

Data Validation Report

405235

Cont.

VAX/VMS Nuclide Identification Report Generated 27-SEP-2016 13:29:21.90

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235004.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY6.CNF;215
Background date    : 25-SEP-2016 12:23:20
Sample date       : 9-DEC-2015 14:00:00. Acquisition date : 27-SEP-2016 12:27:59
Sample ID        : I405235004. Sample quantity : 2.52000E+00 GRAM
Detector name     : XRAY6. Detector geometry: I129
Elapsed live time : 0 01:00:00.00. Elapsed real time: 0 01:00:00.07 0.0%
Energy tolerance  : 1.00000 keV. Analyst Initials : MJH1
Abundance limit   : 75.00000. Sensitivity : 3.00000
Batch ID          : 1598618. Detector SN# :
Matrix Spike ID   : 1470-K. LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.36*	4	0	0.47	316.22	313	7	1.00E-03	89.9	
2	0	81.17*	5	2	0.38	405.30	402	7	1.32E-03	74.3	

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


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                         *
*                               *                                                 *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235004.CNF;1    *
* Acquisition date   : 27-SEP-2016 12:27:59 Sensitivity      : 3.000             *
* Detector ID        : XRAY6 Energy tolerance: 1.000         *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 01:00:00.07 Half life ratio : ***** *
* Sample date       : 9-DEC-2015 14:00:00 Analyst initials: MJH1    *
* Sample ID         : I405235004 Sample Quantity : 2.5200E+00 GRAM *
* Batch Number      : 1598618 Carrier Weight : 0.00000         *
* Recovery          : 1.00000 Standard Weight : 0.00000         *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                 *
* Eff. Cal. date    : 26-JAN-2016 10:07:09 Eff. Geometry   : I129    *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5    *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
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---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-1.726E+00	4.133E+00	6.935E+00	NOT IDENT.
I-129	2.594E-02	2.210E-01	5.123E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.36	9	0	0.47	316.22	313	7	2.50E-03	33.3	
2	0	81.17	7	2	0.38	405.30	402	7	1.98E-03	48.8	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235004

Page : 2
Acquisition date : 27-SEP-2016 12:27:59

Total number of lines in spectrum . 2
Number of unidentified lines 2
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235004

Page : 3
Acquisition date : 27-SEP-2016 12:27:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	63.36	4	0	0.47	316.22	313	7	1.00E-03	****	3.07E+00	
0	81.17	5	2	0.38	405.30	402	7	1.32E-03	****	9.25E-01	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235004.CNF;1  *
* Acquisition date   : 27-SEP-2016 12:27:59 Sensitivity      : 3.000          *
* Detector ID        : XRAY6 Energy tolerance: 1.000        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.07 Half life ratio : *****      *
* Sample date        : 9-DEC-2015 14:00:00 Nuclide Library : IODINE      *
* Sample ID          : I405235004 Analyst initials: MJH1        *
* Batch Number       : 1598618 Sample Quantity : 2.5200E+00 GRAM  *
* Recovery           : 1.00000 Carrier Weight : 0.00000        *
*                               Standard Weight : 0.00000        *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5      *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
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---- Non-Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)	
I-125	2.192E+00	NOT IDENT.
I-129	1.805E-01	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235004.CNF;1  *
* Acquisition date   : 27-SEP-2016 12:27:59 Sensitivity      : 3.000          *
* Detector ID        : XRAY6 Energy tolerance: 1.000          *
* Elapsed live time: 0 01:00:00.00 Abundance limit : 75.000          *
* Elapsed real time: 0 01:00:00.07 Half life ratio : *****          *
* Sample date        : 9-DEC-2015 14:00:00 Nuclide Library : IODINE          *
* Sample ID          : I405235004 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.5200E+00 GRAM          *
*                                     Quantity Err(%) : 3.9683E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	-1.726E+00	4.136E+00	4.208E+00	NOT IDENT.
I-129	2.594E-02	2.210E-01	2.213E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	2.8315				
29.62	1.4643				
27.34	1.4921				
29.62	0.0000				
35.49	1.5811				
39.58	0.0000				

VAX/VMS Nuclide Identification Report Generated 27-SEP-2016 15:42:01.35

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235005.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY4.CNF;433
Background date  : 25-SEP-2016 12:23:10
Sample date     : 10-DEC-2015 13:15:00 Acquisition date : 27-SEP-2016 15:11:29
Sample ID      : I405235005 Sample quantity   : 2.73000E+00 GRAM
Detector name   : XRAY4 Detector geometry: I129
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.10 0.0%
Energy tolerance: 1.00000 keV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity      : 3.00000
Batch ID        : 1598618 Detector SN#      :
Matrix Spike ID : 1470-K LCS ID       : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	44.78	6	0	0.29	223.67	220	6	3.33E-03	40.8	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235005.CNF;1    *
* Acquisition date   : 27-SEP-2016 15:11:29 Sensitivity      : 3.000             *
* Detector ID        : XRAY4 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 00:30:00.10 Half life ratio : *****          *
* Sample date        : 10-DEC-2015 13:15:00 Analyst initials: MJH1         *
* Sample ID          : I405235005 Sample Quantity : 2.7300E+00 GRAM      *
* Batch Number       : 1598618 Carrier Weight : 0.00000         *
* Recovery           : 1.00000 Standard Weight : 0.00000         *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
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---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-1.488E+00	5.457E+00	1.099E+01	NOT IDENT.
I-129	1.289E-01	2.748E-01	7.339E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	44.78	6	0	0.29	223.67	220	6	3.33E-03	40.8	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235005

Page : 2
Acquisition date : 27-SEP-2016 15:11:29

Total number of lines in spectrum 1
Number of unidentified lines 1
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235005

Page : 3
Acquisition date : 27-SEP-2016 15:11:29

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	44.78	6	0	0.29	223.67	220	6	3.33E-03	81.6	1.41E+01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235005.CNF;1  *
* Acquisition date   : 27-SEP-2016 15:11:29 Sensitivity      : 3.000          *
* Detector ID        : XRAY4 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:30:00.10 Half life ratio : *****          *
* Sample date        : 10-DEC-2015 13:15:00 Nuclide Library : IODINE          *
* Sample ID          : I405235005 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.7300E+00 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	3.893E+00	NOT IDENT.
I-129	2.747E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235005.CNF;1  *
* Acquisition date   : 27-SEP-2016 15:11:29 Sensitivity      : 3.000          *
* Detector ID        : XRAY4 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:30:00.10 Half life ratio : *****          *
* Sample date        : 10-DEC-2015 13:15:00 Nuclide Library : IODINE          *
* Sample ID          : I405235005 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.7300E+00 GRAM          *
*                               Quantity Err(%) : 3.6630E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129          *
* Eff. File           : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	-1.488E+00	5.463E+00	5.504E+00	NOT IDENT.
I-129	1.289E-01	2.751E-01	2.812E-01	NOT IDENT.


```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	3.2573				
29.62	1.1089				
27.34	2.2442				
29.62	1.1470				
35.49	0.0000				
39.58	0.0000				

VAX/VMS Nuclide Identification Report Generated 27-SEP-2016 15:43:13.53

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235006.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY5.CNF;58
Background date  : 25-SEP-2016 12:23:15
Sample date     : 10-DEC-2015 13:25:00 Acquisition date : 27-SEP-2016 15:11:52
Sample ID      : I405235006 Sample quantity : 2.78000E+00 GRAM
Detector name   : XRAY5 Detector geometry: I129
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.02 0.0%
Energy tolerance: 1.00000 keV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID       : 1598618 Detector SN# :
Matrix Spike ID: 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	131.03	7	0	0.55	652.14	645	12	3.89E-03	37.8	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                               *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235006.CNF;1  *
* Acquisition date   : 27-SEP-2016 15:11:52 Sensitivity      : 3.000          *
* Detector ID        : XRAY5 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:30:00.02 Half life ratio : *****          *
* Sample date        : 10-DEC-2015 13:25:00 Analyst initials: MJH1          *
* Sample ID          : I405235006 Sample Quantity : 2.7800E+00 GRAM          *
* Batch Number       : 1598618 Carrier Weight : 0.00000          *
* Recovery           : 1.00000 Standard Weight : 0.00000          *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                               *
* Eff. Cal. date    : 30-AUG-2016 11:41:11 Eff. Geometry   : I129          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	1.842E+00	3.611E+00	1.356E+01	NOT IDENT.
I-129	4.326E-01	4.240E-01	1.299E+00	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	131.03	7	0	0.55	652.14	645	12	3.89E-03	37.8	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235006

Page : 2
Acquisition date : 27-SEP-2016 15:11:52

Total number of lines in spectrum 1
Number of unidentified lines 1
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235006

Page : 3
Acquisition date : 27-SEP-2016 15:11:52

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	131.03	7	0	0.55	652.14	645	12	3.89E-03	75.6	1.35E-02	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235006.CNF;1    *
* Acquisition date   : 27-SEP-2016 15:11:52 Sensitivity      : 3.000            *
* Detector ID        : XRAY5 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 00:30:00.02 Half life ratio : *****    *
* Sample date        : 10-DEC-2015 13:25:00 Nuclide Library : IODINE        *
* Sample ID          : I405235006 Analyst initials: MJH1        *
* Batch Number       : 1598618 Sample Quantity : 2.7800E+00 GRAM    *
* Recovery           : 1.00000 Carrier Weight : 0.00000        *
*                               Standard Weight : 0.00000        *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5    *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
---------	------------------------------

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

Nuclide	^{Lc} (pCi/GRAM)	
I-125	4.286E+00	NOT IDENT.
I-129	5.032E-01	NOT IDENT.


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235006.CNF;1    *
* Acquisition date   : 27-SEP-2016 15:11:52 Sensitivity      : 3.000             *
* Detector ID        : XRAY5 Energy tolerance: 1.000             *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000       *
* Elapsed real time  : 0 00:30:00.02 Half life ratio : *****          *
* Sample date        : 10-DEC-2015 13:25:00 Nuclide Library : IODINE         *
* Sample ID          : I405235006 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.7800E+00 GRAM      *
*                               Quantity Err(%) : 3.5971E-03 %         *
* Recovery           : 1.00000 Carrier Weight : 0.00000           *
*                               Standard Weight : 0.00000           *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

```

---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
              (pCi/GRAM )    (1.96-sigma)  (1.96-sigma)

```

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

```

Nuclide      Key-Line
              Activity      K.L Act error      TPU
              (pCi/GRAM )    (1.96-sigma)  (1.96-sigma)
I-125        1.842E+00      3.625E+00      3.719E+00 NOT IDENT.
I-129        4.326E-01      4.262E-01      4.687E-01 NOT IDENT.

```

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	0.0000				
29.62	0.0000				
27.34	0.0000				
29.62	0.9231				
35.49	0.9543				
39.58	0.0000				

VAX/VMS Nuclide Identification Report Generated 27-SEP-2016 15:43:38.92

```
*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235007.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY6.CNF;215
Background date    : 25-SEP-2016 12:23:20
Sample date       : 10-DEC-2015 13:55:00 Acquisition date : 27-SEP-2016 15:12:14
Sample ID        : I405235007 Sample quantity   : 2.60000E+00 GRAM
Detector name     : XRAY6 Detector geometry    : I129
Elapsed live time : 0 00:30:00.00 Elapsed real time: 0 00:30:00.04 0.0%
Energy tolerance  : 1.00000 keV Analyst Initials : MJH1
Abundance limit   : 75.00000 Sensitivity       : 3.00000
Batch ID          : 1598618 Detector SN#      :
Matrix Spike ID   : 1470-K LCS ID              : 1470-K
*****
```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

No peaks were found

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235007.CNF;1    *
* Acquisition date   : 27-SEP-2016 15:12:14 Sensitivity      : 3.000             *
* Detector ID        : XRAY6 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 00:30:00.04 Half life ratio : ***** *
* Sample date        : 10-DEC-2015 13:55:00 Analyst initials: MJH1         *
* Sample ID          : I405235007 Sample Quantity : 2.6000E+00 GRAM *
* Batch Number       : 1598618 Carrier Weight : 0.00000      *
* Recovery           : 1.00000 Standard Weight : 0.00000      *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129           *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5           *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. (1.96-sigma)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	----------------------	----------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. (1.96-sigma)	Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-2.559E+00		5.015E+00	4.898E+00	NOT IDENT.
I-129	-2.761E-01		4.587E-01	6.039E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION
No peaks were found

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235007

Page : 2
Acquisition date : 27-SEP-2016 15:12:14

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235007

Page : 3
Acquisition date : 27-SEP-2016 15:12:14

None

Flags: "T" = Tentatively associated


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235007.CNF;1
* Acquisition date   : 27-SEP-2016 15:12:14 Sensitivity      : 3.000
* Detector ID        : XRAY6 Energy tolerance: 1.000
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 00:30:00.04 Half life ratio : *****
* Sample date        : 10-DEC-2015 13:55:00 Nuclide Library : IODINE
* Sample ID          : I405235007 Analyst initials: MJH1
* Batch Number       : 1598618 Sample Quantity : 2.6000E+00 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*                               Standard Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	0.000E+00	NOT IDENT.
I-129	1.553E-01	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235007.CNF;1  *
* Acquisition date   : 27-SEP-2016 15:12:14 Sensitivity      : 3.000          *
* Detector ID        : XRAY6 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:30:00.04 Half life ratio : *****          *
* Sample date        : 10-DEC-2015 13:55:00 Nuclide Library : IODINE          *
* Sample ID          : I405235007 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.6000E+00 GRAM          *
* Recovery           : 1.00000 Quantity Err(%) : 3.8462E-03 %          *
*                               Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	-2.559E+00	5.020E+00	5.151E+00	NOT IDENT.
I-129	-2.761E-01	4.595E-01	4.761E-01	NOT IDENT.

```

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

```

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
27.34	1.4157				
29.62	2.9286				
27.34	0.0000				
29.62	0.0000				
35.49	1.5811				
39.58	0.0000				

VAX/VMS Nuclide Identification Report Generated 27-SEP-2016 17:19:39.41

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235008.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY1.CNF;415
Background date  : 25-SEP-2016 12:22:54
Sample date     : 10-DEC-2015 14:05:00 Acquisition date : 27-SEP-2016 16:19:05
Sample ID      : I405235008 Sample quantity : 2.58000E+00 GRAM
Detector name   : XRAY1 Detector geometry: I129
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.23 0.0%
Energy tolerance: 1.00000 keV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID       : 1598618 Detector SN# :
Matrix Spike ID : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	72.29	11	0	0.63	363.64	360	8	3.06E-03	30.2	

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

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235008.CNF;1  *
* Acquisition date   : 27-SEP-2016 16:19:05 Sensitivity      : 3.000          *
* Detector ID        : XRAY1 Energy tolerance: 1.000        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.23 Half life ratio : *****      *
* Sample date        : 10-DEC-2015 14:05:00 Analyst initials: MJH1      *
* Sample ID          : I405235008 Sample Quantity : 2.5800E+00 GRAM      *
* Batch Number       : 1598618 Carrier Weight : 0.00000      *
* Recovery           : 1.00000 Standard Weight : 0.00000      *
* Nuclide Library    : IODINE.NLB;1                                         *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry    : I129        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. (1.96-sigma)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	----------------------	----------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. (1.96-sigma)	Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	2.033E+00		3.175E+00	6.873E+00	NOT IDENT.
I-129	-1.212E-01		1.964E-01	3.623E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	72.29	11	0	0.63	363.64	360	8	3.06E-03	30.2	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235008

Page : 2
Acquisition date : 27-SEP-2016 16:19:05

Total number of lines in spectrum 1
Number of unidentified lines 1
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235008

Page : 3
Acquisition date : 27-SEP-2016 16:19:05

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	72.29	11	0	0.63	363.64	360	8	3.06E-03	60.3	1.13E+01	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235008.CNF;1    *
* Acquisition date   : 27-SEP-2016 16:19:05 Sensitivity      : 3.000             *
* Detector ID        : XRAY1 Energy tolerance: 1.000         *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000       *
* Elapsed real time  : 0 01:00:00.23 Half life ratio  : *****          *
* Sample date        : 10-DEC-2015 14:05:00 Nuclide Library : IODINE          *
* Sample ID          : I405235008 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.5800E+00 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	2.937E+00	NOT IDENT.
I-129	1.495E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235008.CNF;1    *
* Acquisition date   : 27-SEP-2016 16:19:05 Sensitivity      : 3.000             *
* Detector ID        : XRAY1 Energy tolerance: 1.000         *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 01:00:00.23 Half life ratio : *****          *
* Sample date        : 10-DEC-2015 14:05:00 Nuclide Library : IODINE         *
* Sample ID          : I405235008 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.5800E+00 GRAM      *
*                               Quantity Err(%) : 3.8760E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000           *
*                               Standard Weight : 0.00000           *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry    : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	2.033E+00	3.195E+00	3.324E+00	NOT IDENT.
I-129	-1.212E-01	1.968E-01	2.042E-01	NOT IDENT.

```

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

```

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
27.34	6.1327				
29.62	12.7227				
27.34	5.1937				
29.62	8.9849				
35.49	6.4505				
39.58	6.7829				

VAX/VMS Nuclide Identification Report Generated 27-SEP-2016 17:19:13.31

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235009.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY2.CNF;379
Background date  : 25-SEP-2016 12:22:59
Sample date      : 10-DEC-2015 10:30:00 Acquisition date : 27-SEP-2016 16:18:41
Sample ID        : I405235009 Sample quantity : 2.63000E+00 GRAM
Detector name    : XRAY2 Detector geometry: I129
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.20 0.0%
Energy tolerance : 1.00000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID         : 1598618 Detector SN# :
Matrix Spike ID  : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	16.81*	7	14	0.43	83.03	77	11	2.01E-03	124.4	
2	0	36.66	7	0	0.55	182.43	177	9	1.94E-03	37.8	
3	0	41.39	9	3	1.36	206.11	200	10	2.62E-03	45.4	
4	0	57.90	12	0	0.25	288.75	283	11	3.33E-03	28.9	
5	0	63.05*	6	2	0.61	314.55	310	9	1.58E-03	82.0	
6	0	64.67	6	2	0.45	322.66	319	7	1.74E-03	53.2	
7	2	70.09	12	1	0.96	349.79	346	13	3.39E-03	34.7	4.21E-01
8	2	71.29	12	2	0.65	355.82	346	13	3.26E-03	32.1	
9	0	93.00*	6	7	1.31	464.51	456	14	1.71E-03	126.9	
10	0	134.56	9	2	0.28	672.65	668	9	2.44E-03	45.7	
11	0	182.13	11	6	0.42	910.91	904	12	3.06E-03	53.8	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235009.CNF;1  *
* Acquisition date   : 27-SEP-2016 16:18:41 Sensitivity      : 3.000          *
* Detector ID        : XRAY2 Energy tolerance: 1.000        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 01:00:00.20 Half life ratio : ***** *
* Sample date        : 10-DEC-2015 10:30:00 Analyst initials: MJH1      *
* Sample ID          : I405235009 Sample Quantity : 2.6300E+00 GRAM *
* Batch Number       : 1598618 Carrier Weight : 0.00000      *
* Recovery           : 1.00000 Standard Weight : 0.00000      *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15      *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	2.282E+00	6.193E+00	1.361E+01	NOT IDENT.
I-129	4.861E-02	2.191E-01	4.694E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5.01	166	89	0.41	23.95	22	6	4.60E-02	11.6	
2	0	16.81	21	14	0.43	83.03	77	11	5.96E-03	39.8	
3	0	36.66	7	0	0.55	182.43	177	9	1.94E-03	37.8	
4	0	41.39	9	3	1.36	206.11	200	10	2.62E-03	45.4	
5	0	57.90	12	0	0.25	288.75	283	11	3.33E-03	28.9	
6	0	63.05	11	2	0.61	314.55	310	9	3.03E-03	38.9	
7	0	64.67	6	2	0.45	322.66	319	7	1.74E-03	53.2	
8	2	70.09	12	1	0.96	349.79	346	13	3.39E-03	34.7	4.21E-01
9	2	71.29	12	2	0.65	355.82	346	13	3.26E-03	32.1	
10	0	93.00	23	7	1.31	464.51	456	14	6.32E-03	32.4	
11	0	134.56	9	2	0.28	672.65	668	9	2.44E-03	45.7	
12	0	182.13	11	6	0.42	910.91	904	12	3.06E-03	53.8	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235009

Page : 2
Acquisition date : 27-SEP-2016 16:18:41

Total number of lines in spectrum 11
Number of unidentified lines 11
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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	16.81	7	14	0.43	83.03	77	11	2.01E-03	****	7.68E-04	
0	36.66	7	0	0.55	182.43	177	9	1.94E-03	75.6	2.36E+01	
0	41.39	9	3	1.36	206.11	200	10	2.62E-03	90.7	1.34E+01	
0	57.90	12	0	0.25	288.75	283	11	3.33E-03	57.7	1.34E-01	
0	63.05	6	2	0.61	314.55	310	9	1.58E-03	****	1.95E-02	
0	64.67	6	2	0.45	322.66	319	7	1.74E-03	****	1.03E-02	
2	70.09	12	1	0.96	349.79	346	13	3.39E-03	69.5	1.12E-03	
2	71.29	12	2	0.65	355.82	346	13	3.26E-03	64.3	6.72E-04	
0	93.00	6	7	1.31	464.51	456	14	1.71E-03	****	3.38E-08	
0	134.56	9	2	0.28	672.65	668	9	2.44E-03	91.4	2.81E-17	
0	182.13	11	6	0.42	910.91	904	12	3.06E-03	****	3.32E-28	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235009.CNF;1    *
* Acquisition date   : 27-SEP-2016 16:18:41 Sensitivity      : 3.000            *
* Detector ID        : XRAY2 Energy tolerance: 1.000          *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.20 Half life ratio : *****        *
* Sample date        : 10-DEC-2015 10:30:00 Nuclide Library : IODINE        *
* Sample ID          : I405235009 Analyst initials: MJH1         *
* Batch Number       : 1598618 Sample Quantity : 2.6300E+00 GRAM    *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15        *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	5.639E+00	NOT IDENT.
I-129	1.922E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235009.CNF;1  *
* Acquisition date   : 27-SEP-2016 16:18:41 Sensitivity      : 3.000          *
* Detector ID        : XRAY2 Energy tolerance: 1.000          *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 01:00:00.20 Half life ratio : *****          *
* Sample date        : 10-DEC-2015 10:30:00 Nuclide Library : IODINE          *
* Sample ID          : I405235009 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.6300E+00 GRAM          *
*                               Quantity Err(%) : 3.8023E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	2.282E+00	6.206E+00	6.291E+00	NOT IDENT.
I-129	4.861E-02	2.191E-01	2.202E-01	NOT IDENT.

```

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

```

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
27.34	5.2595				
29.62	5.3517				
27.34	4.3235				
29.62	5.5038				
35.49	6.6880				
39.58	8.5754				

VAX/VMS Nuclide Identification Report Generated 27-SEP-2016 17:20:03.84

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235010.CNF;1
Background file : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY4.CNF;433
Background date : 25-SEP-2016 12:23:10
Sample date    : 10-DEC-2015 10:35:00 Acquisition date : 27-SEP-2016 16:19:26
Sample ID     : I405235010 Sample quantity : 3.34000E+00 GRAM
Detector name  : XRAY4 Detector geometry: I129
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.21 0.0%
Energy tolerance: 1.00000 keV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID       : 1598618 Detector SN# :
Matrix Spike ID : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	24.66	3	6	0.32	122.81	119	7	9.57E-04	123.8	
2	0	27.52	6	6	0.40	137.17	132	8	1.62E-03	90.7	
3	0	92.71*	9	3	0.61	463.84	459	11	2.52E-03	62.2	
4	0	139.94	12	3	0.75	700.53	693	12	3.28E-03	41.5	
5	0	158.54	7	5	1.36	793.77	788	9	1.81E-03	70.7	
6	0	185.65*	9	0	0.33	929.64	925	9	2.51E-03	45.1	
7	0	202.95	9	0	0.65	1016.33	1012	9	2.50E-03	33.3	

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

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Cnt. uncert (1.96-sigma)	MDA (pCi/GRAM)
I-125	2.786E+00	4.954E+00	6.562E+00

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-129	2.999E-02	1.554E-01	3.474E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	17.21	6	12	0.20	85.51	80	8	1.76E-03	102.3	
2	0	24.66	3	6	0.32	122.81	119	7	9.57E-04	123.8	
3	0	27.52	6	6	0.40	137.17	132	8	1.62E-03	90.7	
4	0	92.71	17	3	0.61	463.84	459	11	4.72E-03	30.9	
5	0	139.94	12	3	0.75	700.53	693	12	3.28E-03	41.5	
6	0	158.54	7	5	1.36	793.77	788	9	1.81E-03	70.7	
7	0	185.65	14	0	0.33	929.64	925	9	3.89E-03	26.7	
8	0	202.95	9	0	0.65	1016.33	1012	9	2.50E-03	33.3	

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
I-125	27.34	6	114.10*	1.249E+01	9.202E-02	2.786E+00	181.42
	30.97	-----	20.30	1.514E+01	-----	Line Not Found	-----
	35.49	-----	6.68	1.660E+01	-----	Line Not Found	-----

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235010

Page : 2
Acquisition date : 27-SEP-2016 16:19:26

Total number of lines in spectrum 7
Number of unidentified lines 6
Number of lines tentatively identified by NID 1 14.29%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
I-125	59.40D	30.3	9.202E-02	2.786E+00	5.055E+00	181.42	
Total Activity :			9.202E-02	2.786E+00			

Grand Total Activity : 9.202E-02 2.786E+00

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235010

Page : 3
Acquisition date : 27-SEP-2016 16:19:26

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	24.66	3	6	0.32	122.81	119	7	9.57E-04	****	9.48E+00	
0	92.71	9	3	0.61	463.84	459	11	2.52E-03	****	5.10E-01	
0	139.94	12	3	0.75	700.53	693	12	3.28E-03	83.0	6.82E-03	
0	158.54	7	5	1.36	793.77	788	9	1.81E-03	****	1.15E-03	
0	185.65	9	0	0.33	929.64	925	9	2.51E-03	90.2	8.28E-05	
0	202.95	9	0	0.65	1016.33	1012	9	2.50E-03	66.7	1.52E-05	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235010.CNF;1  *
* Acquisition date   : 27-SEP-2016 16:19:26 Sensitivity      : 3.000          *
* Detector ID        : XRAY4 Energy tolerance: 1.000          *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 01:00:00.21 Half life ratio : *****          *
* Sample date        : 10-DEC-2015 10:35:00 Nuclide Library : IODINE          *
* Sample ID          : I405235010 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 3.3400E+00 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
I-125	2.626E+00

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

Nuclide	^{Lc} (pCi/GRAM)
I-129	1.360E-01 NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235010.CNF;1    *
* Acquisition date   : 27-SEP-2016 16:19:26 Sensitivity      : 3.000             *
* Detector ID        : XRAY4 Energy tolerance: 1.000             *
* Elapsed live time: 0 01:00:00.00 Abundance limit : 75.000       *
* Elapsed real time: 0 01:00:00.21 Half life ratio : *****       *
* Sample date        : 10-DEC-2015 10:35:00 Nuclide Library : IODINE        *
* Sample ID          : I405235010 Analyst initials: MJH1         *
* Batch Number       : 1598618 Sample Quantity : 3.3400E+00 GRAM    *
*                               Quantity Err(%) : 2.9940E-03 %       *
* Recovery           : 1.00000 Carrier Weight : 0.00000         *
*                               Standard Weight : 0.00000         *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14         *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
I-125	2.786E+00	4.975E+00	4.975E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)
I-129	2.999E-02	1.554E-01	1.560E-01 NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	5.4288				
29.62	3.3266				
30.97	4.4884				
33.59	2.2941				
35.49	8.1513				
39.58	3.6015				

VAX/VMS Nuclide Identification Report Generated 27-SEP-2016 17:20:28.54

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                   *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235011.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY5.CNF;58
Background date  : 25-SEP-2016 12:23:15
Sample date     : 9-DEC-2015 10:13:00. Acquisition date : 27-SEP-2016 16:19:47
Sample ID      : I405235011. Sample quantity : 2.61000E+00 GRAM
Detector name   : XRAY5. Detector geometry: I129
Elapsed live time: 0 01:00:00.00. Elapsed real time: 0 01:00:00.06 0.0%
Energy tolerance: 1.00000 keV. Analyst Initials : MJH1
Abundance limit : 75.00000. Sensitivity : 3.00000
Batch ID       : 1598618. Detector SN# :
Matrix Spike ID: 1470-K. LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.53*	2	0	0.20	231.33	229	5	5.61E-04	135.4	
2	0	63.38*	6	4	0.32	315.27	311	8	1.77E-03	82.2	
3	0	74.74*	6	0	0.53	371.80	369	6	1.75E-03	53.3	
4	0	78.54	9	3	0.20	390.74	383	11	2.47E-03	49.8	
5	0	92.69*	3	0	0.70	461.22	457	8	9.51E-04	139.4	
6	0	162.02	8	3	0.39	806.47	800	11	2.35E-03	51.0	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235011.CNF;1    *
* Acquisition date   : 27-SEP-2016 16:19:47 Sensitivity      : 3.000             *
* Detector ID        : XRAY5 Energy tolerance: 1.000         *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.06 Half life ratio : *****          *
* Sample date        : 9-DEC-2015 10:13:00 Analyst initials: MJH1         *
* Sample ID          : I405235011 Sample Quantity : 2.6100E+00 GRAM      *
* Batch Number       : 1598618 Carrier Weight : 0.00000        *
* Recovery           : 1.00000 Standard Weight : 0.00000         *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-4.152E-01	2.005E+00	5.607E+00	NOT IDENT.
I-129	9.429E-02	1.444E-01	4.988E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.53	6	0	0.20	231.33	229	5	1.67E-03	40.8	
2	0	63.38	13	4	0.32	315.27	311	8	3.61E-03	38.5	
3	0	74.74	10	0	0.53	371.80	369	6	2.78E-03	31.6	
4	0	78.54	9	3	0.20	390.74	383	11	2.47E-03	49.8	
5	0	92.69	18	0	0.70	461.22	457	8	5.00E-03	23.6	
6	0	162.02	8	3	0.39	806.47	800	11	2.35E-03	51.0	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235011

Page : 2
Acquisition date : 27-SEP-2016 16:19:47

Total number of lines in spectrum 6
Number of unidentified lines 6
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235011

Page : 3
Acquisition date : 27-SEP-2016 16:19:47

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.53	2	0	0.20	231.33	229	5	5.61E-04	****	7.90E+00	
0	63.38	6	4	0.32	315.27	311	8	1.77E-03	****	3.18E+00	
0	74.74	6	0	0.53	371.80	369	6	1.75E-03	****	1.44E+00	
0	78.54	9	3	0.20	390.74	383	11	2.47E-03	99.7	1.09E+00	
0	92.69	3	0	0.70	461.22	457	8	9.51E-04	****	3.57E-01	
0	162.02	8	3	0.39	806.47	800	11	2.35E-03	****	8.37E-04	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235011.CNF;1    *
* Acquisition date   : 27-SEP-2016 16:19:47 Sensitivity      : 3.000            *
* Detector ID        : XRAY5 Energy tolerance: 1.000        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 01:00:00.06 Half life ratio : *****    *
* Sample date       : 9-DEC-2015 10:13:00 Nuclide Library : IODINE    *
* Sample ID         : I405235011 Analyst initials: MJH1        *
* Batch Number      : 1598618 Sample Quantity : 2.6100E+00 GRAM  *
* Recovery          : 1.00000 Carrier Weight : 0.00000        *
*                               Standard Weight : 0.00000        *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 30-AUG-2016 11:41:11 Eff. Geometry   : I129    *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5    *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	1.456E+00	NOT IDENT.
I-129	1.714E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235011.CNF;1
* Acquisition date   : 27-SEP-2016 16:19:47 Sensitivity      : 3.000
* Detector ID        : XRAY5 Energy tolerance: 1.000
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.06 Half life ratio : *****
* Sample date        : 9-DEC-2015 10:13:00 Nuclide Library : IODINE
* Sample ID          : I405235011 Analyst initials: MJH1
* Batch Number       : 1598618 Sample Quantity : 2.6100E+00 GRAM
*                               Quantity Err(%) : 3.8314E-03 %
* Recovery           : 1.00000 Carrier Weight : 0.00000
*                               Standard Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	-4.152E-01	2.006E+00	2.015E+00	NOT IDENT.
I-129	9.429E-02	1.448E-01	1.509E-01	NOT IDENT.

```

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

```

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
27.34	0.8133				
29.62	0.0000				
27.34	0.8784				
29.62	3.6923				
35.49	1.9087				
39.58	3.0566				

VAX/VMS Nuclide Identification Report Generated 27-SEP-2016 17:20:52.82

```
*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235012.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY6.CNF;215
Background date    : 25-SEP-2016 12:23:20
Sample date       : 10-DEC-2015 11:25:00 Acquisition date : 27-SEP-2016 16:20:09
Sample ID        : I405235012 Sample quantity : 2.74000E+00 GRAM
Detector name     : XRAY6 Detector geometry: I129
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.07 0.0%
Energy tolerance  : 1.00000 keV Analyst Initials : MJH1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1598618 Detector SN# :
Matrix Spike ID   : 1470-K LCS ID : 1470-K
*****
```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

No peaks were found


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235012.CNF;1    *
* Acquisition date   : 27-SEP-2016 16:20:09 Sensitivity      : 3.000             *
* Detector ID        : XRAY6 Energy tolerance: 1.000         *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 01:00:00.07 Half life ratio : ***** *
* Sample date        : 10-DEC-2015 11:25:00 Analyst initials: MJH1          *
* Sample ID          : I405235012 Sample Quantity : 2.7400E+00 GRAM *
* Batch Number       : 1598618 Carrier Weight : 0.00000      *
* Recovery           : 1.00000 Standard Weight : 0.00000      *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129           *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	3.958E+00	3.614E+00	1.090E+01	NOT IDENT.
I-129	1.310E-01	1.608E-01	5.208E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

No peaks were found

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235012

Page : 2
Acquisition date : 27-SEP-2016 16:20:09

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235012

Page : 3
Acquisition date : 27-SEP-2016 16:20:09

None

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235012.CNF;1    *
* Acquisition date   : 27-SEP-2016 16:20:09 Sensitivity      : 3.000             *
* Detector ID        : XRAY6 Energy tolerance: 1.000         *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 01:00:00.07 Half life ratio  : *****          *
* Sample date        : 10-DEC-2015 11:25:00 Nuclide Library : IODINE         *
* Sample ID          : I405235012 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.7400E+00 GRAM      *
* Recovery           : 1.00000 Carrier Weight  : 0.00000         *
*                               Standard Weight : 0.00000         *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	4.290E+00	NOT IDENT.
I-129	1.909E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235012.CNF;1    *
* Acquisition date   : 27-SEP-2016 16:20:09 Sensitivity      : 3.000             *
* Detector ID        : XRAY6 Energy tolerance: 1.000         *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000         *
* Elapsed real time  : 0 01:00:00.07 Half life ratio : *****         *
* Sample date        : 10-DEC-2015 11:25:00 Nuclide Library : IODINE         *
* Sample ID          : I405235012 Analyst initials: MJH1         *
* Batch Number       : 1598618 Sample Quantity : 2.7400E+00 GRAM         *
*                               Quantity Err(%) : 3.6496E-03 %         *
* Recovery           : 1.00000 Carrier Weight : 0.00000         *
*                               Standard Weight : 0.00000         *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5         *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

```

---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
              (pCi/GRAM )    (1.96-sigma)  (1.96-sigma)

```

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

```

Nuclide      Key-Line
              Activity      K.L Act error      TPU
              (pCi/GRAM )    (1.96-sigma)  (1.96-sigma)
I-125        3.958E+00      3.631E+00      4.046E+00 NOT IDENT.
I-129        1.310E-01      1.613E-01      1.718E-01 NOT IDENT.

```

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	0.0000				
29.62	0.0000				
27.34	0.0000				
29.62	0.7722				
35.49	2.3717				
39.58	0.8284				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 07:07:14.72

```
*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235013.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY2.CNF;379
Background date    : 25-SEP-2016 12:22:59
Sample date       : 8-DEC-2015 11:23:00. Acquisition date : 28-SEP-2016 06:36:49
Sample ID        : I405235013. Sample quantity : 2.77000E+00 GRAM
Detector name     : XRAY2. Detector geometry: I129
Elapsed live time : 0 00:30:00.00. Elapsed real time: 0 00:30:00.10 0.0%
Energy tolerance  : 1.00000 keV. Analyst Initials : MJH1
Abundance limit   : 75.00000. Sensitivity : 3.00000
Batch ID          : 1598618. Detector SN# :
Matrix Spike ID   : 1470-K. LCS ID : 1470-K
*****
```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

No peaks were found

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235013.CNF;1    *
* Acquisition date   : 28-SEP-2016 06:36:49 Sensitivity      : 3.000             *
* Detector ID        : XRAY2 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.10 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 11:23:00 Analyst initials: MJH1         *
* Sample ID          : I405235013 Sample Quantity : 2.7700E+00 GRAM      *
* Batch Number       : 1598618 Carrier Weight : 0.00000        *
* Recovery           : 1.00000 Standard Weight : 0.00000         *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	1.949E+00	9.129E+00	2.085E+01	NOT IDENT.
I-129	4.713E-02	3.193E-01	7.175E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION
No peaks were found

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235013

Page : 2
Acquisition date : 28-SEP-2016 06:36:49

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235013

Page : 3
Acquisition date : 28-SEP-2016 06:36:49

None

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235013.CNF;1    *
* Acquisition date   : 28-SEP-2016 06:36:49 Sensitivity      : 3.000            *
* Detector ID        : XRAY2 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.10 Half life ratio : *****          *
* Sample date       : 8-DEC-2015 11:23:00 Nuclide Library : IODINE          *
* Sample ID         : I405235013 Analyst initials: MJH1          *
* Batch Number      : 1598618 Sample Quantity : 2.7700E+00 GRAM      *
* Recovery          : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 27-JUL-2016 12:15:07 Eff. Geometry   : I129          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
---------	------------------------------

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

Nuclide	^{Lc} (pCi/GRAM)
I-125	8.145E+00 NOT IDENT.
I-129	2.780E-01 NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235013.CNF;1
* Acquisition date   : 28-SEP-2016 06:36:49 Sensitivity      : 3.000
* Detector ID        : XRAY2 Energy tolerance: 1.000
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 00:30:00.10 Half life ratio : *****
* Sample date        : 8-DEC-2015 11:23:00 Nuclide Library : IODINE
* Sample ID          : I405235013 Analyst initials: MJH1
* Batch Number       : 1598618 Sample Quantity : 2.7700E+00 GRAM
*                               Quantity Err(%) : 3.6101E-03 %
* Recovery           : 1.00000 Carrier Weight : 0.00000
*                               Standard Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)
I-125	1.949E+00	9.136E+00	9.178E+00 NOT IDENT.
I-129	4.713E-02	3.193E-01	3.201E-01 NOT IDENT.


```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	3.1557				
29.62	3.2110				
27.34	2.1618				
29.62	4.4030				
35.49	4.4587				
39.58	2.2868				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 07:15:47.60

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235014.CNF;1
Background file     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY4.CNF;433
Background date      : 25-SEP-2016 12:23:10
Sample date         : 8-DEC-2015 10:49:00. Acquisition date : 28-SEP-2016 06:45:16
Sample ID          : I405235014. Sample quantity : 2.92000E+00 GRAM
Detector name       : XRAY4. Detector geometry: I129
Elapsed live time   : 0 00:30:00.00. Elapsed real time: 0 00:30:00.10 0.0%
Energy tolerance    : 1.00000 keV. Analyst Initials : MJH1
Abundance limit     : 75.00000. Sensitivity : 3.00000
Batch ID            : 1598618. Detector SN# :
Matrix Spike ID     : 1470-K. LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	14.62	13	2	0.34	72.50	69	7	7.43E-03	31.8	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235014.CNF;1    *
* Acquisition date   : 28-SEP-2016 06:45:16 Sensitivity      : 3.000            *
* Detector ID        : XRAY4 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 00:30:00.10 Half life ratio : *****    *
* Sample date       : 8-DEC-2015 10:49:00 Analyst initials: MJH1    *
* Sample ID         : I405235014 Sample Quantity : 2.9200E+00 GRAM *
* Batch Number      : 1598618 Carrier Weight : 0.00000        *
* Recovery          : 1.00000 Standard Weight : 0.00000        *
* Nuclide Library   : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date    : 17-JUN-2016 08:18:14 Eff. Geometry   : I129    *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14    *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. (1.96-sigma)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	----------------------	----------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. (1.96-sigma)	Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	3.275E+00		3.791E+00	1.209E+01	NOT IDENT.
I-129	-8.457E-02		2.980E-01	5.919E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	14.62	13	2	0.34	72.50	69	7	7.43E-03	31.8	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235014

Page : 2
Acquisition date : 28-SEP-2016 06:45:16

Total number of lines in spectrum	1	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	0	0.00%

**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235014

Page : 3
Acquisition date : 28-SEP-2016 06:45:16

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	14.62	13	2	0.34	72.50	69	7	7.43E-03	63.6	6.25E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235014.CNF;1  *
* Acquisition date   : 28-SEP-2016 06:45:16 Sensitivity      : 3.000          *
* Detector ID        : XRAY4 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:30:00.10 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 10:49:00 Nuclide Library : IODINE          *
* Sample ID          : I405235014 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.9200E+00 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	4.499E+00	NOT IDENT.
I-129	2.097E-01	NOT IDENT.


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               :                                               *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235014.CNF;1  *
* Acquisition date   : 28-SEP-2016 06:45:16 Sensitivity      : 3.000          *
* Detector ID        : XRAY4 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.10 Half life ratio : *****      *
* Sample date        : 8-DEC-2015 10:49:00 Nuclide Library : IODINE      *
* Sample ID          : I405235014 Analyst initials: MJH1        *
* Batch Number       : 1598618 Sample Quantity : 2.9200E+00 GRAM  *
*                               Quantity Err(%) : 3.4247E-03 %      *
* Recovery           : 1.00000 Carrier Weight : 0.00000        *
*                               Standard Weight : 0.00000        *
*****
*                               CALIBRATION INFORMATION                         *
*                               :                                               *
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129      *
* Eff. File           : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14      *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	3.275E+00	3.834E+00	4.108E+00	NOT IDENT.
I-129	-8.457E-02	2.981E-01	3.005E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	0.0000				
29.62	3.3266				
27.34	1.1221				
29.62	2.2941				
35.49	6.9868				
39.58	0.0000				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 07:18:50.73

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235015.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY6.CNF;215
Background date  : 25-SEP-2016 12:23:20
Sample date      : 8-DEC-2015 10:56:00. Acquisition date : 28-SEP-2016 06:48:23
Sample ID        : I405235015      Sample quantity   : 3.13000E+00 GRAM
Detector name     : XRAY6           Detector geometry: I129
Elapsed live time : 0 00:30:00.00   Elapsed real time: 0 00:30:00.04 0.0%
Energy tolerance  : 1.00000 keV     Analyst Initials : MJH1
Abundance limit   : 75.00000        Sensitivity      : 3.00000
Batch ID          : 1598618          Detector SN#     :
Matrix Spike ID   : 1470-K          LCS ID           : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	87.30	6	0	0.57	436.00	433	6	3.33E-03	40.8	
2	0	295.19	6	0	0.40	1476.17	1472	8	3.33E-03	40.8	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235015.CNF;1    *
* Acquisition date   : 28-SEP-2016 06:48:23 Sensitivity      : 3.000            *
* Detector ID        : XRAY6 Energy tolerance: 1.000          *
* Elapsed live time: 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time: 0 00:30:00.04 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 10:56:00 Analyst initials: MJH1          *
* Sample ID          : I405235015 Sample Quantity : 3.1300E+00 GRAM      *
* Batch Number       : 1598618 Carrier Weight : 0.00000          *
* Recovery           : 1.00000 Standard Weight : 0.00000          *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	1.442E+00	2.931E+00	1.116E+01	NOT IDENT.
I-129	0.000E+00	1.764E-01	2.438E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	87.30	6	0	0.57	436.00	433	6	3.33E-03	40.8	
2	0	295.19	6	0	0.40	1476.17	1472	8	3.33E-03	40.8	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235015

Page : 2
Acquisition date : 28-SEP-2016 06:48:23

Total number of lines in spectrum 2
Number of unidentified lines 2
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235015

Page : 3
Acquisition date : 28-SEP-2016 06:48:23

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	87.30	6	0	0.57	436.00	433	6	3.33E-03	81.6	6.01E-01	
0	295.19	6	0	0.40	1476.17	1472	8	3.33E-03	81.6	2.29E-06	

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*                                     *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235015.CNF;1  *
* Acquisition date   : 28-SEP-2016 06:48:23 Sensitivity      : 3.000          *
* Detector ID        : XRAY6 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.04 Half life ratio : *****      *
* Sample date        : 8-DEC-2015 10:56:00 Nuclide Library : IODINE      *
* Sample ID          : I405235015 Analyst initials: MJH1        *
* Batch Number       : 1598618 Sample Quantity : 3.1300E+00 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000        *
*                                     Standard Weight : 0.00000      *
*****
*                                     CALIBRATION INFORMATION                  *
*                                     *                                         *
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5      *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	3.479E+00	NOT IDENT.
I-129	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235015.CNF;1    *
* Acquisition date   : 28-SEP-2016 06:48:23 Sensitivity      : 3.000            *
* Detector ID        : XRAY6 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.04 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 10:56:00 Nuclide Library : IODINE          *
* Sample ID          : I405235015 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 3.1300E+00 GRAM      *
*                               Quantity Err(%) : 3.1949E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000            *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	1.442E+00	2.934E+00	3.005E+00	NOT IDENT.
I-129	0.000E+00	0.000E+00	0.000E+00	NOT IDENT.

```

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

```

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
27.34	0.0000				
29.62	0.0000				
27.34	1.4921				
29.62	0.0000				
35.49	0.0000				
39.58	0.0000				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 07:26:02.09

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235016.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY5.CNF;58
Background date    : 25-SEP-2016 12:23:15
Sample date       : 8-DEC-2015 11:29:00. Acquisition date : 28-SEP-2016 06:55:30
Sample ID        : I405235016. Sample quantity : 2.85000E+00 GRAM
Detector name     : XRAY5. Detector geometry: I129
Elapsed live time : 0 00:30:00.00. Elapsed real time: 0 00:30:00.03 0.0%
Energy tolerance  : 1.00000 keV. Analyst Initials : MJH1
Abundance limit   : 75.00000. Sensitivity : 3.00000
Batch ID          : 1598618. Detector SN# :
Matrix Spike ID   : 1470-K. LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	92.55*	7	0	0.55	460.50	456	9	3.73E-03	58.1	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235016.CNF;1    *
* Acquisition date   : 28-SEP-2016 06:55:30 Sensitivity      : 3.000            *
* Detector ID        : XRAY5 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 00:30:00.03 Half life ratio : *****      *
* Sample date        : 8-DEC-2015 11:29:00 Analyst initials: MJH1        *
* Sample ID          : I405235016 Sample Quantity : 2.8500E+00 GRAM    *
* Batch Number       : 1598618 Carrier Weight : 0.00000        *
* Recovery           : 1.00000 Standard Weight : 0.00000        *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	4.138E+00	8.276E+00	2.197E+01	NOT IDENT.
I-129	3.359E-02	1.167E-01	5.628E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	92.55	14	0	0.55	460.50	456	9	7.78E-03	26.7	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235016

Page : 2
Acquisition date : 28-SEP-2016 06:55:30

Total number of lines in spectrum 1
Number of unidentified lines 1
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235016

Page : 3
Acquisition date : 28-SEP-2016 06:55:30

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.55	7	0	0.55	460.50	456	9	3.73E-03	****	3.61E-01	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235016.CNF;1  *
* Acquisition date   : 28-SEP-2016 06:55:30 Sensitivity      : 3.000          *
* Detector ID        : XRAY5 Energy tolerance: 1.000        *
* Elapsed live time: 0 00:30:00.00 Abundance limit : 75.000    *
* Elapsed real time: 0 00:30:00.03 Half life ratio : ***** *
* Sample date        : 8-DEC-2015 11:29:00 Nuclide Library : IODINE      *
* Sample ID          : I405235016 Analyst initials: MJH1       *
* Batch Number       : 1598618 Sample Quantity : 2.8500E+00 GRAM *
* Recovery           : 1.00000 Carrier Weight : 0.00000      *
*                               Standard Weight : 0.00000      *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5      *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	8.477E+00	NOT IDENT.
I-129	1.385E-01	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235016.CNF;1  *
* Acquisition date   : 28-SEP-2016 06:55:30 Sensitivity      : 3.000          *
* Detector ID        : XRAY5 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:30:00.03 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 11:29:00 Nuclide Library : IODINE          *
* Sample ID          : I405235016 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.8500E+00 GRAM          *
*                                     Quantity Err(%) : 3.5088E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	4.138E+00	8.308E+00	8.515E+00	NOT IDENT.
I-129	3.359E-02	1.167E-01	1.177E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	1.6265				
29.62	0.0000				
27.34	0.0000				
29.62	0.9231				
35.49	0.9543				
39.58	1.0189				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 07:53:55.37

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235017.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY2.CNF;379
Background date  : 25-SEP-2016 12:22:59
Sample date     : 2-DEC-2015 10:02:00. Acquisition date : 28-SEP-2016 07:22:16
Sample ID      : I405235017. Sample quantity : 2.33000E+00 GRAM
Detector name   : XRAY2. Detector geometry: I129
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.11 0.0%
Energy tolerance: 1.00000 keV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID       : 1598618 Detector SN# :
Matrix Spike ID: 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	20.58	14	5	1.35	101.91	95	11	7.51E-03	43.2	
2	0	29.78	6	0	0.57	148.00	145	6	3.33E-03	40.8	
3	0	34.84	6	0	0.38	173.33	170	6	3.33E-03	40.8	
4	0	115.20	9	0	1.79	575.67	569	13	5.00E-03	33.3	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235017.CNF;1    *
* Acquisition date   : 28-SEP-2016 07:22:16 Sensitivity      : 3.000             *
* Detector ID        : XRAY2 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 00:30:00.11 Half life ratio : ***** *
* Sample date        : 2-DEC-2015 10:02:00 Analyst initials: MJH1         *
* Sample ID          : I405235017 Sample Quantity : 2.3300E+00 GRAM *
* Batch Number       : 1598618 Carrier Weight : 0.00000        *
* Recovery           : 1.00000 Standard Weight : 0.00000        *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15         *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
I-129	4.128E-01	3.303E-01	6.757E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-3.109E+00	1.290E+01	2.538E+01	FAIL ABUN

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	20.58	14	5	1.35	101.91	95	11	7.51E-03	43.2	
2	0	29.78	6	0	0.57	148.00	145	6	3.33E-03	40.8	
3	0	34.84	6	0	0.38	173.33	170	6	3.33E-03	40.8	
4	0	92.88	7	5	0.65	463.93	457	9	3.98E-03	65.6	
5	0	115.20	9	0	1.79	575.67	569	13	5.00E-03	33.3	

Nuclide Line Activity Report

Nuclide Type: FISSION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
I-129	29.62	6	56.60*	1.655E+01	4.128E-01	4.128E-01	81.65
	33.59	-----	10.04	2.487E+01	-----	Line Not Found	-----
	39.58	-----	7.51	1.767E+01	-----	Line Not Found	-----

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235017

Page : 2
Acquisition date : 28-SEP-2016 07:22:16

Total number of lines in spectrum 4
Number of unidentified lines 2
Number of lines tentatively identified by NID 2 50.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
I-129	1.57E+07Y	1.00	4.128E-01	4.128E-01	3.370E-01	81.65	
Total Activity :			4.128E-01	4.128E-01			

Grand Total Activity : 4.128E-01 4.128E-01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235017

Page : 3
Acquisition date : 28-SEP-2016 07:22:16

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	20.58	14	5	1.35	101.91	95	11	7.51E-03	86.4	1.30E-01	
0	34.84	6	0	0.38	173.33	170	6	3.33E-03	81.6	2.52E+01	T
0	115.20	9	0	1.79	575.67	569	13	5.00E-03	66.7	5.83E-13	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235017.CNF;1    *
* Acquisition date   : 28-SEP-2016 07:22:16 Sensitivity      : 3.000             *
* Detector ID        : XRAY2 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 00:30:00.11 Half life ratio : *****          *
* Sample date        : 2-DEC-2015 10:02:00 Nuclide Library : IODINE         *
* Sample ID          : I405235017 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.3300E+00 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

```

      Lc
Nuclide (pCi/GRAM )
I-129      2.417E-01

```

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

```

      Lc
Nuclide (pCi/GRAM )
I-125      9.779E+00 FAIL ABUN

```

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                    *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*                                     *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235017.CNF;1 *
* Acquisition date   : 28-SEP-2016 07:22:16 Sensitivity      : 3.000          *
* Detector ID        : XRAY2 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:30:00.11 Half life ratio : *****          *
* Sample date        : 2-DEC-2015 10:02:00 Nuclide Library : IODINE          *
* Sample ID          : I405235017 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.3300E+00 GRAM          *
*                                     Quantity Err(%) : 4.2918E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*                                     CALIBRATION INFORMATION                  *
*                                     *                                       *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
I-129	4.128E-01	3.327E-01	3.327E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	-3.109E+00	1.291E+01	1.298E+01	FAIL ABUN

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	5.2595				
29.62	2.1407				
27.34	1.6213				
29.62	0.0000				
35.49	1.6720				
39.58	2.2868				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 07:55:07.51

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235018.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY4.CNF;433
Background date  : 25-SEP-2016 12:23:10
Sample date     : 2-DEC-2015 10:19:00. Acquisition date : 28-SEP-2016 07:22:56
Sample ID      : I405235018. Sample quantity : 2.76000E+00 GRAM
Detector name   : XRAY4. Detector geometry: I129
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.08 0.0%
Energy tolerance: 1.00000 keV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID       : 1598618 Detector SN# :
Matrix Spike ID : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	10.11*	6	1	0.58	49.91	48	5	3.22E-03	60.7	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235018.CNF;1    *
* Acquisition date   : 28-SEP-2016 07:22:56 Sensitivity      : 3.000            *
* Detector ID        : XRAY4 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.08 Half life ratio : *****          *
* Sample date       : 2-DEC-2015 10:19:00 Analyst initials: MJH1          *
* Sample ID         : I405235018 Sample Quantity : 2.7600E+00 GRAM      *
* Batch Number      : 1598618 Carrier Weight : 0.00000          *
* Recovery          : 1.00000 Standard Weight : 0.00000          *
* Nuclide Library   : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 17-JUN-2016 08:18:14 Eff. Geometry   : I129          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	3.773E+00	4.336E+00	1.380E+01	NOT IDENT.
I-129	-2.368E-01	3.781E-01	6.299E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	10.11	9	1	0.58	49.91	48	5	5.06E-03	37.4	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235018

Page : 2
Acquisition date : 28-SEP-2016 07:22:56

Total number of lines in spectrum 1
Number of unidentified lines 1
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235018

Page : 3
Acquisition date : 28-SEP-2016 07:22:56

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	10.11	6	1	0.58	49.91	48	5	3.22E-03	****	1.65E-02	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235018.CNF;1    *
* Acquisition date   : 28-SEP-2016 07:22:56 Sensitivity      : 3.000             *
* Detector ID        : XRAY4 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 00:30:00.08 Half life ratio : *****          *
* Sample date       : 2-DEC-2015 10:19:00 Nuclide Library : IODINE         *
* Sample ID         : I405235018 Analyst initials: MJH1          *
* Batch Number      : 1598618 Sample Quantity : 2.7600E+00 GRAM      *
* Recovery          : 1.00000 Carrier Weight  : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date    : 17-JUN-2016 08:18:14 Eff. Geometry   : I129         *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
---------	------------------------------

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

Nuclide	^{Lc} (pCi/GRAM)	
I-125	5.146E+00	NOT IDENT.
I-129	2.237E-01	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235018.CNF;1  *
* Acquisition date   : 28-SEP-2016 07:22:56 Sensitivity      : 3.000          *
* Detector ID        : XRAY4 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000         *
* Elapsed real time  : 0 00:30:00.08 Half life ratio : *****          *
* Sample date        : 2-DEC-2015 10:19:00 Nuclide Library : IODINE         *
* Sample ID          : I405235018 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.7600E+00 GRAM         *
*                   : Quantity Err(%) : 3.6232E-03 %              *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                   : Standard Weight : 0.00000                  *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date    : 17-JUN-2016 08:18:14 Eff. Geometry   : I129          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)
I-125	3.773E+00	4.386E+00	4.704E+00 NOT IDENT.
I-129	-2.368E-01	3.788E-01	3.936E-01 NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	0.0000				
29.62	5.5444				
27.34	1.1221				
29.62	2.2941				
35.49	0.0000				
39.58	1.2005				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 07:55:32.95

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235019.CNF;1
Background file     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY6.CNF;215
Background date      : 25-SEP-2016 12:23:20
Sample date         : 8-DEC-2015 14:30:00. Acquisition date : 28-SEP-2016 07:23:18
Sample ID          : I405235019. Sample quantity : 2.56000E+00 GRAM
Detector name       : XRAY6. Detector geometry: I129
Elapsed live time   : 0 00:30:00.00. Elapsed real time: 0 00:30:00.03 0.0%
Energy tolerance    : 1.00000 keV. Analyst Initials : MJH1
Abundance limit     : 75.00000. Sensitivity : 3.00000
Batch ID            : 1598618. Detector SN# :
Matrix Spike ID     : 1470-K. LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

No peaks were found

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235019.CNF;1    *
* Acquisition date   : 28-SEP-2016 07:23:18 Sensitivity      : 3.000             *
* Detector ID        : XRAY6 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.03 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 14:30:00 Analyst initials: MJH1         *
* Sample ID          : I405235019 Sample Quantity : 2.5600E+00 GRAM      *
* Batch Number       : 1598618 Carrier Weight : 0.00000        *
* Recovery           : 1.00000 Standard Weight : 0.00000         *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	0.000E+00	3.711E+00	5.131E+00	NOT IDENT.
I-129	1.518E-01	2.533E-01	8.990E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

No peaks were found

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235019

Page : 2
Acquisition date : 28-SEP-2016 07:23:18

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235019

Page : 3
Acquisition date : 28-SEP-2016 07:23:18

None

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*                                     *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235019.CNF;1 *
* Acquisition date   : 28-SEP-2016 07:23:18 Sensitivity      : 3.000          *
* Detector ID        : XRAY6 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000         *
* Elapsed real time  : 0 00:30:00.03 Half life ratio : *****         *
* Sample date        : 8-DEC-2015 14:30:00 Nuclide Library : IODINE         *
* Sample ID          : I405235019 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.5600E+00 GRAM         *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*                                     CALIBRATION INFORMATION                  *
*                                     *                                       *
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	0.000E+00	NOT IDENT.
I-129	3.006E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235019.CNF;1    *
* Acquisition date   : 28-SEP-2016 07:23:18 Sensitivity      : 3.000            *
* Detector ID        : XRAY6 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 00:30:00.03 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 14:30:00 Nuclide Library : IODINE        *
* Sample ID          : I405235019 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.5600E+00 GRAM      *
*                               Quantity Err(%) : 3.9063E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000            *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	0.000E+00	0.000E+00	0.000E+00	NOT IDENT.
I-129	1.518E-01	2.537E-01	2.628E-01	NOT IDENT.

```

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

```

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
27.34	0.0000				
29.62	0.0000				
27.34	0.0000				
29.62	1.5445				
35.49	0.7906				
39.58	2.4852				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 07:57:57.75

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235020.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY5.CNF;58
Background date    : Z5-SEP-2016 12:23:15
Sample date       : 8-DEC-2015 13:50:00. Acquisition date : 28-SEP-2016 07:27:31
Sample ID        : I405235020. Sample quantity : 2.97000E+00 GRAM
Detector name    : XRAY5. Detector geometry: I129
Elapsed live time: 0 00:30:00.00. Elapsed real time: 0 00:30:00.03 0.0%
Energy tolerance : 1.00000 keV. Analyst Initials : MJH1
Abundance limit  : 75.00000. Sensitivity : 3.00000
Batch ID        : 1598618. Detector SN# :
Matrix Spike ID  : 1470-K. LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.22*	10	0	0.63	314.46	310	10	5.38E-03	38.1	

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


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235020.CNF;1    *
* Acquisition date   : 28-SEP-2016 07:27:31 Sensitivity      : 3.000             *
* Detector ID        : XRAY5 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 00:30:00.03 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 13:50:00 Analyst initials: MJH1         *
* Sample ID          : I405235020 Sample Quantity : 2.9700E+00 GRAM      *
* Batch Number       : 1598618 Carrier Weight : 0.00000         *
* Recovery           : 1.00000 Standard Weight : 0.00000         *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	3.322E-01	4.494E+00	1.309E+01	NOT IDENT.
I-129	5.711E-02	2.909E-01	8.351E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.22	13	0	0.63	314.46	310	10	7.22E-03	27.7	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235020

Page : 2
Acquisition date : 28-SEP-2016 07:27:31

Total number of lines in spectrum 1
Number of unidentified lines 1
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235020

Page : 3
Acquisition date : 28-SEP-2016 07:27:31

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	63.22	10	0	0.63	314.46	310	10	5.38E-03	76.2	3.22E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235020.CNF;1    *
* Acquisition date   : 28-SEP-2016 07:27:31 Sensitivity      : 3.000            *
* Detector ID        : XRAY5 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 00:30:00.03 Half life ratio : *****    *
* Sample date        : 8-DEC-2015 13:50:00 Nuclide Library : IODINE    *
* Sample ID          : I405235020 Analyst initials: MJH1        *
* Batch Number       : 1598618 Sample Quantity : 2.9700E+00 GRAM    *
* Recovery           : 1.00000 Carrier Weight : 0.00000        *
*                               Standard Weight : 0.00000        *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129    *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5    *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
---------	------------------------------

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

Nuclide	^{Lc} (pCi/GRAM)	
I-125	4.138E+00	NOT IDENT.
I-129	2.805E-01	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                 *
*                                     *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235020.CNF;1 *
* Acquisition date   : 28-SEP-2016 07:27:31 Sensitivity      : 3.000          *
* Detector ID        : XRAY5 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:30:00.03 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 13:50:00 Nuclide Library : IODINE          *
* Sample ID          : I405235020 Analyst initials: MJH1          *
* Batch Number       : 1598618 Sample Quantity : 2.9700E+00 GRAM          *
*                                     Quantity Err(%) : 3.3670E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*                                     CALIBRATION INFORMATION                   *
*                                     *                                         *
* Eff. Cal. date    : 30-AUG-2016 11:41:11 Eff. Geometry   : I129          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	3.322E-01	4.494E+00	4.497E+00	NOT IDENT.
I-129	5.711E-02	2.910E-01	2.921E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	0.8133				
29.62	0.8547				
27.34	0.0000				
29.62	0.0000				
35.49	1.9087				
39.58	2.0378				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 08:09:57.73

```
*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627430.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG.XRAY1.CNF;415
Background date    : 25-SEP-2016 12:22:54
Sample date       : 26-SEP-2016 00:00:00 Acquisition date : 28-SEP-2016 07:39:35
Sample ID        : I1203627430 Sample quantity : 3.34000E+00 GRAM
Detector name     : XRAY1 Detector geometry: I129
Elapsed live time : 0 00:30:00.00 Elapsed real time: 0 00:30:00.14 0.0%
Energy tolerance  : 1.00000 keV Analyst Initials : MJH1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1598618 Detector SN# :
Matrix Spike ID   : 1470-K LCS ID : 1470-K
*****
```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

No peaks were found

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627430.CNF;1  *
* Acquisition date   : 28-SEP-2016 07:39:35 Sensitivity      : 3.000          *
* Detector ID        : XRAY1 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.14 Half life ratio : *****      *
* Sample date        : 26-SEP-2016 00:00:00 Analyst initials: MJH1      *
* Sample ID          : I1203627430 Sample Quantity : 3.3400E+00 GRAM  *
* Batch Number       : 1598618 Carrier Weight : 0.00000      *
* Recovery           : 1.00000 Standard Weight : 0.00000      *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry    : I129      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6      *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-7.411E-02	1.016E-01	1.473E-01	NOT IDENT.
I-129	-1.098E-02	1.731E-01	3.935E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION
No peaks were found

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I1203627430

Page : 2
Acquisition date : 28-SEP-2016 07:39:35

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I1203627430

Page : 3
Acquisition date : 28-SEP-2016 07:39:35

None

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627430.CNF;1  *
* Acquisition date   : 28-SEP-2016 07:39:35 Sensitivity      : 3.000          *
* Detector ID        : XRAY1 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.14 Half life ratio : *****      *
* Sample date        : 26-SEP-2016 00:00:00 Nuclide Library : IODINE      *
* Sample ID          : I1203627430 Analyst initials: MJH1        *
* Batch Number       : 1598618 Sample Quantity : 3.3400E+00 GRAM  *
* Recovery           : 1.00000 Carrier Weight : 0.00000        *
*                               Standard Weight : 0.00000        *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry    : I129        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6      *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
---------	------------------------------

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

Nuclide	^{Lc} (pCi/GRAM)	
I-125	4.734E-02	NOT IDENT.
I-129	1.478E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627430.CNF;1  *
* Acquisition date   : 28-SEP-2016 07:39:35 Sensitivity      : 3.000          *
* Detector ID        : XRAY1 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.14 Half life ratio : *****      *
* Sample date        : 26-SEP-2016 00:00:00 Nuclide Library : IODINE      *
* Sample ID          : I1203627430 Analyst initials: MJH1        *
* Batch Number       : 1598618 Sample Quantity : 3.3400E+00 GRAM      *
*                               Quantity Err(%) : 2.9940E-03 %      *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry    : I129      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6      *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	-7.411E-02	1.025E-01	1.078E-01	NOT IDENT.
I-129	-1.098E-02	1.731E-01	1.732E-01	NOT IDENT.


```

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

```

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
27.34	4.9062				
29.62	3.3927				
27.34	1.7312				
29.62	0.8985				
35.49	0.9215				
39.58	3.8759				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 08:34:26.86

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                   *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627431.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY2.CNF;379
Background date  : 25-SEP-2016 12:22:59
Sample date     : 10-DEC-2015 14:20:00 Acquisition date : 28-SEP-2016 08:03:53
Sample ID      : I1203627431 Sample quantity : 2.50000E+00 GRAM
Detector name   : XRAY2 Detector geometry: I129
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.08 0.0%
Energy tolerance: 1.00000 keV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID       : 1598618 Detector SN# :
Matrix Spike ID: 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	16.37*	10	6	0.58	80.86	76	11	5.78E-03	61.0	
2	0	61.41	5	4	0.29	306.33	300	8	2.78E-03	82.5	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627431.CNF;1  *
* Acquisition date   : 28-SEP-2016 08:03:53 Sensitivity      : 3.000          *
* Detector ID        : XRAY2 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 00:30:00.08 Half life ratio : *****      *
* Sample date       : 10-DEC-2015 14:20:00 Analyst initials: MJH1      *
* Sample ID         : I1203627431 Sample Quantity : 2.5000E+00 GRAM  *
* Batch Number      : 1598618 Carrier Weight : 0.00000      *
* Recovery          : 1.00000 Standard Weight : 0.00000      *
* Nuclide Library   : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 27-JUL-2016 12:15:07 Eff. Geometry   : I129      *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15      *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	1.190E+00	9.544E+00	2.149E+01	NOT IDENT.
I-129	8.699E-02	3.661E-01	8.341E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	16.37	18	6	0.58	80.86	76	11	9.72E-03	35.3	
2	0	61.41	5	4	0.29	306.33	300	8	2.78E-03	82.5	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I1203627431

Page : 2
Acquisition date : 28-SEP-2016 08:03:53

Total number of lines in spectrum 2
Number of unidentified lines 2
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I1203627431

Page : 3
Acquisition date : 28-SEP-2016 08:03:53

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	16.37	10	6	0.58	80.86	76	11	5.78E-03	****	3.43E-04	
0	61.41	5	4	0.29	306.33	300	8	2.78E-03	****	3.66E-02	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627431.CNF;1  *
* Acquisition date   : 28-SEP-2016 08:03:53 Sensitivity      : 3.000           *
* Detector ID        : XRAY2 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.08 Half life ratio : *****          *
* Sample date        : 10-DEC-2015 14:20:00 Nuclide Library : IODINE       *
* Sample ID          : I1203627431 Analyst initials: MJH1         *
* Batch Number       : 1598618 Sample Quantity : 2.5000E+00 GRAM    *
* Recovery            : 1.00000 Carrier Weight : 0.00000         *
*                               Standard Weight : 0.00000         *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15        *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

```

      Lc
Nuclide (pCi/GRAM )

```

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

```

      Lc
Nuclide (pCi/GRAM )
I-125      8.280E+00 NOT IDENT.
I-129      3.276E-01 NOT IDENT.

```



```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627431.CNF;1
* Acquisition date   : 28-SEP-2016 08:03:53 Sensitivity      : 3.000
* Detector ID        : XRAY2 Energy tolerance: 1.000
* Elapsed live time: 0 00:30:00.00 Abundance limit : 75.000
* Elapsed real time: 0 00:30:00.08 Half life ratio : *****
* Sample date        : 10-DEC-2015 14:20:00 Nuclide Library : IODINE
* Sample ID          : I1203627431 Analyst initials: MJH1
* Batch Number       : 1598618 Sample Quantity : 2.5000E+00 GRAM
*                               Quantity Err(%) : 4.0000E-03 %
* Recovery           : 1.00000 Carrier Weight : 0.00000
*                               Standard Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	1.190E+00	9.546E+00	9.561E+00	NOT IDENT.
I-129	8.699E-02	3.662E-01	3.683E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	3.1557				
29.62	3.2110				
27.34	3.2426				
29.62	4.4030				
35.49	7.8027				
39.58	5.7170				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 08:34:51.76

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627432.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY4.CNF;433
Background date  : 25-SEP-2016 12:23:10
Sample date      : 10-DEC-2015 14:20:00 Acquisition date : 28-SEP-2016 08:04:20
Sample ID        : I1203627432 Sample quantity : 2.56000E+00 GRAM
Detector name     : XRAY4 Detector geometry: I129
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.10 0.0%
Energy tolerance : 1.00000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID         : 1598618 Detector SN# :
Matrix Spike ID  : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	16.82*	9	7	0.57	83.56	78	10	4.98E-03	70.8	
2	4	28.53	12	7	0.48	142.22	131	24	6.47E-03	52.3	1.13E+00
3	4	29.68	179	7	0.65	147.98	131	24	9.95E-02	8.5	
4	6	33.43	38	0	0.81	166.76	164	12	2.11E-02	17.3	3.06E+00
5	6	34.39	25	0	0.69	171.59	164	12	1.42E-02	30.7	
6	0	39.62	24	2	0.29	197.79	194	8	1.33E-02	22.9	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627432.CNF;1  *
* Acquisition date   : 28-SEP-2016 08:04:20 Sensitivity      : 3.000           *
* Detector ID        : XRAY4 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 00:30:00.10 Half life ratio : 8.000         *
* Sample date        : 10-DEC-2015 14:20:00 Analyst initials: MJH1      *
* Sample ID          : I1203627432 Sample Quantity : 2.5600E+00 GRAM   *
* Batch Number       : 1598618 Carrier Weight : 0.00000        *
* Recovery           : 1.00000 Standard Weight : 0.00000         *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129       *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14       *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
I-129	1.298E+01	2.163E+00	9.931E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	1.537E+01	1.206E+01	2.819E+01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	.Left	Pw	Cts/Sec	%Err	Fit
1	0	16.82	13	7	0.57	83.56	78	10	6.97E-03	49.6	
2	4	28.53	12	7	0.48	142.22	131	24	6.47E-03	52.3	1.13E+00
3	4	29.68	179	7	0.65	147.98	131	24	9.95E-02	8.5	
4	6	33.43	38	0	0.81	166.76	164	12	2.11E-02	17.3	3.06E+00
5	6	34.39	25	0	0.69	171.59	164	12	1.42E-02	30.7	
6	0	39.62	24	2	0.29	197.79	194	8	1.33E-02	22.9	

Nuclide Line Activity Report

Nuclide Type: FISSION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	1-Sigma %Error
I-129	29.62	179	56.60*	1.430E+01	1.298E+01	1.298E+01	8.50
	33.59	38	10.04	1.621E+01	1.369E+01	1.369E+01	17.26
	39.58	24	7.51	1.618E+01	1.153E+01	1.153E+01	22.93

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I1203627432

Page : 2
Acquisition date : 28-SEP-2016 08:04:20

Total number of lines in spectrum 6
Number of unidentified lines 3
Number of lines tentatively identified by NID 3 50.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
I-129	1.57E+07Y	1.00	1.298E+01	1.298E+01	0.110E+01	8.50	
Total Activity :			1.298E+01	1.298E+01			

Grand Total Activity : 1.298E+01 1.298E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I1203627432

Page : 3
Acquisition date : 28-SEP-2016 08:04:20

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	16.82	9	7	0.57	83.56	78	10	4.98E-03	70.8	1.67E+00	
4	28.53	12	7	0.48	142.22	131	24	6.47E-03	52.3	1.34E+01	
6	34.39	25	0	0.69	171.59	164	12	1.42E-02	30.7	1.65E+01	

Flags: "T" = Tentatively associated


```

*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                          *
*                               Charleston, SC 29407                     *
*                               *****                                   *
*                               *                                         *
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627432.CNF;1 *
* Acquisition date   : 28-SEP-2016 08:04:20 Sensitivity      : 3.000      *
* Detector ID        : XRAY4      Energy tolerance: 1.000      *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.10 Half life ratio : 8.000      *
* Sample date        : 10-DEC-2015 14:20:00 Nuclide Library : IODINE      *
* Sample ID          : I1203627432 Analyst initials: MJH1      *
* Batch Number       : 1598618      Sample Quantity : 2.5600E+00 GRAM *
* Recovery           : 1.00000      Carrier Weight  : 0.00000      *
*                               Standard Weight : 0.00000      *
*                               *****                                   *
*                               *                                         *
*                               CALIBRATION INFORMATION                   *
*                               *                                         *
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14      *
*                               *****                                   *

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

```

      Lc
Nuclide  (pCi/GRAM )
I-129      3.983E-01

```

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

```

      Lc
Nuclide  (pCi/GRAM )
I-125      1.238E+01 NOT IDENT.

```

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627432.CNF;1  *
* Acquisition date   : 28-SEP-2016 08:04:20 Sensitivity      : 3.000          *
* Detector ID        : XRAY4 Energy tolerance: 1.000          *
* Elapsed live time: 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time: 0 00:30:00.10 Half life ratio : 8.000      *
* Sample date        : 10-DEC-2015 14:20:00 Nuclide Library : IODINE      *
* Sample ID          : I1203627432 Analyst initials: MJH1       *
* Batch Number       : 1598618 Sample Quantity : 2.5600E+00 GRAM  *
*                               Quantity Err(%) : 3.9063E-03 %      *
* Recovery           : 1.00000 Carrier Weight : 0.00000        *
*                               Standard Weight : 0.00000        *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date    : 17-JUN-2016 08:18:14 Eff. Geometry   : I129      *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14      *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
I-129	1.298E+01	2.517E+00	2.517E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)
I-125	1.537E+01	1.235E+01	1.416E+01 NOT IDENT.

```

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

```

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
27.34	5.4288				
29.62	5.5444				
27.34	5.0495				
29.62	3.4411				
35.49	6.9868				
39.58	3.6015				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 08:42:37.28

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                   *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627433.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY1.CNF;415
Background date  : 25-SEP-2016 12:22:54
Sample date      : 26-SEP-2016 00:00:00 Acquisition date : 28-SEP-2016 08:11:05
Sample ID        : I1203627433 Sample quantity : 3.34000E+00 GRAM
Detector name     : XRAY1 Detector geometry: I129
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.14 0.0%
Energy tolerance : 1.00000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID         : 1598618 Detector SN# :
Matrix Spike ID  : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	29.75	291	33	0.60	149.23	145	12	1.62E-01	7.3	
2	0	33.71	90	3	0.48	169.18	164	12	4.98E-02	11.3	
3	0	39.54	49	0	0.80	198.55	193	13	2.72E-02	14.3	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627433.CNF;1  *
* Acquisition date   : 28-SEP-2016 08:11:05 Sensitivity      : 3.000           *
* Detector ID        : XRAY1 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.14 Half life ratio : *****          *
* Sample date        : 26-SEP-2016 00:00:00 Analyst initials: MJH1       *
* Sample ID          : I1203627433 Sample Quantity : 3.3400E+00 GRAM    *
* Batch Number       : 1598618 Carrier Weight : 0.00000         *
* Recovery           : 1.00000 Standard Weight : 0.00000         *
* Nuclide Library    : IODINE.NLB;1
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry    : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6         *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
I-129	1.051E+01	1.500E+00	9.173E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-5.238E-02	3.087E-01	5.310E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	29.75	291	33	0.60	149.23	145	12	1.62E-01	7.3	
2	0	33.71	90	3	0.48	169.18	164	12	4.98E-02	11.3	
3	0	39.54	49	0	0.80	198.55	193	13	2.72E-02	14.3	

Nuclide Line Activity Report

Nuclide Type: FISSION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
I-129	29.62	291	56.60*	2.202E+01	1.051E+01	1.051E+01	14.56
	33.59	90	10.04	2.304E+01	1.741E+01	1.741E+01	22.54
	39.58	49	7.51	2.289E+01	1.281E+01	1.281E+01	28.57

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I1203627433

Page : 2
Acquisition date : 28-SEP-2016 08:11:05

Total number of lines in spectrum 3
Number of unidentified lines 0
Number of lines tentatively identified by NID 3 100.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
I-129	1.57E+07Y	1.00	1.051E+01	1.051E+01	0.153E+01	14.56	
Total Activity :			1.051E+01	1.051E+01			

Grand Total Activity : 1.051E+01 1.051E+01

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

Unidentified Energy Lines
Sample ID : I1203627433

Page : 3
Acquisition date : 28-SEP-2016 08:11:05

None

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                               *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627433.CNF;1  *
* Acquisition date   : 28-SEP-2016 08:11:05 Sensitivity      : 3.000          *
* Detector ID        : XRAY1 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.14 Half life ratio : *****      *
* Sample date        : 26-SEP-2016 00:00:00 Nuclide Library : IODINE      *
* Sample ID          : I1203627433 Analyst initials: MJH1        *
* Batch Number       : 1598618 Sample Quantity : 3.3400E+00 GRAM  *
* Recovery           : 1.00000 Carrier Weight : 0.00000        *
*                               Standard Weight : 0.00000        *
*****
*                               CALIBRATION INFORMATION                       *
*                               *                                               *
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry    : I129      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6      *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

```

      Lc
Nuclide (pCi/GRAM )
I-129   4.099E-01

```

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

```

      Lc
Nuclide (pCi/GRAM )
I-125   2.393E-01 NOT IDENT.

```

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627433.CNF;1  *
* Acquisition date   : 28-SEP-2016 08:11:05 Sensitivity      : 3.000           *
* Detector ID        : XRAY1 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000         *
* Elapsed real time  : 0 00:30:00.14 Half life ratio : *****         *
* Sample date        : 26-SEP-2016 00:00:00 Nuclide Library : IODINE         *
* Sample ID          : I1203627433 Analyst initials: MJH1         *
* Batch Number       : 1598618 Sample Quantity : 3.3400E+00 GRAM         *
*                               Quantity Err(%) : 2.9940E-03 %         *
* Recovery           : 1.00000 Carrier Weight : 0.00000           *
*                               Standard Weight : 0.00000           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6         *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
I-129	1.051E+01	1.820E+00	1.820E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)
I-125	-5.238E-02	3.089E-01	3.098E-01 NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	30.6637				
29.62	23.7490				
27.34	10.3875				
29.62	8.0864				
35.49	9.6757				
39.58	3.8759				

09/29/16

Batch# 1598620

Product: I-129 / MJWC

Date: 09/29/16

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 10x 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.		✓	DER 1562566
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 statused.	✓		
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.	✓		DER 1562566
Batch Data Exception Reports (DER) second reviewed. Disposition verified to be completed.	✓		
Alliquot Correction completed if required.	✓		n/a b/c 9/29/16
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:

[Signature] 9/29/16

Secondary Review Performed By:

[Signature] 9/29/16

DATA EXCEPTION REPORT

Mo. Day Yr. 29-SEP-16	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process
Instrument Type: GAMMA SPECTROMETER	Test / Method: DOE EML HASL-300,I-01 Modified	Matrix Type: Solid	Client Code: MJWC
Batch ID: 1598620	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 405235 Application Issues: Sample received out of holding			
Specification and Requirements		DER Disposition:	
Exception Description: Sample received out of holding: 405235 021,022,023,024,025,026,027,028,029, 030,031,032,033,034,035,036,037,038, 039,040 QC 1203627438DUP,1203627439MS		Samples were analyzed in a timely manner upon receipt. Reporting results.	

Originator's Name:

Spencer Collins 29-SEP-16

Data Validator/Group Leader:

Bryan Williams 29-SEP-16

I-129 Queue Sheet

09/14/2016

Batch #: 1598620

Analyst: MJH1

First Client Due Date: 10/04/2016

Internal Due Date: 09/30/2016

Spike Isotope: I-129 Spike Code: 1470-K Expiration Date: 3-30-17 Vol: 0.1uL Nominal Concentration: NALCS Isotope: I-129 LCS Code: 1470-K Expiration Date: 3-30-17 Vol: 0.1uL Nominal Concentration: NAPrep Date: 9-26-16 Initials: U194Pipette ID: 1429303Witness: NABALANCE: 17955156

Sample ID	Client Description	Type	Hazard Code	RDL	Client	Matrix	WET WEIGHT (g)	Collect Date	DRY Aliquot (mL or g)	Detector
405235021-1	4.2B.R.2.3	SAMPLE		1 pCi/g	MJWC001	SOIL	3.94	08-DEC-15 14:17 B1	3.29	X1 RF
405235022-1	4.2B.R.1.3	SAMPLE		1 pCi/g	MJWC001	SOIL	3.23	08-DEC-15 13:43 B2	2.60	X2 RF
405235023-1	4.2B.R.11.2	SAMPLE		1 pCi/g	MJWC001	SOIL	4.18	02-DEC-15 10:40 B3	3.24	X4 RF
405235024-1	4.2B.R.2.2	SAMPLE		1 pCi/g	MJWC001	SOIL	3.22	08-DEC-15 14:13 B4	2.60	X5 RF
405235025-1	4.2B.R.1.2	SAMPLE		1 pCi/g	MJWC001	SOIL	3.00	08-DEC-15 13:38 B5	2.36	X6 RF
405235026-1	4.2C.R.1.3	SAMPLE		1 pCi/g	MJWC001	SOIL	3.05	08-DEC-15 10:15 B6	2.54	X1 RF
405235027-1	4.2C.R.1.4	SAMPLE		1 pCi/g	MJWC001	SOIL	3.63	08-DEC-15 10:19 B7	2.97	X2 RF
405235028-1	4.3.A.R.1.3	SAMPLE		1 pCi/g	MJWC001	SOIL	3.38	23-NOV-15 14:50 B8	2.61	X4 RF
405235029-1	4.3.B.R.1.3	SAMPLE		1 pCi/g	MJWC001	SOIL	3.47	23-NOV-15 11:10 B9	2.80	X5 RF
405235030-1	4.3.A.R.2.3	SAMPLE		1 pCi/g	MJWC001	SOIL	3.42	23-NOV-15 14:44 B10	2.60	X6 RF
405235031-1	4.3.B.R.1.2	SAMPLE		1 pCi/g	MJWC001	SOIL	3.57	26-NOV-15 14:25 B11	2.76	X1 RF
405235032-1	4.3B.R.3.3	SAMPLE		1 pCi/g	MJWC001	SOIL	3.59	23-NOV-15 11:48 B12	2.86	X2 RF
405235033-1	4.3B.R.3.4	SAMPLE		1 pCi/g	MJWC001	SOIL	4.00	23-NOV-15 11:53 B13	3.29	X4 RF
405235034-1	4.3.B.R.1.4	SAMPLE		1 pCi/g	MJWC001	SOIL	3.70	23-NOV-15 11:20 B14	2.98	X5 RF
405235035-1	4.3B.R.2.3	SAMPLE		1 pCi/g	MJWC001	SOIL	3.42	23-NOV-15 11:06 B15	2.86	X6 RF
405235036-1	4.3B.R.2.4	SAMPLE		1 pCi/g	MJWC001	SOIL	3.24	23-NOV-15 11:12 B16	2.67	X1 RF
405235037-1	4.4C.R.2.4	SAMPLE		1 pCi/g	MJWC001	SOIL	3.03	30-NOV-15 11:19 B17	2.84	X2 RF
405235038-1	4.4C.R.1.3	SAMPLE		1 pCi/g	MJWC001	SOIL	3.37	30-NOV-15 10:40 B18	2.82	X4 RF
405235039-1	4.4C.R.1.4	SAMPLE		1 pCi/g	MJWC001	SOIL	3.47	30-NOV-15 10:43 B19	3.17	X5 RF
405235040-1	4.4D.R.1.3	SAMPLE		1 pCi/g	MJWC001	SOIL	4.15	30-NOV-15 13:23 B20	3.54	X6 RF
1203627437-1	MB for batch 1598620	MB		1 pCi/g	QC ACCOUNT	SOIL		9-26-16 B21	3.54	X1 MS
1203627438-1	4.2B.R.2.3(405235021DUP)	DUP		1 pCi/g	QC ACCOUNT	SOIL	4.01	08-DEC-15 14:17 B22	3.35	X2 MS
1203627439-1	4.2B.R.2.3(405235021MS)	MS		1 pCi/g	QC ACCOUNT	SOIL	3.52	08-DEC-15 14:17 B23	2.94	X4 MS
1203627440-1	LCS for batch 1598620	LCS		1 pCi/g	QC ACCOUNT	SOIL		9-26-16 B24	3.54	X5 MS



Weight/Loss Aliquot Correction Report

**Select What to Correct Aliquot to**

☐ Ash Dry Weight ☐ Dry Weight ☐ Wet Weight

Submit

Batch ID: 1598620

Calculate Corrected Aliquot

Aliquot Correction to Dry Weight for Batch 1598620

Sample Id	Aliquot (G)	Sample Type	Parent Sample Id	Loss (Dec)	Corrected Aliquot (G)
405235021	3.94	SAMPLE	NA	.1654	3.288179268289706
405235022	3.23	SAMPLE	NA	.1937	2.6041876287213626
405235023	4.18	SAMPLE	NA	.2255	3.2373361221501776
405235024	3.22	SAMPLE	NA	.1939	2.5953211168275626
405235025	3.00	SAMPLE	NA	.2138	2.3583584707324863
405235026	3.05	SAMPLE	NA	.1664	2.542323751273092
405235027	3.63	SAMPLE	NA	.1816	2.9707806555972556
405235028	3.38	SAMPLE	NA	.2267	2.613558900318237
405235029	3.47	SAMPLE	NA	.1932	2.79956391512922
405235030	3.42	SAMPLE	NA	.2389	2.602888768270461
405235031	3.57	SAMPLE	NA	.2258	2.7638436867904583
405235032	3.59	SAMPLE	NA	.2036	2.8587411379283867
405235033	4.00	SAMPLE	NA	.1762	3.294888818763806
405235034	3.70	SAMPLE	NA	.1956	2.9761179290658006
405235035	3.42	SAMPLE	NA	.1626	2.8636093783609376
405235036	3.24	SAMPLE	NA	.1769	2.6665871086005017
405235037	3.03	SAMPLE	NA	.0623	2.841216180207582
405235038	3.37	SAMPLE	NA	.1634	2.819070473085432
405235039	3.47	SAMPLE	NA	.0869	3.1682391257910686
405235040	4.15	SAMPLE	NA	.1478	3.536328075496036
1203627437		MB	NA	NA	
1203627438	4.01	DUP	405235021	.1654	3.346598696914142
1203627439	3.52	MS	405235021	.1654	2.9376626965430876
1203627440		LCS	NA	NA	

GEL Laboratories LLC

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 09:23:56.34

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235021.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY1.CNF;415
Background date  : 25-SEP-2016 12:22:54
Sample date      : 8-DEC-2015 14:17:00. Acquisition date : 28-SEP-2016 08:45:02
Sample ID        : I405235021. Sample quantity : 3.29000E+00 GRAM
Detector name     : XRAY1. Detector geometry: I129
Elapsed live time: 0 00:38:04.89 Elapsed real time: 0 00:38:05.06 0.0%
Energy tolerance : 1.00000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID         : 1598620 Detector SN# :
Matrix Spike ID  : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	59.10	7	0	0.54	297.14	294	6	3.06E-03	37.8	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235021.CNF;1    *
* Acquisition date   : 28-SEP-2016 08:45:02 Sensitivity      : 3.000             *
* Detector ID        : XRAY1 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:38:04.89 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:38:05.06 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 14:17:00 Analyst initials: MJH1         *
* Sample ID          : I405235021 Sample Quantity : 3.2900E+00 GRAM      *
* Batch Number       : 1598620 Carrier Weight : 0.00000         *
* Recovery           : 1.00000 Standard Weight : 0.00000         *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	1.235E+00	4.824E+00	9.388E+00	NOT IDENT.
I-129	5.697E-02	2.039E-01	4.564E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	59.10	7	0	0.54	297.14	294	6	3.06E-03	37.8	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235021

Page : 2
Acquisition date : 28-SEP-2016 08:45:02

Total number of lines in spectrum 1
Number of unidentified lines 1
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235021

Page : 3
Acquisition date : 28-SEP-2016 08:45:02

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	59.10	7	0	0.54	297.14	294	6	3.06E-03	75.6	1.63E+01	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235021.CNF;1    *
* Acquisition date   : 28-SEP-2016 08:45:02 Sensitivity      : 3.000            *
* Detector ID        : XRAY1 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:38:04.89 Abundance limit : 75.000    *
* Elapsed real time  : 0 00:38:05.06 Half life ratio : *****    *
* Sample date        : 8-DEC-2015 14:17:00 Nuclide Library : IODINE    *
* Sample ID          : I405235021 Analyst initials: MJH1        *
* Batch Number       : 1598620 Sample Quantity : 3.2900E+00 GRAM    *
* Recovery           : 1.00000 Carrier Weight : 0.00000        *
*                               Standard Weight : 0.00000        *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry   : I129    *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6    *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	4.057E+00	NOT IDENT.
I-129	1.892E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235021.CNF;1    *
* Acquisition date   : 28-SEP-2016 08:45:02 Sensitivity      : 3.000            *
* Detector ID        : XRAY1 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:38:04.89 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:38:05.06 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 14:17:00 Nuclide Library : IODINE          *
* Sample ID          : I405235021 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 3.2900E+00 GRAM      *
*                               Quantity Err(%) : 3.0395E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000            *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry    : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	1.235E+00	4.828E+00	4.860E+00	NOT IDENT.
I-129	5.697E-02	2.040E-01	2.056E-01	NOT IDENT.


```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	11.0389				
29.62	5.9373				
27.34	6.0593				
29.62	6.2894				
35.49	5.5290				
39.58	0.9690				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 09:24:19.03

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235022.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY2.CNF;379
Background date  : 25-SEP-2016 12:22:59
Sample date     : 8-DEC-2015 13:43:00. Acquisition date : 28-SEP-2016 08:45:25
Sample ID       : I405235022. Sample quantity : 2.60000E+00 GRAM
Detector name   : XRAY2. Detector geometry: I129
Elapsed live time: 0 00:37:43.11. Elapsed real time: 0 00:37:43.26 0.0%
Energy tolerance : 1.00000 keV. Analyst Initials : MJH1
Abundance limit  : 75.00000. Sensitivity : 3.00000
Batch ID        : 1598620. Detector SN# :
Matrix Spike ID : 1470-K. LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	6.24	27	50	0.49	30.14	28	6	1.20E-02	47.6	
2	0	72.18	6	2	0.48	360.25	356	7	2.76E-03	53.2	
3	0	82.04	8	2	0.53	409.63	406	8	3.71E-03	44.5	
4	0	92.46*	9	4	0.71	461.84	455	14	3.99E-03	68.1	
5	0	132.97	9	0	0.33	664.67	658	12	3.98E-03	33.3	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235022.CNF;1    *
* Acquisition date   : 28-SEP-2016 08:45:25 Sensitivity      : 3.000            *
* Detector ID        : XRAY2 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:37:43.11 Abundance limit : 75.000        *
* Elapsed real time  : 0 00:37:43.26 Half life ratio : *****        *
* Sample date       : 8-DEC-2015 13:43:00 Analyst initials: MJH1        *
* Sample ID         : I405235022 Sample Quantity : 2.6000E+00 GRAM        *
* Batch Number      : 1598620 Carrier Weight : 0.00000        *
* Recovery          : 1.00000 Standard Weight : 0.00000        *
* Nuclide Library   : IODINE.NLB;1
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 27-JUL-2016 12:15:07 Eff. Geometry   : I129        *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15        *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	8.869E+00	9.085E+00	2.302E+01	NOT IDENT.
I-129	1.625E-01	3.115E-01	7.337E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	6.24	27	50	0.49	30.14	28	6	1.20E-02	47.6	
2	0	72.18	6	2	0.48	360.25	356	7	2.76E-03	53.2	
3	0	82.04	8	2	0.53	409.63	406	8	3.71E-03	44.5	
4	0	92.46	19	4	0.71	461.84	455	14	8.61E-03	30.5	
5	0	132.97	9	0	0.33	664.67	658	12	3.98E-03	33.3	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235022

Page : 2
Acquisition date : 28-SEP-2016 08:45:25

Total number of lines in spectrum 5
Number of unidentified lines 5
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235022

Page : 3
Acquisition date : 28-SEP-2016 08:45:25

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	6.24	27	50	0.49	30.14	28	6	1.20E-02	95.3	2.66E-30	
0	72.18	6	2	0.48	360.25	356	7	2.76E-03	****	4.60E-04	
0	82.04	8	2	0.53	409.63	406	8	3.71E-03	89.1	5.78E-06	
0	92.46	9	4	0.71	461.84	455	14	3.99E-03	****	4.36E-08	
0	132.97	9	0	0.33	664.67	658	12	3.98E-03	66.7	6.43E-17	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235022.CNF;1    *
* Acquisition date   : 28-SEP-2016 08:45:25 Sensitivity      : 3.000            *
* Detector ID       : XRAY2 Energy tolerance: 1.000          *
* Elapsed live time: 0 00:37:43.11 Abundance limit : 75.000      *
* Elapsed real time: 0 00:37:43.26 Half life ratio : *****          *
* Sample date       : 8-DEC-2015 13:43:00 Nuclide Library : IODINE          *
* Sample ID        : I405235022 Analyst initials: MJH1          *
* Batch Number     : 1598620 Sample Quantity : 2.6000E+00 GRAM      *
* Recovery         : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 27-JUL-2016 12:15:07 Eff. Geometry   : I129          *
* Eff. File        : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

```

      Lc
Nuclide (pCi/GRAM )

```

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

```

      Lc
Nuclide (pCi/GRAM )
I-125      9.582E+00 NOT IDENT.
I-129      2.984E-01 NOT IDENT.

```



```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235022.CNF;1
* Acquisition date   : 28-SEP-2016 08:45:25 Sensitivity      : 3.000
* Detector ID        : XRAY2 Energy tolerance: 1.000
* Elapsed live time: 0 00:37:43.11 Abundance limit : 75.000
* Elapsed real time: 0 00:37:43.26 Half life ratio : *****
* Sample date       : 8-DEC-2015 13:43:00 Nuclide Library : IODINE
* Sample ID         : I405235022 Analyst initials: MJH1
* Batch Number      : 1598620 Sample Quantity : 2.6000E+00 GRAM
*                               Quantity Err(%) : 3.8462E-03 %
* Recovery          : 1.00000 Carrier Weight : 0.00000
*                               Standard Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 27-JUL-2016 12:15:07 Eff. Geometry   : I129
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	8.869E+00	9.217E+00	1.005E+01	NOT IDENT.
I-129	1.625E-01	3.120E-01	3.205E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	2.1038				
29.62	3.2110				
27.34	3.2426				
29.62	2.2015				
35.49	2.2293				
39.58	2.2868				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 09:24:42.35

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235023.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY4.CNF;433
Background date  : 25-SEP-2016 12:23:10
Sample date     : 2-DEC-2015 10:40:00. Acquisition date : 28-SEP-2016 08:45:52
Sample ID      : I405235023      Sample quantity  : 3.24000E+00 GRAM
Detector name   : XRAY4          Detector geometry: I129
Elapsed live time: 0 00:37:20.59 Elapsed real time: 0 00:37:20.71 0.0%
Energy tolerance: 1.00000 keV    Analyst Initials : MJH1
Abundance limit : 75.00000       Sensitivity    : 3.00000
Batch ID        : 1598620        Detector SN#    :
Matrix Spike ID : 1470-K         LCS ID           : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

No peaks were found

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235023.CNF;1    *
* Acquisition date   : 28-SEP-2016 08:45:52 Sensitivity      : 3.000             *
* Detector ID        : XRAY4 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:37:20.59 Abundance limit : 75.000        *
* Elapsed real time  : 0 00:37:20.71 Half life ratio : *****          *
* Sample date        : 2-DEC-2015 10:40:00 Analyst initials: MJH1         *
* Sample ID          : I405235023 Sample Quantity : 3.2400E+00 GRAM      *
* Batch Number       : 1598620 Carrier Weight : 0.00000         *
* Recovery           : 1.00000 Standard Weight : 0.00000          *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14         *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-6.749E+00	5.000E+00	2.406E+00	NOT IDENT.
I-129	5.620E-02	2.196E-01	5.229E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION
No peaks were found

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235023

Page : 2
Acquisition date : 28-SEP-2016 08:45:52

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235023

Page : 3
Acquisition date : 28-SEP-2016 08:45:52

None

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 09:25:06.50

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235024.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY5.CNF;58
Background date    : Z5-SEP-2016 12:23:15
Sample date       : 8-DEC-2015 14:13:00. Acquisition date : 28-SEP-2016 08:46:16
Sample ID        : I405235024. Sample quantity : 2.60000E+00 GRAM
Detector name    : XRAY5. Detector geometry: I129
Elapsed live time: 0 00:36:58.84. Elapsed real time: 0 00:36:58.88 0.0%
Energy tolerance : 1.00000 keV. Analyst Initials : MJH1
Abundance limit  : 75.00000. Sensitivity : 3.00000
Batch ID        : 1598620. Detector SN# :
Matrix Spike ID  : 1470-K. LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

No peaks were found

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235024.CNF;1  *
* Acquisition date   : 28-SEP-2016 08:46:16 Sensitivity      : 3.000          *
* Detector ID        : XRAY5 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:36:58.84 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:36:58.88 Half life ratio : *****      *
* Sample date        : 8-DEC-2015 14:13:00 Analyst initials: MJH1      *
* Sample ID          : I405235024 Sample Quantity : 2.6000E+00 GRAM  *
* Batch Number       : 1598620 Carrier Weight : 0.00000        *
* Recovery           : 1.00000 Standard Weight : 0.00000        *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5      *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	3.080E-01	4.166E+00	1.214E+01	NOT IDENT.
I-129	-2.406E-01	2.722E-01	2.542E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

No peaks were found

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235024

Page : 2
Acquisition date : 28-SEP-2016 08:46:16

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235024

Page : 3
Acquisition date : 28-SEP-2016 08:46:16

None

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235024.CNF;1    *
* Acquisition date   : 28-SEP-2016 08:46:16 Sensitivity      : 3.000            *
* Detector ID        : XRAY5 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:36:58.84 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:36:58.88 Half life ratio  : *****          *
* Sample date        : 8-DEC-2015 14:13:00 Nuclide Library : IODINE        *
* Sample ID          : I405235024 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 2.6000E+00 GRAM      *
* Recovery           : 1.00000 Carrier Weight  : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	3.836E+00	NOT IDENT.
I-129	0.000E+00	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235024.CNF;1  *
* Acquisition date   : 28-SEP-2016 08:46:16 Sensitivity      : 3.000          *
* Detector ID       : XRAY5 Energy tolerance: 1.000          *
* Elapsed live time: 0 00:36:58.84 Abundance limit : 75.000          *
* Elapsed real time: 0 00:36:58.88 Half life ratio : *****          *
* Sample date       : 8-DEC-2015 14:13:00 Nuclide Library : IODINE          *
* Sample ID        : I405235024 Analyst initials: MJH1          *
* Batch Number     : 1598620 Sample Quantity : 2.6000E+00 GRAM          *
*                                     Quantity Err(%) : 3.8462E-03 %          *
* Recovery         : 1.00000 Carrier Weight : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date    : 30-AUG-2016 11:41:11 Eff. Geometry   : I129          *
* Eff. File        : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)
I-125	3.080E-01	4.167E+00	4.169E+00 NOT IDENT.
I-129	-2.406E-01	2.733E-01	2.940E-01 NOT IDENT.


```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	0.8133				
29.62	2.5641				
27.34	1.7568				
29.62	0.9231				
35.49	0.0000				
39.58	2.0378				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 09:25:34.51

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235025.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY6.CNF;215
Background date    : 25-SEP-2016 12:23:20
Sample date       : 8-DEC-2015 13:38:00. Acquisition date : 28-SEP-2016 08:46:38
Sample ID        : I405235025. Sample quantity   : 2.36000E+00 GRAM
Detector name     : XRAY6. Detector geometry: I129
Elapsed live time : 0 00:36:39.40. Elapsed real time: 0 00:36:39.44 0.0%
Energy tolerance  : 1.00000 keV. Analyst Initials : MJH1
Abundance limit   : 75.00000. Sensitivity        : 3.00000
Batch ID          : 1598620. Detector SN#        :
Matrix Spike ID   : 1470-K. LCS ID              : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

No peaks were found

```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road      *
*               Charleston, SC 29407   *
*                                     *
*****
*
*               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235025.CNF;1
* Acquisition date   : 28-SEP-2016 08:46:38 Sensitivity      : 3.000
* Detector ID        : XRAY6 Energy tolerance: 1.000
* Elapsed live time  : 0 00:36:39.40 Abundance limit : 75.000
* Elapsed real time  : 0 00:36:39.44 Half life ratio : *****
* Sample date       : 8-DEC-2015 13:38:00 Analyst initials: MJH1
* Sample ID         : I405235025 Sample Quantity : 2.3600E+00 GRAM
* Batch Number      : 1598620 Carrier Weight : 0.00000
* Recovery          : 1.00000 Standard Weight : 0.00000
* Nuclide Library   : IODINE.NLB;1
*****
*
*               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 26-JAN-2016 10:07:09 Eff. Geometry   : I129
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	3.082E+00	4.463E+00	1.515E+01	NOT IDENT.
I-129	2.049E-01	2.772E-01	9.224E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION
No peaks were found

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235025

Page : 2
Acquisition date : 28-SEP-2016 08:46:38

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
 "E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235025

Page : 3
Acquisition date : 28-SEP-2016 08:46:38

None

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235025.CNF;1    *
* Acquisition date   : 28-SEP-2016 08:46:38 Sensitivity      : 3.000            *
* Detector ID       : XRAY6 Energy tolerance: 1.000         *
* Elapsed live time : 0 00:36:39.40 Abundance limit : 75.000    *
* Elapsed real time : 0 00:36:39.44 Half life ratio : *****      *
* Sample date       : 8-DEC-2015 13:38:00 Nuclide Library : IODINE      *
* Sample ID        : I405235025 Analyst initials: MJH1         *
* Batch Number     : 1598620 Sample Quantity : 2.3600E+00 GRAM    *
* Recovery         : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date    : 26-JAN-2016 10:07:09 Eff. Geometry   : I129      *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5      *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

```

      Lc
Nuclide (pCi/GRAM )

```

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

```

      Lc
Nuclide (pCi/GRAM .)

I-125      5.298E+00 NOT IDENT.
I-129      3.291E-01 NOT IDENT.

```



```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road      *
*               Charleston, SC 29407  *
*                                     *
*****
*               DETECTOR AND SAMPLE DATA               *
*               *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235025.CNF;1 *
* Acquisition date   : 28-SEP-2016 08:46:38 Sensitivity      : 3.000          *
* Detector ID        : XRAY6                      Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:36:39.40             Abundance limit : 75.000          *
* Elapsed real time  : 0 00:36:39.44             Half life ratio : *****          *
* Sample date        : 8-DEC-2015 13:38:00 Nuclide Library : IODINE              *
* Sample ID          : I405235025                 Analyst initials: MJH1              *
* Batch Number       : 1598620                   Sample Quantity : 2.3600E+00 GRAM      *
*                                     Quantity Err(%) : 4.2373E-03 %              *
* Recovery           : 1.00000                   Carrier Weight  : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*               CALIBRATION INFORMATION               *
*               *                                       *
* Eff. Cal. date    : 26-JAN-2016 10:07:09 Eff. Geometry   : I129              *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	3.082E+00	4.472E+00	4.683E+00	NOT IDENT.
I-129	2.049E-01	2.780E-01	2.929E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	0.0000				
29.62	0.0000				
27.34	0.0000				
29.62	2.3167				
35.49	0.0000				
39.58	0.8284				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 10:15:42.48

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235026.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY1.CNF;415
Background date    : Z5-SEP-2016 12:22:54
Sample date       : 8-DEC-2015 10:15:00. Acquisition date : 28-SEP-2016 09:28:33
Sample ID        : I405235026      Sample quantity   : 2.54000E+00 GRAM
Detector name    : XRAY1           Detector geometry: I129
Elapsed live time: 0 00:46:46.72   Elapsed real time: 0 00:46:46.92  0.0%
Energy tolerance : 1.00000 keV     Analyst Initials : MJH1
Abundance limit  : 75.00000        Sensitivity      : 3.00000
Batch ID        : 1598620          Detector SN#    :
Matrix Spike ID  : 1470-K          LCS ID           : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	95.02	6	0	0.39	478.17	474	8	2.14E-03	40.8	
2	0	120.45	3	10	0.30	606.33	598	10	1.07E-03	205.5	

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

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235026.CNF;1
* Acquisition date   : 28-SEP-2016 09:28:33 Sensitivity      : 3.000
* Detector ID        : XRAY1 Energy tolerance: 1.000
* Elapsed live time  : 0 00:46:46.72 Abundance limit : 75.000
* Elapsed real time  : 0 00:46:46.92 Half life ratio : *****
* Sample date        : 8-DEC-2015 10:15:00 Analyst initials: MJH1
* Sample ID          : I405235026 Sample Quantity : 2.5400E+00 GRAM
* Batch Number       : 1598620 Carrier Weight : 0.00000
* Recovery           : 1.00000 Standard Weight : 0.00000
* Nuclide Library    : IODINE.NLB;1
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry    : I129
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	7.436E-01	3.805E+00	7.756E+00	NOT IDENT.
I-129	2.314E-02	1.752E-01	3.996E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	95.02	6	0	0.39	478.17	474	8	2.14E-03	40.8	
2	0	120.45	3	10	0.30	606.33	598	10	1.07E-03	205.5	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235026

Page : 2
Acquisition date : 28-SEP-2016 09:28:33

Total number of lines in spectrum 2
Number of unidentified lines 2
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235026

Page : 3
Acquisition date : 28-SEP-2016 09:28:33

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	95.02	6	0	0.39	478.17	474	8	2.14E-03	81.6	5.50E+00	
0	120.45	3	10	0.30	606.33	598	10	1.07E-03	****	2.27E+00	

Flags: "T" = Tentatively associated


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235026.CNF;1    *
* Acquisition date   : 28-SEP-2016 09:28:33 Sensitivity      : 3.000            *
* Detector ID        : XRAY1 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:46:46.72 Abundance limit : 75.000        *
* Elapsed real time  : 0 00:46:46.92 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 10:15:00 Nuclide Library : IODINE          *
* Sample ID          : I405235026 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 2.5400E+00 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry    : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	3.204E+00	NOT IDENT.
I-129	1.586E-01	NOT IDENT.

```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road      *
*               Charleston, SC 29407  *
*                                     *
*****
*               DETECTOR AND SAMPLE DATA               *
*               *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235026.CNF;1 *
* Acquisition date   : 28-SEP-2016 09:28:33 Sensitivity      : 3.000          *
* Detector ID        : XRAY1          Energy tolerance:     1.000          *
* Elapsed live time  : 0 00:46:46.72 Abundance limit :     75.000         *
* Elapsed real time  : 0 00:46:46.92 Half life ratio  : *****          *
* Sample date        : 8-DEC-2015 10:15:00 Nuclide Library : IODINE          *
* Sample ID          : I405235026     Analyst initials: MJH1             *
* Batch Number       : 1598620        Sample Quantity : 2.5400E+00 GRAM      *
*                                     Quantity Err(%) : 3.9370E-03 %          *
* Recovery           : 1.00000        Carrier Weight  : 0.00000          *
*                                     Standard Weight  : 0.00000          *
*****
*               CALIBRATION INFORMATION                 *
*               *                                       *
* Eff. Cal. date    : 9-JUN-2016 11:39:23 Eff. Geometry   : I129          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	7.436E-01	3.807E+00	3.822E+00	NOT IDENT.
I-129	2.314E-02	1.752E-01	1.755E-01	NOT IDENT.

```

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

```

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
27.34	6.1327				
29.62	4.2409				
27.34	6.0593				
29.62	4.4924				
35.49	4.6075				
39.58	4.8449				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 10:16:06.11

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235027.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY2.CNF;379
Background date  : 25-SEP-2016 12:22:59
Sample date     : 8-DEC-2015 10:19:00. Acquisition date : 28-SEP-2016 09:28:55
Sample ID      : I405235027. Sample quantity : 2.97000E+00 GRAM
Detector name   : XRAY2. Detector geometry: I129
Elapsed live time: 0 00:46:24.90. Elapsed real time: 0 00:46:25.06 0.0%
Energy tolerance: 1.00000 keV. Analyst Initials : MJH1
Abundance limit : 75.00000. Sensitivity : 3.00000
Batch ID       : 1598620. Detector SN# :
Matrix Spike ID: 1470-K. LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	54.20	6	7	0.71	270.24	263	9	2.31E-03	82.7	
2	0	87.03	9	3	0.99	434.61	430	10	3.28E-03	46.8	
3	0	92.83*	9	3	0.82	463.68	458	11	3.41E-03	63.7	
4	0	126.22	9	0	0.40	630.89	625	12	3.23E-03	33.3	
5	0	129.38	9	3	0.35	646.72	639	13	3.19E-03	53.5	
6	0	144.07	11	0	0.56	720.27	716	10	3.95E-03	30.2	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235027.CNF;1    *
* Acquisition date   : 28-SEP-2016 09:28:55 Sensitivity      : 3.000             *
* Detector ID        : XRAY2 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:46:24.90 Abundance limit : 75.000        *
* Elapsed real time  : 0 00:46:25.06 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 10:19:00 Analyst initials: MJH1         *
* Sample ID          : I405235027 Sample Quantity : 2.9700E+00 GRAM      *
* Batch Number       : 1598620 Carrier Weight : 0.00000         *
* Recovery           : 1.00000 Standard Weight : 0.00000         *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15         *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-5.286E-02	7.746E+00	1.557E+01	NOT IDENT.
I-129	4.226E-02	2.471E-01	5.254E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	13.90	5	27	0.31	68.47	61	10	1.78E-03	202.6	
2	0	54.20	6	7	0.71	270.24	263	9	2.31E-03	82.7	
3	0	87.03	9	3	0.99	434.61	430	10	3.28E-03	46.8	
4	0	92.83	22	3	0.82	463.68	458	11	8.02E-03	25.5	
5	0	126.22	9	0	0.40	630.89	625	12	3.23E-03	33.3	
6	0	129.38	9	3	0.35	646.72	639	13	3.19E-03	53.5	
7	0	144.07	11	0	0.56	720.27	716	10	3.95E-03	30.2	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235027

Page : 2
Acquisition date : 28-SEP-2016 09:28:55

Total number of lines in spectrum 6
Number of unidentified lines 6
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235027

Page : 3
Acquisition date : 28-SEP-2016 09:28:55

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	54.20	6	7	0.71	270.24	263	9	2.31E-03	****	4.79E-01	
0	87.03	9	3	0.99	434.61	430	10	3.28E-03	93.6	5.73E-07	
0	92.83	9	3	0.82	463.68	458	11	3.41E-03	****	3.66E-08	
0	126.22	9	0	0.40	630.89	625	12	3.23E-03	66.7	2.10E-15	
0	129.38	9	3	0.35	646.72	639	13	3.19E-03	****	4.11E-16	
0	144.07	11	0	0.56	720.27	716	10	3.95E-03	60.3	1.97E-19	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235027.CNF;1    *
* Acquisition date   : 28-SEP-2016 09:28:55 Sensitivity      : 3.000             *
* Detector ID        : XRAY2 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:46:24.90 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:46:25.06 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 10:19:00 Nuclide Library : IODINE        *
* Sample ID          : I405235027 Analyst initials: MJH1         *
* Batch Number       : 1598620 Sample Quantity : 2.9700E+00 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
---------	------------------------------

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

Nuclide	^{Lc} (pCi/GRAM)	
I-125	6.407E+00	NOT IDENT.
I-129	2.140E-01	NOT IDENT.

```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road      *
*               Charleston, SC 29407  *
*                                     *
*****
*               DETECTOR AND SAMPLE DATA               *
*               *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235027.CNF;1 *
* Acquisition date   : 28-SEP-2016 09:28:55 Sensitivity      : 3.000          *
* Detector ID        : XRAY2                      Energy tolerance: 1.000          *
* Elapsed live time   : 0 00:46:24.90             Abundance limit : 75.000          *
* Elapsed real time   : 0 00:46:25.06             Half life ratio : *****          *
* Sample date        : 8-DEC-2015 10:19:00         Nuclide Library : IODINE          *
* Sample ID          : I405235027                 Analyst initials: MJH1          *
* Batch Number       : 1598620                     Sample Quantity : 2.9700E+00 GRAM      *
*                                     Quantity Err(%) : 3.3670E-03 %          *
* Recovery           : 1.00000                     Carrier Weight  : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*               CALIBRATION INFORMATION                 *
*               *                                       *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	-5.286E-02	7.746E+00	7.746E+00	NOT IDENT.
I-129	4.226E-02	2.471E-01	2.478E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	7.3633				
29.62	5.3517				
27.34	2.1618				
29.62	3.3023				
35.49	2.2293				
39.58	3.4302				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 10:16:29.09

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235028.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY4.CNF;433
Background date  : Z5-SEP-2016 12:23:10
Sample date      : 23-NOV-2015 14:50:00 Acquisition date : 28-SEP-2016 09:29:20
Sample ID        : I405235028 Sample quantity : 2.61000E+00 GRAM
Detector name    : XRAY4 Detector geometry: I129
Elapsed live time: 0 00:46:04.82 Elapsed real time: 0 00:46:04.97 0.0%
Energy tolerance : 1.00000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID         : 1598620 Detector SN# :
Matrix Spike ID  : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.56	7	4	0.60	177.46	173	7	2.35E-03	61.8	

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

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                    *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*                                     *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235028.CNF;1 *
* Acquisition date   : 28-SEP-2016 09:29:20 Sensitivity      : 3.000          *
* Detector ID       : XRAY4 Energy tolerance: 1.000          *
* Elapsed live time: 0 00:46:04.82 Abundance limit : 75.000          *
* Elapsed real time: 0 00:46:04.97 Half life ratio : *****          *
* Sample date       : 23-NOV-2015 14:50:00 Analyst initials: MJH1          *
* Sample ID        : I405235028 Sample Quantity : 2.6100E+00 GRAM          *
* Batch Number     : 1598620 Carrier Weight : 0.00000          *
* Recovery         : 1.00000 Standard Weight : 0.00000          *
* Nuclide Library  : IODINE.NLB;1                                           *
*****
*                                     CALIBRATION INFORMATION                  *
*                                     *                                       *
* Eff. Cal. date    : 17-JUN-2016 08:18:14 Eff. Geometry   : I129          *
* Eff. File        : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	2.708E+00	4.341E+00	1.169E+01	FAIL ABUN
I-129	-2.110E-01	2.433E-01	3.417E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.56	7	4	0.60	177.46	173	7	2.35E-03	61.8	
2	0	92.73	5	7	0.22	463.91	460	6	1.73E-03	100.6	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235028

Page : 2
Acquisition date : 28-SEP-2016 09:29:20

Total number of lines in spectrum 1
Number of unidentified lines 0
Number of lines tentatively identified by NID 1 100.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235028

Page : 3
Acquisition date : 28-SEP-2016 09:29:20

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	35.56	7	4	0.60	177.46	173	7	2.35E-03	****	1.66E+01	T

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235028.CNF;1    *
* Acquisition date   : 28-SEP-2016 09:29:20 Sensitivity      : 3.000            *
* Detector ID        : XRAY4 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:46:04.82 Abundance limit: 75.000  *
* Elapsed real time  : 0 00:46:04.97 Half life ratio: ***** *
* Sample date        : 23-NOV-2015 14:50:00 Nuclide Library : IODINE          *
* Sample ID          : I405235028 Analyst initials: MJH1      *
* Batch Number       : 1598620 Sample Quantity : 2.6100E+00 GRAM *
* Recovery           : 1.00000 Carrier Weight  : 0.00000      *
*                               Standard Weight : 0.00000      *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129            *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
---------	------------------------------

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

Nuclide	^{Lc} (pCi/GRAM)	
I-125	4.504E+00	FAIL ABUN
I-129	1.080E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235028.CNF;1  *
* Acquisition date   : 28-SEP-2016 09:29:20 Sensitivity      : 3.000          *
* Detector ID        : XRAY4 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:46:04.82 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:46:04.97 Half life ratio : *****          *
* Sample date        : 23-NOV-2015 14:50:00 Nuclide Library : IODINE          *
* Sample ID          : I405235028 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 2.6100E+00 GRAM          *
*                               Quantity Err(%) : 3.8314E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	2.708E+00	4.366E+00	4.534E+00	FAIL ABUN
I-129	-2.110E-01	2.442E-01	2.621E-01	NOT IDENT.

```

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

```

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
27.34	1.0858				
29.62	5.5444				
27.34	4.4884				
29.62	1.1470				
35.49	1.1645				
39.58	3.6015				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 10:16:52.26

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235029.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY5.CNF;58
Background date    : 25-SEP-2016 12:23:15
Sample date       : 23-NOV-2015 11:10:00 Acquisition date : 28-SEP-2016 09:29:56
Sample ID        : I405235029 Sample quantity : 2.80000E+00 GRAM
Detector name     : XRAY5 Detector geometry: I129
Elapsed live time : 0 00:45:30.43 Elapsed real time: 0 00:45:30.47 0.0%
Energy tolerance  : 1.00000 keV Analyst Initials : MJH1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1598620 Detector SN# :
Matrix Spike ID   : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.59*	1	4	0.56	316.31	310	8	2.83E-04	569.7	

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

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-4.832E+00	4.735E+00	4.025E+00	NOT IDENT.
I-129	-5.022E-02	2.177E-01	5.210E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.59	6	4	0.56	316.31	310	8	2.12E-03	73.1	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235029

Page : 2
Acquisition date : 28-SEP-2016 09:29:56

Total number of lines in spectrum 1
Number of unidentified lines 1
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235029

Page : 3
Acquisition date : 28-SEP-2016 09:29:56

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	63.59	1	4	0.56	316.31	310	8	2.83E-04	****	3.14E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235029.CNF;1    *
* Acquisition date   : 28-SEP-2016 09:29:56 Sensitivity      : 3.000            *
* Detector ID        : XRAY5 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:45:30.43 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:45:30.47 Half life ratio : *****          *
* Sample date        : 23-NOV-2015 11:10:00 Nuclide Library : IODINE        *
* Sample ID          : I405235029 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 2.8000E+00 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date    : 30-AUG-2016 11:41:11 Eff. Geometry   : I129          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	0.000E+00	NOT IDENT.
I-129	1.647E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235029.CNF;1
* Acquisition date   : 28-SEP-2016 09:29:56 Sensitivity      : 3.000
* Detector ID        : XRAY5 Energy tolerance: 1.000
* Elapsed live time: 0 00:45:30.43 Abundance limit : 75.000
* Elapsed real time: 0 00:45:30.47 Half life ratio : *****
* Sample date        : 23-NOV-2015 11:10:00 Nuclide Library : IODINE
* Sample ID          : I405235029 Analyst initials: MJH1
* Batch Number       : 1598620 Sample Quantity : 2.8000E+00 GRAM
*                               Quantity Err(%) : 3.5714E-03 %
* Recovery           : 1.00000 Carrier Weight : 0.00000
*                               Standard Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	-4.832E+00	4.810E+00	5.280E+00	NOT IDENT.
I-129	-5.022E-02	2.177E-01	2.189E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	3.2531				
29.62	1.7094				
27.34	0.8784				
29.62	4.6154				
35.49	0.9543				
39.58	0.0000				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 10:17:15.32

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235030.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY6.CNF;215
Background date  : 25-SEP-2016 12:23:20
Sample date      : 23-NOV-2015 14:44:00 Acquisition date : 28-SEP-2016 09:30:21
Sample ID        : I405235030 Sample quantity : 2.60000E+00 GRAM
Detector name    : XRAY6 Detector geometry: I129
Elapsed live time: 0 00:45:07.66 Elapsed real time: 0 00:45:07.72 0.0%
Energy tolerance : 1.00000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID         : 1598620 Detector SN# :
Matrix Spike ID  : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	7.43*	4	2	0.56	36.37	34	5	1.66E-03	81.4	
2	0	10.27	7	1	0.36	50.62	49	4	2.68E-03	41.4	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235030.CNF;1    *
* Acquisition date   : 28-SEP-2016 09:30:21 Sensitivity      : 3.000             *
* Detector ID        : XRAY6 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:45:07.66 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:45:07.72 Half life ratio : *****          *
* Sample date        : 23-NOV-2015 14:44:00 Analyst initials: MJH1         *
* Sample ID          : I405235030 Sample Quantity : 2.6000E+00 GRAM      *
* Batch Number       : 1598620 Carrier Weight : 0.00000         *
* Recovery           : 1.00000 Standard Weight : 0.00000         *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-2.092E+00	4.101E+00	4.005E+00	NOT IDENT.
I-129	-6.592E-02	2.316E-01	4.432E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	7.43	7	2	0.56	36.37	34	5	2.59E-03	49.7	
2	0	10.27	7	1	0.36	50.62	49	4	2.68E-03	41.4	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235030

Page : 2
Acquisition date : 28-SEP-2016 09:30:21

Total number of lines in spectrum 2
Number of unidentified lines 2
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235030

Page : 3
Acquisition date : 28-SEP-2016 09:30:21

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	7.43	4	2	0.56	36.37	34	5	1.66E-03	****	3.52E-03	
0	10.27	7	1	0.36	50.62	49	4	2.68E-03	82.8	7.10E-02	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235030.CNF;1    *
* Acquisition date   : 28-SEP-2016 09:30:21 Sensitivity      : 3.000            *
* Detector ID        : XRAY6 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:45:07.66 Abundance limit : 75.000    *
* Elapsed real time  : 0 00:45:07.72 Half life ratio : *****    *
* Sample date        : 23-NOV-2015 14:44:00 Nuclide Library : IODINE        *
* Sample ID          : I405235030 Analyst initials: MJH1        *
* Batch Number       : 1598620 Sample Quantity : 2.6000E+00 GRAM    *
* Recovery           : 1.00000 Carrier Weight : 0.00000        *
*                               Standard Weight : 0.00000        *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129            *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5    *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
---------	------------------------------

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

Nuclide	^{Lc} (pCi/GRAM)	
I-125	0.000E+00	NOT IDENT.
I-129	1.241E-01	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*                                     *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235030.CNF;1 *
* Acquisition date   : 28-SEP-2016 09:30:21 Sensitivity      : 3.000          *
* Detector ID       : XRAY6 Energy tolerance: 1.000          *
* Elapsed live time: 0 00:45:07.66 Abundance limit : 75.000          *
* Elapsed real time: 0 00:45:07.72 Half life ratio : *****          *
* Sample date       : 23-NOV-2015 14:44:00 Nuclide Library : IODINE          *
* Sample ID        : I405235030 Analyst initials: MJH1          *
* Batch Number     : 1598620 Sample Quantity : 2.6000E+00 GRAM          *
*                                     Quantity Err(%) : 3.8462E-03 %          *
* Recovery         : 1.00000 Carrier Weight : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*                                     CALIBRATION INFORMATION                  *
*                                     *                                       *
* Eff. Cal. date    : 26-JAN-2016 10:07:09 Eff. Geometry   : I129          *
* Eff. File        : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	-2.092E+00	4.105E+00	4.212E+00	NOT IDENT.
I-129	-6.592E-02	2.317E-01	2.336E-01	NOT IDENT.

```

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

```

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
27.34	1.4157				
29.62	1.4643				
27.34	0.0000				
29.62	0.7722				
35.49	0.7906				
39.58	1.6568				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 10:48:30.25

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235031.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY1.CNF;415
Background date  : 25-SEP-2016 12:22:54
Sample date      : 26-NOV-2015 14:25:00 Acquisition date : 28-SEP-2016 10:17:59
Sample ID        : I405235031 Sample quantity : 2.76000E+00 GRAM
Detector name     : XRAY1 Detector geometry: I129
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.14 0.0%
Energy tolerance : 1.00000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID         : 1598620 Detector SN# :
Matrix Spike ID  : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND-CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	23.69	20	20	0.56	118.72	113	11	1.09E-02	53.0	

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


```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road      *
*               Charleston, SC 29407  *
*                                     *
*****
*               DETECTOR AND SAMPLE DATA               *
*               *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235031.CNF;1 *
* Acquisition date   : 28-SEP-2016 10:17:59 Sensitivity      : 3.000          *
* Detector ID        : XRAY1          Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:30:00.14 Half life ratio : *****          *
* Sample date        : 26-NOV-2015 14:25:00 Analyst initials: MJH1          *
* Sample ID          : I405235031     Sample Quantity : 2.7600E+00 GRAM      *
* Batch Number       : 1598620        Carrier Weight  : 0.00000          *
* Recovery           : 1.00000        Standard Weight  : 0.00000          *
* Nuclide Library    : IODINE.NLB;1   *
*****
*               CALIBRATION INFORMATION               *
*               *                                       *
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-9.311E-01	5.701E+00	1.077E+01	NOT IDENT.
I-129	0.000E+00	2.630E-01	5.775E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	23.69	20	20	0.56	118.72	113	11	1.09E-02	53.0	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235031

Page : 2
Acquisition date : 28-SEP-2016 10:17:59

Total number of lines in spectrum 1
Number of unidentified lines 1
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235031

Page : 3
Acquisition date : 28-SEP-2016 10:17:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	23.69	20	20	0.56	118.72	113	11	1.09E-02	****	1.80E+01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*                                     *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235031.CNF;1 *
* Acquisition date   : 28-SEP-2016 10:17:59 Sensitivity      : 3.000          *
* Detector ID        : XRAY1 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:30:00.14 Half life ratio : *****          *
* Sample date        : 26-NOV-2015 14:25:00 Nuclide Library : IODINE          *
* Sample ID          : I405235031 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 2.7600E+00 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*                                     CALIBRATION INFORMATION                  *
*                                     *                                         *
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	4.276E+00	NOT IDENT.
I-129	2.296E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235031.CNF;1    *
* Acquisition date   : 28-SEP-2016 10:17:59 Sensitivity      : 3.000             *
* Detector ID        : XRAY1 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 00:30:00.14 Half life ratio : *****          *
* Sample date        : 26-NOV-2015 14:25:00 Nuclide Library : IODINE         *
* Sample ID          : I405235031 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 2.7600E+00 GRAM      *
*                               Quantity Err(%) : 3.6232E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000           *
*                               Standard Weight : 0.00000           *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry    : I129          *
* Eff. File           : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

```

---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
              (pCi/GRAM )    (1.96-sigma)  (1.96-sigma)

```

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

```

Nuclide      Key-Line
              Activity      K.L Act error      TPU
              (pCi/GRAM )    (1.96-sigma)  (1.96-sigma)
I-125        -9.311E-01      5.703E+00      5.719E+00  NOT IDENT.
I-129         0.000E+00      2.630E-01      0.000E+00  NOT IDENT.

```

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	6.1327				
29.62	5.0891				
27.34	4.3281				
29.62	6.2894				
35.49	8.2934				
39.58	6.7829				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 10:49:03.08

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235032.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY2.CNF;379
Background date    : 25-SEP-2016 12:22:59
Sample date       : 23-NOV-2015 11:48:00 Acquisition date : 28-SEP-2016 10:18:25
Sample ID        : I405235032 Sample quantity : 2.86000E+00 GRAM
Detector name     : XRAY2 Detector geometry: I129
Elapsed live time : 0 00:30:00.00 Elapsed real time: 0 00:30:00.13 0.0%
Energy tolerance  : 1.00000 keV Analyst Initials : MJH1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1598620 Detector SN# :
Matrix Spike ID   : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	185.52*	13	0	1.80	927.89	920	15	7.44E-03	32.7	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235032.CNF;1  *
* Acquisition date   : 28-SEP-2016 10:18:25 Sensitivity      : 3.000          *
* Detector ID        : XRAY2 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.13 Half life ratio : *****      *
* Sample date        : 23-NOV-2015 11:48:00 Analyst initials: MJH1      *
* Sample ID          : I405235032 Sample Quantity : 2.8600E+00 GRAM    *
* Batch Number       : 1598620 Carrier Weight : 0.00000        *
* Recovery           : 1.00000 Standard Weight : 0.00000        *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15      *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-7.655E-01	1.096E+01	2.298E+01	NOT IDENT.
I-129	9.754E-02	3.274E-01	7.522E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	185.52	18	0	1.80	927.89	920	15	1.00E-02	23.6	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235032

Page : 2
Acquisition date : 28-SEP-2016 10:18:25

Total number of lines in spectrum 1
Number of unidentified lines 1
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235032

Page : 3
Acquisition date : 28-SEP-2016 10:18:25

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	185.52	13	0	1.80	927.89	920	15	7.44E-03	65.3	5.39E-29	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235032.CNF;1    *
* Acquisition date   : 28-SEP-2016 10:18:25 Sensitivity      : 3.000             *
* Detector ID        : XRAY2 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 00:30:00.13 Half life ratio : *****          *
* Sample date       : 23-NOV-2015 11:48:00 Nuclide Library : IODINE          *
* Sample ID         : I405235032 Analyst initials: MJH1         *
* Batch Number      : 1598620 Sample Quantity : 2.8600E+00 GRAM    *
* Recovery          : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 27-JUL-2016 12:15:07 Eff. Geometry   : I129          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
---------	------------------------------

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

Nuclide	^{Lc} (pCi/GRAM)	
I-125	8.854E+00	NOT IDENT.
I-129	2.979E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235032.CNF;1  *
* Acquisition date   : 28-SEP-2016 10:18:25 Sensitivity      : 3.000          *
* Detector ID        : XRAY2 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.13 Half life ratio : *****      *
* Sample date        : 23-NOV-2015 11:48:00 Nuclide Library : IODINE      *
* Sample ID          : I405235032 Analyst initials: MJH1        *
* Batch Number       : 1598620 Sample Quantity : 2.8600E+00 GRAM      *
*                               Quantity Err(%) : 3.4965E-03 %      *
* Recovery           : 1.00000 Carrier Weight : 0.00000        *
*                               Standard Weight : 0.00000        *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15      *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	-7.655E-01	1.096E+01	1.097E+01	NOT IDENT.
I-129	9.754E-02	3.275E-01	3.305E-01	NOT IDENT.


```

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

```

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
27.34	4.2076				
29.62	3.2110				
27.34	5.4044				
29.62	5.5038				
35.49	2.2293				
39.58	2.2868				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 10:49:26.12

```
*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235033.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY4.CNF;433
Background date    : 25-SEP-2016 12:23:10
Sample date       : 23-NOV-2015 11:53:00 Acquisition date : 28-SEP-2016 10:18:47
Sample ID        : I405235033 Sample quantity : 3.29000E+00 GRAM
Detector name    : XRAY4 Detector geometry: I129
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.09 0.0%
Energy tolerance : 1.00000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1598620 Detector SN# :
Matrix Spike ID  : 1470-K LCS ID : 1470-K
*****
```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

No peaks were found

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235033.CNF;1    *
* Acquisition date   : 28-SEP-2016 10:18:47 Sensitivity      : 3.000            *
* Detector ID        : XRAY4 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 00:30:00.09 Half life ratio : *****        *
* Sample date        : 23-NOV-2015 11:53:00 Analyst initials: MJH1        *
* Sample ID          : I405235033 Sample Quantity : 3.2900E+00 GRAM    *
* Batch Number       : 1598620 Carrier Weight : 0.00000        *
* Recovery           : 1.00000 Standard Weight : 0.00000        *
* Nuclide Library    : IODINE.NLB;1
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14        *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	5.241E-01	1.560E+00	6.979E+00	NOT IDENT.
I-129	7.937E-02	1.313E-01	4.649E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION
No peaks were found

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235033

Page : 2
Acquisition date : 28-SEP-2016 10:18:47

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235033

Page : 3
Acquisition date : 28-SEP-2016 10:18:47

None

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235033.CNF;1    *
* Acquisition date   : 28-SEP-2016 10:18:47 Sensitivity      : 3.000             *
* Detector ID        : XRAY4 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.09 Half life ratio : *****          *
* Sample date        : 23-NOV-2015 11:53:00 Nuclide Library : IODINE         *
* Sample ID          : I405235033 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 3.2900E+00 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	1.852E+00	NOT IDENT.
I-129	1.559E-01	NOT IDENT.


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235033.CNF;1
* Acquisition date   : 28-SEP-2016 10:18:47 Sensitivity      : 3.000
* Detector ID        : XRAY4 Energy tolerance: 1.000
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 00:30:00.09 Half life ratio : *****
* Sample date        : 23-NOV-2015 11:53:00 Nuclide Library : IODINE
* Sample ID          : I405235033 Analyst initials: MJH1
* Batch Number       : 1598620 Sample Quantity : 3.2900E+00 GRAM
*                               Quantity Err(%) : 3.0395E-03 %
* Recovery           : 1.00000 Carrier Weight : 0.00000
*                               Standard Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	5.241E-01	1.563E+00	1.581E+00	NOT IDENT.
I-129	7.937E-02	1.316E-01	1.364E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	0.0000				
29.62	0.0000				
27.34	1.1221				
29.62	4.5881				
35.49	2.3289				
39.58	1.2005				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 10:49:51.59

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235034.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY5.CNF;58
Background date    : 25-SEP-2016 12:23:15
Sample date       : 23-NOV-2015 11:20:00 Acquisition date : 28-SEP-2016 10:19:14
Sample ID        : I405235034 Sample quantity : 2.98000E+00 GRAM
Detector name     : XRAY5 Detector geometry: I129
Elapsed live time : 0 00:30:00.00 Elapsed real time: 0 00:30:00.02 0.0%
Energy tolerance  : 1.00000 keV Analyst Initials : MJH1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1598620 Detector SN# :
Matrix Spike ID   : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.33*	6	0	0.33	315.00	311	7	3.16E-03	54.5	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235034.CNF;1    *
* Acquisition date   : 28-SEP-2016 10:19:14 Sensitivity      : 3.000             *
* Detector ID        : XRAY5 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 00:30:00.02 Half life ratio : *****          *
* Sample date        : 23-NOV-2015 11:20:00 Analyst initials: MJH1        *
* Sample ID          : I405235034 Sample Quantity : 2.9800E+00 GRAM      *
* Batch Number       : 1598620 Carrier Weight : 0.00000         *
* Recovery           : 1.00000 Standard Weight : 0.00000          *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. (1.96-sigma)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	----------------------	----------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. (1.96-sigma)	Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-5.212E+00		7.694E+00	1.450E+01	NOT IDENT.
I-129	0.000E+00		1.978E-01	2.734E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.33	9	0	0.33	315.00	311	7	5.00E-03	33.3	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235034

Page : 2
Acquisition date : 28-SEP-2016 10:19:14

Total number of lines in spectrum 1
Number of unidentified lines 1
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235034

Page : 3
Acquisition date : 28-SEP-2016 10:19:14

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	63.33	6	0	0.33	315.00	311	7	3.16E-03	****	3.19E+00	

Flags: "T" = Tentatively associated


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235034.CNF;1    *
* Acquisition date   : 28-SEP-2016 10:19:14 Sensitivity      : 3.000            *
* Detector ID        : XRAY5 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit: 75.000 *
* Elapsed real time  : 0 00:30:00.02 Half life ratio : ***** *
* Sample date        : 23-NOV-2015 11:20:00 Nuclide Library : IODINE           *
* Sample ID          : I405235034 Analyst initials: MJH1      *
* Batch Number       : 1598620 Sample Quantity : 2.9800E+00 GRAM *
* Recovery           : 1.00000 Carrier Weight  : 0.00000      *
*                               Standard Weight : 0.00000      *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129            *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5            *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
---------	------------------------------

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

Nuclide	^{Lc} (pCi/GRAM)	
I-125	4.383E+00	NOT IDENT.
I-129	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235034.CNF;1    *
* Acquisition date   : 28-SEP-2016 10:19:14 Sensitivity      : 3.000             *
* Detector ID        : XRAY5 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000 . .             *
* Elapsed real time  : 0 00:30:00.02 Half life ratio : *****             *
* Sample date        : 23-NOV-2015 11:20:00 Nuclide Library : IODINE             *
* Sample ID          : I405235034 Analyst initials: MJH1      *
* Batch Number       : 1598620 Sample Quantity : 2.9800E+00 GRAM             *
*                               Quantity Err(%) : 3.3557E-03 %             *
* Recovery           : 1.00000 Carrier Weight : 0.00000             *
*                               Standard Weight : 0.00000             *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129             *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5             *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	-5.212E+00	7.748E+00	8.097E+00	NOT IDENT.
I-129	0.000E+00	0.000E+00	0.000E+00	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	3.2531				
29.62	0.0000				
27.34	0.0000				
29.62	0.9231				
35.49	0.9543				
39.58	0.0000				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 10:50:15.90

```
*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235035.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY6.CNF;215
Background date    : 25-SEP-2016 12:23:20
Sample date       : 23-NOV-2015 11:06:00 Acquisition date : 28-SEP-2016 10:19:45
Sample ID        : I405235035 Sample quantity : 2.86000E+00 GRAM
Detector name     : XRAY6 Detector geometry: I129
Elapsed live time : 0 00:30:00.00 Elapsed real time: 0 00:30:00.04 0.0%
Energy tolerance  : 1.00000 keV Analyst Initials : MJH1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1598620 Detector SN# :
Matrix Spike ID   : 1470-K LCS ID : 1470-K
*****
```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.28*	9	0	0.35	315.83	312	7	5.17E-03	37.8	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235035.CNF;1    *
* Acquisition date   : 28-SEP-2016 10:19:45 Sensitivity      : 3.000            *
* Detector ID        : XRAY6 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:30:00.04 Half life ratio : *****          *
* Sample date        : 23-NOV-2015 11:06:00 Analyst initials: MJH1        *
* Sample ID          : I405235035 Sample Quantity : 2.8600E+00 GRAM      *
* Batch Number       : 1598620 Carrier Weight : 0.00000        *
* Recovery           : 1.00000 Standard Weight : 0.00000        *
* Nuclide Library    : IODINE.NLB;1
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert. (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	----------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	0.000E+00	3.969E+00	5.488E+00	NOT IDENT.
I-129	5.275E-02	3.929E-01	9.144E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	.Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.28	12	0	0.35	315.83	312	7	6.67E-03	28.9	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235035

Page : 2
Acquisition date : 28-SEP-2016 10:19:45

Total number of lines in spectrum 1
Number of unidentified lines 1
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235035

Page : 3
Acquisition date : 28-SEP-2016 10:19:45

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	63.28	9	0	0.35	315.83	312	7	5.17E-03	75.6	3.09E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235035.CNF;1    *
* Acquisition date   : 28-SEP-2016 10:19:45 Sensitivity      : 3.000            *
* Detector ID        : XRAY6 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:30:00.00 Abundance limit: 75.000  *
* Elapsed real time  : 0 00:30:00.04 Half life ratio : ***** *
* Sample date        : 23-NOV-2015 11:06:00 Nuclide Library : IODINE          *
* Sample ID          : I405235035 Analyst initials: MJH1      *
* Batch Number       : 1598620 Sample Quantity : 2.8600E+00 GRAM *
* Recovery           : 1.00000 Carrier Weight  : 0.00000      *
*                               Standard Weight : 0.00000      *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
---------	------------------------------

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

Nuclide	^{Lc} (pCi/GRAM)	
I-125	0.000E+00	NOT IDENT.
I-129	3.240E-01	NOT IDENT.

```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road      *
*               Charleston, SC 29407  *
*                                     *
*****
*               DETECTOR AND SAMPLE DATA               *
*               *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235035.CNF;1 *
* Acquisition date   : 28-SEP-2016 10:19:45 Sensitivity      : 3.000          *
* Detector ID        : XRAY6          Energy tolerance:    1.000          *
* Elapsed live time  : 0 00:30:00.00 Abundance limit :    75.000          *
* Elapsed real time  : 0 00:30:00.04 Half life ratio  : *****          *
* Sample date       : 23-NOV-2015 11:06:00 Nuclide Library : IODINE          *
* Sample ID         : I405235035      Analyst initials: MJH1          *
* Batch Number      : 1598620         Sample Quantity : 2.8600E+00 GRAM      *
*                                     Quantity Err(%) : 3.4965E-03 %          *
* Recovery          : 1.00000         Carrier Weight  : 0.00000          *
*                                     Standard Weight  : 0.00000          *
*****
*               CALIBRATION INFORMATION                 *
*               *                                       *
* Eff. Cal. date    : 26-JAN-2016 10:07:09 Eff. Geometry  : I129          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	0.000E+00	0.000E+00	0.000E+00	NOT IDENT.
I-129	5.275E-02	3.929E-01	3.936E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	0.0000				
29.62	1.4643				
27.34	0.0000				
29.62	0.0000				
35.49	0.7906				
39.58	0.8284				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 12:18:06.75

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235036.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY1.CNF;415
Background date    : Z5-SEP-2016 12:22:54
Sample date       : 23-NOV-2015 11:12:00 Acquisition date : 28-SEP-2016 11:17:38
Sample ID        : I405235036 Sample quantity : 2.67000E+00 GRAM
Detector name    : XRAY1 Detector geometry: I129
Elapsed live time: 0/01:00:00.00 Elapsed real time: 0 01:00:00.22 0.0%
Energy tolerance : 1.00000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1598620 Detector SN# :
Matrix Spike ID : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	32.52	15	6	0.53	163.19	157	12	4.22E-03	41.1	
2	0	108.45	8	9	0.21	545.85	533	16	2.35E-03	82.6	

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

```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road       *
*               Charleston, SC 29407   *
*                                     *
*****
*               DETECTOR AND SAMPLE DATA               *
*               *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235036.CNF;1 *
* Acquisition date   : 28-SEP-2016 11:17:38 Sensitivity      : 3.000          *
* Detector ID        : XRAY1           Energy tolerance     : 1.000          *
* Elapsed live time  : 0 01:00:00.00   Abundance limit    : 75.000          *
* Elapsed real time  : 0 01:00:00.22   Half life ratio    : *****          *
* Sample date        : 23-NOV-2015 11:12:00 Analyst initials: MJH1           *
* Sample ID          : I405235036      Sample Quantity   : 2.6700E+00 GRAM      *
* Batch Number       : 1598620         Carrier Weight    : 0.00000          *
* Recovery           : 1.00000         Standard Weight   : 0.00000          *
* Nuclide Library    : IODINE.NLB;1    *
*****
*               CALIBRATION INFORMATION                 *
*               *                                       *
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry   : I129           *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-2.077E+00	4.349E+00	7.270E+00	NOT IDENT.
I-129	3.934E-05	1.665E-01	3.518E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	32.52	15	6	0.53	163.19	157	12	4.22E-03	41.1	
2	0	108.45	8	9	0.21	545.85	533	16	2.35E-03	82.6	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235036

Page : 2
Acquisition date : 28-SEP-2016 11:17:38

Total number of lines in spectrum 2
Number of unidentified lines 2
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235036

Page : 3
Acquisition date : 28-SEP-2016 11:17:38

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	32.52	15	6	0.53	163.19	157	12	4.22E-03	82.2	2.28E+01	
0	108.45	8	9	0.21	545.85	533	16	2.35E-03	****	3.47E+00	

Flags: "T" = Tentatively associated

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide (pCi/^{Lc}GRAM)

Nuclide (pCi/GRAM ^{Lc})

Page 2831 of 5809

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                 *
*                                     *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235036.CNF;1 *
* Acquisition date   : 28-SEP-2016 11:17:38 Sensitivity      : 3.000          *
* Detector ID        : XRAY1 Energy tolerance: 1.000          *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 01:00:00.22 Half life ratio : *****          *
* Sample date        : 23-NOV-2015 11:12:00 Nuclide Library : IODINE          *
* Sample ID          : I405235036 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 2.6700E+00 GRAM          *
*                                     Quantity Err(%) : 3.7453E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*                                     CALIBRATION INFORMATION                   *
*                                     *                                         *
* Eff. Cal. date    : 9-JUN-2016 11:39:23 Eff. Geometry   : I129          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	-2.077E+00	4.365E+00	4.464E+00	NOT IDENT.
I-129	3.934E-05	1.665E-01	1.665E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	13.4920				
29.62	7.6336				
27.34	7.7906				
29.62	6.7387				
35.49	3.6860				
39.58	4.8449				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 12:18:32.74

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                   *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235037.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY2.CNF;379
Background date  : 25-SEP-2016 12:22:59
Sample date      : 30-NOV-2015 11:19:00 Acquisition date : 28-SEP-2016 11:18:01
Sample ID        : I405235037 Sample quantity : 2.84000E+00 GRAM
Detector name     : XRAY2 Detector geometry: I129
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.20 0.0%
Energy tolerance : 1.00000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID          : 1598620 Detector SN# :
Matrix Spike ID   : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	24.46	10	5	0.50	121.32	114	10	2.65E-03	55.0	
2	4	91.42	12	3	0.79	456.60	454	14	3.41E-03	27.3	3.05E+00
3	4	92.50*	19	2	0.86	462.00	454	14	5.23E-03	33.7	
4	0	147.24	9	11	1.41	736.13	723	15	2.45E-03	89.4	
5	0	153.65	13	0	0.33	768.23	763	10	3.61E-03	27.7	
6	0	185.93*	20	0	1.14	929.93	920	18	5.49E-03	29.2	

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

```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road      *
*               Charleston, SC 29407  *
*                                     *
*****
*               DETECTOR AND SAMPLE DATA               *
*               *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235037.CNF;1 *
* Acquisition date   : 28-SEP-2016 11:18:01 Sensitivity      : 3.000          *
* Detector ID        : XRAY2                      Energy tolerance: 1.000      *
* Elapsed live time  : 0 01:00:00.00             Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.20             Half life ratio : *****    *
* Sample date        : 30-NOV-2015 11:19:00 Analyst initials: MJH1          *
* Sample ID          : I405235037                Sample Quantity : 2.8400E+00 GRAM *
* Batch Number       : 1598620                   Carrier Weight  : 0.00000      *
* Recovery           : 1.00000                   Standard Weight  : 0.00000      *
* Nuclide Library    : IODINE.NLB;1               *
*****
*               CALIBRATION INFORMATION                 *
*               *                                       *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	-4.085E-01	5.704E+00	1.168E+01	NOT IDENT.
I-129	-1.442E-02	2.213E-01	4.373E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	24.46	10	5	0.50	121.32	114	10	2.65E-03	55.0	3.05E+00
2	4	91.42	12	3	0.79	456.60	454	14	3.41E-03	27.3	
3	4	92.50	35	2	0.86	462.00	454	14	9.84E-03	16.4	
4	0	147.24	9	11	1.41	736.13	723	15	2.45E-03	89.4	
5	0	153.65	13	0	0.33	768.23	763	10	3.61E-03	27.7	
6	0	185.93	29	0	1.14	929.93	920	18	8.06E-03	18.6	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235037

Page : 2
Acquisition date : 28-SEP-2016 11:18:01

Total number of lines in spectrum	6	
Number of unidentified lines	6	
Number of lines tentatively identified by NID	0	0.00%

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I405235037

Page : 3
Acquisition date : 28-SEP-2016 11:18:01

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	24.46	10	5	0.50	121.32	114	10	2.65E-03	****	2.50E+00	
4	91.42	12	3	0.79	456.60	454	14	3.41E-03	54.7	7.19E-08	
4	92.50	19	2	0.86	462.00	454	14	5.23E-03	67.5	4.30E-08	
0	147.24	9	11	1.41	736.13	723	15	2.45E-03	****	3.74E-20	
0	153.65	13	0	0.33	768.23	763	10	3.61E-03	55.5	1.28E-21	
0	185.93	20	0	1.14	929.93	920	18	5.49E-03	58.5	4.33E-29	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235037.CNF;1    *
* Acquisition date   : 28-SEP-2016 11:18:01 Sensitivity      : 3.000            *
* Detector ID        : XRAY2 Energy tolerance: 1.000          *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 01:00:00.20 Half life ratio : *****          *
* Sample date        : 30-NOV-2015 11:19:00 Nuclide Library : IODINE          *
* Sample ID          : I405235037 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 2.8400E+00 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

```

      Lc
Nuclide (pCi/GRAM )

```

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

```

      Lc
Nuclide (pCi/GRAM )
I-125      4.616E+00 NOT IDENT.
I-129      1.793E-01 NOT IDENT.

```

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)		
I-125	-4.085E-01	5.704E+00	5.707E+00	NOT	IDENT.
I-129	-1.442E-02	2.213E-01	2.214E-01	NOT	IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	5.2595				
29.62	7.4924				
27.34	5.4044				
29.62	5.5038				
35.49	5.5733				
39.58	4.5736				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 12:19:14.89

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235038.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY4.CNF;433
Background date    : Z5-SEP-2016 12:23:10
Sample date       : 30-NOV-2015 10:40:00 Acquisition date : 28-SEP-2016 11:18:47
Sample ID        : I405235038 Sample quantity : 2.82000E+00 GRAM
Detector name     : XRAY4 Detector geometry: I129
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.18 0.0%
Energy tolerance  : 1.00000 keV Analyst Initials : MJH1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1598620 Detector SN# :
Matrix Spike ID   : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	15.84*	8	8	0.55	78.64	75	17	2.11E-03	83.5	2.83E+00
2	4	16.51*	1	7	0.38	82.00	75	17	1.55E-04	*****	
3	4	17.89	8	5	0.57	88.91	75	17	2.20E-03	51.7	
4	0	31.71	7	2	0.36	158.14	155	6	1.82E-03	56.0	
5	0	92.53*	8	0	0.78	462.94	458	9	2.25E-03	55.6	
6	0	132.35	8	3	1.50	662.49	656	10	2.31E-03	49.9	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235038.CNF;1  *
* Acquisition date   : 28-SEP-2016 11:18:47 Sensitivity      : 3.000          *
* Detector ID        : XRAY4 Energy tolerance: 1.000        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 01:00:00.18 Half life ratio : *****      *
* Sample date        : 30-NOV-2015 10:40:00 Analyst initials: MJH1      *
* Sample ID          : I405235038 Sample Quantity : 2.8200E+00 GRAM  *
* Batch Number       : 1598620 Carrier Weight : 0.00000      *
* Recovery           : 1.00000 Standard Weight : 0.00000      *
* Nuclide Library    : IODINE.NLB;1                                          *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14      *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

--- Non-Identified Nuclides ---

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	7.595E-01	2.363E+00	6.306E+00	FAIL ABUN
I-129	5.630E-02	1.910E-01	4.337E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	15.84	15	8	0.55	78.64	75	17	4.10E-03	39.6	2.83E+00
2	4	16.51	8	7	0.38	82.00	75	17	2.15E-03	75.6	
3	4	17.89	8	5	0.57	88.91	75	17	2.20E-03	51.7	
4	0	31.71	7	2	0.36	158.14	155	6	1.82E-03	56.0	
5	0	92.53	16	0	0.78	462.94	458	9	4.44E-03	25.0	
6	0	132.35	8	3	1.50	662.49	656	10	2.31E-03	49.9	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235038

Page : 2
Acquisition date : 28-SEP-2016 11:18:47

Total number of lines in spectrum 6
Number of unidentified lines 5
Number of lines tentatively identified by NID 1 16.67%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235038

Page : 3
Acquisition date : 28-SEP-2016 11:18:47

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	15.84	8	8	0.55	78.64	75	17	2.11E-03	****	1.12E+00	
4	16.51	1	7	0.38	82.00	75	17	1.55E-04	****	1.48E+00	
4	17.89	8	5	0.57	88.91	75	17	2.20E-03	****	2.41E+00	
0	31.71	7	2	0.36	158.14	155	6	1.82E-03	****	1.55E+01	T
0	92.53	8	0	0.78	462.94	458	9	2.25E-03	****	5.17E-01	
0	132.35	8	3	1.50	662.49	656	10	2.31E-03	99.9	1.40E-02	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235038.CNF;1    *
* Acquisition date   : 28-SEP-2016 11:18:47 Sensitivity      : 3.000            *
* Detector ID        : XRAY4 Energy tolerance: 1.000          *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.18 Half life ratio : *****          *
* Sample date        : 30-NOV-2015 10:40:00 Nuclide Library : IODINE          *
* Sample ID          : I405235038 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 2.8200E+00 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	2.273E+00	FAIL ABUN
I-129	1.722E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235038.CNF;1    *
* Acquisition date   : 28-SEP-2016 11:18:47 Sensitivity      : 3.000             *
* Detector ID        : XRAY4 Energy tolerance: 1.000         *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 01:00:00.18 Half life ratio : *****          *
* Sample date        : 30-NOV-2015 10:40:00 Nuclide Library : IODINE         *
* Sample ID          : I405235038 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 2.8200E+00 GRAM      *
*                               Quantity Err(%) : 3.5461E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000           *
*                               Standard Weight : 0.00000           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	7.595E-01	2.367E+00	2.391E+00	FAIL ABUN
I-129	5.630E-02	1.911E-01	1.928E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	1.0858				
29.62	3.3266				
27.34	1.4961				
29.62	2.2941				
35.49	4.6579				
39.58	4.8019				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 12:19:44.16

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235039.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY5.CNF;58
Background date  : 25-SEP-2016 12:23:15
Sample date      : 30-NOV-2015 10:43:00 Acquisition date : 28-SEP-2016 11:19:10
Sample ID        : I405235039 Sample quantity : 3.17000E+00 GRAM
Detector name     : XRAY5 Detector geometry: I129
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.05 0.0%
Energy tolerance  : 1.00000 keV Analyst Initials : MJH1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1598620 Detector SN# :
Matrix Spike ID   : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.90*	2	4	0.26	233.18	228	7	4.22E-04	268.3	
2	0	63.52*	9	3	0.60	315.92	312	9	2.46E-03	57.1	
3	0	92.75*	3	2	1.01	461.54	456	10	8.74E-04	176.9	

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


```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road       *
*               Charleston, SC 29407   *
*                                     *
*****
*               DETECTOR AND SAMPLE DATA               *
*               *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235039.CNF;1 *
* Acquisition date   : 28-SEP-2016 11:19:10 Sensitivity      : 3.000          *
* Detector ID        : XRAY5                      Energy tolerance: 1.000          *
* Elapsed live time  : 0 01:00:00.00             Abundance limit : 75.000          *
* Elapsed real time  : 0 01:00:00.05             Half life ratio : *****          *
* Sample date        : 30-NOV-2015 10:43:00 Analyst initials: MJH1          *
* Sample ID          : I405235039                Sample Quantity : 3.1700E+00 GRAM    *
* Batch Number       : 1598620                   Carrier Weight  : 0.00000          *
* Recovery           : 1.00000                   Standard Weight  : 0.00000          *
* Nuclide Library    : IODINE.NLB;1              *
*****
*               CALIBRATION INFORMATION                 *
*               *                                       *
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	3.840E-01	3.302E+00	8.592E+00	NOT IDENT.
I-129	1.378E-02	1.729E-01	4.404E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.90	6	4	0.26	233.18	228	7	1.53E-03	70.7	
2	0	63.52	15	3	0.60	315.92	312	9	4.30E-03	31.0	
3	0	92.75	18	2	1.01	461.54	456	10	4.92E-03	28.9	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235039

Page : 2
Acquisition date : 28-SEP-2016 11:19:10

Total number of lines in spectrum 3
Number of unidentified lines 3
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235039

Page : 3
Acquisition date : 28-SEP-2016 11:19:10

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.90	2	4	0.26	233.18	228	7	4.22E-04	****	7.78E+00	
0	63.52	9	3	0.60	315.92	312	9	2.46E-03	****	3.16E+00	
0	92.75	3	2	1.01	461.54	456	10	8.74E-04	****	3.55E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235039.CNF;1  *
* Acquisition date   : 28-SEP-2016 11:19:10 Sensitivity      : 3.000          *
* Detector ID        : XRAY5 Energy tolerance: 1.000          *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 01:00:00.05 Half life ratio : *****          *
* Sample date        : 30-NOV-2015 10:43:00 Nuclide Library : IODINE          *
* Sample ID          : I405235039 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 3.1700E+00 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	3.054E+00	NOT IDENT.
I-129	1.560E-01	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*                                     *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235039.CNF;1 *
* Acquisition date   : 28-SEP-2016 11:19:10 Sensitivity      : 3.000          *
* Detector ID        : XRAY5 Energy tolerance: 1.000        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.05 Half life ratio : *****      *
* Sample date        : 30-NOV-2015 10:43:00 Nuclide Library : IODINE      *
* Sample ID          : I405235039 Analyst initials: MJH1         *
* Batch Number       : 1598620 Sample Quantity : 3.1700E+00 GRAM      *
*                                     Quantity Err(%) : 3.1546E-03 %      *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*                                     CALIBRATION INFORMATION                  *
*                                     *                                       *
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5      *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	3.840E-01	3.303E+00	3.307E+00	NOT IDENT.
I-129	1.378E-02	1.729E-01	1.731E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	1.6265				
29.62	1.7094				
27.34	0.0000				
29.62	1.8461				
35.49	3.8174				
39.58	1.0189				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 12:20:21.94

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235040.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY6.CNF;215
Background date  : 25-SEP-2016 12:23:20
Sample date      : 30-NOV-2015 13:23:00 Acquisition date : 28-SEP-2016 11:19:53
Sample ID        : I405235040 Sample quantity : 3.54000E+00 GRAM
Detector name    : XRAY6 Detector geometry: I129
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.07 0.0%
Energy tolerance : 1.00000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID         : 1598620 Detector SN# :
Matrix Spike ID  : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.27*	3	2	0.54	315.77	312	7	8.07E-04	131.4	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235040.CNF;1    *
* Acquisition date   : 28-SEP-2016 11:19:53 Sensitivity      : 3.000             *
* Detector ID        : XRAY6 Energy tolerance: 1.000         *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 01:00:00.07 Half life ratio : *****          *
* Sample date        : 30-NOV-2015 13:23:00 Analyst initials: MJH1        *
* Sample ID          : I405235040 Sample Quantity : 3.5400E+00 GRAM      *
* Batch Number       : 1598620 Carrier Weight : 0.00000         *
* Recovery           : 1.00000 Standard Weight : 0.00000         *
* Nuclide Library    : IODINE.NLB;1                                           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	7.535E-01	1.477E+00	5.546E+00	NOT IDENT.
I-129	-7.671E-02	1.793E-01	2.928E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.27	8	2	0.54	315.77	312	7	2.31E-03	43.5	
2	0	92.65	6	3	0.19	462.75	458	7	1.70E-03	63.6	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I405235040

Page : 2
Acquisition date : 28-SEP-2016 11:19:53

Total number of lines in spectrum 1
Number of unidentified lines 1
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : I405235040

Page : 3
Acquisition date : 28-SEP-2016 11:19:53

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	63.27	3	2	0.54	315.77	312	7	8.07E-04	****	3.09E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235040.CNF;1
* Acquisition date   : 28-SEP-2016 11:19:53 Sensitivity      : 3.000
* Detector ID        : XRAY6 Energy tolerance: 1.000
* Elapsed live time  : 0 01:00:00.00 Abundance limit: 75.000
* Elapsed real time  : 0 01:00:00.07 Half life ratio : *****
* Sample date        : 30-NOV-2015 13:23:00 Nuclide Library : IODINE
* Sample ID          : I405235040 Analyst initials: MJH1
* Batch Number       : 1598620 Sample Quantity : 3.5400E+00 GRAM
* Recovery            : 1.00000 Carrier Weight : 0.00000
*                               Standard Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
---------	------------------------------

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

Nuclide	^{Lc} (pCi/GRAM)	
I-125	1.753E+00	NOT IDENT.
I-129	9.254E-02	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I405235040.CNF;1    *
* Acquisition date   : 28-SEP-2016 11:19:53 Sensitivity      : 3.000            *
* Detector ID        : XRAY6 Energy tolerance: 1.000          *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.07 Half life ratio : *****          *
* Sample date        : 30-NOV-2015 13:23:00 Nuclide Library : IODINE          *
* Sample ID          : I405235040 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 3.5400E+00 GRAM      *
*                               Quantity Err(%) : 2.8249E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 26-JAN-2016 10:07:09 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY6 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	7.535E-01	1.478E+00	1.517E+00	NOT IDENT.
I-129	-7.671E-02	1.795E-01	1.828E-01	NOT IDENT.


```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	0.0000				
29.62	2.9286				
27.34	1.4921				
29.62	0.0000				
35.49	1.5811				
39.58	3.3136				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 13:32:24.89

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627437.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY1.CNF;415
Background date  : 25-SEP-2016 12:22:54
Sample date      : 26-SEP-2016 00:00:00 Acquisition date : 28-SEP-2016 12:50:58
Sample ID        : I1203627437 Sample quantity : 3.54000E+00 GRAM
Detector name    : XRAY1 Detector geometry: I129
Elapsed live time: 0 00:40:07.21 Elapsed real time: 0 00:40:07.36 0.0%
Energy tolerance : 1.00000 keV Analyst Initials : MJH1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID         : 1598620 Detector SN# :
Matrix Spike ID  : 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

No peaks were found

```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road      *
*               Charleston, SC 29407  *
*                                     *
*****
*               DETECTOR AND SAMPLE DATA               *
*               *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627437.CNF;1 *
* Acquisition date   : 28-SEP-2016 12:50:58 Sensitivity      : 3.000          *
* Detector ID        : XRAY1                      Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:40:07.21             Abundance limit : 75.000          *
* Elapsed real time  : 0 00:40:07.36             Half life ratio : *****          *
* Sample date        : 26-SEP-2016 00:00:00 Analyst initials: MJH1          *
* Sample ID          : I1203627437              Sample Quantity : 3.5400E+00 GRAM      *
* Batch Number       : 1598620                  Carrier Weight  : 0.00000          *
* Recovery           : 1.00000                  Standard Weight : 0.00000          *
* Nuclide Library    : IODINE.NLB;1              *
*****
*               CALIBRATION INFORMATION                 *
*               *                                       *
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	2.094E-02	1.050E-01	2.142E-01	NOT IDENT.
I-129	4.719E-02	1.896E-01	4.177E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION
No peaks were found

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I1203627437

Page : 2
Acquisition date : 28-SEP-2016 12:50:58

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I1203627437

Page : 3
Acquisition date : 28-SEP-2016 12:50:58

None

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627437.CNF;1 *
* Acquisition date   : 28-SEP-2016 12:50:58 Sensitivity      : 3.000          *
* Detector ID        : XRAY1 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:40:07.21 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:40:07.36 Half life ratio : *****          *
* Sample date        : 26-SEP-2016 00:00:00 Nuclide Library : IODINE          *
* Sample ID          : I1203627437 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 3.5400E+00 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry    : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	8.853E-02	NOT IDENT.
I-129	1.744E-01	NOT IDENT.


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                               *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627437.CNF;1  *
* Acquisition date   : 28-SEP-2016 12:50:58 Sensitivity      : 3.000           *
* Detector ID        : XRAY1 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:40:07.21 Abundance limit : 75.000        *
* Elapsed real time  : 0 00:40:07.36 Half life ratio : *****          *
* Sample date        : 26-SEP-2016 00:00:00 Nuclide Library : IODINE       *
* Sample ID          : I1203627437 Analyst initials: MJH1         *
* Batch Number       : 1598620 Sample Quantity : 3.5400E+00 GRAM      *
*                               Quantity Err(%) : 2.8249E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000           *
*                               Standard Weight : 0.00000           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                               *
* Eff. Cal. date     : 9-JUN-2016 11:39:23 Eff. Geometry   : I129         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY1 I129.CNF;6         *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	2.094E-02	1.051E-01	1.055E-01	NOT IDENT.
I-129	4.719E-02	1.897E-01	1.909E-01	NOT IDENT.

```

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

```

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
27.34	6.1327				
29.62	6.7854				
27.34	4.3281				
29.62	1.7970				
35.49	1.8430				
39.58	10.6588				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 13:32:00.80

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627438.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY2.CNF;379
Background date  : 25-SEP-2016 12:22:59
Sample date      : 8-DEC-2015 14:17:00. Acquisition date : 28-SEP-2016 12:51:32
Sample ID        : I1203627438. Sample quantity : 3.35000E+00 GRAM
Detector name    : XRAY2. Detector geometry: I129
Elapsed live time: 0 00:39:28.38. Elapsed real time: 0 00:39:28.53 0.0%
Energy tolerance : 1.00000 keV. Analyst Initials : MJH1
Abundance limit  : 75.00000. Sensitivity : 3.00000
Batch ID         : 1598620. Detector SN# :
Matrix Spike ID  : 1470-K. LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	92.71*	10	0	0.94	463.05	457	11	4.25E-03	48.5	
2	0	96.42	8	3	0.37	481.65	474	12	3.40E-03	55.6	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627438.CNF;1  *
* Acquisition date   : 28-SEP-2016 12:51:32 Sensitivity      : 3.000          *
* Detector ID        : XRAY2 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:39:28.38 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:39:28.53 Half life ratio : *****      *
* Sample date        : 8-DEC-2015 14:17:00 Analyst initials: MJH1      *
* Sample ID          : I1203627438 Sample Quantity : 3.3500E+00 GRAM  *
* Batch Number       : 1598620 Carrier Weight : 0.00000      *
* Recovery           : 1.00000 Standard Weight : 0.00000      *
* Nuclide Library    : IODINE.NLB;1
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15      *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
I-125	3.393E+00	7.155E+00	1.631E+01	NOT IDENT.
I-129	2.433E-01	2.666E-01	6.452E-01	NOT IDENT.

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	92.71	21	0	0.94	463.05	457	11	8.87E-03	21.8	
2	0	96.42	8	3	0.37	481.65	474	12	3.40E-03	55.6	

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I1203627438

Page : 2
Acquisition date : 28-SEP-2016 12:51:32

Total number of lines in spectrum 2
Number of unidentified lines 2
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I1203627438

Page : 3
Acquisition date : 28-SEP-2016 12:51:32

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.71	10	0	0.94	463.05	457	11	4.25E-03	97.0	3.89E-08	
0	96.42	8	3	0.37	481.65	474	12	3.40E-03	****	6.49E-09	

Flags: "T" = Tentatively associated


```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road       *
*               Charleston, SC 29407   *
*                                     *
*****
*               DETECTOR AND SAMPLE DATA               *
*               *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627438.CNF;1 *
* Acquisition date   : 28-SEP-2016 12:51:32 Sensitivity      : 3.000          *
* Detector ID        : XRAY2                      Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:39:28.38             Abundance limit : 75.000          *
* Elapsed real time  : 0 00:39:28.53             Half life ratio : *****          *
* Sample date        : 8-DEC-2015 14:17:00 Nuclide Library : IODINE              *
* Sample ID          : I1203627438                 Analyst initials: MJH1              *
* Batch Number       : 1598620                     Sample Quantity : 3.3500E+00 GRAM      *
* Recovery           : 1.00000                     Carrier Weight  : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*               CALIBRATION INFORMATION               *
*               *                                       *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129              *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
---------	-------------------

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

Nuclide	Lc (pCi/GRAM)	
I-125	6.719E+00	NOT IDENT.
I-129	2.719E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627438.CNF;1  *
* Acquisition date   : 28-SEP-2016 12:51:32 Sensitivity      : 3.000           *
* Detector ID        : XRAY2 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:39:28.38 Abundance limit : 75.000        *
* Elapsed real time  : 0 00:39:28.53 Half life ratio : *****        *
* Sample date        : 8-DEC-2015 14:17:00 Nuclide Library : IODINE       *
* Sample ID          : I1203627438 Analyst initials: MJH1         *
* Batch Number       : 1598620 Sample Quantity : 3.3500E+00 GRAM      *
*                               Quantity Err(%) : 2.9851E-03 %         *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000           *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 27-JUL-2016 12:15:07 Eff. Geometry   : I129       *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY2 I129.CNF;15      *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------	---------------------------	---------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
I-125	3.393E+00	7.180E+00	7.341E+00	NOT IDENT.
I-129	2.433E-01	2.677E-01	2.893E-01	NOT IDENT.

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	4.2076				
29.62	3.2110				
27.34	5.4044				
29.62	7.7053				
35.49	7.8027				
39.58	4.5736				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 13:31:36.22

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627439.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY4.CNF;433
Background date  : 25-SEP-2016 12:23:10
Sample date     : 8-DEC-2015 14:17:00. Acquisition date : 28-SEP-2016 12:52:05
Sample ID      : I1203627439. Sample quantity : 2.94000E+00 GRAM
Detector name   : XRAY4. Detector geometry: I129
Elapsed live time: 0 00:38:50.89. Elapsed real time: 0 00:38:51.04 0.0%
Energy tolerance : 1.00000 keV. Analyst Initials : MJH1
Abundance limit  : 75.00000. Sensitivity : 3.00000
Batch ID        : 1598620. Detector SN# :
Matrix Spike ID : 1470-K. LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	27.00	10	22	0.63	134.54	127	32	4.35E-03	77.9	1.74E+00
2	4	27.78	19	18	0.53	138.46	127	32	7.98E-03	45.3	
3	4	28.69	11	14	0.44	143.00	127	32	4.92E-03	81.1	
4	4	29.70	247	13	0.65	148.09	127	32	1.06E-01	7.1	
5	0	33.60	23	27	0.36	167.62	164	8	1.00E-02	43.2	
6	0	39.65	29	9	0.75	197.94	193	9	1.25E-02	26.2	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627439.CNF;1  *
* Acquisition date   : 28-SEP-2016 12:52:05 Sensitivity      : 3.000          *
* Detector ID        : XRAY4 Energy tolerance: 1.000        *
* Elapsed live time  : 0 00:38:50.89 Abundance limit : 75.000    *
* Elapsed real time  : 0 00:38:51.04 Half life ratio : *****      *
* Sample date        : 8-DEC-2015 14:17:00 Analyst initials: MJH1      *
* Sample ID          : I1203627439 Sample Quantity : 2.9400E+00 GRAM  *
* Batch Number       : 1598620 Carrier Weight : 0.00000      *
* Recovery           : 1.00000 Standard Weight : 0.00000      *
* Nuclide Library    : IODINE.NLB;1
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14      *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
I-125	9.138E+00	1.395E+01	1.362E+01
I-129	1.203E+01	1.679E+00	7.659E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	27.00	10	22	0.63	134.54	127	32	4.35E-03	77.9	1.74E+00
2	4	27.78	19	18	0.53	138.46	127	32	7.98E-03	45.3	
3	4	28.69	11	14	0.44	143.00	127	32	4.92E-03	81.1	
4	4	29.70	247	13	0.65	148.09	127	32	1.06E-01	7.1	
5	0	33.60	23	27	0.36	167.62	164	8	1.00E-02	43.2	
6	0	39.65	29	9	0.75	197.94	193	9	1.25E-02	26.2	

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
I-125	27.34	10	114.10*	1.198E+01	2.925E-01	9.138E+00	155.83
	30.97	-----	20.30	1.514E+01	-----	Line Not Found	-----
	35.49	-----	6.68	1.660E+01	-----	Line Not Found	-----

Nuclide Type: FISSION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
I-129	29.62	247	56.60*	1.431E+01	1.203E+01	1.203E+01	14.24
	33.59	23	10.04	1.626E+01	5.644E+00	5.644E+00	86.43
	39.58	29	7.51	1.617E+01	9.467E+00	9.467E+00	52.35

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : I1203627439

Page : 2
Acquisition date : 28-SEP-2016 12:52:05

Total number of lines in spectrum 6
Number of unidentified lines 2
Number of lines tentatively identified by NID 4 66.67%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
I-125	59.40D	31.2	2.925E-01	9.138E+00	14.24E+00	155.83	
Total Activity :			2.925E-01	9.138E+00			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
I-129	1.57E+07Y	1.00	1.203E+01	1.203E+01	0.171E+01	14.24	
Total Activity :			1.203E+01	1.203E+01			

Grand Total Activity : 1.232E+01 2.117E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I1203627439

Page : 3
Acquisition date : 28-SEP-2016 12:52:05

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	27.78	19	18	0.53	138.46	127	32	7.98E-03	90.6	1.27E+01	
4	28.69	11	14	0.44	143.00	127	32	4.92E-03	****	1.35E+01	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627439.CNF;1  *
* Acquisition date   : 28-SEP-2016 12:52:05 Sensitivity      : 3.000          *
* Detector ID        : XRAY4 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:38:50.89 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:38:51.04 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 14:17:00 Nuclide Library : IODINE          *
* Sample ID          : I1203627439 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 2.9400E+00 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14          *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
I-125	5.626E+00
I-129	3.169E-01

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

Nuclide	Lc (pCi/GRAM)
---------	-------------------

```

*****
*                                     *
*               GEL Laboratories LLC *
*               2040 Savage Road    *
*               Charleston, SC 29407 *
*                                     *
*****
*
*               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627439.CNF;1
* Acquisition date   : 28-SEP-2016 12:52:05 Sensitivity      : 3.000
* Detector ID        : XRAY4 Energy tolerance: 1.000
* Elapsed live time  : 0 00:38:50.89 Abundance limit : 75.000
* Elapsed real time  : 0 00:38:51.04 Half life ratio : *****
* Sample date        : 8-DEC-2015 14:17:00 Nuclide Library : IODINE
* Sample ID          : I1203627439 Analyst initials: MJH1
* Batch Number       : 1598620 Sample Quantity : 2.9400E+00 GRAM
* Quantity Err(%)    : 3.4014E-03 %
* Recovery           : 1.00000 Carrier Weight : 0.00000
* Standard Weight    : 0.00000
*****
*
*               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 17-JUN-2016 08:18:14 Eff. Geometry   : I129
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY4 I129.CNF;14
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
I-125	9.138E+00	1.407E+01	1.407E+01
I-129	1.203E+01	2.057E+00	2.057E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------------------	-------------------------------	---------------------

```

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

```

<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>	<u>ENERGY</u>	<u>MDA COUNTS</u>
27.34	7.6004				
29.62	7.7622				
30.97	7.8547				
33.59	17.2054				
35.49	12.8092				
39.58	7.2029				

VAX/VMS Nuclide Identification Report Generated 28-SEP-2016 13:31:10.80

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627440.CNF;1
Background file : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG XRAY5.CNF;58
Background date : Z5-SEP-2016 12:23:15
Sample date     : 26-SEP-2016 00:00:00 Acquisition date : 28-SEP-2016 12:52:43
Sample ID      : I1203627440 Sample quantity : 3.54000E+00 GRAM
Detector name   : XRAY5 Detector geometry: I129
Elapsed live time: 0 00:38:05.93 Elapsed real time: 0 00:38:05.98 0.0%
Energy tolerance: 1.00000 keV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID       : 1598620 Detector SN# :
Matrix Spike ID: 1470-K LCS ID : 1470-K
*****

```

BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	6	27.21	14	0	0.57	135.07	129	25	6.34E-03	35.9	2.22E+00
2	6	29.70	198	0	0.61	147.48	129	25	8.66E-02	7.4	
3	0	32.46	8	3	0.55	161.23	157	7	3.34E-03	54.2	
4	0	33.67	27	16	0.53	167.29	164	8	1.18E-02	31.3	
5	0	39.64	38	5	0.58	196.99	192	10	1.68E-02	19.4	
6	0	76.98*	4	0	0.58	383.00	380	6	1.87E-03	59.8	

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

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627440.CNF;1  *
* Acquisition date   : 28-SEP-2016 12:52:43 Sensitivity      : 3.000          *
* Detector ID        : XRAY5 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:38:05.93 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:38:05.98 Half life ratio : *****          *
* Sample date        : 26-SEP-2016 00:00:00 Analyst initials: MJH1          *
* Sample ID          : I1203627440 Sample Quantity : 3.5400E+00 GRAM          *
* Batch Number       : 1598620 Carrier Weight : 0.00000          *
* Recovery           : 1.00000 Standard Weight : 0.00000          *
* Nuclide Library    : IODINE.NLB;1
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
I-125	5.681E-01	3.992E-01	2.681E-01
I-129	1.320E+01	1.907E+00	4.688E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)
---------	-------------------------------------	---------------------------------	--------------------

PEAK REPORT WITHOUT BACKGROUND SUBTRACTION

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	6	27.21	14	0	0.57	135.07	129	25	6.34E-03	35.9	2.22E+00
2	6	29.70	198	0	0.61	147.48	129	25	8.66E-02	7.4	
3	0	32.46	8	3	0.55	161.23	157	7	3.34E-03	54.2	
4	0	33.67	27	16	0.53	167.29	164	8	1.18E-02	31.3	
5	0	39.64	38	5	0.58	196.99	192	10	1.68E-02	19.4	
6	0	76.98	6	0	0.58	383.00	380	6	2.62E-03	40.8	

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
I-125	27.34	14	114.10*	7.693E+00	5.514E-01	5.681E-01	71.71
	30.97	-----	20.30	9.289E+00	-----	Line Not Found	-----
	35.49	-----	6.68	9.988E+00	-----	Line Not Found	-----

Nuclide Type: FISSION

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
I-129	29.62	198	56.60*	8.851E+00	1.320E+01	1.320E+01	14.75
	33.59	27	10.04	9.860E+00	9.070E+00	9.070E+00	62.69
	39.58	38	7.51	9.649E+00	1.769E+01	1.769E+01	38.83

Flag: "*" = Keyline

Total number of lines in spectrum 6
Number of unidentified lines 2
Number of lines tentatively identified by NID 4 66.67%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
I-125	59.40D	1.03	5.514E-01	5.681E-01	4.073E-01	71.71	
Total Activity :			5.514E-01	5.681E-01			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
I-129	1.57E+07Y	1.00	1.320E+01	1.320E+01	0.195E+01	14.75	
Total Activity :			1.320E+01	1.320E+01			

Grand Total Activity : 1.375E+01 1.376E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : I1203627440

Page : 3
Acquisition date : 28-SEP-2016 12:52:43

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	32.46	8	3	0.55	161.23	157	7	3.34E-03	****	9.66E+00	
0	76.98	4	0	0.58	383.00	380	6	1.87E-03	****	1.22E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627440.CNF;1  *
* Acquisition date   : 28-SEP-2016 12:52:43 Sensitivity      : 3.000           *
* Detector ID        : XRAY5 Energy tolerance: 1.000         *
* Elapsed live time  : 0 00:38:05.93 Abundance limit : 75.000       *
* Elapsed real time  : 0 00:38:05.98 Half life ratio  : *****          *
* Sample date        : 26-SEP-2016 00:00:00 Nuclide Library : IODINE        *
* Sample ID          : I1203627440 Analyst initials: MJH1         *
* Batch Number       : 1598620 Sample Quantity : 3.5400E+00 GRAM      *
* Recovery           : 1.00000 Carrier Weight  : 0.00000          *
*                               Standard Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 30-AUG-2016 11:41:11 Eff. Geometry   : I129         *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5         *
*****

```

Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
I-125	8.148E-02
I-129	1.438E-01

--- Non-Identified Nuclides ---

Nuclide	^{Lc} (pCi/GRAM)
---------	------------------------------

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]I1203627440.CNF;1 *
* Acquisition date   : 28-SEP-2016 12:52:43 Sensitivity      : 3.000          *
* Detector ID        : XRAY5 Energy tolerance: 1.000          *
* Elapsed live time  : 0 00:38:05.93 Abundance limit : 75.000          *
* Elapsed real time  : 0 00:38:05.98 Half life ratio : *****          *
* Sample date        : 26-SEP-2016 00:00:00 Nuclide Library : IODINE          *
* Sample ID          : I1203627440 Analyst initials: MJH1          *
* Batch Number       : 1598620 Sample Quantity : 3.5400E+00 GRAM          *
*                                     Quantity Err(%) : 2.8249E-03 %          *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*                                     Standard Weight : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date     : 30-AUG-2016 11:41:11 Eff. Geometry   : I129          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF XRAY5 I129.CNF;5          *
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
I-125	5.681E-01	4.125E-01	4.125E-01
I-129	1.320E+01	2.311E+00	2.311E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)
---------	-------------------------------------	-------------------------------	---------------------

```

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

```

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
27.34	0.8133				
29.62	0.8547				
30.97	0.0000				
33.59	7.3846				
35.49	6.6804				
39.58	1.0189				

10/03/16

Gamma Solid

Batch# 1596247

Product: MJWC

Date: 10/03/16

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 10x 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.	✓		see narrative
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.		✓	DER 1563869
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 stated.	✓		
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.	✓		DER 1563869
Batch Data Exception Reports (DER) second reviewed. Disposition verified to be completed.	✓		
Aliquot Correction completed if required.			n/a
Review sample historical results if available (If REM, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

Primary Review Performed By: JS - 10/3/16

Secondary Review Performed By: mmmmmmmmmm 10-3-116

DATA EXCEPTION REPORT

Mo.Day Yr. 03-OCT-16	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process
Instrument Type: GAMMA SPECTROMETER	Test / Method: DOE HASL 300, 4.5.2.3/Ga-01-R	Matrix Type: Solid	Client Code: MJWC
Batch ID: 1596247	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 405235 Application Issues: Sample received out of holding			
Specification and Requirements Exception Description:		DER Disposition:	
Samples 405235 001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 018, 019, 020, and 1203621351 (duplicate) were received outside of the holding period.		Samples were analyzed in a timely manner upon receipt. Reporting results.	

Originator's Name:

Spencer Collins 03-OCT-16

Data Validator/Group Leader:

Michael Hilton 03-OCT-16

Gamma Spec Queue Sheet 1.G-10/3/16

09/16/2016

Batch #:1596247

Analyst: MXR1

First Client Due Date: 10/04/2016

Internal Due Date: 09/30/2016

Gamma LCS Isotope: Mixed Gamma

LCS Code: 1556Expiration Date: 4/1/37Vol: 10 mLInitials: MSPrep Date: 9/12/16Library: SOCLDBalance ID: N/A

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry	Wet/Dry Alignot (1/g/F)	Detector	Sealing Date/Time (if Applicable)
405235001-1	4.1.B.R.1.2	SAMPLE		MJWC001	SOIL	10-DEC-15 14:20:00 <u>RR</u>	CAN	141.921 g	<u>2</u>	<u>9/12/16</u>
405235002-1	4.1.B.R.1.3	SAMPLE		MJWC001	SOIL	10-DEC-15 14:30:00 <u>RR</u>		123.837 g	<u>30</u>	
405235003-1	4.1.B.R.1.4	SAMPLE		MJWC001	SOIL	10-DEC-15 14:35:00 <u>RR</u>		140.486 g	<u>8</u>	
405235004-1	4.1.B.R.7.2	SAMPLE		MJWC001	SOIL	09-DEC-15 14:00:00 <u>RR</u>		148.94 g	<u>9</u>	
405235005-1	4.1.C.R.1.3	SAMPLE		MJWC001	SOIL	10-DEC-15 13:15:00 <u>RR</u>		157.331 g	<u>19</u>	
405235006-1	4.1.C.R.1.4	SAMPLE		MJWC001	SOIL	10-DEC-15 13:25:00 <u>RR</u>		156.342 g	<u>20</u>	
405235007-1	4.1.C.R.2.3	SAMPLE		MJWC001	SOIL	10-DEC-15 13:55:00 <u>RR</u>		152.523 g	<u>32</u>	
405235008-1	4.1.C.R.2.4	SAMPLE		MJWC001	SOIL	10-DEC-15 14:05:00 <u>RR</u>		147.889 g	<u>39</u>	
405235009-1	4.1.D.R.1.3	SAMPLE		MJWC001	SOIL	10-DEC-15 10:30:00 <u>RR</u>		134.381 g	<u>25</u>	
405235010-1	4.1.D.R.1.4	SAMPLE		MJWC001	SOIL	10-DEC-15 10:35:00 <u>RR</u>		141.695 g	<u>28</u>	
405235011-1	4.1.D.R.3.2	SAMPLE		MJWC001	SOIL	09-DEC-15 10:13:00 <u>RR</u>		146.502 g	<u>33</u>	
405235012-1	4.1.D.R.2.4	SAMPLE		MJWC001	SOIL	10-DEC-15 11:25:00 <u>RR</u>		154.64 g	<u>38</u>	
405235013-1	4.2.A.R.2.3	SAMPLE		MJWC001	SOIL	08-DEC-15 11:23:00 <u>RR</u>		144.574 g	<u>41</u>	
405235014-1	4.2.A.R.1.3	SAMPLE		MJWC001	SOIL	08-DEC-15 10:49:00 <u>RR</u>		153.732 g	<u>43</u>	
405235015-1	4.2.A.R.1.4	SAMPLE		MJWC001	SOIL	08-DEC-15 10:56:00 <u>RR</u>		145.075 g	<u>44</u>	
405235016-1	4.2.A.R.2.4	SAMPLE		MJWC001	SOIL	08-DEC-15 11:29:00 <u>RR</u>		163.118 g	<u>12</u>	
405235017-1	4.2.A.R.3.2	SAMPLE		MJWC001	SOIL	02-DEC-15 10:02:00 <u>RR</u>		148.561 g	<u>16</u>	
405235018-1	4.2.A.R.4.2	SAMPLE		MJWC001	SOIL	02-DEC-15 10:19:00 <u>RR</u>		155.815 g	<u>27</u>	
405235019-1	4.2.B.R.2.4	SAMPLE		MJWC001	SOIL	08-DEC-15 14:30:00 <u>RR</u>		175.975 g	<u>11</u>	
405235020-1	4.2.B.R.1.4	SAMPLE		MJWC001	SOIL	08-DEC-15 13:50:00 <u>RR</u>		170.763 g	<u>1</u>	
1203621350-1	MB	MB		QC ACCOUNT	SOIL	<u>9/12/16</u> <u>RR</u>		175.975	<u>31</u>	
1203621351-1	DUP 4.1.B.R.1.2(405235001)	DUP		QC ACCOUNT	SOIL	10-DEC-15 14:20:00 <u>RR</u>		141.585	<u>5</u>	
1203621352-1	LCS	LCS		QC ACCOUNT	SOIL	<u>9/12/16</u> <u>RR</u>		115	<u>6</u>	

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:57:39.80

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235001.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM02.CNF;493
Background date    : 2-OCT-2016 11:00:01.
Sample date       : 10-DEC-2015 14:20:00 Acquisition date : 3-OCT-2016 07:56:53.
Sample ID        : G405235001 Sample quantity   : 1.41921E+02 GRAM
Detector name    : GAM02 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.40 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 3.00000
Batch ID        : 1596247 Detector SN#       :
Matrix Spike ID  : LCS ID                   : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.77*	30	156	0.99	125.05	122	8	8.25E-03	79.1	
2	3	74.90*	134	219	1.19	149.28	146	16	3.72E-02	19.9	2.23E+00
3	3	77.10	214	173	1.25	153.69	146	16	5.95E-02	13.0	
4	0	92.82*	107	266	1.47	185.10	180	12	2.97E-02	34.1	
5	0	112.23*	12	140	1.42	223.88	223	8	3.36E-03	174.4	
6	0	143.48*	10	140	1.27	286.32	283	8	2.92E-03	203.7	
7	0	186.02*	77	141	1.10	371.32	366	11	2.13E-02	34.6	
8	0	208.83	67	162	2.65	416.92	411	13	1.86E-02	41.0	
9	6	238.54*	414	71	1.26	476.29	471	18	1.15E-01	6.1	1.54E+00
10	6	241.94	115	81	2.10	483.07	471	18	3.20E-02	19.7	
11	0	270.65	84	95	3.65	540.43	533	14	2.34E-02	26.8	
12	0	295.25	153	83	1.10	589.60	585	10	4.26E-02	13.7	
13	0	338.34*	102	48	1.41	675.71	671	10	2.83E-02	16.4	
14	0	351.68*	258	72	1.53	702.37	696	12	7.17E-02	9.2	
15	0	382.01	14	39	2.94	762.98	756	9	3.79E-03	79.9	
16	0	464.18	18	44	0.60	927.18	918	13	5.13E-03	78.4	
17	0	510.86*	54	54	2.48	1020.46	1015	15	1.51E-02	37.4	
18	1	546.32	22	18	1.84	1091.33	1088	18	6.19E-03	35.8	2.69E+00
19	1	548.66	18	28	1.67	1096.00	1088	18	5.09E-03	58.2	
20	0	583.19*	145	28	1.34	1165.01	1159	13	4.04E-02	11.5	
21	0	609.14*	183	49	1.35	1216.87	1210	15	5.08E-02	11.4	
22	4	658.58	16	20	1.94	1315.69	1312	17	4.55E-03	56.0	6.25E+00
23	4	661.37	174	30	1.79	1321.26	1312	17	4.82E-02	9.5	
24	0	717.42	13	19	3.43	1433.28	1429	12	3.65E-03	70.7	
25	0	726.67	33	15	1.28	1451.75	1448	8	9.04E-03	27.5	
26	0	755.24	14	25	1.36	1508.86	1502	10	3.91E-03	71.6	
27	0	769.00	24	40	0.88	1536.36	1527	12	6.74E-03	55.5	
28	0	795.57	28	17	1.37	1589.45	1582	15	7.65E-03	41.3	
29	0	808.56	14	20	1.21	1615.42	1608	11	3.75E-03	71.6	
30	0	812.22	6	12	1.07	1622.73	1618	9	1.80E-03	101.7	
31	0	911.29*	79	11	1.64	1820.74	1815	11	2.20E-02	14.4	
32	1	964.76*	26	1	2.17	1927.61	1922	21	7.22E-03	27.6	6.57E-01
33	1	969.00*	49	5	2.17	1936.08	1922	21	1.36E-02	18.2	
34	0	1023.46	12	15	4.60	2044.92	2036	15	3.33E-03	76.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1099.87	16	18	0.80	2197.65	2188	14	4.35E-03	66.3	
36	0	1120.14*	42	12	1.94	2238.17	2233	15	1.17E-02	24.3	
37	0	1130.15	18	6	3.23	2258.17	2252	12	5.00E-03	36.0	
38	0	1154.59	26	10	2.10	2307.01	2300	14	7.16E-03	33.1	
39	2	1186.65	15	8	2.55	2371.09	2361	26	4.09E-03	62.7	1.04E+00
40	2	1191.84	14	17	2.55	2381.47	2361	26	4.01E-03	52.9	
41	0	1195.72	9	7	1.37	2389.22	2386	7	2.50E-03	59.1	
42	0	1222.52	15	8	1.55	2442.79	2438	10	4.24E-03	42.3	
43	0	1228.78	14	5	2.06	2455.30	2451	9	3.96E-03	37.8	
44	0	1252.82	23	3	3.01	2503.34	2498	12	6.31E-03	26.0	
45	0	1282.31	24	4	5.42	2562.30	2555	16	6.59E-03	28.0	
46	0	1325.72	13	0	2.73	2649.08	2644	12	3.61E-03	27.7	
47	0	1378.42*	14	7	1.11	2754.41	2750	10	3.91E-03	47.3	
48	0	1460.66*	375	8	1.79	2918.80	2910	15	1.04E-01	5.5	
49	0	1729.65*	7	2	0.69	3456.50	3450	11	1.90E-03	63.9	
50	0	1764.48*	33	0	2.63	3526.12	3520	13	9.15E-03	19.8	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235001.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 10-DEC-2015 14:20:00 Acquisition date : 3-OCT-2016 07:56:53
Sample ID : G405235001 Sample quantity : 141.92 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA2 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.40 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.059E+00	1.685E+01	1.685E+01	10.98	OK
CO-58	810.76	99.45*	1.711E+00	2.038E-02	3.751E-01	203.37	OK
BA-137M	661.66	89.90*	2.016E+00	5.224E-01	5.323E-01	18.94	OK
CS-137	661.66	85.10*	2.016E+00	5.519E-01	5.624E-01	18.94	OK
TL-208	277.37	6.60	4.173E+00	----- Line Not Found	-----	-----	Absent
	583.19	85.00*	2.233E+00	4.222E-01	4.222E-01	23.00	OK
	860.56	12.50	1.634E+00	----- Line Not Found	-----	-----	Absent
PB-212	74.82	10.28	3.783E+00	1.545E+00	1.545E+00	59.01	OK
	77.11	17.10	4.000E+00	2.030E+00	2.030E+00	25.96	OK
	238.63	43.60*	4.702E+00	1.200E+00	1.200E+00	12.25	OK
	300.09	3.30	3.910E+00	----- Line Not Found	-----	-----	Absent
BI-214	609.32	45.49*	2.155E+00	1.025E+00	1.026E+00	22.80	OK
	1120.29	14.92	1.323E+00	1.112E+00	1.112E+00	48.51	OK
	1764.49	15.30	8.931E-01	1.201E+00	1.202E+00	39.68	OK
PB-214	74.82	5.80	3.775E+00	----- Line Not Found	-----	-----	<<INT Reject
	77.11	9.70	4.000E+00	3.579E+00	3.580E+00	25.96	OK
	87.09	3.41	4.837E+00	----- Line Not Found	-----	-----	Absent
	242.00	7.25	4.651E+00	----- Line Not Found	-----	-----	<<INT Reject
	295.22	18.42	3.963E+00	1.226E+00	1.226E+00	27.45	OK
	351.93	35.60*	3.418E+00	1.221E+00	1.221E+00	18.38	OK
RN-222	609.32	45.49*	2.155E+00	1.025E+00	1.026E+00	22.80	OK
	1120.29	14.92	1.323E+00	1.112E+00	1.112E+00	48.51	OK
	1764.49	15.30	8.931E-01	1.201E+00	1.202E+00	39.68	OK
RA-224	240.99	4.10*	4.652E+00	1.414E+00	1.414E+00	108.39	OK
RA-226	609.32	45.49*	2.155E+00	1.025E+00	1.026E+00	22.80	OK
	1120.29	14.92	1.323E+00	1.112E+00	1.112E+00	48.51	OK
	1764.49	15.30	8.931E-01	1.201E+00	1.202E+00	39.68	OK
AC-228	105.21	1.10	5.776E+00	----- Line Not Found	-----	-----	Absent
	338.32	11.27	3.533E+00	1.479E+00	1.479E+00	32.75	OK
	794.95	4.25	1.739E+00	1.999E+00	1.999E+00	82.62	OK
	835.71	1.61	1.672E+00	----- Line Not Found	-----	-----	Absent
	911.20	25.80*	1.561E+00	1.041E+00	1.041E+00	28.80	OK
	968.97	15.80	1.487E+00	1.100E+00	1.100E+00	36.32	OK
RA-228	105.21	1.10	5.776E+00	----- Line Not Found	-----	-----	Absent
	338.32	11.27	3.533E+00	1.479E+00	1.479E+00	32.75	OK
	794.95	4.25	1.739E+00	1.999E+00	1.999E+00	82.62	OK
	835.71	1.61	1.672E+00	----- Line Not Found	-----	-----	Absent
	911.20	25.80*	1.561E+00	1.041E+00	1.041E+00	28.80	OK
	968.97	15.80	1.487E+00	1.100E+00	1.100E+00	36.32	OK
TH-228	74.82	10.28	3.783E+00	1.545E+00	1.545E+00	59.01	OK
	77.11	17.10	4.000E+00	2.030E+00	2.030E+00	25.96	OK
	238.63	43.60*	4.702E+00	1.200E+00	1.200E+00	12.25	OK
	300.09	3.30	3.910E+00	----- Line Not Found	-----	-----	Absent
TH-230	609.32	45.49*	2.155E+00	1.025E+00	1.025E+00	22.80	OK
	1120.29	14.92	1.323E+00	1.112E+00	1.112E+00	48.51	OK
	1764.49	15.30	8.931E-01	1.201E+00	1.201E+00	39.68	OK
TH-232	105.21	1.10	5.776E+00	----- Line Not Found	-----	-----	Absent
	338.32	11.27	3.533E+00	1.479E+00	1.479E+00	32.75	OK
	835.71	1.61	1.672E+00	----- Line Not Found	-----	-----	Absent

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	911.20	25.80*	1.561E+00	1.041E+00	1.041E+00	28.80	OK
	968.97	15.80	1.487E+00	1.100E+00	1.100E+00	36.32	OK
TH-234	63.29	3.70*	2.417E+00	2.186E+00	2.186E+00	158.12	OK
	92.59	4.23	5.211E+00	3.099E+00	3.099E+00	68.16	OK
U-234	609.32	45.49*	2.155E+00	1.025E+00	1.025E+00	22.80	OK
	1120.29	14.92	1.323E+00	1.112E+00	1.112E+00	48.51	OK
	1764.49	15.30	8.931E-01	1.201E+00	1.201E+00	39.68	OK
U-235	89.96	3.47	5.033E+00	----- Line	Not Found	-----	Absent
	93.35	5.60	5.211E+00	2.341E+00	2.341E+00	68.16	OK
	143.76	10.96*	6.129E+00	9.669E-02	9.669E-02	407.43	OK
	163.33	5.08	5.908E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	5.553E+00	1.464E-01	1.464E-01	69.13	OK
	205.31	5.01	5.230E+00	----- Line	Not Found	-----	Absent
U-238	63.29	3.70*	2.417E+00	2.186E+00	2.186E+00	158.12	OK
	92.59	4.23	5.211E+00	3.099E+00	3.099E+00	68.16	OK
AM-243	43.53	5.90	2.878E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.783E+00	2.363E-01	2.364E-01	59.01	OK
ANH-511	511.00	100.00*	2.491E+00	1.218E-01	1.218E-01	74.84	OK

Flag: "*" = Keyline

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235001.CNF;1
* Acquisition date   : 3-OCT-2016 07:56:53 Sensitivity      : 3.000
* Detector ID        : GAM02 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit: 75.000
* Elapsed real time  : 0 01:00:00.40 Half life ratio: *****
* Sample date        : 10-DEC-2015 14:20:00 Analyst initials: MXR1
* Sample ID          : G405235001 Sample Quantity: 1.4192E+02 GRAM
* Batch Number       : 1596247 Wet Weight: 0.00000
* Wet wt corr        : 1.00000 Dry Weight: 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 22-AUG-2016 09:02:05 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM02 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.685E+01	1.814E+00	5.916E-01
CO-58	3.751E-01	7.476E-01	1.576E-01
BA-137M	5.323E-01	9.881E-02	8.448E-02
CS-137	5.624E-01	1.044E-01	8.924E-02
TL-208	4.222E-01	9.518E-02	7.254E-02
PB-212	1.200E+00	1.441E-01	1.072E-01
BI-214	1.026E+00	2.292E-01	1.350E-01
PB-214	1.221E+00	2.199E-01	1.460E-01
RN-222	1.026E+00	2.292E-01	1.350E-01
RA-224	1.414E+00	1.502E+00	1.149E+00
RA-226	1.026E+00	2.292E-01	1.350E-01
AC-228	1.041E+00	2.939E-01	2.560E-01
RA-228	1.041E+00	2.939E-01	2.560E-01
TH-228	1.200E+00	1.441E-01	1.072E-01
TH-230	1.025E+00	2.291E-01	1.350E-01
TH-232	1.041E+00	2.939E-01	2.560E-01
TH-234	2.186E+00	3.388E+00	2.955E+00
U-234	1.025E+00	2.291E-01	1.350E-01
U-235	9.669E-02	3.860E-01	3.806E-01
U-238	2.186E+00	3.388E+00	2.955E+00
AM-243	2.364E-01	1.367E-01	1.249E-01
ANH-511	1.218E-01	8.937E-02	6.502E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.033E+01	1.586E+01	2.726E+01	NOT IDENT.
NA-22	1.975E-02	5.169E-02	1.055E-01	NOT IDENT.
NA-24	0.000E+00	1.349E+41	0.000E+00	SHORT HLIF
AL-26	-1.136E-02	2.855E-02	5.642E-02	FAIL ABUN
SC-46	-2.504E-01	4.309E-01	7.340E-01	FAIL ABUN
V-48	0.000E+00	1.594E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.612E+02	0.000E+00	SHORT HLIF
MN-54	1.886E-02	7.391E-02	1.496E-01	NOT IDENT.

CO-56	-3.947E-01	5.563E-01	9.794E-01	NOT IDENT.
MN-56	0.000E+00	1.410E+41	0.000E+00	SHORT HLIF
CO-57	4.240E-02	5.649E-02	1.081E-01	NOT IDENT.
FE-59	1.111E+01	1.443E+01	1.734E+01	FAIL ABUN
CO-60	-3.648E-02	5.042E-02	7.292E-02	NOT IDENT.
ZN-65	-4.372E-03	2.487E-01	4.150E-01	NOT IDENT.
GE-68	-5.512E-01	2.709E+00	5.102E+00	NOT IDENT.
AS-73	8.307E+00	1.268E+01	2.537E+01	NOT IDENT.
AS-74	0.000E+00	7.478E+03	0.000E+00	SHORT HLIF
SE-75	-1.764E-01	2.576E-01	4.087E-01	NOT IDENT.
BR-77	0.000E+00	1.407E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	7.141E+02	0.000E+00	SHORT HLIF
RB-83	2.717E-01	7.858E-01	1.531E+00	NOT IDENT.
KR-85	1.558E+00	9.643E+00	1.629E+01	NOT IDENT.
SR-85	1.601E-01	9.966E-01	1.683E+00	NOT IDENT.
RB-86	0.000E+00	3.140E+04	0.000E+00	SHORT HLIF
Y-88	4.653E-02	2.202E-01	5.156E-01	NOT IDENT.
Y-91	-1.329E+02	6.400E+02	1.180E+03	NOT IDENT.
NB-94	-1.070E-02	3.508E-02	6.669E-02	NOT IDENT.
NB-95	-2.388E-01	1.250E+00	2.107E+00	NOT IDENT.
NB-95M	-4.962E-01	2.845E+00	4.826E+00	NOT IDENT.
ZR-95	1.934E+00	2.712E+00	3.715E+00	FAIL ABUN
NB-97	0.000E+00	1.097E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.179E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.572E+41	0.000E+00	SHORT HLIF
RH-101	-1.953E-02	4.321E-02	7.469E-02	NOT IDENT.
RH-102	1.531E-02	7.310E-02	1.392E-01	NOT IDENT.
RU-103	5.366E+00	5.231E+00	1.151E+01	FAIL ABUN
RH-106	-2.953E-01	6.393E-01	1.102E+00	NOT IDENT.
RU-106	-2.953E-01	6.393E-01	1.102E+00	NOT IDENT.
AG-108M	3.360E-02	3.703E-02	7.512E-02	NOT IDENT.
CD-109	2.982E+00	1.609E+00	3.067E+00	NOT IDENT.
AG-110M	5.130E-02	1.239E-01	2.550E-01	FAIL ABUN
SN-113	1.139E-01	2.743E-01	5.386E-01	NOT IDENT.
CD-115	0.000E+00	2.020E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.017E+05	0.000E+00	SHORT HLIF
TE-123M	5.067E-02	1.533E-01	3.055E-01	NOT IDENT.
SB-124	-6.571E-01	1.707E+00	3.429E+00	NOT IDENT.
SB-125	-4.868E-02	1.220E-01	2.192E-01	FAIL ABUN
TE-125M	8.935E+01	3.109E+02	5.793E+02	NOT IDENT.
I-126	0.000E+00	9.782E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.382E+06	0.000E+00	SHORT HLIF
SN-126	1.453E-01	1.028E-01	2.016E-01	NOT IDENT.
SB-127	0.000E+00	1.820E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.953E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.181E+26	0.000E+00	SHORT HLIF
BA-133	2.367E-02	4.869E-02	8.874E-02	NOT IDENT.
I-133	0.000E+00	7.179E+40	0.000E+00	SHORT HLIF
CS-134	1.306E-01	1.058E-01	1.338E-01	FAIL ABUN
CS-135	2.299E-02	1.592E-01	3.083E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.992E+05	0.000E+00	SHORT HLIF
CE-139	-2.036E-03	1.259E-01	2.457E-01	NOT IDENT.
BA-140	0.000E+00	1.537E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	5.300E+05	0.000E+00	SHORT HLIF
CE-141	-5.740E+00	3.088E+01	4.955E+01	NOT IDENT.
CE-143	0.000E+00	1.042E+41	0.000E+00	SHORT HLIF
CE-144	-4.306E-02	3.893E-01	6.950E-01	NOT IDENT.
PM-144	3.248E-02	6.778E-02	1.395E-01	NOT IDENT.
PR-144	2.802E+00	5.879E+00	1.210E+01	NOT IDENT.
PM-146	1.939E-02	5.429E-02	1.056E-01	NOT IDENT.
ND-147	0.000E+00	3.661E+07	0.000E+00	SHORT HLIF
PM-147	1.318E+02	9.980E+02	1.821E+03	NOT IDENT.
PM-149	0.000E+00	2.721E+40	0.000E+00	SHORT HLIF
EU-150	-4.283E-03	3.377E-02	5.634E-02	FAIL ABUN
EU-152	5.747E-03	1.128E-01	2.144E-01	FAIL ABUN
GD-153	-9.845E-02	2.504E-01	4.109E-01	NOT IDENT.
EU-154	4.574E-02	1.263E-01	2.570E-01	NOT IDENT.
EU-155	7.265E-02	1.258E-01	2.402E-01	NOT IDENT.
TB-160	-1.448E+00	1.972E+00	3.443E+00	FAIL ABUN
HO-166M	2.139E-02	6.676E-02	1.331E-01	NOT IDENT.
TM-171	-2.711E+00	3.236E+01	6.126E+01	NOT IDENT.
HF-172	-1.167E-02	2.786E-01	4.995E-01	FAIL ABUN
LU-172	-3.326E-02	1.334E-01	2.099E-01	FAIL ABUN
LU-176	-9.986E-03	2.611E-02	4.822E-02	NOT IDENT.
HF-181	2.255E-01	5.453E+00	1.019E+01	NOT IDENT.

TA-182	1.438E+00	1.193E+00	2.312E+00	FAIL ABUN
RE-183	-2.638E+00	4.377E+00	7.887E+00	NOT IDENT.
RE-184	2.943E+01	3.645E+01	7.818E+01	NOT IDENT.
W-188	-3.587E+01	1.423E+02	2.362E+02	FAIL ABUN
IR-192	-4.362E-01	5.188E-01	9.087E-01	FAIL ABUN
HG-203	4.209E-01	2.751E+00	5.309E+00	NOT IDENT.
BI-207	-2.553E-02	5.978E-02	1.077E-01	FAIL ABUN
PB-210	-1.184E+00	5.916E+00	1.104E+01	NOT IDENT.
BI-211	0.000E+00	6.058E-01	9.921E-01	FAIL ABUN
PB-211	-3.378E-02	8.026E-01	1.503E+00	NOT IDENT.
BI-212	1.412E+00	7.607E-01	1.461E+00	FAIL ABUN
RN-219	-1.153E-01	4.514E-01	8.272E-01	FAIL ABUN
RA-223	-2.656E-01	6.892E-01	1.262E+00	FAIL ABUN
AC-227	1.042E-02	2.582E-01	4.975E-01	NOT IDENT.
TH-227	1.042E-02	2.582E-01	4.975E-01	NOT IDENT.
TH-229	1.264E-01	5.363E-01	1.054E+00	NOT IDENT.
PA-231	5.744E-02	5.328E-01	1.019E+00	NOT IDENT.
TH-231	-2.656E-01	6.892E-01	1.262E+00	FAIL ABUN
PA-233	-8.485E-03	6.648E-02	1.255E-01	NOT IDENT.
PA-234	-1.485E-01	3.838E-01	6.989E-01	FAIL ABUN
PA-234M	-1.313E+00	5.149E+00	1.012E+01	NOT IDENT.
NP-237	-8.485E-03	6.648E-02	1.255E-01	NOT IDENT.
NP-238	0.000E+00	1.204E+41	0.000E+00	SHORT HLIF
NP-239	3.933E-01	3.001E-01	5.656E-01	NOT IDENT.
PU-239	2.344E+01	3.894E+02	7.001E+02	NOT IDENT.
AM-241	2.139E-01	2.158E-01	4.059E-01	NOT IDENT.
CM-243	-1.051E-02	1.259E-01	2.275E-01	NOT IDENT.
BK-247	-6.994E-02	8.734E-02	1.363E-01	NOT IDENT.
CM-247	-3.403E-02	4.050E-02	6.917E-02	NOT IDENT.
CF-249	3.059E-03	4.283E-02	8.169E-02	NOT IDENT.
CF-251	-1.555E-02	1.229E-01	2.383E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	360	10.66*	1.059E+00	1.685E+01	1.685E+01	10.98
CO-58	810.76	7	99.45*	1.711E+00	2.038E-02	3.751E-01	203.37
BA-137M	661.66	179	89.90*	2.016E+00	5.224E-01	5.323E-01	18.94
CS-137	661.66	179	85.10*	2.016E+00	5.519E-01	5.624E-01	18.94
TL-208	277.37	-----	6.60	4.173E+00	-----	Line Not Found	-----
	583.19	151	85.00*	2.233E+00	4.222E-01	4.222E-01	23.00
	860.56	-----	12.50	1.634E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.574E+00	-----	Line Not Found	-----
	351.06	281	12.92*	3.418E+00	3.364E+00	3.364E+00	18.38
PB-212	74.82	164	10.28	3.783E+00	2.237E+00	2.237E+00	39.87
	77.11	262	17.10	4.000E+00	2.030E+00	2.030E+00	25.96
	238.63	465	43.60*	4.702E+00	1.200E+00	1.200E+00	12.25
	300.09	-----	3.30	3.910E+00	-----	Line Not Found	-----
BI-214	609.32	190	45.49*	2.155E+00	1.025E+00	1.026E+00	22.80
	1120.29	41	14.92	1.323E+00	1.112E+00	1.112E+00	48.51
	1764.49	31	15.30	8.931E-01	1.201E+00	1.202E+00	39.68
PB-214	74.82	164	5.80	3.783E+00	3.964E+00	3.966E+00	39.87
	77.11	262	9.70	4.000E+00	3.579E+00	3.580E+00	25.96
	87.09	-----	3.41	4.837E+00	-----	Line Not Found	-----
	242.00	129	7.25	4.652E+00	2.026E+00	2.027E+00	39.44
	295.22	169	18.42	3.963E+00	1.226E+00	1.226E+00	27.45
	351.93	281	35.60*	3.418E+00	1.221E+00	1.221E+00	18.38
RN-222	609.32	190	45.49*	2.155E+00	1.025E+00	1.026E+00	22.80
	1120.29	41	14.92	1.323E+00	1.112E+00	1.112E+00	48.51
	1764.49	31	15.30	8.931E-01	1.201E+00	1.202E+00	39.68
RA-224	240.99	129	4.10*	4.652E+00	3.582E+00	3.582E+00	39.44
RA-226	609.32	190	45.49*	2.155E+00	1.025E+00	1.026E+00	22.80
	1120.29	41	14.92	1.323E+00	1.112E+00	1.112E+00	48.51
	1764.49	31	15.30	8.931E-01	1.201E+00	1.202E+00	39.68
AC-228	105.21	-----	1.10	5.776E+00	-----	Line Not Found	-----
	338.32	111	11.27	3.533E+00	1.479E+00	1.479E+00	32.75
	794.95	28	4.25	1.739E+00	1.999E+00	1.999E+00	82.62
	835.71	-----	1.61	1.672E+00	-----	Line Not Found	-----
	911.20	79	25.80*	1.561E+00	1.041E+00	1.041E+00	28.80
	968.97	49	15.80	1.487E+00	1.100E+00	1.100E+00	36.32
RA-228	105.21	-----	1.10	5.776E+00	-----	Line Not Found	-----
	338.32	111	11.27	3.533E+00	1.479E+00	1.479E+00	32.75
	794.95	28	4.25	1.739E+00	1.999E+00	1.999E+00	82.62
	835.71	-----	1.61	1.672E+00	-----	Line Not Found	-----
	911.20	79	25.80*	1.561E+00	1.041E+00	1.041E+00	28.80
	968.97	49	15.80	1.487E+00	1.100E+00	1.100E+00	36.32
TH-228	74.82	164	10.28	3.783E+00	2.237E+00	2.237E+00	39.87
	77.11	262	17.10	4.000E+00	2.030E+00	2.030E+00	25.96
	238.63	465	43.60*	4.702E+00	1.200E+00	1.200E+00	12.25
	300.09	-----	3.30	3.910E+00	-----	Line Not Found	-----
TH-230	609.32	190	45.49*	2.155E+00	1.025E+00	1.025E+00	22.80
	1120.29	41	14.92	1.323E+00	1.112E+00	1.112E+00	48.51

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-232	1764.49	31	15.30	8.931E-01	1.201E+00	1.201E+00	39.68
	105.21	-----	1.10	5.776E+00	-----	Line Not Found	-----
	338.32	111	11.27	3.533E+00	1.479E+00	1.479E+00	32.75
	835.71	-----	1.61	1.672E+00	-----	Line Not Found	-----
TH-234	911.20	79	25.80*	1.561E+00	1.041E+00	1.041E+00	28.80
	968.97	49	15.80	1.487E+00	1.100E+00	1.100E+00	36.32
	63.29	37	3.70*	2.417E+00	2.186E+00	2.186E+00	158.12
	92.59	129	4.23	5.211E+00	3.099E+00	3.099E+00	68.16
U-234	609.32	190	45.49*	2.155E+00	1.025E+00	1.025E+00	22.80
	1120.29	41	14.92	1.323E+00	1.112E+00	1.112E+00	48.51
	1764.49	31	15.30	8.931E-01	1.201E+00	1.201E+00	39.68
	89.96	-----	3.47	5.033E+00	-----	Line Not Found	-----
U-235	93.35	129	5.60	5.211E+00	2.341E+00	2.341E+00	68.16
	143.76	12	10.96*	6.129E+00	9.669E-02	9.669E-02	407.43
	163.33	-----	5.08	5.908E+00	-----	Line Not Found	-----
	185.72	88	57.20	5.553E+00	1.464E-01	1.464E-01	69.13
U-238	205.31	-----	5.01	5.230E+00	-----	Line Not Found	-----
	63.29	37	3.70*	2.417E+00	2.186E+00	2.186E+00	158.12
	92.59	129	4.23	5.211E+00	3.099E+00	3.099E+00	68.16
	43.53	-----	5.90	2.878E-01	-----	Line Not Found	-----
AM-243	74.66	164	67.20*	3.783E+00	3.421E-01	3.422E-01	39.87
ANH-511	511.00	57	100.00*	2.491E+00	1.218E-01	1.218E-01	74.84

Flag: "*" = Keyline

Total number of lines in spectrum 50
Number of unidentified lines 16
Number of lines tentatively identified by NID 34 68.00%

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	1.685E+01	1.685E+01	0.185E+01	10.98	
CO-58	70.86D	18.4	2.038E-02	3.751E-01	7.629E-01	203.37	
BA-137M	30.08Y	1.02	5.224E-01	5.323E-01	1.008E-01	18.94	
CS-137	30.08Y	1.02	5.519E-01	5.624E-01	1.065E-01	18.94	
TL-208	1.41E+10Y	1.00	4.222E-01	4.222E-01	0.971E-01	23.00	
BI-211	7.04E+08Y	1.00	3.364E+00	3.364E+00	0.618E+00	18.38	
PB-212	1.41E+10Y	1.00	1.200E+00	1.200E+00	0.147E+00	12.25	
BI-214	1600.00Y	1.00	1.025E+00	1.026E+00	0.234E+00	22.80	
PB-214	1600.00Y	1.00	1.221E+00	1.221E+00	0.224E+00	18.38	
RN-222	1600.00Y	1.00	1.025E+00	1.026E+00	0.234E+00	22.80	
RA-224	1.41E+10Y	1.00	3.582E+00	3.582E+00	1.413E+00	39.44	
RA-226	1600.00Y	1.00	1.025E+00	1.026E+00	0.234E+00	22.80	
AC-228	1.41E+10Y	1.00	1.041E+00	1.041E+00	0.300E+00	28.80	
RA-228	1.41E+10Y	1.00	1.041E+00	1.041E+00	0.300E+00	28.80	
TH-228	1.41E+10Y	1.00	1.200E+00	1.200E+00	0.147E+00	12.25	
TH-230	7.54E+04Y	1.00	1.025E+00	1.025E+00	0.234E+00	22.80	
TH-232	1.41E+10Y	1.00	1.041E+00	1.041E+00	0.300E+00	28.80	
TH-234	4.47E+09Y	1.00	2.186E+00	2.186E+00	3.457E+00	158.12	
U-234	2.45E+05Y	1.00	1.025E+00	1.025E+00	0.234E+00	22.80	
U-235	7.04E+08Y	1.00	9.669E-02	9.669E-02	39.39E-02	407.43	
U-238	4.47E+09Y	1.00	2.186E+00	2.186E+00	3.457E+00	158.12	
AM-243	7370.00Y	1.00	3.421E-01	3.422E-01	1.364E-01	39.87	
ANH-511	1.00E+09Y	1.00	1.218E-01	1.218E-01	0.912E-01	74.84	

Total Activity : 4.212E+01 4.250E+01

Grand Total Activity : 4.212E+01 4.250E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	112.23	14	167	1.42	223.88	223	8	3.36E-03	****	5.97E+00	T
0	208.83	76	184	2.65	416.92	411	13	1.86E-02	82.0	5.17E+00	
0	270.65	94	105	3.65	540.43	533	14	2.34E-02	53.6	4.26E+00	T
0	382.01	15	43	2.94	762.98	756	9	3.79E-03	****	3.19E+00	
0	464.18	20	46	0.60	927.18	918	13	5.13E-03	****	2.70E+00	T
1	546.32	23	19	1.84	1091.33	1088	18	6.19E-03	71.6	2.36E+00	T
1	548.66	19	29	1.67	1096.00	1088	18	5.09E-03	****	2.35E+00	
4	658.58	17	21	1.94	1315.69	1312	17	4.55E-03	****	2.02E+00	T
0	717.42	13	19	3.43	1433.28	1429	12	3.65E-03	****	1.89E+00	
0	726.67	33	16	1.28	1451.75	1448	8	9.04E-03	55.0	1.87E+00	T
0	755.24	14	25	1.36	1508.86	1502	10	3.91E-03	****	1.81E+00	T
0	769.00	25	40	0.88	1536.36	1527	12	6.74E-03	****	1.79E+00	
0	808.56	14	20	1.21	1615.42	1608	11	3.75E-03	****	1.72E+00	T
1	964.76	26	1	2.17	1927.61	1922	21	7.22E-03	55.2	1.49E+00	T
0	1023.46	12	15	4.60	2044.92	2036	15	3.33E-03	****	1.42E+00	
0	1099.87	15	18	0.80	2197.65	2188	14	4.35E-03	****	1.34E+00	T
0	1130.15	18	6	3.23	2258.17	2252	12	5.00E-03	72.0	1.31E+00	T
0	1154.59	25	10	2.10	2307.01	2300	14	7.16E-03	66.1	1.29E+00	
2	1186.65	14	8	2.55	2371.09	2361	26	4.09E-03	****	1.26E+00	
2	1191.84	14	17	2.55	2381.47	2361	26	4.01E-03	****	1.26E+00	
0	1195.72	9	7	1.37	2389.22	2386	7	2.50E-03	****	1.25E+00	
0	1222.52	15	8	1.55	2442.79	2438	10	4.24E-03	84.7	1.23E+00	T
0	1228.78	14	5	2.06	2455.30	2451	9	3.96E-03	75.7	1.23E+00	
0	1252.82	22	3	3.01	2503.34	2498	12	6.31E-03	52.1	1.21E+00	
0	1282.31	23	4	5.42	2562.30	2555	16	6.59E-03	55.9	1.18E+00	
0	1325.72	13	0	2.73	2649.08	2644	12	3.61E-03	55.5	1.15E+00	
0	1378.42	14	7	1.11	2754.41	2750	10	3.91E-03	94.7	1.11E+00	
0	1729.65	6	2	0.69	3456.50	3450	11	1.90E-03	****	9.10E-01	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235001.CNF;1
* Acquisition date   : 3-OCT-2016 07:56:53 Sensitivity      : 3.000
* Detector ID        : GAM02 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.40 Half life ratio : *****
* Sample date        : 10-DEC-2015 14:20:00 Nuclide Library : SOLID
* Sample ID          : G405235001 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.4192E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 22-AUG-2016 09:02:05 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM02 CAN.CNF;15
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.322E-01
CO-58	0.000E+00
BA-137M	3.814E-02
CS-137	4.029E-02
TL-208	3.242E-02
PB-212	4.997E-02
BI-214	6.005E-02
PB-214	6.692E-02
RN-222	6.005E-02
RA-224	5.359E-01
RA-226	6.005E-02
AC-228	1.100E-01
RA-228	1.100E-01
TH-228	4.997E-02
TH-230	6.003E-02
TH-232	1.100E-01
TH-234	1.395E+00
U-234	6.003E-02
U-235	1.791E-01
U-238	1.395E+00
AM-243	5.947E-02
ANH-511	2.957E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.234E+01	NOT IDENT.
NA-22	4.521E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.999E-02	FAIL ABUN
SC-46	3.135E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	6.639E-02	NOT IDENT.
CO-56	4.262E-01	NOT IDENT.

MN-56	0.000E+00	SHORT HLIF
CO-57	5.099E-02	NOT IDENT.
FE-59	7.686E+00	FAIL ABUN
CO-60	2.947E-02	NOT IDENT.
ZN-65	1.825E-01	NOT IDENT.
GE-68	2.199E+00	NOT IDENT.
AS-73	1.192E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.881E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.927E-01	NOT IDENT.
KR-85	7.428E+00	NOT IDENT.
SR-85	7.675E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.997E-01	NOT IDENT.
Y-91	5.143E+02	NOT IDENT.
NB-94	2.955E-02	NOT IDENT.
NB-95	9.515E-01	NOT IDENT.
NB-95M	2.254E+00	NOT IDENT.
ZR-95	1.672E+00	FAIL ABUN
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.522E-02	NOT IDENT.
RH-102	6.238E-02	NOT IDENT.
RU-103	5.151E+00	FAIL ABUN
RH-106	4.904E-01	NOT IDENT.
RU-106	4.904E-01	NOT IDENT.
AG-108M	3.472E-02	NOT IDENT.
CD-109	1.469E+00	NOT IDENT.
AG-110M	1.133E-01	FAIL ABUN
SN-113	2.474E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.443E-01	NOT IDENT.
SB-124	1.215E+00	NOT IDENT.
SB-125	9.914E-02	FAIL ABUN
TE-125M	2.724E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SN-126	9.664E-02	NOT IDENT.
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	4.066E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	6.047E-02	FAIL ABUN
CS-135	1.433E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.157E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.333E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.248E-01	NOT IDENT.
PM-144	6.308E-02	NOT IDENT.
PR-144	5.470E+00	NOT IDENT.
PM-146	4.823E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	8.571E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.599E-02	FAIL ABUN
EU-152	9.888E-02	FAIL ABUN
GD-153	1.942E-01	NOT IDENT.
EU-154	1.100E-01	NOT IDENT.
EU-155	1.131E-01	NOT IDENT.
TB-160	1.461E+00	FAIL ABUN
HO-166M	5.947E-02	NOT IDENT.
TM-171	2.873E+01	NOT IDENT.
HF-172	2.351E-01	FAIL ABUN
LU-172	9.346E-02	FAIL ABUN
LU-176	2.205E-02	NOT IDENT.
HF-181	4.643E+00	NOT IDENT.
TA-182	1.025E+00	FAIL ABUN

RE-183	3.711E+00	NOT IDENT.
RE-184	3.498E+01	NOT IDENT.
W-188	1.093E+02	FAIL ABUN
IR-192	4.152E-01	FAIL ABUN
HG-203	2.471E+00	NOT IDENT.
BI-207	4.672E-02	FAIL ABUN
PB-210	5.173E+00	NOT IDENT.
BI-211	4.796E-01	FAIL ABUN
PB-211	6.871E-01	NOT IDENT.
BI-212	6.722E-01	FAIL ABUN
RN-219	3.771E-01	FAIL ABUN
RA-223	5.807E-01	FAIL ABUN
AC-227	2.312E-01	NOT IDENT.
TH-227	2.312E-01	NOT IDENT.
TH-229	4.961E-01	NOT IDENT.
PA-231	4.740E-01	NOT IDENT.
TH-231	5.807E-01	FAIL ABUN
PA-233	5.767E-02	NOT IDENT.
PA-234	3.097E-01	FAIL ABUN
PA-234M	4.465E+00	NOT IDENT.
NP-237	5.767E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
NP-239	2.671E-01	NOT IDENT.
PU-239	3.308E+02	NOT IDENT.
AM-241	1.924E-01	NOT IDENT.
CM-243	1.073E-01	NOT IDENT.
BK-247	6.243E-02	NOT IDENT.
CM-247	3.123E-02	NOT IDENT.
CF-249	3.729E-02	NOT IDENT.
CF-251	1.115E-01	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                                     DETECTOR AND SAMPLE DATA                *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235001.CNF;1  *
* Acquisition date   : 3-OCT-2016 07:56:53 Sensitivity      : 3.000          *
* Detector ID        : GAM02 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 01:00:00.40 Half life ratio : *****        *
* Sample date        : 10-DEC-2015 14:20:00 Nuclide Library : SOLID        *
* Sample ID          : G405235001 Analyst initials: MXR1          *
* Batch Number       : 1596247 Sample Quantity : 1.4192E+02 GRAM        *
*                                     Quantity Err(%) : 1.4092E-03 %        *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000          *
*                                     Dry Weight : 0.00000          *
*****
*
*                                     CALIBRATION INFORMATION                  *
*
* Eff. Cal. date     : 22-AUG-2016 09:02:05 Eff. Geometry : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM02 CAN.CNF;15        *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.685E+01	2.017E+00	2.017E+00
CO-58	3.751E-01	7.478E-01	7.478E-01
BA-137M	5.323E-01	1.014E-01	1.014E-01
CS-137	5.624E-01	1.071E-01	1.071E-01
TL-208	4.222E-01	9.686E-02	9.686E-02
PB-212	1.200E+00	1.576E-01	1.576E-01
BI-214	1.026E+00	2.334E-01	2.334E-01
PB-214	1.221E+00	2.258E-01	2.258E-01
RN-222	1.026E+00	2.334E-01	2.334E-01
RA-224	1.414E+00	1.511E+00	1.511E+00
RA-226	1.026E+00	2.334E-01	2.334E-01
AC-228	1.041E+00	2.987E-01	2.987E-01
RA-228	1.041E+00	2.987E-01	2.987E-01
TH-228	1.200E+00	1.576E-01	1.576E-01
TH-230	1.025E+00	2.333E-01	2.333E-01
TH-232	1.041E+00	2.987E-01	2.987E-01
TH-234	2.186E+00	3.422E+00	3.422E+00
U-234	1.025E+00	2.333E-01	2.333E-01
U-235	9.669E-02	3.861E-01	3.861E-01
U-238	2.186E+00	3.422E+00	3.422E+00
AM-243	2.364E-01	1.381E-01	1.381E-01
ANH-511	1.218E-01	8.951E-02	8.951E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-1.033E+01	1.586E+01	1.653E+01	NOT IDENT.
NA-22	1.975E-02	5.170E-02	5.246E-02	NOT IDENT.
NA-24	-1.000E+41	1.417E+41	0.000E+00	SHORT HLIF
AL-26	-1.136E-02	2.856E-02	2.901E-02	FAIL ABUN
SC-46	-2.504E-01	4.310E-01	4.456E-01	FAIL ABUN
V-48	1.277E+04	1.595E+04	1.696E+04	SHORT HLIF
CR-51	2.842E+02	4.614E+02	4.789E+02	SHORT HLIF
MN-54	1.886E-02	7.391E-02	7.440E-02	NOT IDENT.

CO-56	-3.947E-01	5.565E-01	5.843E-01	NOT IDENT.
MN-56	-1.000E+41	1.410E+41	0.000E+00	SHORT HLIF
CO-57	4.240E-02	5.653E-02	5.967E-02	NOT IDENT.
FE-59	1.111E+01	1.445E+01	1.529E+01	FAIL ABUN
CO-60	-3.648E-02	5.044E-02	5.306E-02	NOT IDENT.
ZN-65	-4.372E-03	2.487E-01	2.487E-01	NOT IDENT.
GE-68	-5.512E-01	2.709E+00	2.720E+00	NOT IDENT.
AS-73	8.307E+00	1.279E+01	1.333E+01	NOT IDENT.
AS-74	5.670E+03	7.493E+03	7.917E+03	SHORT HLIF
SE-75	-1.764E-01	2.577E-01	2.697E-01	NOT IDENT.
BR-77	1.172E+38	1.007E+39	0.000E+00	SHORT HLIF
SR-82	1.438E+02	7.141E+02	7.170E+02	SHORT HLIF
RB-83	2.717E-01	7.867E-01	7.962E-01	NOT IDENT.
KR-85	1.558E+00	9.643E+00	9.668E+00	NOT IDENT.
SR-85	1.601E-01	9.966E-01	9.992E-01	NOT IDENT.
RB-86	-1.205E+04	3.141E+04	3.187E+04	SHORT HLIF
Y-88	4.653E-02	2.202E-01	2.212E-01	NOT IDENT.
Y-91	-1.329E+02	6.400E+02	6.428E+02	NOT IDENT.
NB-94	-1.070E-02	3.508E-02	3.541E-02	NOT IDENT.
NB-95	-2.388E-01	1.250E+00	1.255E+00	NOT IDENT.
NB-95M	-4.962E-01	2.845E+00	2.854E+00	NOT IDENT.
ZR-95	1.934E+00	2.714E+00	2.850E+00	FAIL ABUN
NB-97	1.000E+41	1.098E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	4.411E+41	0.000E+00	SHORT HLIF
MO-99	1.831E+31	1.179E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.576E+41	0.000E+00	SHORT HLIF
RH-101	-1.953E-02	4.335E-02	4.424E-02	NOT IDENT.
RH-102	1.531E-02	7.311E-02	7.344E-02	NOT IDENT.
RU-103	5.366E+00	5.237E+00	5.769E+00	FAIL ABUN
RH-106	-2.953E-01	6.396E-01	6.533E-01	NOT IDENT.
RU-106	-2.953E-01	6.396E-01	6.533E-01	NOT IDENT.
AG-108M	3.360E-02	3.705E-02	4.003E-02	NOT IDENT.
CD-109	2.982E+00	1.628E+00	2.111E+00	NOT IDENT.
AG-110M	5.130E-02	1.239E-01	1.260E-01	FAIL ABUN
SN-113	1.139E-01	2.743E-01	2.791E-01	NOT IDENT.
CD-115	6.777E+38	2.023E+39	0.000E+00	SHORT HLIF
SN-117M	2.239E+03	1.017E+05	1.017E+05	SHORT HLIF
TE-123M	5.067E-02	1.533E-01	1.550E-01	NOT IDENT.
SB-124	-6.571E-01	1.707E+00	1.733E+00	NOT IDENT.
SB-125	-4.868E-02	1.220E-01	1.239E-01	FAIL ABUN
TE-125M	8.935E+01	3.109E+02	3.135E+02	NOT IDENT.
I-126	1.189E+05	9.783E+05	9.798E+05	SHORT HLIF
SB-126	-4.278E+05	1.384E+06	1.398E+06	SHORT HLIF
SN-126	1.453E-01	1.032E-01	1.222E-01	NOT IDENT.
SB-127	-1.412E+22	2.651E+22	0.000E+00	SHORT HLIF
I-131	1.886E+09	4.954E+09	5.026E+09	SHORT HLIF
I-132	-1.000E+41	1.847E+42	0.000E+00	SHORT HLIF
TE-132	-1.375E+26	3.229E+26	0.000E+00	SHORT HLIF
BA-133	2.367E-02	4.870E-02	4.985E-02	NOT IDENT.
I-133	-1.000E+41	1.935E+41	0.000E+00	SHORT HLIF
CS-134	1.306E-01	1.059E-01	1.212E-01	FAIL ABUN
CS-135	2.299E-02	1.592E-01	1.596E-01	NOT IDENT.
I-135	1.000E+41	7.696E+41	0.000E+00	SHORT HLIF
CS-136	2.616E+05	3.005E+05	3.229E+05	SHORT HLIF
CE-139	-2.036E-03	1.259E-01	1.259E-01	NOT IDENT.
BA-140	1.090E+06	1.538E+06	1.615E+06	SHORT HLIF
LA-140	1.213E+05	5.300E+05	5.328E+05	SHORT HLIF
CE-141	-5.740E+00	3.089E+01	3.099E+01	NOT IDENT.
CE-143	1.000E+41	1.047E+41	0.000E+00	SHORT HLIF
CE-144	-4.306E-02	3.893E-01	3.898E-01	NOT IDENT.
PM-144	3.248E-02	6.781E-02	6.937E-02	NOT IDENT.
PR-144	2.802E+00	5.880E+00	6.014E+00	NOT IDENT.
PM-146	1.939E-02	5.431E-02	5.500E-02	NOT IDENT.
ND-147	-2.717E+07	3.664E+07	3.863E+07	SHORT HLIF
PM-147	1.318E+02	9.980E+02	9.998E+02	NOT IDENT.
PM-149	-9.014E+39	2.728E+40	0.000E+00	SHORT HLIF
EU-150	-4.283E-03	3.377E-02	3.382E-02	FAIL ABUN
EU-152	5.747E-03	1.128E-01	1.128E-01	FAIL ABUN
GD-153	-9.845E-02	2.505E-01	2.544E-01	NOT IDENT.
EU-154	4.574E-02	1.263E-01	1.280E-01	NOT IDENT.
EU-155	7.265E-02	1.259E-01	1.301E-01	NOT IDENT.
TB-160	-1.448E+00	1.974E+00	2.079E+00	FAIL ABUN
HO-166M	2.139E-02	6.677E-02	6.746E-02	NOT IDENT.
TM-171	-2.711E+00	3.236E+01	3.239E+01	NOT IDENT.
HF-172	-1.167E-02	2.786E-01	2.787E-01	FAIL ABUN
LU-172	-3.326E-02	1.334E-01	1.342E-01	FAIL ABUN
LU-176	-9.986E-03	2.612E-02	2.650E-02	NOT IDENT.
HF-181	2.255E-01	5.453E+00	5.454E+00	NOT IDENT.

TA-182	1.438E+00	1.195E+00	1.359E+00	FAIL ABUN
RE-183	-2.638E+00	4.396E+00	4.554E+00	NOT IDENT.
RE-184	2.943E+01	3.712E+01	3.942E+01	NOT IDENT.
W-188	-3.587E+01	1.424E+02	1.433E+02	FAIL ABUN
IR-192	-4.362E-01	5.191E-01	5.551E-01	FAIL ABUN
HG-203	4.209E-01	2.751E+00	2.757E+00	NOT IDENT.
BI-207	-2.553E-02	5.979E-02	6.088E-02	FAIL ABUN
PB-210	-1.184E+00	5.917E+00	5.941E+00	NOT IDENT.
BI-211	3.364E+00	6.243E-01	1.640E+00	FAIL ABUN
PB-211	-3.378E-02	8.026E-01	8.027E-01	NOT IDENT.
BI-212	1.412E+00	7.641E-01	9.945E-01	FAIL ABUN
RN-219	-1.153E-01	4.517E-01	4.547E-01	FAIL ABUN
RA-223	-2.656E-01	6.894E-01	6.997E-01	FAIL ABUN
AC-227	1.042E-02	2.582E-01	2.583E-01	NOT IDENT.
TH-227	1.042E-02	2.582E-01	2.583E-01	NOT IDENT.
TH-229	1.264E-01	5.363E-01	5.393E-01	NOT IDENT.
PA-231	5.744E-02	5.329E-01	5.336E-01	NOT IDENT.
TH-231	-2.656E-01	6.894E-01	6.997E-01	FAIL ABUN
PA-233	-8.485E-03	6.648E-02	6.659E-02	NOT IDENT.
PA-234	-1.485E-01	4.197E-01	4.250E-01	FAIL ABUN
PA-234M	-1.313E+00	5.149E+00	5.183E+00	NOT IDENT.
NP-237	-8.485E-03	6.648E-02	6.659E-02	NOT IDENT.
NP-238	1.000E+41	1.205E+41	0.000E+00	SHORT HLIF
NP-239	3.933E-01	3.019E-01	3.501E-01	NOT IDENT.
PU-239	2.344E+01	3.894E+02	3.896E+02	NOT IDENT.
AM-241	2.139E-01	2.164E-01	2.369E-01	NOT IDENT.
CM-243	-1.051E-02	1.259E-01	1.260E-01	NOT IDENT.
BK-247	-6.994E-02	8.847E-02	9.392E-02	NOT IDENT.
CM-247	-3.403E-02	4.090E-02	4.368E-02	NOT IDENT.
CF-249	3.059E-03	4.283E-02	4.286E-02	NOT IDENT.
CF-251	-1.555E-02	1.229E-01	1.231E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	78.2704	87.09	134.7812	136.47	85.0401
45.60	71.5784	87.57	127.0328	140.51	0.0000
46.54	72.7927	88.03	103.5126	143.76	85.8807
49.72	0.0000	88.34	141.0985	144.24	85.9352
51.35	77.8999	88.47	136.6277	145.44	91.8101
51.87	86.3264	89.96	143.0228	152.43	89.3353
52.39	78.1111	1093.63	137.1702	153.25	0.0000
52.97	63.6255	91.11	0.0000	323.87	90.7811
53.44	65.7908	92.59	114.5844	156.02	0.0000
54.07	78.4481	93.35	114.7400	158.56	0.0000
57.36	0.0000	94.56	114.9858	159.00	89.2407
57.53	88.6213	94.65	115.0043	162.33	96.3059
57.98	101.3919	94.67	115.0082	162.66	0.0000
59.27	69.2175	94.87	115.0482	163.33	90.5537
59.32	69.2258	97.43	100.6885	165.86	88.3075
59.54	81.9838	98.43	85.9617	176.31	78.3306
60.96	93.6061	98.44	85.9634	176.60	0.0000
61.17	86.5572	99.53	97.6068	177.52	75.0288
62.93	94.0358	100.11	100.0017	181.07	0.0000
63.29	94.1133	102.03	93.4072	181.52	80.9379
63.58	94.1761	103.18	94.7418	184.41	77.3337
64.28	102.9014	103.37	94.7718	143.76	77.4463
66.73	100.5944	105.21	73.0336	193.51	78.9761
67.24	103.5850	105.31	73.0456	197.03	85.3722
125.81	111.2457	106.12	85.9137	198.01	77.6124
67.75	111.2622	106.47	98.7410	201.83	78.8013
69.67	100.8815	109.28	75.8505	203.43	72.3545
70.83	144.6296	111.00	84.2492	205.31	56.6783
72.81	141.2314	111.76	0.0000	210.85	70.2564
72.87	141.2491	114.06	99.9395	215.65	63.0488
74.66	130.4477	116.30	0.0000	222.11	78.6445
74.82	130.4904	116.74	61.3925	227.09	80.8209
74.97	130.5312	119.76	83.0230	227.38	80.8429
77.11	131.1005	121.12	82.0038	228.16	0.0000
78.74	131.5290	121.22	82.0159	228.18	86.2988
79.69	131.7769	121.78	83.2740	116.74	86.2988
80.12	104.9197	122.06	72.5976	235.69	71.9757
80.19	0.0000	122.92	95.3308	235.96	71.9943
80.57	121.2817	123.07	95.3522	238.63	63.5486
81.00	113.9828	265.00	90.6657	238.98	0.0000
81.07	113.9984	125.81	87.3586	240.99	63.6874
81.75	121.5611	127.23	104.3257	242.00	63.7465
83.79	109.3894	127.91	80.4223	244.70	64.3611
84.00	101.6162	129.30	96.2170	252.40	0.0000
85.43	164.5944	131.20	86.8293	252.80	53.3366
86.55	138.0118	133.02	91.8886	254.15	0.0000
86.79	131.3385	133.52	71.3841	256.23	57.1884
86.94	134.7437	136.00	69.2017	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	59.9320	355.39	0.0000	584.27	23.8292
264.80	57.1520	356.01	31.3994	595.83	0.0000
265.00	57.1620	364.49	0.0000	427.87	29.7303
268.22	55.9216	366.42	0.0000	602.52	0.0000
269.46	55.9802	372.51	40.3223	604.72	32.6505
270.03	56.0071	375.05	35.3418	607.14	25.8060
271.23	56.0645	377.52	40.9622	609.32	21.8134
273.65	0.0000	356.01	36.5625	610.33	21.8234
276.40	65.3180	388.16	35.6473	614.28	24.1642
277.37	56.3538	388.63	0.0000	618.01	28.8157
277.60	56.3647	391.69	35.7285	620.36	19.6154
278.00	48.8653	264.66	36.9602	621.93	28.8676
279.20	57.3799	401.81	40.0696	630.19	0.0000
279.54	60.2188	402.40	43.1672	631.29	22.0314
279.70	61.1676	404.85	39.1164	633.25	27.8535
280.46	61.2060	410.95	37.1990	634.78	0.0000
283.69	45.3184	413.71	35.1925	635.95	25.5628
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	48.2182	423.72	0.0000	645.85	20.1313
285.90	0.0000	427.09	39.6552	657.76	29.5620
287.50	55.8767	427.87	36.5424	657.90	0.0000
290.67	56.9690	433.94	33.5313	661.66	29.0835
293.27	0.0000	439.40	35.7425	664.57	0.0000
351.93	48.6000	453.88	31.8048	666.33	0.0000
295.96	48.6291	463.37	27.7144	666.50	0.0000
879.38	51.5962	468.07	38.4756	667.71	0.0000
299.98	61.6970	473.00	0.0000	677.62	24.8452
300.09	61.7023	475.06	37.5535	685.70	0.0000
300.13	61.7036	476.78	35.4412	695.00	0.0000
301.36	57.4548	477.60	41.9041	696.49	23.2531
302.85	54.6447	482.18	34.4701	696.51	23.2531
256.23	47.0361	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	19.6824
306.78	45.1956	497.08	11.9453	697.49	23.2626
308.46	31.7740	505.52	27.8164	702.65	24.2084
311.90	41.5119	507.63	0.0000	706.68	22.4525
316.51	53.2835	511.00	33.9141	711.68	19.5414
319.41	0.0000	514.00	32.8720	720.70	0.0000
320.08	0.0000	514.00	32.8720	721.93	0.0000
321.04	47.6322	520.40	25.2854	722.78	14.4634
323.87	51.6284	520.69	0.0000	722.91	14.4644
325.23	59.4822	522.65	0.0000	723.31	14.4668
328.76	0.0000	527.90	0.0000	724.19	16.8836
333.37	58.8562	528.26	19.8691	727.33	11.5918
333.97	50.0496	529.59	34.2430	733.00	18.1537
334.37	50.0641	529.87	0.0000	735.93	18.1744
338.28	40.3619	531.02	0.0000	333.97	16.3669
338.32	40.3627	537.26	0.0000	739.50	0.0000
311.90	50.2851	546.56	0.0000	747.24	19.1684
340.48	50.2851	552.55	26.8184	748.06	21.9133
340.55	0.0000	563.25	34.8233	752.31	24.8766
344.28	46.4664	569.33	38.3067	753.82	0.0000
345.93	50.4802	946.00	38.3095	756.73	16.1240
351.06	40.7289	569.70	39.4405	756.80	14.6587
351.93	40.7531	583.19	23.8173	884.68	23.5188

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:58:47.82

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235002.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM30.CNF;300
Background date    : 2-OCT-2016 11:01:47.
Sample date       : 10-DEC-2015 14:30:00 Acquisition date : 3-OCT-2016 07:57:26.
Sample ID        : G405235002 Sample quantity : 1.23837E+02 GRAM
Detector name    : GAM30 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.45 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596247 Detector SN# :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.20*	16	128	1.12	126.12	123	7	4.52E-03	122.3	
2	3	72.96	37	158	1.31	145.65	142	17	1.03E-02	65.1	1.24E+00
3	3	74.81	170	155	1.31	149.35	142	17	4.72E-02	15.1	
4	3	77.12*	277	129	1.10	153.97	142	17	7.68E-02	9.3	
5	2	87.18	96	181	1.19	174.09	169	25	2.66E-02	23.7	2.94E+00
6	2	89.84	66	141	0.97	179.40	169	25	1.82E-02	30.4	
7	2	92.75*	93	140	1.23	185.22	169	25	2.59E-02	25.9	
8	0	105.57	39	134	1.15	210.87	207	10	1.09E-02	57.3	
9	0	186.31*	88	173	1.18	372.35	365	14	2.43E-02	34.5	
10	0	209.30	49	89	1.00	418.34	415	8	1.37E-02	35.8	
11	2	238.71*	530	59	1.20	477.15	471	18	1.47E-01	5.0	2.23E+00
12	2	241.88	122	62	1.44	483.50	471	18	3.40E-02	16.6	
13	0	270.44	43	116	1.50	540.64	536	13	1.20E-02	53.1	
14	3	295.25*	185	38	1.25	590.25	585	27	5.13E-02	9.6	1.17E+00
15	3	300.21	28	59	1.65	600.18	585	27	7.74E-03	54.9	
16	0	331.76*	83	97	7.88	663.28	652	20	2.32E-02	31.4	
17	2	338.35*	112	38	1.45	676.47	672	21	3.12E-02	14.4	3.34E+00
18	2	341.35	22	51	1.54	682.46	672	21	6.02E-03	60.7	
19	0	352.21*	259	74	1.34	704.19	699	13	7.19E-02	9.4	
20	0	387.36	19	50	1.86	774.49	767	10	5.29E-03	73.1	
21	5	430.57	15	7	1.54	860.93	859	11	4.04E-03	32.2	7.52E-01
22	5	433.18	24	9	1.64	866.14	859	11	6.72E-03	32.8	
23	2	463.17	38	20	1.65	926.14	919	31	1.05E-02	29.8	1.95E+00
24	2	466.96	14	18	1.50	933.73	919	31	3.98E-03	62.2	
25	0	511.12*	35	58	1.97	1022.06	1015	17	9.64E-03	60.7	
26	0	524.39	15	26	1.69	1048.59	1041	10	4.07E-03	73.5	
27	3	583.26*	97	18	1.39	1166.36	1162	15	2.70E-02	13.8	2.37E+00
28	3	587.03	15	12	1.92	1173.92	1162	15	4.11E-03	42.9	
29	0	609.64*	186	31	1.39	1219.15	1213	14	5.17E-02	9.9	
30	0	639.66	25	28	3.74	1279.20	1271	14	7.02E-03	48.6	
31	0	660.26	44	33	7.52	1320.41	1309	20	1.22E-02	36.2	
32	0	666.48	31	12	0.67	1332.84	1328	12	8.61E-03	28.7	
33	0	727.68	58	12	2.21	1455.27	1448	16	1.60E-02	18.8	
34	0	737.36	15	16	0.78	1474.65	1471	7	4.27E-03	49.7	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	794.89	31	10	1.34	1589.74	1585	10	8.61E-03	26.2	
36	0	851.32	14	2	0.66	1702.64	1699	8	3.98E-03	31.2	
37	0	860.49	37	14	1.26	1720.98	1715	12	1.03E-02	26.4	
38	0	911.52	111	27	1.55	1823.07	1817	14	3.09E-02	13.5	
39	0	935.80	26	3	2.68	1871.64	1867	10	7.31E-03	22.6	
40	5	964.58*	22	32	2.64	1929.22	1921	27	6.24E-03	63.9	8.74E-01
41	5	969.20*	50	22	1.87	1938.48	1921	27	1.39E-02	23.9	
42	0	1065.20	8	13	0.77	2130.55	2124	11	2.10E-03	101.3	
43	0	1115.32	11	14	1.38	2230.82	2223	14	3.06E-03	78.2	
44	0	1121.17*	57	7	2.07	2242.53	2236	14	1.59E-02	16.8	
45	0	1167.01	19	20	5.96	2334.25	2325	16	5.34E-03	56.7	
46	0	1212.44	9	14	0.66	2425.14	2420	7	2.59E-03	73.9	
47	0	1238.24	21	12	1.35	2476.76	2469	12	5.83E-03	39.6	
48	0	1328.10	6	5	1.03	2656.58	2652	7	1.64E-03	76.0	
49	0	1378.05	16	2	1.36	2756.53	2751	10	4.37E-03	31.3	
50	0	1393.55*	4	4	1.41	2787.55	2781	8	1.16E-03	101.2	
51	0	1430.88	6	5	1.40	2862.25	2855	10	1.67E-03	80.8	
52	0	1461.22*	432	10	1.91	2922.95	2916	14	1.20E-01	5.1	
53	0	1547.80	9	0	0.88	3096.22	3091	10	2.50E-03	33.3	
54	0	1731.15	7	5	0.77	3463.13	3455	10	1.92E-03	71.6	
55	0	1765.18*	23	6	3.09	3531.24	3526	11	6.51E-03	30.0	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235002.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 10-DEC-2015 14:30:00 Acquisition date : 3-OCT-2016 07:57:26
Sample ID : G405235002 Sample quantity : 123.84 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA30 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.45 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	87.09	EU-155	86.55
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	242.00	RA-224	240.99
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.307E+00	1.784E+01	1.784E+01	10.20	OK
ZN-65	1115.54	50.60*	1.652E+00	7.695E-02	1.792E-01	156.41	OK
CD-109	88.03	3.70*	6.548E+00	1.395E+00	2.183E+00	92.25	OK
SN-126	64.28	9.60	3.867E+00	3.007E-01	3.007E-01	244.55	OK
	86.94	8.90	6.548E+00	5.801E-01	5.801E-01	92.25	OK
	87.57	37.00*	6.548E+00	1.395E-01	1.395E-01	92.25	OK
BA-137M	661.66	89.90*	2.546E+00	1.156E-01	1.178E-01	72.35	OK
CS-137	661.66	85.10*	2.546E+00	1.222E-01	1.245E-01	72.35	OK
EU-155	86.55	30.70	6.548E+00	1.682E-01	1.894E-01	92.25	OK
	105.31	21.10*	7.284E+00	1.703E-01	1.918E-01	114.53	OK
TL-208	277.37	6.60	4.820E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	2.799E+00	2.485E-01	2.485E-01	27.65	OK
	860.56	12.50	2.059E+00	8.550E-01	8.550E-01	52.88	OK
PB-212	74.82	10.28	5.441E+00	1.291E+00	1.291E+00	49.80	OK
	77.11	17.10	5.693E+00	1.928E+00	1.928E+00	18.63	OK
	238.63	43.60*	5.356E+00	1.449E+00	1.449E+00	10.08	OK
	300.09	3.30	4.554E+00	1.169E+00	1.169E+00	109.89	OK
BI-214	609.32	45.49*	2.707E+00	9.149E-01	9.152E-01	19.80	OK
	1120.29	14.92	1.644E+00	1.366E+00	1.366E+00	33.69	OK
	1764.49	15.30	1.121E+00	7.769E-01	7.771E-01	59.97	OK
PB-214	74.82	5.80	5.442E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	5.693E+00	3.400E+00	3.401E+00	18.63	OK
	87.09	3.41	6.542E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	5.305E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	4.609E+00	1.374E+00	1.375E+00	19.23	OK
	351.93	35.60*	4.058E+00	1.119E+00	1.120E+00	18.84	OK
RN-222	609.32	45.49*	2.707E+00	9.149E-01	9.152E-01	19.80	OK
	1120.29	14.92	1.644E+00	1.366E+00	1.366E+00	33.69	OK
	1764.49	15.30	1.121E+00	7.769E-01	7.771E-01	59.97	OK
RA-224	240.99	4.10*	5.307E+00	1.160E+00	1.160E+00	110.62	OK
RA-226	609.32	45.49*	2.707E+00	9.149E-01	9.152E-01	19.80	OK
	1120.29	14.92	1.644E+00	1.366E+00	1.366E+00	33.69	OK
	1764.49	15.30	1.121E+00	7.769E-01	7.771E-01	59.97	OK
AC-228	105.21	1.10	7.284E+00	3.267E+00	3.267E+00	114.53	OK
	338.32	11.27	4.178E+00	1.494E+00	1.494E+00	28.78	OK
	794.95	4.25	2.197E+00	1.980E+00	1.980E+00	52.41	OK
	835.71	1.61	2.109E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.962E+00	1.298E+00	1.298E+00	26.93	OK
	968.97	15.80	1.863E+00	9.990E-01	9.990E-01	47.84	OK
RA-228	105.21	1.10	7.284E+00	3.267E+00	3.267E+00	114.53	OK
	338.32	11.27	4.178E+00	1.494E+00	1.494E+00	28.78	OK
	794.95	4.25	2.197E+00	1.980E+00	1.980E+00	52.41	OK
	835.71	1.61	2.109E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.962E+00	1.298E+00	1.298E+00	26.93	OK
	968.97	15.80	1.863E+00	9.990E-01	9.990E-01	47.84	OK
TH-228	74.82	10.28	5.441E+00	1.291E+00	1.291E+00	49.80	OK
	77.11	17.10	5.693E+00	1.928E+00	1.928E+00	18.63	OK
	238.63	43.60*	5.356E+00	1.449E+00	1.449E+00	10.08	OK
	300.09	3.30	4.554E+00	1.169E+00	1.169E+00	109.89	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	609.32	45.49*	2.707E+00	9.149E-01	9.149E-01	19.80	OK
	1120.29	14.92	1.644E+00	1.366E+00	1.366E+00	33.69	OK
	1764.49	15.30	1.121E+00	7.769E-01	7.769E-01	59.97	OK
PA-231	283.69	1.70	4.743E+00	-----	Line Not Found	-----	Absent
	301.36	5.35*	4.554E+00	7.211E-01	7.211E-01	109.89	OK
TH-232	105.21	1.10	7.284E+00	3.267E+00	3.267E+00	114.53	OK
	338.32	11.27	4.178E+00	1.494E+00	1.494E+00	28.78	OK
	835.71	1.61	2.109E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.962E+00	1.298E+00	1.298E+00	26.93	OK
	968.97	15.80	1.863E+00	9.990E-01	9.990E-01	47.84	OK
TH-234	63.29	3.70*	3.867E+00	7.801E-01	7.801E-01	244.55	OK
	92.59	4.23	6.868E+00	2.155E+00	2.155E+00	51.86	OK
U-234	609.32	45.49*	2.707E+00	9.149E-01	9.149E-01	19.80	OK
	1120.29	14.92	1.644E+00	1.366E+00	1.366E+00	33.69	OK
	1764.49	15.30	1.121E+00	7.769E-01	7.769E-01	59.97	OK
U-235	89.96	3.47	6.713E+00	1.893E+00	1.893E+00	60.80	OK
	93.35	5.60	6.868E+00	1.628E+00	1.628E+00	51.86	OK
	143.76	10.96*	7.121E+00	-----	Line Not Found	-----	Absent
	163.33	5.08	6.750E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	6.287E+00	1.577E-01	1.577E-01	69.06	OK
	205.31	5.01	5.922E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	3.867E+00	7.801E-01	7.801E-01	244.55	OK
	92.59	4.23	6.868E+00	2.155E+00	2.155E+00	51.86	OK
AM-243	43.53	5.90	8.765E-01	-----	Line Not Found	-----	Absent
	74.66	67.20*	5.441E+00	1.975E-01	1.975E-01	49.80	OK
CF-249	252.80	2.50	5.147E+00	-----	Line Not Found	-----	Absent
	333.37	14.60	4.223E+00	-----	Line Not Found	-----	Absent
	388.16	66.00*	3.787E+00	4.741E-02	4.748E-02	146.17	OK
ANH-511	511.00	100.00*	3.091E+00	6.875E-02	6.875E-02	121.32	OK

Flag: "*" = Keyline

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235002.CNF;1
* Acquisition date   : 3-OCT-2016 07:57:26 Sensitivity      : 3.000
* Detector ID        : GAM30 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:01.45 Half life ratio : *****
* Sample date        : 10-DEC-2015 14:30:00 Analyst initials: MXR1
* Sample ID          : G405235002 Sample Quantity : 1.2384E+02 GRAM
* Batch Number       : 1596247 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight       : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 11-MAR-2016 05:58:49 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM30 CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.784E+01	1.782E+00	6.674E-01
ZN-65	1.792E-01	2.747E-01	2.520E-01
CD-109	2.183E+00	1.973E+00	1.831E+00
SN-126	1.395E-01	1.262E-01	1.176E-01
BA-137M	1.178E-01	8.354E-02	5.633E-02
CS-137	1.245E-01	8.825E-02	5.951E-02
EU-155	1.918E-01	2.153E-01	1.766E-01
TL-208	2.485E-01	6.732E-02	6.449E-02
PB-212	1.449E+00	1.431E-01	9.642E-02
BI-214	9.152E-01	1.775E-01	8.187E-02
PB-214	1.120E+00	2.068E-01	1.155E-01
RN-222	9.152E-01	1.775E-01	8.187E-02
RA-224	1.160E+00	1.258E+00	1.033E+00
RA-226	9.152E-01	1.775E-01	8.187E-02
AC-228	1.298E+00	3.426E-01	2.069E-01
RA-228	1.298E+00	3.426E-01	2.069E-01
TH-228	1.449E+00	1.431E-01	9.642E-02
TH-230	9.149E-01	1.775E-01	8.184E-02
PA-231	7.211E-01	7.766E-01	8.034E-01
TH-232	1.298E+00	3.426E-01	2.069E-01
TH-234	7.801E-01	1.870E+00	1.939E+00
U-234	9.149E-01	1.775E-01	8.184E-02
U-235	5.447E-02	1.765E-01	3.287E-01
U-238	7.801E-01	1.870E+00	1.939E+00
AM-243	1.975E-01	9.638E-02	7.383E-02
CF-249	4.748E-02	6.802E-02	6.705E-02
ANH-511	6.875E-02	8.174E-02	4.622E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-5.252E+00		1.101E+01	1.916E+01	NOT IDENT.
NA-22	2.002E-02		4.927E-02	1.049E-01	NOT IDENT.
NA-24	0.000E+00		1.960E+41	0.000E+00	SHORT HLIF

AL-26	1.369E-03	2.682E-02	6.071E-02	NOT IDENT.
SC-46	1.978E-01	3.668E-01	7.672E-01	FAIL ABUN
V-48	0.000E+00	1.554E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.903E+02	0.000E+00	SHORT HLIF
MN-54	5.343E-02	6.886E-02	1.437E-01	NOT IDENT.
CO-56	2.914E-01	4.921E-01	9.506E-01	FAIL ABUN
MN-56	0.000E+00	1.689E+41	0.000E+00	SHORT HLIF
CO-57	-5.272E-02	4.967E-02	8.267E-02	NOT IDENT.
CO-58	-2.314E-01	4.909E-01	8.752E-01	NOT IDENT.
FE-59	4.032E+00	6.865E+00	1.428E+01	NOT IDENT.
CO-60	-1.437E-02	4.976E-02	9.113E-02	NOT IDENT.
GE-68	-2.439E+00	2.787E+00	4.454E+00	NOT IDENT.
AS-73	3.034E+00	7.472E+00	1.464E+01	NOT IDENT.
AS-74	0.000E+00	5.971E+03	0.000E+00	SHORT HLIF
SE-75	5.062E-02	2.085E-01	3.827E-01	NOT IDENT.
BR-77	0.000E+00	1.395E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.441E+02	0.000E+00	SHORT HLIF
RB-83	-1.010E-01	7.256E-01	1.230E+00	NOT IDENT.
KR-85	1.877E+00	6.059E+00	1.224E+01	NOT IDENT.
SR-85	1.922E-01	6.260E-01	1.265E+00	NOT IDENT.
RB-86	0.000E+00	3.177E+04	0.000E+00	SHORT HLIF
Y-88	-7.362E-02	1.373E-01	2.849E-01	NOT IDENT.
Y-91	2.211E+01	5.808E+02	1.084E+03	NOT IDENT.
NB-94	-3.826E-03	3.251E-02	6.065E-02	NOT IDENT.
NB-95	-1.197E+00	9.999E-01	1.569E+00	NOT IDENT.
NB-95M	1.723E+00	2.489E+00	4.477E+00	NOT IDENT.
ZR-95	9.690E-01	1.418E+00	2.980E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.281E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-1.948E-02	3.571E-02	6.210E-02	NOT IDENT.
RH-102	4.200E-02	5.459E-02	1.172E-01	NOT IDENT.
RU-103	3.008E+00	5.206E+00	1.083E+01	FAIL ABUN
RH-106	3.384E-01	4.781E-01	1.011E+00	NOT IDENT.
RU-106	3.384E-01	4.781E-01	1.011E+00	NOT IDENT.
AG-108M	4.739E-02	3.046E-02	4.786E-02	FAIL ABUN
AG-110M	-8.785E-02	9.486E-02	1.497E-01	NOT IDENT.
SN-113	4.570E-02	2.014E-01	4.059E-01	NOT IDENT.
CD-115	0.000E+00	1.549E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	8.813E+04	0.000E+00	SHORT HLIF
TE-123M	8.256E-02	1.258E-01	2.419E-01	NOT IDENT.
SB-124	-7.328E-01	2.022E+00	3.914E+00	NOT IDENT.
SB-125	4.379E-02	1.152E-01	2.117E-01	FAIL ABUN
TE-125M	8.068E-01	2.778E+02	4.673E+02	NOT IDENT.
I-126	0.000E+00	1.080E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.004E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.524E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.394E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	5.620E+40	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.627E+26	0.000E+00	SHORT HLIF
BA-133	-3.670E-03	4.171E-02	7.281E-02	NOT IDENT.
I-133	0.000E+00	1.130E+41	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.647E-02	1.205E-01	FAIL ABUN
CS-135	4.649E-02	1.530E-01	2.611E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.317E+05	0.000E+00	SHORT HLIF
CE-139	1.710E-03	1.169E-01	2.107E-01	NOT IDENT.
BA-140	0.000E+00	1.067E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.015E+05	0.000E+00	SHORT HLIF
CE-141	-5.014E+00	2.309E+01	4.111E+01	NOT IDENT.
CE-143	0.000E+00	1.665E+41	0.000E+00	SHORT HLIF
CE-144	9.386E-03	3.450E-01	6.333E-01	NOT IDENT.
PM-144	2.222E-03	5.523E-02	1.084E-01	NOT IDENT.
PR-144	1.775E-01	4.789E+00	9.394E+00	NOT IDENT.
PM-146	4.628E-02	4.510E-02	9.611E-02	FAIL ABUN
ND-147	0.000E+00	2.628E+07	0.000E+00	SHORT HLIF
PM-147	1.446E+03	7.769E+02	1.641E+03	NOT IDENT.
PM-149	0.000E+00	2.674E+40	0.000E+00	SHORT HLIF
EU-150	1.870E-02	3.044E-02	5.659E-02	FAIL ABUN
EU-152	-1.798E-03	9.207E-02	1.629E-01	FAIL ABUN
GD-153	-6.544E-02	1.732E-01	2.840E-01	NOT IDENT.
EU-154	4.660E-02	1.204E-01	2.560E-01	NOT IDENT.
TB-160	-3.604E-02	2.009E+00	3.794E+00	FAIL ABUN
HO-166M	8.084E-03	5.809E-02	1.129E-01	NOT IDENT.
TM-171	-2.052E-01	1.746E+01	3.327E+01	NOT IDENT.
HF-172	1.331E-01	2.256E-01	4.322E-01	FAIL ABUN
LU-172	3.109E-02	7.343E-02	1.518E-01	FAIL ABUN

LU-176	-3.930E-03	2.940E-02	4.668E-02	FAIL ABUN
HF-181	1.039E+00	3.943E+00	7.927E+00	NOT IDENT.
TA-182	2.800E-02	9.320E-01	1.866E+00	FAIL ABUN
RE-183	-9.476E-02	2.642E+00	4.972E+00	NOT IDENT.
RE-184	-2.167E+00	2.852E+01	5.396E+01	NOT IDENT.
W-188	5.014E+01	1.268E+02	2.174E+02	FAIL ABUN
IR-192	-1.458E-02	4.490E-01	8.747E-01	FAIL ABUN
HG-203	-1.183E+00	2.437E+00	4.072E+00	FAIL ABUN
BI-207	1.742E-02	4.722E-02	9.617E-02	FAIL ABUN
PB-210	3.524E-01	2.359E+00	4.605E+00	NOT IDENT.
BI-211	0.000E+00	5.695E-01	8.315E-01	FAIL ABUN
PB-211	4.493E-01	6.822E-01	1.403E+00	NOT IDENT.
BI-212	0.000E+00	8.115E-01	1.330E+00	FAIL ABUN
RN-219	-6.924E-02	3.679E-01	7.015E-01	FAIL ABUN
RA-223	4.601E-02	6.537E-01	1.159E+00	FAIL ABUN
AC-227	1.881E-02	2.380E-01	4.276E-01	FAIL ABUN
TH-227	1.881E-02	2.380E-01	4.276E-01	FAIL ABUN
TH-229	2.042E-01	4.583E-01	8.605E-01	FAIL ABUN
TH-231	4.601E-02	6.537E-01	1.159E+00	FAIL ABUN
PA-233	-1.265E-02	5.819E-02	1.116E-01	FAIL ABUN
PA-234	9.521E-03	2.502E-01	4.885E-01	NOT IDENT.
PA-234M	-2.099E+00	4.725E+00	8.194E+00	NOT IDENT.
NP-237	-1.265E-02	5.819E-02	1.116E-01	FAIL ABUN
NP-238	0.000E+00	1.097E+41	0.000E+00	SHORT HLIF
NP-239	5.193E-03	2.345E-01	4.312E-01	FAIL ABUN
PU-239	3.268E+02	3.267E+02	6.386E+02	NOT IDENT.
AM-241	5.439E-02	1.330E-01	2.406E-01	NOT IDENT.
CM-243	-1.163E-02	9.611E-02	1.625E-01	NOT IDENT.
BK-247	-1.203E-02	7.576E-02	1.324E-01	FAIL ABUN
CM-247	-5.026E-03	3.442E-02	6.584E-02	NOT IDENT.
CF-251	-1.778E-01	1.232E-01	1.907E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	410	10.66*	1.307E+00	1.784E+01	1.784E+01	10.20
ZN-65	1115.54	11	50.60*	1.652E+00	7.695E-02	1.792E-01	156.41
CD-109	88.03	106	3.70*	6.548E+00	2.662E+00	4.163E+00	47.48
SN-126	64.28	18	9.60	3.867E+00	3.007E-01	3.007E-01	244.55
	86.94	106	8.90	6.548E+00	1.107E+00	1.107E+00	47.48
	87.57	106	37.00*	6.548E+00	2.662E-01	2.662E-01	47.48
BA-137M	661.66	44	89.90*	2.546E+00	1.156E-01	1.178E-01	72.35
CS-137	661.66	44	85.10*	2.546E+00	1.222E-01	1.245E-01	72.35
EU-155	86.55	106	30.70	6.548E+00	3.208E-01	3.613E-01	47.48
	105.31	43	21.10*	7.284E+00	1.703E-01	1.918E-01	114.53
TL-208	277.37	-----	6.60	4.820E+00	-----	Line Not Found	-----
	583.19	98	85.00*	2.799E+00	2.485E-01	2.485E-01	27.65
	860.56	36	12.50	2.059E+00	8.550E-01	8.550E-01	52.88
BI-211	72.87	41	1.23	5.224E+00	3.913E+00	3.913E+00	130.26
	351.06	267	12.92*	4.058E+00	3.084E+00	3.084E+00	18.84
PB-212	74.82	191	10.28	5.441E+00	2.066E+00	2.066E+00	30.27
	77.11	310	17.10	5.693E+00	1.928E+00	1.928E+00	18.63
	238.63	558	43.60*	5.356E+00	1.449E+00	1.449E+00	10.08
	300.09	29	3.30	4.554E+00	1.169E+00	1.169E+00	109.89
BI-214	609.32	186	45.49*	2.707E+00	9.149E-01	9.152E-01	19.80
	1120.29	55	14.92	1.644E+00	1.366E+00	1.366E+00	33.69
	1764.49	22	15.30	1.121E+00	7.769E-01	7.771E-01	59.97
PB-214	74.82	191	5.80	5.441E+00	3.662E+00	3.663E+00	30.27
	77.11	310	9.70	5.693E+00	3.400E+00	3.401E+00	18.63
	87.09	106	3.41	6.548E+00	2.888E+00	2.889E+00	47.48
	242.00	129	7.25	5.307E+00	2.030E+00	2.031E+00	33.30
	295.22	192	18.42	4.609E+00	1.374E+00	1.375E+00	19.23
RN-222	351.93	267	35.60*	4.058E+00	1.119E+00	1.120E+00	18.84
	609.32	186	45.49*	2.707E+00	9.149E-01	9.152E-01	19.80
	1120.29	55	14.92	1.644E+00	1.366E+00	1.366E+00	33.69
	1764.49	22	15.30	1.121E+00	7.769E-01	7.771E-01	59.97
RA-224	240.99	129	4.10*	5.307E+00	3.590E+00	3.590E+00	33.30
RA-226	609.32	186	45.49*	2.707E+00	9.149E-01	9.152E-01	19.80
	1120.29	55	14.92	1.644E+00	1.366E+00	1.366E+00	33.69
	1764.49	22	15.30	1.121E+00	7.769E-01	7.771E-01	59.97
AC-228	105.21	43	1.10	7.284E+00	3.267E+00	3.267E+00	114.53
	338.32	116	11.27	4.178E+00	1.494E+00	1.494E+00	28.78
	794.95	31	4.25	2.197E+00	1.980E+00	1.980E+00	52.41
	835.71	-----	1.61	2.109E+00	-----	Line Not Found	-----
	911.20	108	25.80*	1.962E+00	1.298E+00	1.298E+00	26.93
	968.97	49	15.80	1.863E+00	9.990E-01	9.990E-01	47.84
RA-228	105.21	43	1.10	7.284E+00	3.267E+00	3.267E+00	114.53
	338.32	116	11.27	4.178E+00	1.494E+00	1.494E+00	28.78
	794.95	31	4.25	2.197E+00	1.980E+00	1.980E+00	52.41
	835.71	-----	1.61	2.109E+00	-----	Line Not Found	-----
	911.20	108	25.80*	1.962E+00	1.298E+00	1.298E+00	26.93
	968.97	49	15.80	1.863E+00	9.990E-01	9.990E-01	47.84

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	191	10.28	5.441E+00	2.066E+00	2.066E+00	30.27
	77.11	310	17.10	5.693E+00	1.928E+00	1.928E+00	18.63
	238.63	558	43.60*	5.356E+00	1.449E+00	1.449E+00	10.08
	300.09	29	3.30	4.554E+00	1.169E+00	1.169E+00	109.89
TH-230	609.32	186	45.49*	2.707E+00	9.149E-01	9.149E-01	19.80
	1120.29	55	14.92	1.644E+00	1.366E+00	1.366E+00	33.69
	1764.49	22	15.30	1.121E+00	7.769E-01	7.769E-01	59.97
PA-231	283.69	-----	1.70	4.743E+00	-----	Line Not Found	-----
	301.36	29	5.35*	4.554E+00	7.211E-01	7.211E-01	109.89
TH-232	105.21	43	1.10	7.284E+00	3.267E+00	3.267E+00	114.53
	338.32	116	11.27	4.178E+00	1.494E+00	1.494E+00	28.78
	835.71	-----	1.61	2.109E+00	-----	Line Not Found	-----
	911.20	108	25.80*	1.962E+00	1.298E+00	1.298E+00	26.93
	968.97	49	15.80	1.863E+00	9.990E-01	9.990E-01	47.84
TH-234	63.29	18	3.70*	3.867E+00	7.801E-01	7.801E-01	244.55
	92.59	103	4.23	6.868E+00	2.155E+00	2.155E+00	51.86
U-234	609.32	186	45.49*	2.707E+00	9.149E-01	9.149E-01	19.80
	1120.29	55	14.92	1.644E+00	1.366E+00	1.366E+00	33.69
	1764.49	22	15.30	1.121E+00	7.769E-01	7.769E-01	59.97
U-235	89.96	73	3.47	6.713E+00	1.893E+00	1.893E+00	60.80
	93.35	103	5.60	6.868E+00	1.628E+00	1.628E+00	51.86
	143.76	-----	10.96*	7.121E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.750E+00	-----	Line Not Found	-----
	185.72	94	57.20	6.287E+00	1.577E-01	1.577E-01	69.06
	205.31	-----	5.01	5.922E+00	-----	Line Not Found	-----
U-238	63.29	18	3.70*	3.867E+00	7.801E-01	7.801E-01	244.55
	92.59	103	4.23	6.868E+00	2.155E+00	2.155E+00	51.86
AM-243	43.53	-----	5.90	8.765E-01	-----	Line Not Found	-----
	74.66	191	67.20*	5.441E+00	3.161E-01	3.161E-01	30.27
CF-249	252.80	-----	2.50	5.147E+00	-----	Line Not Found	-----
	333.37	-----	14.60	4.223E+00	-----	Line Not Found	-----
	388.16	20	66.00*	3.787E+00	4.741E-02	4.748E-02	146.17
ANH-511	511.00	35	100.00*	3.091E+00	6.875E-02	6.875E-02	121.32

Flag: "*" = Keyline

Total number of lines in spectrum 55
Number of unidentified lines 17
Number of lines tentatively identified by NID 38 69.09%

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	1.784E+01	1.784E+01	0.182E+01	10.20	
ZN-65	244.06D	2.33	7.695E-02	1.792E-01	2.803E-01	156.41	
CD-109	461.40D	1.56	2.662E+00	4.163E+00	1.977E+00	47.48	
SN-126	2.30E+05Y	1.00	2.662E-01	2.662E-01	1.264E-01	47.48	
BA-137M	30.08Y	1.02	1.156E-01	1.178E-01	0.852E-01	72.35	
CS-137	30.08Y	1.02	1.222E-01	1.245E-01	0.901E-01	72.35	
EU-155	4.75Y	1.13	1.703E-01	1.918E-01	2.197E-01	114.53	
TL-208	1.41E+10Y	1.00	2.485E-01	2.485E-01	0.687E-01	27.65	
BI-211	7.04E+08Y	1.00	3.084E+00	3.084E+00	0.581E+00	18.84	
PB-212	1.41E+10Y	1.00	1.449E+00	1.449E+00	0.146E+00	10.08	
BI-214	1600.00Y	1.00	9.149E-01	9.152E-01	1.812E-01	19.80	
PB-214	1600.00Y	1.00	1.119E+00	1.120E+00	0.211E+00	18.84	
RN-222	1600.00Y	1.00	9.149E-01	9.152E-01	1.812E-01	19.80	
RA-224	1.41E+10Y	1.00	3.590E+00	3.590E+00	1.195E+00	33.30	
RA-226	1600.00Y	1.00	9.149E-01	9.152E-01	1.812E-01	19.80	
AC-228	1.41E+10Y	1.00	1.298E+00	1.298E+00	0.350E+00	26.93	
RA-228	1.41E+10Y	1.00	1.298E+00	1.298E+00	0.350E+00	26.93	
TH-228	1.41E+10Y	1.00	1.449E+00	1.449E+00	0.146E+00	10.08	
TH-230	7.54E+04Y	1.00	9.149E-01	9.149E-01	1.811E-01	19.80	
PA-231	7.04E+08Y	1.00	7.211E-01	7.211E-01	7.924E-01	109.89	
TH-232	1.41E+10Y	1.00	1.298E+00	1.298E+00	0.350E+00	26.93	
TH-234	4.47E+09Y	1.00	7.801E-01	7.801E-01	19.08E-01	244.55	
U-234	2.45E+05Y	1.00	9.149E-01	9.149E-01	1.811E-01	19.80	
U-235	7.04E+08Y	1.00	1.577E-01	1.577E-01	1.089E-01	69.06	K
U-238	4.47E+09Y	1.00	7.801E-01	7.801E-01	19.08E-01	244.55	
AM-243	7370.00Y	1.00	3.161E-01	3.161E-01	0.957E-01	30.27	
CF-249	351.00Y	1.00	4.741E-02	4.748E-02	6.941E-02	146.17	
ANH-511	1.00E+09Y	1.00	6.875E-02	6.875E-02	8.341E-02	121.32	

Total Activity : 4.353E+01 4.516E+01

Grand Total Activity : 4.353E+01 4.516E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.30	53	94	1.00	418.34	415	8	1.37E-02	71.6	5.85E+00	
0	270.44	45	121	1.50	540.64	536	13	1.20E-02	****	4.91E+00	T
0	331.76	86	100	7.88	663.28	652	20	2.32E-02	62.8	4.24E+00	
2	341.35	22	53	1.54	682.46	672	21	6.02E-03	****	4.15E+00	T
5	430.57	15	8	1.54	860.93	859	11	4.04E-03	64.4	3.51E+00	
5	433.18	25	9	1.64	866.14	859	11	6.72E-03	65.6	3.49E+00	T
2	463.17	38	20	1.65	926.14	919	31	1.05E-02	59.6	3.32E+00	T
2	466.96	15	18	1.50	933.73	919	31	3.98E-03	****	3.30E+00	T
0	524.39	15	27	1.69	1048.59	1041	10	4.07E-03	****	3.03E+00	
3	587.03	15	12	1.92	1173.92	1162	15	4.11E-03	85.8	2.79E+00	
0	639.66	25	28	3.74	1279.20	1271	14	7.02E-03	97.2	2.61E+00	
0	666.48	31	12	0.67	1332.84	1328	12	8.61E-03	57.3	2.53E+00	T
0	727.68	57	12	2.21	1455.27	1448	16	1.60E-02	37.7	2.36E+00	T
0	737.36	15	15	0.78	1474.65	1471	7	4.27E-03	99.5	2.33E+00	T
0	851.32	14	2	0.66	1702.64	1699	8	3.98E-03	62.5	2.08E+00	
0	935.80	26	3	2.68	1871.64	1867	10	7.31E-03	45.1	1.92E+00	
5	964.58	22	31	2.64	1929.22	1921	27	6.24E-03	****	1.87E+00	T
0	1065.20	7	13	0.77	2130.55	2124	11	2.10E-03	****	1.72E+00	
0	1167.01	18	19	5.96	2334.25	2325	16	5.34E-03	****	1.59E+00	
0	1212.44	9	13	0.66	2425.14	2420	7	2.59E-03	****	1.54E+00	
0	1238.24	20	11	1.35	2476.76	2469	12	5.83E-03	79.1	1.51E+00	T
0	1328.10	6	5	1.03	2656.58	2652	7	1.64E-03	****	1.42E+00	
0	1378.05	15	2	1.36	2756.53	2751	10	4.37E-03	62.6	1.37E+00	
0	1393.55	4	4	1.41	2787.55	2781	8	1.16E-03	****	1.36E+00	
0	1430.88	6	5	1.40	2862.25	2855	10	1.67E-03	****	1.33E+00	
0	1547.80	9	0	0.88	3096.22	3091	10	2.50E-03	66.7	1.25E+00	
0	1731.15	6	5	0.77	3463.13	3455	10	1.92E-03	****	1.14E+00	

Flags: "T" = Tentatively associated


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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235002.CNF;1
* Acquisition date   : 3-OCT-2016 07:57:26 Sensitivity      : 3.000
* Detector ID        : GAM30 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit: 75.000
* Elapsed real time  : 0 01:00:01.45 Half life ratio : *****
* Sample date        : 10-DEC-2015 14:30:00 Nuclide Library : SOLID
* Sample ID          : G405235002 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.2384E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 11-MAR-2016 05:58:49 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM30 CAN.CNF;7
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.750E-01
ZN-65	1.031E-01
CD-109	8.616E-01
SN-126	5.532E-02
BA-137M	2.448E-02
CS-137	2.586E-02
EU-155	8.214E-02
TL-208	2.877E-02
PB-212	4.464E-02
BI-214	3.421E-02
PB-214	5.198E-02
RN-222	3.421E-02
RA-224	4.783E-01
RA-226	3.421E-02
AC-228	8.719E-02
RA-228	8.719E-02
TH-228	4.464E-02
TH-230	3.420E-02
PA-231	3.674E-01
TH-232	8.719E-02
TH-234	9.105E-01
U-234	3.420E-02
U-235	1.536E-01
U-238	9.105E-01
AM-243	3.459E-02
CF-249	3.019E-02
ANH-511	2.043E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	8.396E+00	NOT IDENT.
NA-22	4.554E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.292E-02	NOT IDENT.

SC-46	3.354E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	6.429E-02	NOT IDENT.
CO-56	4.182E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	3.849E-02	NOT IDENT.
CO-58	3.670E-01	NOT IDENT.
FE-59	6.244E+00	NOT IDENT.
CO-60	3.912E-02	NOT IDENT.
GE-68	1.906E+00	NOT IDENT.
AS-73	6.849E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.754E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.487E-01	NOT IDENT.
KR-85	5.468E+00	NOT IDENT.
SR-85	5.647E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	9.004E-02	NOT IDENT.
Y-91	4.726E+02	NOT IDENT.
NB-94	2.692E-02	NOT IDENT.
NB-95	6.931E-01	NOT IDENT.
NB-95M	2.082E+00	NOT IDENT.
ZR-95	1.323E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.905E-02	NOT IDENT.
RH-102	5.209E-02	NOT IDENT.
RU-103	4.862E+00	FAIL ABUN
RH-106	4.509E-01	NOT IDENT.
RU-106	4.509E-01	NOT IDENT.
AG-108M	2.129E-02	FAIL ABUN
AG-110M	6.200E-02	NOT IDENT.
SN-113	1.825E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.127E-01	NOT IDENT.
SB-124	1.500E+00	NOT IDENT.
SB-125	9.613E-02	FAIL ABUN
TE-125M	2.182E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.289E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.451E-02	FAIL ABUN
CS-135	1.200E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.837E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.916E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.951E-01	NOT IDENT.
PM-144	4.818E-02	NOT IDENT.
PR-144	4.177E+00	NOT IDENT.
PM-146	4.387E-02	FAIL ABUN
ND-147	0.000E+00	SHORT HLIF
PM-147	7.709E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.621E-02	FAIL ABUN
EU-152	7.356E-02	FAIL ABUN
GD-153	1.323E-01	NOT IDENT.
EU-154	1.110E-01	NOT IDENT.
TB-160	1.662E+00	FAIL ABUN
HO-166M	5.011E-02	NOT IDENT.
TM-171	1.549E+01	NOT IDENT.
HF-172	2.024E-01	FAIL ABUN
LU-172	6.539E-02	FAIL ABUN
LU-176	2.136E-02	FAIL ABUN

HF-181	3.548E+00	NOT IDENT.
TA-182	8.122E-01	FAIL ABUN
RE-183	2.331E+00	NOT IDENT.
RE-184	2.326E+01	NOT IDENT.
W-188	1.002E+02	FAIL ABUN
IR-192	3.998E-01	FAIL ABUN
HG-203	1.857E+00	FAIL ABUN
BI-207	4.158E-02	FAIL ABUN
PB-210	2.139E+00	NOT IDENT.
BI-211	4.001E-01	FAIL ABUN
PB-211	6.414E-01	NOT IDENT.
BI-212	6.129E-01	FAIL ABUN
RN-219	3.167E-01	FAIL ABUN
RA-223	5.309E-01	FAIL ABUN
AC-227	1.966E-01	FAIL ABUN
TH-227	1.966E-01	FAIL ABUN
TH-229	3.994E-01	FAIL ABUN
TH-231	5.309E-01	FAIL ABUN
PA-233	5.091E-02	FAIL ABUN
PA-234	2.082E-01	NOT IDENT.
PA-234M	3.558E+00	NOT IDENT.
NP-237	5.091E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.012E-01	FAIL ABUN
PU-239	3.012E+02	NOT IDENT.
AM-241	1.131E-01	NOT IDENT.
CM-243	7.556E-02	NOT IDENT.
BK-247	6.059E-02	FAIL ABUN
CM-247	2.979E-02	NOT IDENT.
CF-251	8.784E-02	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.784E+01	2.389E+00	2.389E+00
ZN-65	1.792E-01	2.770E-01	2.770E-01
CD-109	2.183E+00	2.007E+00	2.007E+00
SN-126	1.395E-01	1.281E-01	1.281E-01
BA-137M	1.178E-01	8.405E-02	8.405E-02
CS-137	1.245E-01	8.879E-02	8.879E-02
EU-155	1.918E-01	2.159E-01	2.159E-01
TL-208	2.485E-01	7.033E-02	7.033E-02
PB-212	1.449E+00	1.858E-01	1.858E-01
BI-214	9.152E-01	1.924E-01	1.924E-01
PB-214	1.120E+00	2.265E-01	2.265E-01
RN-222	9.152E-01	1.924E-01	1.924E-01
RA-224	1.160E+00	1.292E+00	1.292E+00
RA-226	9.152E-01	1.924E-01	1.924E-01
AC-228	1.298E+00	3.876E-01	3.876E-01
RA-228	1.298E+00	3.876E-01	3.876E-01
TH-228	1.449E+00	1.858E-01	1.858E-01
TH-230	9.149E-01	1.923E-01	1.923E-01
PA-231	7.211E-01	7.933E-01	7.933E-01
TH-232	1.298E+00	3.876E-01	3.876E-01
TH-234	7.801E-01	1.878E+00	1.878E+00
U-234	9.149E-01	1.923E-01	1.923E-01
U-235	5.447E-02	1.765E-01	1.765E-01
U-238	7.801E-01	1.878E+00	1.878E+00
AM-243	1.975E-01	9.910E-02	9.910E-02
CF-249	4.748E-02	6.821E-02	6.821E-02
ANH-511	6.875E-02	8.194E-02	8.194E-02

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AL-26	1.369E-03	2.682E-02	2.683E-02	NOT IDENT.
SC-46	1.978E-01	3.677E-01	3.784E-01	FAIL ABUN
V-48	1.221E+04	1.565E+04	1.659E+04	SHORT HLIF
CR-51	-2.639E+02	3.909E+02	4.086E+02	SHORT HLIF
MN-54	5.343E-02	6.914E-02	7.322E-02	NOT IDENT.
CO-56	2.914E-01	4.934E-01	5.106E-01	FAIL ABUN
MN-56	1.000E+41	1.693E+41	0.000E+00	SHORT HLIF
CO-57	-5.272E-02	4.981E-02	5.519E-02	NOT IDENT.
CO-58	-2.314E-01	4.916E-01	5.025E-01	NOT IDENT.
FE-59	4.032E+00	6.914E+00	7.148E+00	NOT IDENT.
CO-60	-1.437E-02	4.977E-02	5.019E-02	NOT IDENT.
GE-68	-2.439E+00	2.823E+00	3.030E+00	NOT IDENT.
AS-73	3.034E+00	7.498E+00	7.622E+00	NOT IDENT.
AS-74	-2.159E+02	5.971E+03	5.972E+03	SHORT HLIF
SE-75	5.062E-02	2.085E-01	2.098E-01	NOT IDENT.
BR-77	1.412E+38	1.214E+39	0.000E+00	SHORT HLIF
SR-82	1.989E+02	6.444E+02	6.506E+02	SHORT HLIF
RB-83	-1.010E-01	7.257E-01	7.272E-01	NOT IDENT.
KR-85	1.877E+00	6.061E+00	6.120E+00	NOT IDENT.
SR-85	1.922E-01	6.262E-01	6.321E-01	NOT IDENT.
RB-86	-2.369E+04	3.208E+04	3.381E+04	SHORT HLIF
Y-88	-7.362E-02	1.374E-01	1.414E-01	NOT IDENT.
Y-91	2.211E+01	5.808E+02	5.809E+02	NOT IDENT.
NB-94	-3.826E-03	3.251E-02	3.256E-02	NOT IDENT.
NB-95	-1.197E+00	1.007E+00	1.143E+00	NOT IDENT.
NB-95M	1.723E+00	2.495E+00	2.613E+00	NOT IDENT.
ZR-95	9.690E-01	1.421E+00	1.487E+00	NOT IDENT.
NB-97	1.000E+41	6.207E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.229E+42	0.000E+00	SHORT HLIF
MO-99	-4.789E+31	1.282E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.414E+42	0.000E+00	SHORT HLIF
RH-101	-1.948E-02	3.590E-02	3.696E-02	NOT IDENT.
RH-102	4.200E-02	5.477E-02	5.795E-02	NOT IDENT.
RU-103	3.008E+00	5.212E+00	5.386E+00	FAIL ABUN
RH-106	3.384E-01	4.791E-01	5.028E-01	NOT IDENT.
RU-106	3.384E-01	4.791E-01	5.028E-01	NOT IDENT.
AG-108M	4.739E-02	3.071E-02	3.741E-02	FAIL ABUN
AG-110M	-8.785E-02	9.557E-02	1.035E-01	NOT IDENT.
SN-113	4.570E-02	2.014E-01	2.025E-01	NOT IDENT.
CD-115	1.004E+39	1.561E+39	0.000E+00	SHORT HLIF
SN-117M	6.973E+03	8.814E+04	8.819E+04	SHORT HLIF
TE-123M	8.256E-02	1.259E-01	1.313E-01	NOT IDENT.
SB-124	-7.328E-01	2.023E+00	2.049E+00	NOT IDENT.
SB-125	4.379E-02	1.153E-01	1.170E-01	FAIL ABUN
TE-125M	8.068E-01	2.778E+02	2.778E+02	NOT IDENT.
I-126	1.922E+06	1.118E+06	1.414E+06	SHORT HLIF
SB-126	8.688E+04	1.004E+06	1.005E+06	SHORT HLIF
SB-127	-3.331E+21	1.591E+22	0.000E+00	SHORT HLIF
I-131	3.100E+09	4.402E+09	4.618E+09	SHORT HLIF
I-132	1.000E+41	1.836E+42	0.000E+00	SHORT HLIF
TE-132	1.363E+26	2.685E+26	0.000E+00	SHORT HLIF
BA-133	-3.670E-03	4.171E-02	4.174E-02	NOT IDENT.
I-133	-1.000E+41	2.124E+41	0.000E+00	SHORT HLIF
CS-134	1.294E-01	6.790E-02	8.951E-02	FAIL ABUN
CS-135	4.649E-02	1.530E-01	1.545E-01	NOT IDENT.
I-135	-1.000E+41	2.665E+42	0.000E+00	SHORT HLIF
CS-136	1.536E+04	3.317E+05	3.317E+05	SHORT HLIF
CE-139	1.710E-03	1.169E-01	1.169E-01	NOT IDENT.
BA-140	-7.668E+05	1.069E+06	1.124E+06	SHORT HLIF
LA-140	-1.875E+05	4.018E+05	4.106E+05	SHORT HLIF
CE-141	-5.014E+00	2.309E+01	2.320E+01	NOT IDENT.
CE-143	1.000E+41	1.669E+41	0.000E+00	SHORT HLIF
CE-144	9.386E-03	3.450E-01	3.450E-01	NOT IDENT.
PM-144	2.222E-03	5.523E-02	5.524E-02	NOT IDENT.
PR-144	1.775E-01	4.790E+00	4.790E+00	NOT IDENT.
PM-146	4.628E-02	4.534E-02	4.991E-02	FAIL ABUN
ND-147	-9.633E+06	2.629E+07	2.665E+07	SHORT HLIF
PM-147	1.446E+03	7.833E+02	1.019E+03	NOT IDENT.
PM-149	-3.778E+39	2.675E+40	0.000E+00	SHORT HLIF
EU-150	1.870E-02	3.048E-02	3.163E-02	FAIL ABUN
EU-152	-1.798E-03	9.207E-02	9.208E-02	FAIL ABUN
GD-153	-6.544E-02	1.733E-01	1.758E-01	NOT IDENT.
EU-154	4.660E-02	1.205E-01	1.223E-01	NOT IDENT.
TB-160	-3.604E-02	2.009E+00	2.009E+00	FAIL ABUN
HO-166M	8.084E-03	5.809E-02	5.821E-02	NOT IDENT.
TM-171	-2.052E-01	1.746E+01	1.746E+01	NOT IDENT.
HF-172	1.331E-01	2.268E-01	2.346E-01	FAIL ABUN
LU-172	3.109E-02	7.372E-02	7.504E-02	FAIL ABUN

LU-176	-3.930E-03	2.940E-02	2.945E-02	FAIL ABUN
HF-181	1.039E+00	3.944E+00	3.972E+00	NOT IDENT.
TA-182	2.800E-02	9.320E-01	9.321E-01	FAIL ABUN
RE-183	-9.476E-02	2.642E+00	2.642E+00	NOT IDENT.
RE-184	-2.167E+00	2.852E+01	2.854E+01	NOT IDENT.
W-188	5.014E+01	1.270E+02	1.290E+02	FAIL ABUN
IR-192	-1.458E-02	4.490E-01	4.491E-01	FAIL ABUN
HG-203	-1.183E+00	2.439E+00	2.496E+00	FAIL ABUN
BI-207	1.742E-02	4.733E-02	4.797E-02	FAIL ABUN
PB-210	3.524E-01	2.359E+00	2.364E+00	NOT IDENT.
BI-211	3.084E+00	6.258E-01	1.525E+00	FAIL ABUN
PB-211	4.493E-01	6.833E-01	7.127E-01	NOT IDENT.
BI-212	2.197E+00	8.384E-01	1.298E+00	FAIL ABUN
RN-219	-6.924E-02	3.680E-01	3.693E-01	FAIL ABUN
RA-223	4.601E-02	6.537E-01	6.540E-01	FAIL ABUN
AC-227	1.881E-02	2.380E-01	2.382E-01	FAIL ABUN
TH-227	1.881E-02	2.380E-01	2.382E-01	FAIL ABUN
TH-229	2.042E-01	4.585E-01	4.677E-01	FAIL ABUN
TH-231	4.601E-02	6.537E-01	6.540E-01	FAIL ABUN
PA-233	-1.265E-02	5.820E-02	5.848E-02	FAIL ABUN
PA-234	9.521E-03	2.505E-01	2.505E-01	NOT IDENT.
PA-234M	-2.099E+00	4.737E+00	4.831E+00	NOT IDENT.
NP-237	-1.265E-02	5.820E-02	5.848E-02	FAIL ABUN
NP-238	1.000E+41	1.108E+41	0.000E+00	SHORT HLIF
NP-239	5.193E-03	2.345E-01	2.345E-01	FAIL ABUN
PU-239	3.268E+02	3.275E+02	3.591E+02	NOT IDENT.
AM-241	5.439E-02	1.330E-01	1.353E-01	NOT IDENT.
CM-243	-1.163E-02	9.612E-02	9.626E-02	NOT IDENT.
BK-247	-1.203E-02	7.580E-02	7.600E-02	FAIL ABUN
CM-247	-5.026E-03	3.444E-02	3.451E-02	NOT IDENT.
CF-251	-1.778E-01	1.252E-01	1.486E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	37.0694	87.09	84.5633	136.47	56.9975
45.60	58.6698	87.57	84.6261	140.51	0.0000
46.54	47.5979	88.03	84.6864	143.76	55.3058
49.72	0.0000	88.34	84.7267	144.24	47.7410
51.35	64.1478	88.47	84.7440	145.44	67.3612
51.87	66.1086	89.96	84.9376	152.43	78.8291
52.39	61.4550	1093.63	85.0254	153.25	0.0000
52.97	57.7443	91.11	0.0000	323.87	63.6234
53.44	61.5921	92.59	85.2760	156.02	0.0000
54.07	59.7763	93.35	85.3727	158.56	0.0000
57.36	0.0000	94.56	85.5259	159.00	48.5124
57.53	71.6703	94.65	85.5374	162.33	73.0214
57.98	75.5609	94.67	85.5400	162.66	0.0000
59.27	77.6734	94.87	85.5650	163.33	62.0216
59.32	77.6811	97.43	66.8003	165.86	65.5143
59.54	71.6383	98.43	70.9922	176.31	54.9829
60.96	82.1009	98.44	70.9932	176.60	0.0000
61.17	82.1344	99.53	59.4815	177.52	78.6400
62.93	79.1938	100.11	66.7154	181.07	0.0000
63.29	79.2483	102.03	63.1232	181.52	85.7122
63.58	79.2917	103.18	61.8507	184.41	55.4151
64.28	76.1693	103.37	61.8672	143.76	55.4839
66.73	86.8927	105.21	58.9239	193.51	46.7650
67.24	69.1252	105.31	58.9322	197.03	49.2043
125.81	71.1292	106.12	58.9978	198.01	60.7014
67.75	71.1381	106.47	59.0261	201.83	47.1197
69.67	88.6620	109.28	63.7561	203.43	71.3554
70.83	69.2471	111.00	76.0587	205.31	43.0385
72.81	73.7497	111.76	0.0000	210.85	50.9710
72.87	73.7572	114.06	67.9973	215.65	46.5295
74.66	73.9861	116.30	0.0000	222.11	65.4994
74.82	74.0061	116.74	65.0855	227.09	51.6773
74.97	74.0250	119.76	62.1757	227.38	49.3405
77.11	74.2945	121.12	40.1141	228.16	0.0000
78.74	76.8147	121.22	40.1193	228.18	45.8465
79.69	83.5674	121.78	59.1646	116.74	45.8465
80.12	87.6086	122.06	86.6646	235.69	39.4251
80.19	0.0000	122.92	66.6554	235.96	39.4338
80.57	77.0466	123.07	60.3185	238.63	52.1641
81.00	82.4175	265.00	70.9544	238.98	0.0000
81.07	82.4270	125.81	59.4611	240.99	52.2621
81.75	80.8548	127.23	84.0285	242.00	52.3037
83.79	98.8127	127.91	72.3885	244.70	31.7668
84.00	96.1743	129.30	62.9135	252.40	0.0000
85.43	84.3435	131.20	73.7442	252.80	37.1616
86.55	84.4922	133.02	69.6199	254.15	0.0000
86.79	84.5236	133.52	58.9444	256.23	42.0667
86.94	84.5435	136.00	69.8639	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	36.2869	355.39	0.0000	584.27	23.0508
264.80	42.3390	356.01	30.8540	595.83	0.0000
265.00	42.3454	364.49	0.0000	427.87	23.2080
268.22	37.1906	366.42	0.0000	602.52	0.0000
269.46	48.5535	372.51	30.2917	604.72	23.2471
270.03	48.5742	375.05	23.4025	607.14	21.8161
271.23	48.6169	377.52	30.3800	609.32	8.7341
273.65	0.0000	356.01	24.8285	610.33	8.7378
276.40	40.6667	388.16	27.5093	614.28	14.5862
277.37	37.8456	388.63	0.0000	618.01	21.4253
277.60	34.1891	391.69	23.6261	620.36	19.4954
278.00	34.1993	264.66	29.9008	621.93	14.6313
279.20	45.2304	401.81	31.6802	630.19	0.0000
279.54	45.2417	402.40	32.5707	631.29	12.7276
279.70	41.5776	404.85	28.2070	633.25	13.2275
280.46	31.8121	410.95	31.8391	634.78	0.0000
283.69	42.9222	413.71	30.1152	635.95	8.8275
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	33.1518	423.72	0.0000	645.85	16.7392
285.90	0.0000	427.09	21.4106	657.76	14.8383
287.50	38.1190	427.87	26.7743	657.90	0.0000
290.67	37.7933	433.94	20.1448	661.66	14.8602
293.27	0.0000	439.40	22.4467	664.57	0.0000
351.93	38.3243	453.88	21.7095	666.33	0.0000
295.96	38.3441	463.37	17.2686	666.50	0.0000
879.38	38.4123	468.07	17.3088	667.71	0.0000
299.98	38.4492	473.00	0.0000	677.62	16.9440
300.09	38.4520	475.06	16.4542	685.70	0.0000
300.13	38.4529	476.78	16.4681	695.00	0.0000
301.36	38.4851	477.60	23.0646	696.49	17.0636
302.85	38.5239	482.18	21.0978	696.51	17.0636
256.23	38.5674	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	18.0725
306.78	41.5334	497.08	18.4774	697.49	18.0740
308.46	43.6592	505.52	20.8699	702.65	21.1256
311.90	40.0088	507.63	0.0000	706.68	22.1647
316.51	38.4578	511.00	19.5284	711.68	19.1770
319.41	0.0000	514.00	19.5551	720.70	0.0000
320.08	0.0000	514.00	19.5551	721.93	0.0000
321.04	35.2179	520.40	25.2169	722.78	16.7202
323.87	39.0622	520.69	0.0000	722.91	18.2410
325.23	37.8360	522.65	0.0000	723.31	18.2439
328.76	0.0000	527.90	0.0000	724.19	13.6873
333.37	40.5684	528.26	15.9340	727.33	14.2096
333.97	40.5830	529.59	25.3224	733.00	12.2046
334.37	40.5938	529.87	0.0000	735.93	15.2716
338.28	29.2484	531.02	0.0000	333.97	16.8075
338.32	29.2491	537.26	0.0000	739.50	0.0000
311.90	29.2884	546.56	0.0000	747.24	12.2656
340.48	29.2884	552.55	14.2120	748.06	15.3363
340.55	0.0000	563.25	25.7014	752.31	13.3110
344.28	29.3578	569.33	14.3158	753.82	0.0000
345.93	37.0536	946.00	16.2260	756.73	13.3317
351.06	27.3438	569.70	16.2273	756.80	12.3066
351.93	27.3581	583.19	23.0400	884.68	15.4211

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	37.0342	1274.44	16.5686	1620.50	1.9110
766.42	33.9547	1001.03	19.9087	1621.92	3.8232
766.84	23.6691	1002.74	9.9591	1678.03	0.0000
772.60	0.0000	1004.73	13.2861	1690.97	5.8092
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	4.9057
778.90	18.5999	1028.54	0.0000	1063.66	8.8391
783.70	0.0000	1037.84	13.4072	1771.35	4.4905
785.37	5.1778	1038.76	0.0000	1791.20	0.0000
792.07	20.2387	631.29	16.7993	1808.65	2.9663
794.95	11.4279	1048.07	0.0000	1810.72	0.0000
795.86	15.5884	1049.04	16.8103	1836.06	1.9869
810.06	17.7498	1050.41	8.9688		
810.29	16.7070	1063.66	10.1257		
344.28	12.5308	1077.00	0.0000		
810.76	13.5761	1077.34	20.3247		
815.77	0.0000	1085.87	11.3167		
1048.07	0.0000	1093.63	9.0716		
832.01	18.9280	1099.45	10.2209		
834.85	14.7354	1112.07	1.7090		
835.71	12.6338	1112.84	3.4187		
836.80	0.0000	1115.54	6.8423		
846.75	0.0000	1120.29	15.4138		
846.77	11.0934	1120.55	15.4149		
856.80	0.0000	1221.41	15.4171		
860.56	13.7945	1129.67	6.8667		
871.09	12.7754	1131.51	0.0000		
873.19	17.0449	1147.95	0.0000		
875.33	0.0000	1173.23	15.2722		
879.38	17.0775	1177.95	13.9004		
880.51	18.1510	1189.05	13.9375		
883.24	9.6174	1204.77	15.1571		
884.68	17.1055	1221.41	14.9248		
889.28	10.7060	1231.02	14.0791		
894.76	10.7239	1235.36	0.0000		
898.04	20.3955	1238.28	10.5776		
900.72	11.8173	1260.41	0.0000		
903.28	13.9770	1271.87	14.2139		
911.20	9.6995	1274.44	10.6670		
912.08	9.7020	1274.54	10.6670		
923.98	0.0000	1291.59	8.0316		
926.50	15.1570	1298.22	0.0000		
929.11	6.5007	1312.11	0.0000		
937.49	9.7753	1332.49	15.4395		
944.13	0.0000	1362.66	0.0000		
946.00	10.8883	1365.19	6.3502		
949.00	15.2572	1368.63	0.0000		
667.71	0.0000	1384.29	7.2876		
962.31	15.3159	1408.01	10.9871		
964.08	15.3239	1457.56	0.0000		
966.17	15.3330	1460.82	7.4063		
911.20	15.3450	1489.16	7.4492		
968.97	15.3450	1505.03	0.9341		
983.53	0.0000	1584.12	7.5908		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:01:35.64

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*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235003.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM08.CNF;320
Background date  : 2-OCT-2016 11:00:23.
Sample date      : 10-DEC-2015 14:35:00 Acquisition date : 3-OCT-2016 08:01:06.
Sample ID        : G405235003 Sample quantity   : 1.40486E+02 GRAM
Detector name     : GAM08 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.68 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity      : 3.00000
Batch ID          : 1596247 Detector SN#       :
Matrix Spike ID   : LCS ID          : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	41.47	14	99	1.38	83.16	80	7	3.94E-03	118.8	
2	0	63.66*	67	146	1.58	127.57	122	11	1.87E-02	37.6	
3	2	74.52*	116	145	1.30	149.30	143	16	3.22E-02	20.8	3.53E+00
4	2	77.01*	157	119	1.10	154.28	143	16	4.35E-02	14.7	
5	0	86.98*	51	178	1.03	174.23	171	8	1.41E-02	47.8	
6	0	92.58*	14	204	1.43	185.43	182	9	3.85E-03	198.0	
7	0	104.66	31	88	1.66	209.61	207	7	8.75E-03	52.7	
8	0	129.00	18	116	0.83	258.30	253	9	4.96E-03	111.6	
9	0	185.88*	56	108	1.54	372.11	367	9	1.55E-02	38.5	
10	0	209.35	64	112	3.58	419.08	413	14	1.78E-02	37.2	
11	3	238.59*	371	56	1.15	477.57	473	18	1.03E-01	6.3	1.01E+00
12	3	241.51	90	76	1.79	483.42	473	18	2.51E-02	27.7	
13	0	270.63	29	77	1.12	541.69	535	10	8.01E-03	60.0	
14	0	278.02*	15	60	1.02	556.48	550	9	4.25E-03	100.0	
15	0	294.96*	116	48	1.30	590.38	585	10	3.21E-02	14.8	
16	7	338.25*	70	52	1.72	676.98	672	20	1.93E-02	23.1	2.33E+00
17	7	342.50	33	61	2.84	685.48	672	20	9.06E-03	53.0	
18	0	352.04*	189	76	1.25	704.59	698	14	5.24E-02	12.4	
19	0	367.54	22	30	2.73	735.59	731	9	6.12E-03	49.3	
20	0	401.74	16	51	4.42	804.01	795	15	4.37E-03	103.2	
21	0	416.72	12	27	1.30	834.00	830	8	3.34E-03	81.1	
22	0	463.41	12	30	1.33	927.40	923	8	3.45E-03	81.3	
23	0	511.20*	42	31	1.97	1023.03	1015	16	1.17E-02	40.9	
24	0	517.47	18	17	3.86	1035.57	1030	11	4.86E-03	50.9	
25	0	583.39*	121	33	1.36	1167.46	1161	12	3.36E-02	13.3	
26	0	596.95	14	7	1.66	1194.59	1191	7	3.75E-03	42.1	
27	0	609.38*	116	42	1.56	1219.46	1213	12	3.23E-02	14.8	
28	0	679.31	25	17	3.78	1359.36	1350	17	7.05E-03	42.1	
29	0	706.97	9	19	0.98	1414.71	1411	7	2.61E-03	91.4	
30	0	727.97*	24	29	1.06	1456.73	1448	13	6.75E-03	51.9	
31	0	781.12	21	2	0.90	1563.07	1558	10	5.72E-03	26.2	
32	0	785.41	25	0	0.87	1571.64	1568	8	6.94E-03	20.0	
33	0	860.11*	25	10	0.82	1721.09	1714	13	6.86E-03	34.3	
34	0	876.69	8	7	3.30	1754.26	1748	10	2.16E-03	74.8	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	911.50*	67	13	1.62	1823.91	1818	14	1.87E-02	17.3	
36	0	934.52	9	9	0.92	1869.96	1863	9	2.45E-03	70.0	
37	0	963.07*	27	6	0.63	1927.07	1920	13	7.49E-03	28.3	
38	0	968.96*	44	11	2.45	1938.86	1934	10	1.22E-02	21.7	
39	0	1042.94	18	4	1.35	2086.86	2082	11	4.90E-03	34.5	
40	0	1097.55	11	6	1.29	2196.11	2192	8	3.14E-03	47.7	
41	0	1121.15*	34	10	3.88	2243.33	2236	18	9.40E-03	30.9	
42	0	1145.18	9	7	1.18	2291.40	2287	8	2.40E-03	69.3	
43	0	1155.67	21	7	2.04	2312.38	2304	14	5.79E-03	34.7	
44	0	1239.66	11	12	3.50	2480.41	2473	13	3.12E-03	71.9	
45	0	1243.50	10	0	1.53	2488.10	2485	7	2.78E-03	31.6	
46	0	1310.84	12	5	1.11	2622.80	2617	12	3.38E-03	48.6	
47	0	1408.11	9	2	1.57	2817.40	2813	9	2.41E-03	46.2	
48	0	1430.72	8	6	0.66	2862.62	2853	13	2.14E-03	76.8	
49	0	1460.85	291	3	1.90	2922.90	2916	13	8.08E-02	6.0	
50	0	1764.80*	17	3	1.03	3530.91	3525	11	4.68E-03	34.6	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235003.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 10-DEC-2015 14:35:00 Acquisition date : 3-OCT-2016 08:01:06
 Sample ID : G405235003 Sample quantity : 140.49 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA8 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.68 0.0%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	87.09	EU-155	86.55
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	242.00	RA-224	240.99
TL-208	277.37	CM-247	278.00
TL-208	277.37	HG-203	279.20
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	9.671E-01	1.446E+01	1.446E+01	12.00	OK
CD-109	88.03	3.70*	4.281E+00	1.101E+00	1.722E+00	181.21	OK
SN-126	64.28	9.60	2.181E+00	2.125E+00	2.125E+00	75.23	OK
	86.94	8.90	4.281E+00	4.577E-01	4.577E-01	181.21	OK
	87.57	37.00*	4.281E+00	1.101E-01	1.101E-01	181.21	OK
EU-155	86.55	30.70	4.281E+00	1.327E-01	1.495E-01	181.21	OK
	105.31	21.10*	5.121E+00	1.853E-01	2.088E-01	105.38	OK
TL-208	277.37	6.60	3.703E+00	3.695E-01	3.695E-01	199.99	OK
	583.19	85.00*	2.006E+00	3.940E-01	3.940E-01	26.63	OK
	860.56	12.50	1.479E+00	7.179E-01	7.179E-01	68.57	OK
BI-212	727.33	6.67*	1.684E+00	1.178E+00	1.178E+00	103.81	OK
	785.37	1.10	1.587E+00	7.754E+00	7.754E+00	40.00	OK
	1620.50	1.47	8.836E-01	----- Line	Not Found	-----	Absent
PB-212	74.82	10.28	3.291E+00	1.644E+00	1.644E+00	57.64	OK
	77.11	17.10	3.516E+00	1.694E+00	1.694E+00	29.38	OK
	238.63	43.60*	4.175E+00	1.218E+00	1.218E+00	12.63	OK
	300.09	3.30	3.479E+00	----- Line	Not Found	-----	Absent
BI-214	609.32	45.49*	1.938E+00	7.300E-01	7.303E-01	29.55	OK
	1120.29	14.92	1.202E+00	9.905E-01	9.908E-01	61.72	OK
	1764.49	15.30	8.179E-01	6.774E-01	6.777E-01	69.13	OK
PB-214	74.82	5.80	3.318E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.516E+00	2.986E+00	2.987E+00	29.38	OK
	87.09	3.41	4.288E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.130E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	3.529E+00	1.045E+00	1.045E+00	29.69	OK
	351.93	35.60*	3.045E+00	1.007E+00	1.008E+00	24.88	OK
RN-219	271.23	10.80	3.784E+00	4.176E-01	4.176E-01	120.01	OK
	401.81	6.60*	2.725E+00	5.016E-01	5.016E-01	206.32	OK
RN-222	609.32	45.49*	1.938E+00	7.300E-01	7.303E-01	29.55	OK
	1120.29	14.92	1.202E+00	9.905E-01	9.908E-01	61.72	OK
	1764.49	15.30	8.179E-01	6.774E-01	6.777E-01	69.13	OK
RA-224	240.99	4.10*	4.136E+00	1.333E+00	1.333E+00	138.31	OK
RA-226	609.32	45.49*	1.938E+00	7.300E-01	7.303E-01	29.55	OK
	1120.29	14.92	1.202E+00	9.905E-01	9.908E-01	61.72	OK
	1764.49	15.30	8.179E-01	6.774E-01	6.777E-01	69.13	OK
AC-228	105.21	1.10	5.121E+00	3.555E+00	3.555E+00	105.38	OK
	338.32	11.27	3.149E+00	1.138E+00	1.138E+00	46.11	OK
	794.95	4.25	1.572E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.512E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.413E+00	9.868E-01	9.868E-01	34.65	OK
	968.97	15.80	1.348E+00	1.097E+00	1.097E+00	43.42	OK
RA-228	105.21	1.10	5.121E+00	3.555E+00	3.555E+00	105.38	OK
	338.32	11.27	3.149E+00	1.138E+00	1.138E+00	46.11	OK
	794.95	4.25	1.572E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.512E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.413E+00	9.868E-01	9.868E-01	34.65	OK
	968.97	15.80	1.348E+00	1.097E+00	1.097E+00	43.42	OK
TH-228	74.82	10.28	3.291E+00	1.644E+00	1.644E+00	57.64	OK
	77.11	17.10	3.516E+00	1.694E+00	1.694E+00	29.38	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	238.63	43.60*	4.175E+00	1.218E+00	1.218E+00	12.63	OK
	300.09	3.30	3.479E+00	----- Line	Not Found	-----	Absent
TH-230	609.32	45.49*	1.938E+00	7.301E-01	7.301E-01	29.55	OK
	1120.29	14.92	1.202E+00	9.905E-01	9.905E-01	61.72	OK
	1764.49	15.30	8.179E-01	6.774E-01	6.774E-01	69.13	OK
TH-232	105.21	1.10	5.121E+00	3.555E+00	3.555E+00	105.38	OK
	338.32	11.27	3.149E+00	1.138E+00	1.138E+00	46.11	OK
	835.71	1.61	1.512E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.413E+00	9.868E-01	9.868E-01	34.65	OK
	968.97	15.80	1.348E+00	1.097E+00	1.097E+00	43.42	OK
TH-234	63.29	3.70*	2.181E+00	5.514E+00	5.514E+00	75.23	OK
	92.59	4.23	4.614E+00	4.562E-01	4.562E-01	395.92	OK
U-234	609.32	45.49*	1.938E+00	7.300E-01	7.301E-01	29.55	OK
	1120.29	14.92	1.202E+00	9.905E-01	9.905E-01	61.72	OK
	1764.49	15.30	8.179E-01	6.774E-01	6.774E-01	69.13	OK
U-238	63.29	3.70*	2.181E+00	5.514E+00	5.514E+00	75.23	OK
	92.59	4.23	4.614E+00	4.562E-01	4.562E-01	395.92	OK
AM-243	43.53	5.90	2.327E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.291E+00	2.515E-01	2.515E-01	57.64	OK
CM-247	278.00	3.40	3.703E+00	----- Line	Not Found	-----	<<INT Reject
	287.50	2.00	3.604E+00	----- Line	Not Found	-----	Absent
	402.40	72.00*	2.725E+00	4.598E-02	4.598E-02	206.32	OK
ANH-511	511.00	100.00*	2.232E+00	1.061E-01	1.061E-01	81.81	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235003.CNF;1
* Acquisition date   : 3-OCT-2016 08:01:06 Sensitivity      : 3.000
* Detector ID        : GAM08 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.68 Half life ratio : *****
* Sample date       : 10-DEC-2015 14:35:00 Analyst initials: MXR1
* Sample ID         : G405235003 Sample Quantity : 1.4049E+02 GRAM
* Batch Number      : 1596247 Wet Weight      : 0.00000
* Wet wt corr       : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 21-JUL-2016 06:09:19 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM08 CAN.CNF;14
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.446E+01	1.700E+00	8.167E-01
CD-109	1.722E+00	3.058E+00	3.055E+00
SN-126	1.101E-01	1.955E-01	1.900E-01
EU-155	2.088E-01	2.156E-01	2.455E-01
TL-208	3.940E-01	1.028E-01	6.557E-02
BI-212	1.178E+00	1.199E+00	1.010E+00
PB-212	1.218E+00	1.508E-01	1.099E-01
BI-214	7.303E-01	2.115E-01	1.733E-01
PB-214	1.008E+00	2.457E-01	1.604E-01
RN-219	5.016E-01	1.014E+00	8.686E-01
RN-222	7.303E-01	2.115E-01	1.733E-01
RA-224	1.333E+00	1.807E+00	1.178E+00
RA-226	7.303E-01	2.115E-01	1.733E-01
AC-228	9.868E-01	3.351E-01	3.106E-01
RA-228	9.868E-01	3.351E-01	3.106E-01
TH-228	1.218E+00	1.508E-01	1.099E-01
TH-230	7.301E-01	2.114E-01	1.733E-01
TH-232	9.868E-01	3.351E-01	3.106E-01
TH-234	5.514E+00	4.065E+00	2.879E+00
U-234	7.301E-01	2.114E-01	1.733E-01
U-238	5.514E+00	4.065E+00	2.879E+00
AM-243	2.515E-01	1.421E-01	1.162E-01
CM-247	4.598E-02	9.297E-02	7.973E-02
ANH-511	1.061E-01	8.509E-02	5.025E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	3.769E-01		1.220E+01	2.376E+01	NOT IDENT.
NA-22	-3.017E-02		6.110E-02	1.074E-01	NOT IDENT.
NA-24	0.000E+00		1.960E+41	0.000E+00	SHORT HLIF
AL-26	2.807E-04		1.819E-02	4.928E-02	NOT IDENT.
SC-46	-4.138E-02		3.385E-01	6.862E-01	FAIL ABUN
V-48	0.000E+00		1.452E+04	0.000E+00	SHORT HLIF

CR-51	0.000E+00	4.984E+02	0.000E+00	SHORT HLIF
MN-54	1.168E-02	6.721E-02	1.390E-01	NOT IDENT.
CO-56	-3.603E-01	5.812E-01	1.044E+00	FAIL ABUN
MN-56	0.000E+00	1.603E+41	0.000E+00	SHORT HLIF
CO-57	3.215E-02	5.676E-02	1.088E-01	NOT IDENT.
CO-58	-7.275E-01	6.999E-01	1.167E+00	NOT IDENT.
FE-59	2.551E+00	9.019E+00	1.654E+01	NOT IDENT.
CO-60	4.861E-03	5.650E-02	1.113E-01	NOT IDENT.
ZN-65	9.557E-02	2.044E-01	3.990E-01	NOT IDENT.
GE-68	9.350E-01	2.840E+00	5.888E+00	NOT IDENT.
AS-73	4.679E+00	1.492E+01	2.911E+01	NOT IDENT.
AS-74	0.000E+00	5.875E+03	0.000E+00	SHORT HLIF
SE-75	2.433E-01	2.254E-01	4.693E-01	FAIL ABUN
BR-77	0.000E+00	1.469E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	7.886E+02	0.000E+00	SHORT HLIF
RB-83	-4.842E-01	8.995E-01	1.357E+00	NOT IDENT.
KR-85	9.885E+00	9.717E+00	1.687E+01	NOT IDENT.
SR-85	1.019E+00	1.004E+00	1.743E+00	NOT IDENT.
RB-86	0.000E+00	3.377E+04	0.000E+00	SHORT HLIF
Y-88	-8.771E-02	2.218E-01	4.392E-01	NOT IDENT.
Y-91	-2.454E+02	4.722E+02	8.419E+02	NOT IDENT.
NB-94	9.471E-03	4.610E-02	8.292E-02	NOT IDENT.
NB-95	-6.313E-01	1.019E+00	1.846E+00	NOT IDENT.
NB-95M	-2.326E-01	2.792E+00	4.837E+00	NOT IDENT.
ZR-95	-9.418E-02	1.968E+00	3.838E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.517E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.217E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	1.169E-02	4.169E-02	7.220E-02	NOT IDENT.
RH-102	3.701E-03	6.831E-02	1.306E-01	NOT IDENT.
RU-103	1.458E+00	6.553E+00	1.286E+01	FAIL ABUN
RH-106	-2.142E-01	6.246E-01	1.109E+00	NOT IDENT.
RU-106	-2.142E-01	6.246E-01	1.109E+00	NOT IDENT.
AG-108M	-9.918E-03	3.475E-02	6.372E-02	NOT IDENT.
AG-110M	-2.885E-02	9.101E-02	1.769E-01	FAIL ABUN
SN-113	7.813E-02	2.482E-01	4.970E-01	NOT IDENT.
CD-115	0.000E+00	2.060E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.123E+05	0.000E+00	SHORT HLIF
TE-123M	1.883E-01	1.573E-01	3.123E-01	NOT IDENT.
SB-124	-7.623E-01	1.056E+00	1.104E+00	NOT IDENT.
SB-125	-5.468E-02	1.179E-01	2.122E-01	FAIL ABUN
TE-125M	1.069E+02	3.419E+02	6.351E+02	NOT IDENT.
I-126	0.000E+00	1.117E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.198E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.667E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	5.195E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.039E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.815E+26	0.000E+00	SHORT HLIF
BA-133	1.325E-02	5.067E-02	9.088E-02	NOT IDENT.
I-133	0.000E+00	1.167E+41	0.000E+00	SHORT HLIF
CS-134	8.258E-02	5.926E-02	1.380E-01	NOT IDENT.
CS-135	9.185E-02	1.707E-01	3.171E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.500E+05	0.000E+00	SHORT HLIF
BA-137M	6.763E-03	4.608E-02	8.695E-02	NOT IDENT.
CS-137	7.144E-03	4.868E-02	9.186E-02	NOT IDENT.
CE-139	-4.362E-02	1.406E-01	2.432E-01	NOT IDENT.
BA-140	0.000E+00	1.724E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	3.627E+05	0.000E+00	SHORT HLIF
CE-141	3.308E+00	3.052E+01	5.510E+01	NOT IDENT.
CE-143	0.000E+00	8.286E+40	0.000E+00	SHORT HLIF
CE-144	9.356E-02	4.746E-01	8.603E-01	NOT IDENT.
PM-144	-1.355E-02	6.227E-02	1.212E-01	NOT IDENT.
PR-144	-1.232E+00	5.393E+00	1.048E+01	NOT IDENT.
PM-146	4.955E-03	5.043E-02	9.762E-02	NOT IDENT.
ND-147	0.000E+00	4.064E+07	0.000E+00	SHORT HLIF
PM-147	-9.139E+02	1.045E+03	1.753E+03	NOT IDENT.
PM-149	0.000E+00	2.372E+40	0.000E+00	SHORT HLIF
EU-150	-6.881E-03	3.208E-02	5.364E-02	FAIL ABUN
EU-152	7.929E-04	1.151E-01	1.992E-01	FAIL ABUN
GD-153	-8.738E-02	2.201E-01	3.926E-01	FAIL ABUN
EU-154	-7.705E-02	1.494E-01	2.614E-01	NOT IDENT.
TB-160	-7.311E-01	1.832E+00	2.961E+00	FAIL ABUN
HO-166M	6.388E-02	7.824E-02	1.640E-01	FAIL ABUN
TM-171	-1.557E+01	3.878E+01	7.150E+01	NOT IDENT.
HF-172	-9.778E-02	2.939E-01	4.742E-01	FAIL ABUN
LU-172	4.333E-02	1.119E-01	2.119E-01	FAIL ABUN

LU-176	2.191E-02	2.782E-02	5.780E-02	FAIL ABUN
HF-181	2.207E+00	4.754E+00	9.671E+00	NOT IDENT.
TA-182	-8.885E-01	1.158E+00	1.927E+00	FAIL ABUN
RE-183	1.486E-01	4.431E+00	8.474E+00	NOT IDENT.
RE-184	9.336E+00	3.418E+01	7.087E+01	NOT IDENT.
W-188	9.807E+00	1.247E+02	2.208E+02	FAIL ABUN
IR-192	-1.562E-01	5.335E-01	9.972E-01	FAIL ABUN
HG-203	2.509E+00	4.918E+00	4.798E+00	FAIL ABUN
BI-207	-2.470E-02	6.450E-02	1.176E-01	FAIL ABUN
PB-210	4.378E+00	6.861E+00	1.389E+01	NOT IDENT.
BI-211	0.000E+00	6.767E-01	9.852E-01	FAIL ABUN
PB-211	-6.341E-02	7.940E-01	1.350E+00	NOT IDENT.
RA-223	-3.459E-01	6.499E-01	1.147E+00	FAIL ABUN
AC-227	6.193E-02	2.609E-01	5.171E-01	NOT IDENT.
TH-227	6.193E-02	2.609E-01	5.171E-01	NOT IDENT.
TH-229	3.118E-01	5.182E-01	1.061E+00	FAIL ABUN
PA-231	8.794E-01	5.953E-01	1.261E+00	NOT IDENT.
TH-231	-3.459E-01	6.499E-01	1.147E+00	FAIL ABUN
PA-233	-1.557E-02	6.863E-02	1.294E-01	NOT IDENT.
PA-234	6.011E-02	3.615E-01	7.255E-01	NOT IDENT.
PA-234M	1.138E+00	6.167E+00	1.246E+01	NOT IDENT.
U-235	1.168E-01	2.250E-01	4.286E-01	FAIL ABUN
NP-237	-1.557E-02	6.863E-02	1.294E-01	NOT IDENT.
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	4.035E-02	3.200E-01	5.880E-01	FAIL ABUN
PU-239	3.234E+02	7.071E+02	7.300E+02	FAIL ABUN
AM-241	1.208E-02	2.140E-01	3.793E-01	NOT IDENT.
CM-243	1.908E-01	1.970E-01	2.313E-01	FAIL ABUN
BK-247	3.487E-02	8.713E-02	1.603E-01	NOT IDENT.
CF-249	-2.600E-02	4.139E-02	7.336E-02	NOT IDENT.
CF-251	5.720E-02	1.289E-01	2.619E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	279	10.66*	9.671E-01	1.446E+01	1.446E+01	12.00
CD-109	88.03	61	3.70*	4.281E+00	2.064E+00	3.228E+00	95.67
SN-126	64.28	83	9.60	2.181E+00	2.125E+00	2.125E+00	75.23
	86.94	61	8.90	4.281E+00	8.580E-01	8.580E-01	95.67
	87.57	61	37.00*	4.281E+00	2.064E-01	2.064E-01	95.67
EU-155	86.55	61	30.70	4.281E+00	2.487E-01	2.802E-01	95.67
	105.31	37	21.10*	5.121E+00	1.853E-01	2.088E-01	105.38
HG-203	70.83	-----	3.69	2.935E+00	-----	Line Not Found	-----
	72.87	-----	6.19	3.135E+00	-----	Line Not Found	-----
	279.20	17	81.56*	3.703E+00	2.990E-02	2.509E+00	199.99
TL-208	277.37	17	6.60	3.703E+00	3.695E-01	3.695E-01	199.99
	583.19	126	85.00*	2.006E+00	3.940E-01	3.940E-01	26.63
	860.56	25	12.50	1.479E+00	7.179E-01	7.179E-01	68.57
BI-211	72.87	-----	1.23	3.135E+00	-----	Line Not Found	-----
	351.06	204	12.92*	3.045E+00	2.776E+00	2.776E+00	24.88
BI-212	727.33	25	6.67*	1.684E+00	1.178E+00	1.178E+00	103.81
	785.37	25	1.10	1.587E+00	7.754E+00	7.754E+00	40.00
	1620.50	-----	1.47	8.836E-01	-----	Line Not Found	-----
PB-212	74.82	141	10.28	3.291E+00	2.233E+00	2.233E+00	41.69
	77.11	191	17.10	3.516E+00	1.694E+00	1.694E+00	29.38
	238.63	415	43.60*	4.175E+00	1.218E+00	1.218E+00	12.63
	300.09	-----	3.30	3.479E+00	-----	Line Not Found	-----
BI-214	609.32	120	45.49*	1.938E+00	7.300E-01	7.303E-01	29.55
	1120.29	33	14.92	1.202E+00	9.905E-01	9.908E-01	61.72
	1764.49	16	15.30	8.179E-01	6.774E-01	6.777E-01	69.13
PB-214	74.82	141	5.80	3.291E+00	3.959E+00	3.960E+00	41.69
	77.11	191	9.70	3.516E+00	2.986E+00	2.987E+00	29.38
	87.09	61	3.41	4.281E+00	2.239E+00	2.240E+00	95.67
	242.00	101	7.25	4.136E+00	1.799E+00	1.799E+00	55.34
	295.22	127	18.42	3.529E+00	1.045E+00	1.045E+00	29.69
	351.93	204	35.60*	3.045E+00	1.007E+00	1.008E+00	24.88
RN-219	271.23	32	10.80	3.784E+00	4.176E-01	4.176E-01	120.01
	401.81	17	6.60*	2.725E+00	5.016E-01	5.016E-01	206.32
RN-222	609.32	120	45.49*	1.938E+00	7.300E-01	7.303E-01	29.55
	1120.29	33	14.92	1.202E+00	9.905E-01	9.908E-01	61.72
	1764.49	16	15.30	8.179E-01	6.774E-01	6.777E-01	69.13
RA-224	240.99	101	4.10*	4.136E+00	3.181E+00	3.181E+00	55.34
RA-226	609.32	120	45.49*	1.938E+00	7.300E-01	7.303E-01	29.55
	1120.29	33	14.92	1.202E+00	9.905E-01	9.908E-01	61.72
	1764.49	16	15.30	8.179E-01	6.774E-01	6.777E-01	69.13
AC-228	105.21	37	1.10	5.121E+00	3.555E+00	3.555E+00	105.38
	338.32	76	11.27	3.149E+00	1.138E+00	1.138E+00	46.11
	794.95	-----	4.25	1.572E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.512E+00	-----	Line Not Found	-----
	911.20	67	25.80*	1.413E+00	9.868E-01	9.868E-01	34.65
	968.97	44	15.80	1.348E+00	1.097E+00	1.097E+00	43.42
RA-228	105.21	37	1.10	5.121E+00	3.555E+00	3.555E+00	105.38

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	338.32	76	11.27	3.149E+00	1.138E+00	1.138E+00	46.11
	794.95	-----	4.25	1.572E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.512E+00	-----	Line Not Found	-----
	911.20	67	25.80*	1.413E+00	9.868E-01	9.868E-01	34.65
	968.97	44	15.80	1.348E+00	1.097E+00	1.097E+00	43.42
TH-228	74.82	141	10.28	3.291E+00	2.233E+00	2.233E+00	41.69
	77.11	191	17.10	3.516E+00	1.694E+00	1.694E+00	29.38
	238.63	415	43.60*	4.175E+00	1.218E+00	1.218E+00	12.63
	300.09	-----	3.30	3.479E+00	-----	Line Not Found	-----
TH-230	609.32	120	45.49*	1.938E+00	7.301E-01	7.301E-01	29.55
	1120.29	33	14.92	1.202E+00	9.905E-01	9.905E-01	61.72
	1764.49	16	15.30	8.179E-01	6.774E-01	6.774E-01	69.13
TH-232	105.21	37	1.10	5.121E+00	3.555E+00	3.555E+00	105.38
	338.32	76	11.27	3.149E+00	1.138E+00	1.138E+00	46.11
	835.71	-----	1.61	1.512E+00	-----	Line Not Found	-----
	911.20	67	25.80*	1.413E+00	9.868E-01	9.868E-01	34.65
	968.97	44	15.80	1.348E+00	1.097E+00	1.097E+00	43.42
TH-234	63.29	83	3.70*	2.181E+00	5.514E+00	5.514E+00	75.23
	92.59	17	4.23	4.614E+00	4.562E-01	4.562E-01	395.92
U-234	609.32	120	45.49*	1.938E+00	7.300E-01	7.301E-01	29.55
	1120.29	33	14.92	1.202E+00	9.905E-01	9.905E-01	61.72
	1764.49	16	15.30	8.179E-01	6.774E-01	6.774E-01	69.13
U-238	63.29	83	3.70*	2.181E+00	5.514E+00	5.514E+00	75.23
	92.59	17	4.23	4.614E+00	4.562E-01	4.562E-01	395.92
AM-243	43.53	-----	5.90	2.327E-01	-----	Line Not Found	-----
	74.66	141	67.20*	3.291E+00	3.417E-01	3.417E-01	41.69
CM-247	278.00	17	3.40	3.703E+00	7.173E-01	7.173E-01	199.99
	287.50	-----	2.00	3.604E+00	-----	Line Not Found	-----
	402.40	17	72.00*	2.725E+00	4.598E-02	4.598E-02	206.32
ANH-511	511.00	44	100.00*	2.232E+00	1.061E-01	1.061E-01	81.81

Flag: "*" = Keyline

Total number of lines in spectrum 50
Number of unidentified lines 13
Number of lines tentatively identified by NID 37 74.00%

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	1.446E+01	1.446E+01	0.173E+01	12.00	
CD-109	461.40D	1.56	2.064E+00	3.228E+00	3.088E+00	95.67	
SN-126	2.30E+05Y	1.00	2.064E-01	2.064E-01	1.974E-01	95.67	
EU-155	4.75Y	1.13	1.853E-01	2.088E-01	2.200E-01	105.38	
HG-203	46.59D	83.9	2.990E-02	2.509E+00	5.018E+00	199.99	
TL-208	1.41E+10Y	1.00	3.940E-01	3.940E-01	1.049E-01	26.63	
BI-211	7.04E+08Y	1.00	2.776E+00	2.776E+00	0.690E+00	24.88	
BI-212	1.41E+10Y	1.00	1.178E+00	1.178E+00	1.223E+00	103.81	
PB-212	1.41E+10Y	1.00	1.218E+00	1.218E+00	0.154E+00	12.63	
BI-214	1600.00Y	1.00	7.300E-01	7.303E-01	2.158E-01	29.55	
PB-214	1600.00Y	1.00	1.007E+00	1.008E+00	0.251E+00	24.88	
RN-219	7.04E+08Y	1.00	5.016E-01	5.016E-01	10.35E-01	206.32	
RN-222	1600.00Y	1.00	7.300E-01	7.303E-01	2.158E-01	29.55	
RA-224	1.41E+10Y	1.00	3.181E+00	3.181E+00	1.760E+00	55.34	
RA-226	1600.00Y	1.00	7.300E-01	7.303E-01	2.158E-01	29.55	
AC-228	1.41E+10Y	1.00	9.868E-01	9.868E-01	3.419E-01	34.65	
RA-228	1.41E+10Y	1.00	9.868E-01	9.868E-01	3.419E-01	34.65	
TH-228	1.41E+10Y	1.00	1.218E+00	1.218E+00	0.154E+00	12.63	
TH-230	7.54E+04Y	1.00	7.301E-01	7.301E-01	2.157E-01	29.55	
TH-232	1.41E+10Y	1.00	9.868E-01	9.868E-01	3.419E-01	34.65	
TH-234	4.47E+09Y	1.00	5.514E+00	5.514E+00	4.148E+00	75.23	
U-234	2.45E+05Y	1.00	7.300E-01	7.301E-01	2.157E-01	29.55	
U-238	4.47E+09Y	1.00	5.514E+00	5.514E+00	4.148E+00	75.23	
AM-243	7370.00Y	1.00	3.417E-01	3.417E-01	1.425E-01	41.69	
CM-247	1.56E+07Y	1.00	4.598E-02	4.598E-02	9.486E-02	206.32	
ANH-511	1.00E+09Y	1.00	1.061E-01	1.061E-01	0.868E-01	81.81	

Total Activity : 4.655E+01 5.022E+01

Grand Total Activity : 4.655E+01 5.022E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	41.47	18	126	1.38	83.16	80	7	3.94E-03	****	1.33E-01	
0	129.00	21	136	0.83	258.30	253	9	4.96E-03	****	5.48E+00	T
0	185.88	64	123	1.54	372.11	367	9	1.55E-02	76.9	4.93E+00	T
0	209.35	72	126	3.58	419.08	413	14	1.78E-02	74.5	4.58E+00	T
7	342.50	35	66	2.84	685.48	672	20	9.06E-03	****	3.12E+00	
0	367.54	24	32	2.73	735.59	731	9	6.12E-03	98.5	2.94E+00	T
0	416.72	13	29	1.30	834.00	830	8	3.34E-03	****	2.64E+00	
0	463.41	13	31	1.33	927.40	923	8	3.45E-03	****	2.42E+00	T
0	517.47	18	17	3.86	1035.57	1030	11	4.86E-03	****	2.21E+00	
0	596.95	14	7	1.66	1194.59	1191	7	3.75E-03	84.1	1.97E+00	T
0	679.31	26	17	3.78	1359.36	1350	17	7.05E-03	84.2	1.78E+00	
0	706.97	10	19	0.98	1414.71	1411	7	2.61E-03	****	1.72E+00	T
0	781.12	21	2	0.90	1563.07	1558	10	5.72E-03	52.5	1.59E+00	
0	876.69	8	7	3.30	1754.26	1748	10	2.16E-03	****	1.46E+00	T
0	934.52	9	9	0.92	1869.96	1863	9	2.45E-03	****	1.39E+00	
0	963.07	27	6	0.63	1927.07	1920	13	7.49E-03	56.7	1.35E+00	T
0	1042.94	17	4	1.35	2086.86	2082	11	4.90E-03	69.1	1.27E+00	
0	1097.55	11	6	1.29	2196.11	2192	8	3.14E-03	95.4	1.22E+00	
0	1145.18	8	7	1.18	2291.40	2287	8	2.40E-03	****	1.18E+00	
0	1155.67	20	7	2.04	2312.38	2304	14	5.79E-03	69.5	1.17E+00	
0	1239.66	11	11	3.50	2480.41	2473	13	3.12E-03	****	1.11E+00	T
0	1243.50	10	0	1.53	2488.10	2485	7	2.78E-03	63.2	1.11E+00	
0	1310.84	12	5	1.11	2622.80	2617	12	3.38E-03	97.2	1.06E+00	T
0	1408.11	8	2	1.57	2817.40	2813	9	2.41E-03	92.3	9.98E-01	T
0	1430.72	7	6	0.66	2862.62	2853	13	2.14E-03	****	9.84E-01	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235003.CNF;1
* Acquisition date   : 3-OCT-2016 08:01:06 Sensitivity      : 3.000
* Detector ID        : GAM08 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.68 Half life ratio : *****
* Sample date        : 10-DEC-2015 14:35:00 Nuclide Library : SOLID
* Sample ID          : G405235003 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.4049E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 21-JUL-2016 06:09:19 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM08 CAN.CNF;14
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	3.380E-01
CD-109	1.453E+00
SN-126	9.024E-02
EU-155	1.148E-01
TL-208	2.846E-02
BI-212	4.395E-01
PB-212	5.081E-02
BI-214	7.832E-02
PB-214	7.331E-02
RN-219	3.930E-01
RN-222	7.832E-02
RA-224	5.448E-01
RA-226	7.832E-02
AC-228	1.353E-01
RA-228	1.353E-01
TH-228	5.081E-02
TH-230	7.829E-02
TH-232	1.353E-01
TH-234	1.343E+00
U-234	7.829E-02
U-238	1.343E+00
AM-243	5.467E-02
CM-247	3.607E-02
ANH-511	2.181E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.043E+01	NOT IDENT.
NA-22	4.538E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.558E-02	NOT IDENT.
SC-46	2.834E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF

MN-54	6.013E-02	NOT IDENT.
CO-56	4.509E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	5.090E-02	NOT IDENT.
CO-58	4.960E-01	NOT IDENT.
FE-59	7.178E+00	NOT IDENT.
CO-60	4.792E-02	NOT IDENT.
ZN-65	1.717E-01	NOT IDENT.
GE-68	2.553E+00	NOT IDENT.
AS-73	1.364E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	2.162E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.964E-01	NOT IDENT.
KR-85	7.628E+00	NOT IDENT.
SR-85	7.877E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.556E-01	NOT IDENT.
Y-91	3.369E+02	NOT IDENT.
NB-94	3.721E-02	NOT IDENT.
NB-95	8.089E-01	NOT IDENT.
NB-95M	2.238E+00	NOT IDENT.
ZR-95	1.712E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.369E-02	NOT IDENT.
RH-102	5.716E-02	NOT IDENT.
RU-103	5.748E+00	FAIL ABUN
RH-106	4.864E-01	NOT IDENT.
RU-106	4.864E-01	NOT IDENT.
AG-108M	2.865E-02	NOT IDENT.
AG-110M	7.251E-02	FAIL ABUN
SN-113	2.238E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.466E-01	NOT IDENT.
SB-124	0.000E+00	NOT IDENT.
SB-125	9.428E-02	FAIL ABUN
TE-125M	2.980E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	4.124E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	6.184E-02	NOT IDENT.
CS-135	1.463E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.888E-02	NOT IDENT.
CS-137	4.108E-02	NOT IDENT.
CE-139	1.135E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.591E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	4.045E-01	NOT IDENT.
PM-144	5.312E-02	NOT IDENT.
PR-144	4.593E+00	NOT IDENT.
PM-146	4.368E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	8.158E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.434E-02	FAIL ABUN
EU-152	9.019E-02	FAIL ABUN
GD-153	1.835E-01	FAIL ABUN
EU-154	1.102E-01	NOT IDENT.
TB-160	1.190E+00	FAIL ABUN
HO-166M	7.409E-02	FAIL ABUN
TM-171	3.345E+01	NOT IDENT.
HF-172	2.205E-01	FAIL ABUN
LU-172	9.319E-02	FAIL ABUN
LU-176	2.657E-02	FAIL ABUN

HF-181	4.324E+00	NOT IDENT.
TA-182	8.178E-01	FAIL ABUN
RE-183	3.962E+00	NOT IDENT.
RE-184	3.085E+01	NOT IDENT.
W-188	1.004E+02	FAIL ABUN
IR-192	4.542E-01	FAIL ABUN
HG-203	2.190E+00	FAIL ABUN
BI-207	5.088E-02	FAIL ABUN
PB-210	6.513E+00	NOT IDENT.
BI-211	4.739E-01	FAIL ABUN
PB-211	6.025E-01	NOT IDENT.
RA-223	5.165E-01	FAIL ABUN
AC-227	2.386E-01	NOT IDENT.
TH-227	2.386E-01	NOT IDENT.
TH-229	4.951E-01	FAIL ABUN
PA-231	5.901E-01	NOT IDENT.
TH-231	5.165E-01	FAIL ABUN
PA-233	5.895E-02	NOT IDENT.
PA-234	3.184E-01	NOT IDENT.
PA-234M	5.567E+00	NOT IDENT.
U-235	2.016E-01	FAIL ABUN
NP-237	5.895E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
NP-239	2.763E-01	FAIL ABUN
PU-239	3.431E+02	FAIL ABUN
AM-241	1.772E-01	NOT IDENT.
CM-243	1.084E-01	FAIL ABUN
BK-247	7.365E-02	NOT IDENT.
CF-249	3.265E-02	NOT IDENT.
CF-251	1.223E-01	NOT IDENT.


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235003.CNF;1
* Acquisition date   : 3-OCT-2016 08:01:06 Sensitivity      : 3.000
* Detector ID        : GAM08 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.68 Half life ratio : *****
* Sample date        : 10-DEC-2015 14:35:00 Nuclide Library : SOLID
* Sample ID          : G405235003 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.4049E+02 GRAM
*                               Quantity Err(%) : 1.4236E-03 %
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000
*                               Dry Weight       : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 21-JUL-2016 06:09:19 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM08 CAN.CNF;14
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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
              (pCi/GRAM )   (1.96-sigma)  (1.96-sigma)
K-40         1.446E+01      1.860E+00      1.860E+00
CD-109       1.722E+00      3.067E+00      3.067E+00
SN-126       1.101E-01      1.960E-01      1.960E-01
EU-155       2.088E-01      2.161E-01      2.161E-01
TL-208       3.940E-01      1.042E-01      1.042E-01
BI-212       1.178E+00      1.200E+00      1.200E+00
PB-212       1.218E+00      1.640E-01      1.640E-01
BI-214       7.303E-01      2.138E-01      2.138E-01
PB-214       1.008E+00      2.492E-01      2.492E-01
RN-219       5.016E-01      1.016E+00      1.016E+00
RN-222       7.303E-01      2.138E-01      2.138E-01
RA-224       1.333E+00      1.812E+00      1.812E+00
RA-226       7.303E-01      2.138E-01      2.138E-01
AC-228       9.868E-01      3.389E-01      3.389E-01
RA-228       9.868E-01      3.389E-01      3.389E-01
TH-228       1.218E+00      1.640E-01      1.640E-01
TH-230       7.301E-01      2.137E-01      2.137E-01
TH-232       9.868E-01      3.389E-01      3.389E-01
TH-234       5.514E+00      4.245E+00      4.245E+00
U-234        7.301E-01      2.137E-01      2.137E-01
U-238        5.514E+00      4.245E+00      4.245E+00
AM-243       2.515E-01      1.434E-01      1.434E-01
CM-247       4.598E-02      9.329E-02      9.329E-02
ANH-511      1.061E-01      8.520E-02      8.520E-02

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

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Nuclide      Key-Line      K.L Act error      TPU
              Activity      (1.96-sigma)      (1.96-sigma)
              (pCi/GRAM )
BE-7         3.769E-01      1.220E+01      1.220E+01 NOT IDENT.
NA-22        -3.017E-02      6.111E-02      6.261E-02 NOT IDENT.
NA-24        -1.000E+41      8.361E+41      0.000E+00 SHORT HLIF
AL-26        2.807E-04      1.819E-02      1.819E-02 NOT IDENT.
SC-46        -4.138E-02      3.385E-01      3.390E-01 FAIL ABUN
V-48         -8.087E+03      1.452E+04      1.497E+04 SHORT HLIF

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CR-51	2.431E+02	4.985E+02	5.104E+02	SHORT HLIF
MN-54	1.168E-02	6.721E-02	6.742E-02	NOT IDENT.
CO-56	-3.603E-01	5.814E-01	6.037E-01	FAIL ABUN
MN-56	-1.000E+41	1.604E+41	0.000E+00	SHORT HLIF
CO-57	3.215E-02	5.678E-02	5.860E-02	NOT IDENT.
CO-58	-7.275E-01	7.006E-01	7.736E-01	NOT IDENT.
FE-59	2.551E+00	9.021E+00	9.094E+00	NOT IDENT.
CO-60	4.861E-03	5.650E-02	5.654E-02	NOT IDENT.
ZN-65	9.557E-02	2.045E-01	2.090E-01	NOT IDENT.
GE-68	9.350E-01	2.840E+00	2.871E+00	NOT IDENT.
AS-73	4.679E+00	1.495E+01	1.510E+01	NOT IDENT.
AS-74	7.125E+03	5.904E+03	6.722E+03	SHORT HLIF
SE-75	2.433E-01	2.257E-01	2.509E-01	FAIL ABUN
BR-77	1.187E+38	1.020E+39	0.000E+00	SHORT HLIF
SR-82	-5.075E+01	7.886E+02	7.890E+02	SHORT HLIF
RB-83	-4.842E-01	9.019E-01	9.280E-01	NOT IDENT.
KR-85	9.885E+00	9.725E+00	1.070E+01	NOT IDENT.
SR-85	1.019E+00	1.005E+00	1.105E+00	NOT IDENT.
RB-86	1.534E+03	3.377E+04	3.378E+04	SHORT HLIF
Y-88	-8.771E-02	2.218E-01	2.253E-01	NOT IDENT.
Y-91	-2.454E+02	4.723E+02	4.851E+02	NOT IDENT.
NB-94	9.471E-03	4.610E-02	4.630E-02	NOT IDENT.
NB-95	-6.313E-01	1.019E+00	1.058E+00	NOT IDENT.
NB-95M	-2.326E-01	2.792E+00	2.794E+00	NOT IDENT.
ZR-95	-9.418E-02	1.968E+00	1.968E+00	NOT IDENT.
NB-97	-1.000E+41	3.976E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.517E+41	0.000E+00	SHORT HLIF
MO-99	5.623E+30	1.217E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	3.882E+41	0.000E+00	SHORT HLIF
RH-101	1.169E-02	4.175E-02	4.208E-02	NOT IDENT.
RH-102	3.701E-03	6.831E-02	6.833E-02	NOT IDENT.
RU-103	1.458E+00	6.554E+00	6.586E+00	FAIL ABUN
RH-106	-2.142E-01	6.247E-01	6.321E-01	NOT IDENT.
RU-106	-2.142E-01	6.247E-01	6.321E-01	NOT IDENT.
AG-108M	-9.918E-03	3.475E-02	3.504E-02	NOT IDENT.
AG-110M	-2.885E-02	9.102E-02	9.195E-02	FAIL ABUN
SN-113	7.813E-02	2.482E-01	2.507E-01	NOT IDENT.
CD-115	-1.298E+39	2.074E+39	0.000E+00	SHORT HLIF
SN-117M	1.370E+04	1.123E+05	1.125E+05	SHORT HLIF
TE-123M	1.883E-01	1.576E-01	1.790E-01	NOT IDENT.
SB-124	-7.623E-01	1.057E+00	1.112E+00	NOT IDENT.
SB-125	-5.468E-02	1.179E-01	1.205E-01	FAIL ABUN
TE-125M	1.069E+02	3.420E+02	3.453E+02	NOT IDENT.
I-126	-3.319E+04	1.117E+06	1.117E+06	SHORT HLIF
SB-126	5.939E+05	1.203E+06	1.233E+06	SHORT HLIF
SB-127	2.057E+21	1.690E+22	0.000E+00	SHORT HLIF
I-131	-3.372E+09	5.197E+09	5.415E+09	SHORT HLIF
I-132	1.000E+41	1.838E+42	0.000E+00	SHORT HLIF
TE-132	-1.489E+26	2.879E+26	0.000E+00	SHORT HLIF
BA-133	1.325E-02	5.067E-02	5.102E-02	NOT IDENT.
I-133	1.000E+41	2.142E+41	0.000E+00	SHORT HLIF
CS-134	8.258E-02	5.936E-02	7.007E-02	NOT IDENT.
CS-135	9.185E-02	1.708E-01	1.757E-01	NOT IDENT.
I-135	1.000E+41	2.658E+42	0.000E+00	SHORT HLIF
CS-136	2.261E+05	3.508E+05	3.653E+05	SHORT HLIF
BA-137M	6.763E-03	4.608E-02	4.619E-02	NOT IDENT.
CS-137	7.144E-03	4.868E-02	4.879E-02	NOT IDENT.
CE-139	-4.362E-02	1.409E-01	1.422E-01	NOT IDENT.
BA-140	-4.541E+05	1.724E+06	1.737E+06	SHORT HLIF
LA-140	-7.891E+04	3.627E+05	3.644E+05	SHORT HLIF
CE-141	3.308E+00	3.052E+01	3.055E+01	NOT IDENT.
CE-143	1.000E+41	8.347E+40	0.000E+00	SHORT HLIF
CE-144	9.356E-02	4.746E-01	4.765E-01	NOT IDENT.
PM-144	-1.355E-02	6.227E-02	6.257E-02	NOT IDENT.
PR-144	-1.232E+00	5.394E+00	5.422E+00	NOT IDENT.
PM-146	4.955E-03	5.043E-02	5.048E-02	NOT IDENT.
ND-147	-5.972E+06	4.064E+07	4.073E+07	SHORT HLIF
PM-147	-9.139E+02	1.046E+03	1.124E+03	NOT IDENT.
PM-149	-6.305E+39	2.376E+40	0.000E+00	SHORT HLIF
EU-150	-6.881E-03	3.208E-02	3.223E-02	FAIL ABUN
EU-152	7.929E-04	1.151E-01	1.151E-01	FAIL ABUN
GD-153	-8.738E-02	2.202E-01	2.237E-01	FAIL ABUN
EU-154	-7.705E-02	1.494E-01	1.534E-01	NOT IDENT.
TB-160	-7.311E-01	1.832E+00	1.862E+00	FAIL ABUN
HO-166M	6.388E-02	7.831E-02	8.344E-02	FAIL ABUN
TM-171	-1.557E+01	3.880E+01	3.943E+01	NOT IDENT.
HF-172	-9.778E-02	2.943E-01	2.976E-01	FAIL ABUN
LU-172	4.333E-02	1.119E-01	1.136E-01	FAIL ABUN

LU-176	2.191E-02	2.783E-02	2.953E-02	FAIL ABUN
HF-181	2.207E+00	4.755E+00	4.858E+00	NOT IDENT.
TA-182	-8.885E-01	1.159E+00	1.226E+00	FAIL ABUN
RE-183	1.486E-01	4.431E+00	4.431E+00	NOT IDENT.
RE-184	9.336E+00	3.425E+01	3.451E+01	NOT IDENT.
W-188	9.807E+00	1.247E+02	1.248E+02	FAIL ABUN
IR-192	-1.562E-01	5.335E-01	5.382E-01	FAIL ABUN
HG-203	2.509E+00	4.919E+00	5.048E+00	FAIL ABUN
BI-207	-2.470E-02	6.451E-02	6.546E-02	FAIL ABUN
PB-210	4.378E+00	6.874E+00	7.151E+00	NOT IDENT.
BI-211	2.776E+00	6.879E-01	1.428E+00	FAIL ABUN
PB-211	-6.341E-02	7.940E-01	7.945E-01	NOT IDENT.
RA-223	-3.459E-01	6.502E-01	6.687E-01	FAIL ABUN
AC-227	6.193E-02	2.610E-01	2.625E-01	NOT IDENT.
TH-227	6.193E-02	2.610E-01	2.625E-01	NOT IDENT.
TH-229	3.118E-01	5.184E-01	5.372E-01	FAIL ABUN
PA-231	8.794E-01	6.242E-01	7.395E-01	NOT IDENT.
TH-231	-3.459E-01	6.502E-01	6.687E-01	FAIL ABUN
PA-233	-1.557E-02	6.864E-02	6.900E-02	NOT IDENT.
PA-234	6.011E-02	3.680E-01	3.690E-01	NOT IDENT.
PA-234M	1.138E+00	6.167E+00	6.189E+00	NOT IDENT.
U-235	1.168E-01	2.251E-01	2.311E-01	FAIL ABUN
NP-237	-1.557E-02	6.864E-02	6.900E-02	NOT IDENT.
NP-238	-9.871E+40	2.386E+41	0.000E+00	SHORT HLIF
NP-239	4.035E-02	3.200E-01	3.206E-01	FAIL ABUN
PU-239	3.234E+02	7.073E+02	7.222E+02	FAIL ABUN
AM-241	1.208E-02	2.140E-01	2.141E-01	NOT IDENT.
CM-243	1.908E-01	1.978E-01	2.157E-01	FAIL ABUN
BK-247	3.487E-02	8.741E-02	8.881E-02	NOT IDENT.
CF-249	-2.600E-02	4.145E-02	4.307E-02	NOT IDENT.
CF-251	5.720E-02	1.291E-01	1.317E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	59.6892	87.09	118.9514	136.47	81.1235
45.60	68.0586	87.57	119.0594	140.51	0.0000
46.54	61.2173	88.03	127.9901	143.76	60.2501
49.72	0.0000	88.34	128.0645	144.24	72.3468
51.35	64.0687	88.47	128.0954	145.44	79.7094
51.87	70.2679	89.96	126.2374	152.43	62.1633
52.39	75.4637	1093.63	104.2217	153.25	0.0000
52.97	68.4295	91.11	0.0000	323.87	76.9658
53.44	61.3554	92.59	107.9328	156.02	0.0000
54.07	67.6015	93.35	108.0823	158.56	0.0000
57.36	0.0000	94.56	84.8680	159.00	50.3948
57.53	66.1311	94.65	84.8813	162.33	59.2449
57.98	68.2737	94.67	84.8848	162.66	0.0000
59.27	66.4148	94.87	84.9149	163.33	58.0823
59.32	66.4231	97.43	78.5674	165.86	73.1387
59.54	66.4585	98.43	68.5859	176.31	68.6178
60.96	63.9081	98.44	68.5873	176.60	0.0000
61.17	63.9402	99.53	63.0850	177.52	57.8208
62.93	63.8584	100.11	75.5524	181.07	0.0000
63.29	63.9123	102.03	63.3568	181.52	64.4029
63.58	63.9555	103.18	64.9917	184.41	64.1930
64.28	64.0596	103.37	66.5246	143.76	64.2881
66.73	70.4041	105.21	70.5224	193.51	52.9009
67.24	76.1237	105.31	70.5343	197.03	70.2344
125.81	87.4877	106.12	71.3888	198.01	53.1602
67.75	86.0897	106.47	68.3908	201.83	68.0136
69.67	72.2842	109.28	62.9815	203.43	53.8135
70.83	89.5185	111.00	75.7883	205.31	55.7348
72.81	83.4790	111.76	0.0000	210.85	47.7999
72.87	83.4897	114.06	70.3898	215.65	69.1703
74.66	83.8069	116.30	0.0000	222.11	52.7423
74.82	83.8349	116.74	77.6390	227.09	48.5843
74.97	83.8611	119.76	68.6882	227.38	50.3655
77.11	84.2342	121.12	81.6633	228.16	0.0000
78.74	88.1268	121.22	81.6761	228.18	58.3630
79.69	94.0862	121.78	65.3960	116.74	58.3630
80.12	76.7822	122.06	58.4141	235.69	53.4418
80.19	0.0000	122.92	58.4900	235.96	52.1194
80.57	58.0013	123.07	59.6730	238.63	50.9112
81.00	74.0150	265.00	62.0702	238.98	0.0000
81.07	95.7975	125.81	67.3581	240.99	51.0242
81.75	101.3768	127.23	58.0801	242.00	51.0724
83.79	74.4222	127.91	60.1026	244.70	41.7688
84.00	74.4528	129.30	60.2240	252.40	0.0000
85.43	112.7193	131.20	77.3620	252.80	40.7217
86.55	118.8295	133.02	68.8573	254.15	0.0000
86.79	118.8831	133.52	74.8471	256.23	43.5703
86.94	118.9177	136.00	77.4940	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	27.4353	355.39	0.0000	584.27	10.0789
264.80	26.0664	356.01	27.9886	595.83	0.0000
265.00	35.6762	364.49	0.0000	427.87	8.4644
268.22	37.1522	366.42	0.0000	602.52	0.0000
269.46	42.2425	372.51	20.8590	604.72	27.1387
270.03	42.2640	375.05	27.8604	607.14	35.6592
271.23	46.9056	377.52	20.9299	609.32	29.4626
273.65	0.0000	356.01	29.0254	610.33	25.5093
276.40	40.6466	388.16	31.1154	614.28	28.9625
277.37	40.6798	388.63	0.0000	618.01	14.7906
277.60	40.6878	391.69	23.1390	620.36	28.4749
278.00	40.2387	264.66	30.3571	621.93	21.6564
279.20	30.5568	401.81	30.3796	630.19	0.0000
279.54	30.5656	402.40	30.3906	631.29	16.0251
279.70	30.5696	404.85	24.3506	633.25	10.3110
280.46	27.8082	410.95	26.4819	634.78	0.0000
283.69	38.1072	413.71	33.6700	635.95	13.7646
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	35.3691	423.72	0.0000	645.85	10.3693
285.90	0.0000	427.09	29.8349	657.76	23.1641
287.50	27.0388	427.87	27.7905	657.90	0.0000
290.67	32.2504	433.94	30.9924	661.66	22.0437
293.27	0.0000	439.40	37.3125	664.57	0.0000
351.93	36.5919	453.88	22.9981	666.33	0.0000
295.96	40.8379	463.37	25.2271	666.50	0.0000
879.38	57.8577	468.07	30.5647	667.71	0.0000
299.98	52.7427	473.00	0.0000	677.62	11.3897
300.09	52.7472	475.06	27.5118	685.70	0.0000
300.13	38.6193	476.78	19.0649	695.00	0.0000
301.36	41.4863	477.60	16.9544	696.49	19.4293
302.85	55.6942	482.18	18.0601	696.51	19.4299
256.23	56.7126	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	22.0863
306.78	30.3008	497.08	19.2799	697.49	22.0879
308.46	36.9775	505.52	11.2981	702.65	22.6672
311.90	38.9780	507.63	0.0000	706.68	31.0416
316.51	40.0706	511.00	14.5688	711.68	18.2825
319.41	0.0000	514.00	12.9707	720.70	0.0000
320.08	0.0000	514.00	12.9707	721.93	0.0000
321.04	31.5928	520.40	26.0293	722.78	19.9979
323.87	33.5794	520.69	0.0000	722.91	19.9992
325.23	43.2175	522.65	0.0000	723.31	22.8602
328.76	0.0000	527.90	0.0000	724.19	17.1510
333.37	33.3345	528.26	25.0468	727.33	15.2050
333.97	36.2488	529.59	17.4362	733.00	14.3433
334.37	43.5114	529.87	0.0000	735.93	17.0529
338.28	29.0912	531.02	0.0000	333.97	12.5730
338.32	29.0918	537.26	0.0000	739.50	0.0000
311.90	29.1376	546.56	0.0000	747.24	16.2285
340.48	29.1376	552.55	23.1542	748.06	14.4297
340.55	0.0000	563.25	17.7357	752.31	20.7778
344.28	30.6784	569.33	22.2355	753.82	0.0000
345.93	46.8037	946.00	22.2380	756.73	23.5284
351.06	38.1669	569.70	21.1276	756.80	23.5292
351.93	38.1907	583.19	14.5509	884.68	19.9650

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	24.5198	1274.44	22.6315	1620.50	2.7681
766.42	21.8005	1001.03	16.7525	1621.92	5.5377
766.84	19.0787	1002.74	19.7192	1678.03	0.0000
772.60	0.0000	1004.73	17.7583	1690.97	1.8724
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	3.8000
778.90	10.2228	1028.54	0.0000	1063.66	4.7551
783.70	0.0000	1037.84	6.3785	1771.35	2.8538
785.37	8.7838	1038.76	0.0000	1791.20	0.0000
792.07	22.9332	631.29	4.7968	1808.65	0.9581
794.95	12.8563	1048.07	0.0000	1810.72	0.0000
795.86	9.1864	1049.04	14.6676	1836.06	3.8525
810.06	20.3175	1050.41	13.0063		
810.29	23.0896	1063.66	18.0802		
344.28	23.0911	1077.00	0.0000		
810.76	22.1697	1077.34	11.0933		
815.77	0.0000	1085.87	8.0884		
1048.07	0.0000	1093.63	11.3490		
832.01	7.4478	1099.45	11.3682		
834.85	12.1153	1112.07	13.2436		
835.71	17.7122	1112.84	15.2847		
836.80	0.0000	1115.54	8.1582		
846.75	0.0000	1120.29	12.2534		
846.77	20.5908	1120.55	12.2542		
856.80	0.0000	1221.41	12.2571		
860.56	15.9894	1129.67	10.9212		
871.09	10.5731	1131.51	0.0000		
873.19	9.0694	1147.95	0.0000		
875.33	0.0000	1173.23	10.3638		
879.38	9.0888	1177.95	19.7167		
880.51	4.5461	1189.05	15.6125		
883.24	6.6362	1204.77	9.4076		
884.68	9.4849	1221.41	18.8987		
889.28	8.5501	1231.02	16.8418		
894.76	10.4696	1235.36	0.0000		
898.04	10.4814	1238.28	13.4992		
900.72	15.2598	1260.41	0.0000		
903.28	12.4093	1271.87	9.5746		
911.20	15.3140	1274.44	14.9041		
912.08	15.3184	1274.54	14.9041		
923.98	0.0000	1291.59	13.8998		
926.50	9.6204	1298.22	0.0000		
929.11	7.7029	1312.11	0.0000		
937.49	10.8141	1332.49	10.8026		
944.13	0.0000	1362.66	0.0000		
946.00	15.4922	1365.19	7.6225		
949.00	11.6305	1368.63	0.0000		
667.71	0.0000	1384.29	10.9393		
962.31	15.5742	1408.01	4.4004		
964.08	19.4788	1457.56	0.0000		
966.17	15.5938	1460.82	7.7960		
911.20	12.4863	1489.16	6.7255		
968.97	12.4863	1505.03	11.2488		
983.53	0.0000	1584.12	10.0719		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:02:43.73

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235004.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM09.CNF;335
Background date    : 2-OCT-2016 11:00:29.
Sample date       : 9-DEC-2015 14:00:00. Acquisition date : 3-OCT-2016 08:01:44.
Sample ID        : G405235004      Sample quantity  : 1.48940E+02 GRAM
Detector name     : GAM09           Detector geometry: CAN
Elapsed live time : 0 01:00:00.00   Elapsed real time: 0 01:00:00.56 0.0%
Energy tolerance  : 1.50000 keV     Analyst Initials : MXR1
Abundance limit   : 75.00000        Sensitivity      : 3.00000
Batch ID          : 1596247          Detector SN#     :
Matrix Spike ID   :                  LCS ID            : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	58.87	42	77	1.95	117.40	114	7	1.17E-02	37.9	
2	0	63.49*	24	163	0.93	126.66	124	9	6.78E-03	97.6	
3	4	74.93	86	189	1.03	149.54	146	16	2.39E-02	25.8	4.15E+00
4	4	77.15	149	129	0.78	153.99	146	16	4.15E-02	14.1	
5	0	83.38*	16	126	0.99	166.45	165	6	4.36E-03	117.2	
6	0	87.17	116	153	1.14	174.03	170	8	3.23E-02	20.7	
7	0	185.97*	74	148	0.94	371.72	367	11	2.06E-02	35.4	
8	0	190.86	16	79	1.00	381.50	378	7	4.57E-03	92.7	
9	0	209.28	36	89	0.82	418.36	415	7	9.88E-03	47.2	
10	4	238.68*	428	69	0.93	477.18	473	15	1.19E-01	5.8	1.17E+00
11	4	241.57	116	96	1.61	482.96	473	15	3.21E-02	21.7	
12	0	295.43*	146	58	1.10	590.73	585	10	4.07E-02	12.9	
13	1	299.56	33	44	1.16	599.00	596	12	9.24E-03	38.1	2.17E+00
14	1	301.06	25	34	1.16	602.00	596	12	7.00E-03	50.4	
15	0	327.62	32	54	2.41	655.13	651	10	8.75E-03	46.8	
16	0	338.35*	89	77	1.52	676.60	671	11	2.48E-02	22.0	
17	0	352.00*	264	91	1.29	703.92	699	12	7.34E-02	9.5	
18	0	438.80	16	24	0.52	877.59	874	9	4.36E-03	62.4	
19	0	462.68	40	30	1.07	925.37	919	12	1.12E-02	31.3	
20	0	510.90*	32	64	2.16	1021.86	1013	17	8.82E-03	67.1	
21	0	582.98*	147	24	1.38	1166.08	1159	14	4.09E-02	11.1	
22	0	592.66	35	16	3.82	1185.46	1179	13	9.70E-03	29.2	
23	0	609.23*	173	52	1.10	1218.60	1212	14	4.82E-02	11.9	
24	0	661.71	72	17	1.64	1323.62	1319	11	1.99E-02	16.2	
25	0	701.42	18	24	1.39	1403.06	1396	14	4.99E-03	62.9	
26	0	727.52	53	28	1.63	1455.29	1447	16	1.47E-02	26.3	
27	0	752.96	20	33	3.45	1506.21	1497	17	5.66E-03	69.0	
28	0	768.41	24	13	0.82	1537.12	1532	10	6.56E-03	36.5	
29	0	795.16	28	7	1.15	1590.64	1586	10	7.71E-03	26.4	
30	0	808.19	17	3	0.73	1616.71	1613	8	4.63E-03	31.8	
31	0	820.39	7	10	0.62	1641.13	1636	8	1.95E-03	86.5	
32	0	861.30	11	14	2.20	1722.98	1717	11	3.02E-03	73.0	
33	0	872.46	17	19	0.94	1745.32	1736	16	4.75E-03	67.3	
34	0	910.79*	90	6	1.73	1822.02	1816	12	2.51E-02	12.2	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	964.44	21	10	1.25	1929.37	1926	7	5.86E-03	33.3	
36	0	968.67	40	21	1.22	1937.82	1933	10	1.11E-02	26.3	
37	0	1120.29	50	11	1.03	2241.21	2233	15	1.39E-02	20.3	
38	0	1183.15	12	5	1.27	2367.01	2363	9	3.35E-03	43.2	
39	0	1216.65	23	9	2.98	2434.04	2428	12	6.46E-03	33.0	
40	0	1220.72	12	4	1.10	2442.17	2439	7	3.19E-03	40.0	
41	1	1224.31	17	3	1.98	2449.36	2446	19	4.80E-03	24.7	1.13E+00
42	1	1226.95	18	3	1.98	2454.64	2446	19	4.99E-03	39.4	
43	1	1230.12	23	0	1.80	2461.00	2446	19	6.30E-03	21.6	
44	0	1239.21	10	20	0.56	2479.18	2473	9	2.78E-03	89.8	
45	0	1460.26*	352	14	1.63	2921.51	2914	14	9.77E-02	5.9	
46	0	1542.51	6	2	1.20	3086.11	3082	7	1.79E-03	51.7	
47	0	1763.43*	29	0	1.85	3528.19	3522	11	7.94E-03	20.2	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235004.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 9-DEC-2015 14:00:00 Acquisition date : 3-OCT-2016 08:01:44
Sample ID : G405235004 Sample quantity : 148.94 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA9 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.56 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.146E+00	1.398E+01	1.398E+01	11.70	OK
NB-94	702.65	99.81*	2.061E+00	4.576E-02	4.576E-02	125.83	OK
	871.09	99.89	1.740E+00	5.040E-02	5.040E-02	134.51	OK
CD-109	88.03	3.70*	4.855E+00	3.083E+00	4.830E+00	55.48	OK
SN-126	64.28	9.60	2.292E+00	7.198E-01	7.198E-01	195.25	OK
	86.94	8.90	4.855E+00	1.282E+00	1.282E+00	55.48	OK
	87.57	37.00*	4.855E+00	3.083E-01	3.083E-01	55.48	OK
BA-137M	661.66	89.90*	2.157E+00	1.943E-01	1.980E-01	32.30	OK
CS-137	661.66	85.10*	2.157E+00	2.053E-01	2.092E-01	32.30	OK
TL-208	277.37	6.60	4.352E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.382E+00	3.877E-01	3.877E-01	22.10	OK
	860.56	12.50	1.757E+00	2.538E-01	2.538E-01	145.96	OK
BI-211	72.87	1.23	3.448E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	3.588E+00	1.803E-01	1.803E-01	546.38	OK
PB-212	74.82	10.28	3.682E+00	8.364E-01	8.364E-01	91.68	OK
	77.11	17.10	3.923E+00	1.421E+00	1.421E+00	28.16	OK
	238.63	43.60*	4.882E+00	1.167E+00	1.167E+00	11.52	OK
	300.09	3.30	4.092E+00	1.399E+00	1.399E+00	76.19	OK
BI-214	609.32	45.49*	2.301E+00	8.801E-01	8.804E-01	23.73	OK
	1120.29	14.92	1.429E+00	1.171E+00	1.171E+00	40.66	OK
	1764.49	15.30	9.661E-01	9.205E-01	9.208E-01	40.37	OK
PB-214	74.82	5.80	3.669E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.923E+00	2.506E+00	2.507E+00	28.16	OK
	87.09	3.41	4.849E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.832E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.139E+00	1.093E+00	1.093E+00	25.74	OK
	351.93	35.60*	3.588E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	2.301E+00	8.801E-01	8.804E-01	23.73	OK
	1120.29	14.92	1.429E+00	1.171E+00	1.171E+00	40.66	OK
	1764.49	15.30	9.661E-01	9.205E-01	9.208E-01	40.37	OK
RA-224	240.99	4.10*	4.839E+00	1.444E+00	1.444E+00	106.96	OK
RA-226	609.32	45.49*	2.301E+00	8.801E-01	8.804E-01	23.73	OK
	1120.29	14.92	1.429E+00	1.171E+00	1.171E+00	40.66	OK
	1764.49	15.30	9.661E-01	9.205E-01	9.208E-01	40.37	OK
AC-228	105.21	1.10	5.896E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.706E+00	1.201E+00	1.201E+00	44.00	OK
	794.95	4.25	1.869E+00	1.809E+00	1.809E+00	52.80	OK
	835.71	1.61	1.799E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.682E+00	1.062E+00	1.062E+00	24.49	OK
	968.97	15.80	1.603E+00	8.012E-01	8.012E-01	52.66	OK
RA-228	105.21	1.10	5.896E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.706E+00	1.201E+00	1.201E+00	44.00	OK
	794.95	4.25	1.869E+00	1.809E+00	1.809E+00	52.80	OK
	835.71	1.61	1.799E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.682E+00	1.062E+00	1.062E+00	24.49	OK
	968.97	15.80	1.603E+00	8.012E-01	8.012E-01	52.66	OK
TH-228	74.82	10.28	3.682E+00	8.364E-01	8.364E-01	91.68	OK
	77.11	17.10	3.923E+00	1.421E+00	1.421E+00	28.16	OK
	238.63	43.60*	4.882E+00	1.167E+00	1.167E+00	11.52	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	300.09	3.30	4.092E+00	1.399E+00	1.399E+00	76.19	OK
TH-230	609.32	45.49*	2.301E+00	8.801E-01	8.801E-01	23.73	OK
	1120.29	14.92	1.429E+00	1.171E+00	1.171E+00	40.66	OK
	1764.49	15.30	9.661E-01	9.205E-01	9.205E-01	40.37	OK
PA-231	283.69	1.70	4.275E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	4.076E+00	6.560E-01	6.560E-01	100.87	OK
TH-232	105.21	1.10	5.896E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.706E+00	1.201E+00	1.201E+00	44.00	OK
	835.71	1.61	1.799E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.682E+00	1.062E+00	1.062E+00	24.49	OK
	968.97	15.80	1.603E+00	8.012E-01	8.012E-01	52.66	OK
U-234	609.32	45.49*	2.301E+00	8.801E-01	8.801E-01	23.73	OK
	1120.29	14.92	1.429E+00	1.171E+00	1.171E+00	40.66	OK
	1764.49	15.30	9.661E-01	9.205E-01	9.205E-01	40.37	OK
AM-241	59.54	35.90*	1.701E+00	4.489E-01	4.495E-01	75.85	OK
AM-243	43.53	5.90	1.969E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.682E+00	1.279E-01	1.280E-01	91.68	OK
ANH-511	511.00	100.00*	2.647E+00	6.485E-02	6.485E-02	134.22	OK

Flag: "*" = Keyline

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235004.CNF;1
* Acquisition date   : 3-OCT-2016 08:01:44 Sensitivity      : 3.000
* Detector ID        : GAM09 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit: 75.000
* Elapsed real time  : 0 01:00:00.56 Half life ratio: *****
* Sample date        : 9-DEC-2015 14:00:00 Analyst initials: MXR1
* Sample ID          : G405235004 Sample Quantity: 1.4894E+02 GRAM
* Batch Number       : 1596247 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 3-JUN-2016 07:32:22 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM09 CAN.CNF;16
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.398E+01	1.603E+00	5.756E-01
NB-94	4.576E-02	5.643E-02	5.494E-02
CD-109	4.830E+00	2.626E+00	2.236E+00
SN-126	3.083E-01	1.676E-01	1.268E-01
BA-137M	1.980E-01	6.270E-02	6.185E-02
CS-137	2.092E-01	6.623E-02	6.534E-02
TL-208	3.877E-01	8.398E-02	5.989E-02
BI-211	1.803E-01	9.657E-01	3.372E-01
PB-212	1.167E+00	1.317E-01	9.158E-02
BI-214	8.804E-01	2.048E-01	1.088E-01
PB-214	1.159E+00	2.166E-01	3.510E-01
RN-222	8.804E-01	2.048E-01	1.088E-01
RA-224	1.444E+00	1.514E+00	9.818E-01
RA-226	8.804E-01	2.048E-01	1.088E-01
AC-228	1.062E+00	2.549E-01	2.386E-01
RA-228	1.062E+00	2.549E-01	2.386E-01
TH-228	1.167E+00	1.317E-01	9.158E-02
TH-230	8.801E-01	2.047E-01	1.088E-01
PA-231	6.560E-01	6.485E-01	7.231E-01
TH-232	1.062E+00	2.549E-01	2.386E-01
U-234	8.801E-01	2.047E-01	1.088E-01
AM-241	4.495E-01	3.342E-01	3.277E-01
AM-243	1.280E-01	1.150E-01	1.048E-01
ANH-511	6.485E-02	8.530E-02	4.609E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.312E+00	1.196E+01	2.345E+01	NOT IDENT.
NA-22	2.943E-02	3.671E-02	8.789E-02	NOT IDENT.
NA-24	0.000E+00	1.883E+41	0.000E+00	SHORT HLIF
AL-26	-5.207E-03	2.342E-02	4.981E-02	NOT IDENT.
SC-46	-7.557E-02	3.229E-01	6.092E-01	FAIL ABUN
V-48	0.000E+00	1.251E+04	0.000E+00	SHORT HLIF

CR-51	0.000E+00	4.078E+02	0.000E+00	SHORT HLIF
MN-54	7.091E-03	6.386E-02	1.250E-01	NOT IDENT.
CO-56	-4.387E-02	4.399E-01	8.425E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-1.608E-02	3.948E-02	7.496E-02	NOT IDENT.
CO-58	1.278E-01	4.763E-01	9.224E-01	NOT IDENT.
FE-59	-7.773E+00	8.275E+00	1.291E+01	NOT IDENT.
CO-60	-2.285E-02	2.699E-02	4.509E-02	NOT IDENT.
ZN-65	-8.201E-03	1.538E-01	2.637E-01	NOT IDENT.
GE-68	-3.959E-01	2.345E+00	4.453E+00	NOT IDENT.
AS-73	7.034E+00	1.179E+01	2.556E+01	NOT IDENT.
AS-74	0.000E+00	5.264E+03	0.000E+00	SHORT HLIF
SE-75	1.159E-01	1.817E-01	3.649E-01	NOT IDENT.
BR-77	0.000E+00	1.731E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.308E+02	0.000E+00	SHORT HLIF
RB-83	5.138E-01	6.149E-01	1.340E+00	NOT IDENT.
KR-85	4.621E+00	6.934E+00	1.360E+01	NOT IDENT.
SR-85	4.825E-01	7.244E-01	1.420E+00	NOT IDENT.
RB-86	0.000E+00	2.671E+04	0.000E+00	SHORT HLIF
Y-88	8.201E-02	1.545E-01	4.203E-01	NOT IDENT.
Y-91	3.388E+02	5.518E+02	1.185E+03	NOT IDENT.
NB-95	-2.377E-01	8.955E-01	1.468E+00	NOT IDENT.
NB-95M	3.039E-01	2.355E+00	4.109E+00	NOT IDENT.
ZR-95	2.840E-01	1.845E+00	3.234E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.326E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-2.655E-02	2.779E-02	4.988E-02	NOT IDENT.
RH-102	7.622E-03	5.477E-02	1.104E-01	NOT IDENT.
RU-103	4.191E+00	5.418E+00	1.168E+01	FAIL ABUN
RH-106	4.606E-02	3.733E-01	7.751E-01	NOT IDENT.
RU-106	4.606E-02	3.733E-01	7.751E-01	NOT IDENT.
AG-108M	2.466E-02	2.478E-02	5.507E-02	NOT IDENT.
AG-110M	-6.962E-02	8.794E-02	1.452E-01	NOT IDENT.
SN-113	-2.848E-02	2.040E-01	4.059E-01	NOT IDENT.
CD-115	0.000E+00	2.022E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	7.413E+04	0.000E+00	SHORT HLIF
TE-123M	3.041E-02	1.078E-01	2.135E-01	NOT IDENT.
SB-124	7.987E-01	1.642E+00	4.128E+00	NOT IDENT.
SB-125	-2.940E-02	9.972E-02	1.932E-01	FAIL ABUN
TE-125M	2.234E+02	2.220E+02	4.761E+02	NOT IDENT.
I-126	0.000E+00	7.250E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	9.274E+05	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.679E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.399E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.933E+26	0.000E+00	SHORT HLIF
BA-133	1.473E-03	3.922E-02	6.709E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.121E-02	1.158E-01	FAIL ABUN
CS-135	-1.026E-01	1.337E-01	2.271E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.525E+05	0.000E+00	SHORT HLIF
CE-139	-3.435E-04	1.007E-01	1.924E-01	NOT IDENT.
BA-140	0.000E+00	1.062E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	2.202E+05	0.000E+00	SHORT HLIF
CE-141	6.175E-01	2.076E+01	4.018E+01	NOT IDENT.
CE-143	0.000E+00	1.514E+41	0.000E+00	SHORT HLIF
CE-144	-1.473E-01	3.011E-01	5.628E-01	NOT IDENT.
PM-144	5.270E-03	4.419E-02	8.239E-02	NOT IDENT.
PR-144	4.725E-01	3.840E+00	7.163E+00	NOT IDENT.
PM-146	1.615E-02	3.930E-02	8.246E-02	NOT IDENT.
ND-147	0.000E+00	2.882E+07	0.000E+00	SHORT HLIF
PM-147	-2.104E+02	6.816E+02	1.307E+03	NOT IDENT.
PM-149	0.000E+00	3.252E+40	0.000E+00	SHORT HLIF
EU-150	-1.637E-02	2.736E-02	4.185E-02	FAIL ABUN
EU-152	-7.932E-03	8.013E-02	1.466E-01	FAIL ABUN
GD-153	5.437E-03	1.603E-01	3.174E-01	NOT IDENT.
EU-154	6.543E-02	9.358E-02	2.185E-01	FAIL ABUN
EU-155	1.214E-01	9.804E-02	2.110E-01	FAIL ABUN
TB-160	1.399E-01	1.814E+00	3.562E+00	FAIL ABUN
HO-166M	1.280E-02	5.584E-02	1.121E-01	FAIL ABUN
TM-171	6.161E+00	3.042E+01	6.404E+01	NOT IDENT.
HF-172	-6.209E-02	1.763E-01	3.368E-01	FAIL ABUN
LU-172	2.174E-03	8.933E-02	1.675E-01	FAIL ABUN
LU-176	2.479E-03	2.245E-02	4.216E-02	FAIL ABUN
HF-181	-5.894E-01	3.197E+00	6.381E+00	FAIL ABUN

TA-182	9.666E-01	7.572E-01	1.821E+00	FAIL ABUN
RE-183	0.000E+00	6.730E+00	7.122E+00	FAIL ABUN
RE-184	-8.777E-02	3.088E+01	5.919E+01	NOT IDENT.
W-188	8.756E+01	8.965E+01	1.804E+02	FAIL ABUN
IR-192	-5.684E-02	4.725E-01	8.544E-01	FAIL ABUN
HG-203	-1.680E+00	2.336E+00	3.975E+00	NOT IDENT.
BI-207	-8.270E-04	3.599E-02	7.363E-02	FAIL ABUN
PB-210	6.344E-01	6.095E+00	1.271E+01	NOT IDENT.
PB-211	-1.763E-01	5.784E-01	1.130E+00	NOT IDENT.
BI-212	0.000E+00	1.064E+00	1.386E+00	FAIL ABUN
RN-219	6.745E-02	3.160E-01	6.557E-01	NOT IDENT.
RA-223	-4.703E-02	5.776E-01	9.710E-01	FAIL ABUN
AC-227	-8.334E-02	2.338E-01	4.178E-01	FAIL ABUN
TH-227	-8.334E-02	2.338E-01	4.178E-01	FAIL ABUN
TH-229	2.894E-01	4.550E-01	8.509E-01	FAIL ABUN
TH-231	-4.703E-02	5.776E-01	9.710E-01	FAIL ABUN
PA-233	-1.322E-02	5.324E-02	9.572E-02	FAIL ABUN
PA-234	3.338E-02	2.817E-01	5.511E-01	NOT IDENT.
PA-234M	-3.346E-01	4.292E+00	8.503E+00	NOT IDENT.
TH-234	1.868E+00	3.573E+00	3.066E+00	FAIL ABUN
U-235	-2.460E-02	1.600E-01	3.047E-01	FAIL ABUN
NP-237	-1.322E-02	5.324E-02	9.572E-02	FAIL ABUN
NP-238	0.000E+00	1.898E+41	0.000E+00	SHORT HLIF
U-238	1.868E+00	3.573E+00	3.066E+00	FAIL ABUN
NP-239	-4.922E-02	2.028E-01	3.920E-01	NOT IDENT.
PU-239	2.068E+02	2.724E+02	5.608E+02	NOT IDENT.
CM-243	-5.301E-02	8.741E-02	1.649E-01	NOT IDENT.
BK-247	2.268E-03	6.609E-02	1.239E-01	FAIL ABUN
CM-247	1.361E-02	2.862E-02	6.109E-02	NOT IDENT.
CF-249	-1.180E-02	3.731E-02	6.494E-02	NOT IDENT.
CF-251	5.653E-02	1.029E-01	2.054E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	339	10.66*	1.146E+00	1.398E+01	1.398E+01	11.70
NB-94	702.65	19	99.81*	2.061E+00	4.576E-02	4.576E-02	125.83
	871.09	17	99.89	1.740E+00	5.040E-02	5.040E-02	134.51
CD-109	88.03	146	3.70*	4.855E+00	4.090E+00	6.408E+00	41.34
SN-126	64.28	31	9.60	2.292E+00	7.198E-01	7.198E-01	195.25
	86.94	146	8.90	4.855E+00	1.701E+00	1.701E+00	41.34
	87.57	146	37.00*	4.855E+00	4.090E-01	4.090E-01	41.34
BA-137M	661.66	75	89.90*	2.157E+00	1.943E-01	1.980E-01	32.30
CS-137	661.66	75	85.10*	2.157E+00	2.053E-01	2.092E-01	32.30
TL-208	277.37	-----	6.60	4.352E+00	-----	Line Not Found	-----
	583.19	156	85.00*	2.382E+00	3.877E-01	3.877E-01	22.10
	860.56	11	12.50	1.757E+00	2.538E-01	2.538E-01	145.96
BI-211	72.87	-----	1.23	3.448E+00	-----	Line Not Found	-----
	351.06	293	12.92*	3.588E+00	3.191E+00	3.191E+00	19.07
PB-212	74.82	109	10.28	3.682E+00	1.453E+00	1.453E+00	51.64
	77.11	189	17.10	3.923E+00	1.421E+00	1.421E+00	28.16
	238.63	493	43.60*	4.882E+00	1.167E+00	1.167E+00	11.52
	300.09	37	3.30	4.092E+00	1.399E+00	1.399E+00	76.19
BI-214	609.32	183	45.49*	2.301E+00	8.801E-01	8.804E-01	23.73
	1120.29	50	14.92	1.429E+00	1.171E+00	1.171E+00	40.66
	1764.49	27	15.30	9.661E-01	9.205E-01	9.208E-01	40.37
PB-214	74.82	109	5.80	3.682E+00	2.575E+00	2.576E+00	51.64
	77.11	189	9.70	3.923E+00	2.506E+00	2.507E+00	28.16
	87.09	146	3.41	4.855E+00	4.438E+00	4.440E+00	41.34
	242.00	133	7.25	4.839E+00	1.909E+00	1.910E+00	43.31
	295.22	165	18.42	4.139E+00	1.093E+00	1.093E+00	25.74
	351.93	293	35.60*	3.588E+00	1.158E+00	1.159E+00	19.07
RN-222	609.32	183	45.49*	2.301E+00	8.801E-01	8.804E-01	23.73
	1120.29	50	14.92	1.429E+00	1.171E+00	1.171E+00	40.66
	1764.49	27	15.30	9.661E-01	9.205E-01	9.208E-01	40.37
RA-224	240.99	133	4.10*	4.839E+00	3.376E+00	3.376E+00	43.31
RA-226	609.32	183	45.49*	2.301E+00	8.801E-01	8.804E-01	23.73
	1120.29	50	14.92	1.429E+00	1.171E+00	1.171E+00	40.66
	1764.49	27	15.30	9.661E-01	9.205E-01	9.208E-01	40.37
AC-228	105.21	-----	1.10	5.896E+00	-----	Line Not Found	-----
	338.32	100	11.27	3.706E+00	1.201E+00	1.201E+00	44.00
	794.95	29	4.25	1.869E+00	1.809E+00	1.809E+00	52.80
	835.71	-----	1.61	1.799E+00	-----	Line Not Found	-----
	911.20	91	25.80*	1.682E+00	1.062E+00	1.062E+00	24.49
	968.97	40	15.80	1.603E+00	8.012E-01	8.012E-01	52.66
RA-228	105.21	-----	1.10	5.896E+00	-----	Line Not Found	-----
	338.32	100	11.27	3.706E+00	1.201E+00	1.201E+00	44.00
	794.95	29	4.25	1.869E+00	1.809E+00	1.809E+00	52.80
	835.71	-----	1.61	1.799E+00	-----	Line Not Found	-----
	911.20	91	25.80*	1.682E+00	1.062E+00	1.062E+00	24.49
	968.97	40	15.80	1.603E+00	8.012E-01	8.012E-01	52.66
TH-228	74.82	109	10.28	3.682E+00	1.453E+00	1.453E+00	51.64

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	189	17.10	3.923E+00	1.421E+00	1.421E+00	28.16
	238.63	493	43.60*	4.882E+00	1.167E+00	1.167E+00	11.52
	300.09	37	3.30	4.092E+00	1.399E+00	1.399E+00	76.19
TH-230	609.32	183	45.49*	2.301E+00	8.801E-01	8.801E-01	23.73
	1120.29	50	14.92	1.429E+00	1.171E+00	1.171E+00	40.66
	1764.49	27	15.30	9.661E-01	9.205E-01	9.205E-01	40.37
PA-231	283.69	-----	1.70	4.275E+00	-----	Line Not Found	-----
	301.36	28	5.35*	4.076E+00	6.560E-01	6.560E-01	100.87
TH-232	105.21	-----	1.10	5.896E+00	-----	Line Not Found	-----
	338.32	100	11.27	3.706E+00	1.201E+00	1.201E+00	44.00
	835.71	-----	1.61	1.799E+00	-----	Line Not Found	-----
	911.20	91	25.80*	1.682E+00	1.062E+00	1.062E+00	24.49
	968.97	40	15.80	1.603E+00	8.012E-01	8.012E-01	52.66
U-234	609.32	183	45.49*	2.301E+00	8.801E-01	8.801E-01	23.73
	1120.29	50	14.92	1.429E+00	1.171E+00	1.171E+00	40.66
	1764.49	27	15.30	9.661E-01	9.205E-01	9.205E-01	40.37
AM-241	59.54	54	35.90*	1.701E+00	4.489E-01	4.495E-01	75.85
AM-243	43.53	-----	5.90	1.969E-01	-----	Line Not Found	-----
	74.66	109	67.20*	3.682E+00	2.223E-01	2.223E-01	51.64
ANH-511	511.00	34	100.00*	2.647E+00	6.485E-02	6.485E-02	134.22

Flag: "*" = Keyline

Total number of lines in spectrum 47
Number of unidentified lines 11
Number of lines tentatively identified by NID 36 76.60%

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	1.398E+01	1.398E+01	0.164E+01	11.70	
NB-94	20300.00Y	1.00	4.576E-02	4.576E-02	5.759E-02	125.83	
CD-109	461.40D	1.57	4.090E+00	6.408E+00	2.649E+00	41.34	
SN-126	2.30E+05Y	1.00	4.090E-01	4.090E-01	1.691E-01	41.34	
BA-137M	30.08Y	1.02	1.943E-01	1.980E-01	0.640E-01	32.30	
CS-137	30.08Y	1.02	2.053E-01	2.092E-01	0.676E-01	32.30	
TL-208	1.41E+10Y	1.00	3.877E-01	3.877E-01	0.857E-01	22.10	
BI-211	7.04E+08Y	1.00	3.191E+00	3.191E+00	0.609E+00	19.07	
PB-212	1.41E+10Y	1.00	1.167E+00	1.167E+00	0.134E+00	11.52	
BI-214	1600.00Y	1.00	8.801E-01	8.804E-01	2.089E-01	23.73	
PB-214	1600.00Y	1.00	1.158E+00	1.159E+00	0.221E+00	19.07	
RN-222	1600.00Y	1.00	8.801E-01	8.804E-01	2.089E-01	23.73	
RA-224	1.41E+10Y	1.00	3.376E+00	3.376E+00	1.462E+00	43.31	
RA-226	1600.00Y	1.00	8.801E-01	8.804E-01	2.089E-01	23.73	
AC-228	1.41E+10Y	1.00	1.062E+00	1.062E+00	0.260E+00	24.49	
RA-228	1.41E+10Y	1.00	1.062E+00	1.062E+00	0.260E+00	24.49	
TH-228	1.41E+10Y	1.00	1.167E+00	1.167E+00	0.134E+00	11.52	
TH-230	7.54E+04Y	1.00	8.801E-01	8.801E-01	2.089E-01	23.73	
PA-231	7.04E+08Y	1.00	6.560E-01	6.560E-01	6.617E-01	100.87	
TH-232	1.41E+10Y	1.00	1.062E+00	1.062E+00	0.260E+00	24.49	
U-234	2.45E+05Y	1.00	8.801E-01	8.801E-01	2.089E-01	23.73	
AM-241	432.60Y	1.00	4.489E-01	4.495E-01	3.410E-01	75.85	
AM-243	7370.00Y	1.00	2.223E-01	2.223E-01	1.148E-01	51.64	
ANH-511	1.00E+09Y	1.00	6.485E-02	6.485E-02	8.704E-02	134.22	
Total Activity :			3.835E+01	4.068E+01			

Grand Total Activity : 3.835E+01 4.068E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	83.38	20	158	0.99	166.45	165	6	4.36E-03	****	4.53E+00	T
0	185.97	87	174	0.94	371.72	367	11	2.06E-02	70.8	5.74E+00	T
0	190.86	19	92	1.00	381.50	378	7	4.57E-03	****	5.66E+00	
0	209.28	41	104	0.82	418.36	415	7	9.88E-03	94.3	5.35E+00	
0	327.62	35	61	2.41	655.13	651	10	8.75E-03	93.5	3.81E+00	T
0	438.80	17	26	0.52	877.59	874	9	4.36E-03	****	2.99E+00	T
0	462.68	44	32	1.07	925.37	919	12	1.12E-02	62.7	2.87E+00	T
0	592.66	37	17	3.82	1185.46	1179	13	9.70E-03	58.4	2.35E+00	
0	727.52	55	29	1.63	1455.29	1447	16	1.47E-02	52.6	2.00E+00	T
0	752.96	21	34	3.45	1506.21	1497	17	5.66E-03	****	1.95E+00	T
0	768.41	24	14	0.82	1537.12	1532	10	6.56E-03	73.1	1.92E+00	
0	808.19	17	3	0.73	1616.71	1613	8	4.63E-03	63.6	1.85E+00	
0	820.39	7	10	0.62	1641.13	1636	8	1.95E-03	****	1.82E+00	
0	964.44	21	10	1.25	1929.37	1926	7	5.86E-03	66.6	1.61E+00	T
0	1183.15	12	5	1.27	2367.01	2363	9	3.35E-03	86.4	1.37E+00	
0	1216.65	23	9	2.98	2434.04	2428	12	6.46E-03	66.1	1.34E+00	
0	1220.72	11	3	1.10	2442.17	2439	7	3.19E-03	79.9	1.33E+00	T
1	1224.31	17	3	1.98	2449.36	2446	19	4.80E-03	49.5	1.33E+00	
1	1226.95	18	3	1.98	2454.64	2446	19	4.99E-03	78.7	1.33E+00	
1	1230.12	22	0	1.80	2461.00	2446	19	6.30E-03	43.2	1.32E+00	T
0	1239.21	10	20	0.56	2479.18	2473	9	2.78E-03	****	1.32E+00	T
0	1542.51	6	1	1.20	3086.11	3082	7	1.79E-03	****	1.09E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 03-OCT-2016 09:03:14.91

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                                     DETECTOR AND SAMPLE DATA                *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235004.CNF;1 *
* Acquisition date   : 3-OCT-2016 08:01:44 Sensitivity      : 3.000          *
* Detector ID        : GAM09 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 01:00:00.56 Half life ratio : *****        *
* Sample date        : 9-DEC-2015 14:00:00 Nuclide Library : SOLID        *
* Sample ID          : G405235004 Analyst initials: MXR1          *
* Batch Number       : 1596247 Sample Quantity : 1.4894E+02 GRAM        *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000          *
*                                     Dry Weight      : 0.00000          *
*****
*
*                                     CALIBRATION INFORMATION                  *
*
* Eff. Cal. date     : 3-JUN-2016 07:32:22 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM09 CAN.CNF;16          *
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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.316E-01
NB-94	2.408E-02
CD-109	1.056E+00
SN-126	5.937E-02
BA-137M	2.726E-02
CS-137	2.879E-02
TL-208	2.649E-02
BI-211	1.534E-01
PB-212	4.244E-02
BI-214	4.772E-02
PB-214	1.700E-01
RN-222	4.772E-02
RA-224	4.550E-01
RA-226	4.772E-02
AC-228	1.033E-01
RA-228	1.033E-01
TH-228	4.244E-02
TH-230	4.770E-02
PA-231	3.289E-01
TH-232	1.033E-01
U-234	4.770E-02
AM-241	1.524E-01
AM-243	4.944E-02
ANH-511	2.039E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.054E+01	NOT IDENT.
NA-22	3.729E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.765E-02	NOT IDENT.
SC-46	2.566E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF

MN-54	5.502E-02	NOT IDENT.
CO-56	3.642E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	3.460E-02	NOT IDENT.
CO-58	3.906E-01	NOT IDENT.
FE-59	5.570E+00	NOT IDENT.
CO-60	1.637E-02	NOT IDENT.
ZN-65	1.096E-01	NOT IDENT.
GE-68	1.914E+00	NOT IDENT.
AS-73	1.188E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.674E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.039E-01	NOT IDENT.
KR-85	6.150E+00	NOT IDENT.
SR-85	6.424E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.586E-01	NOT IDENT.
Y-91	5.249E+02	NOT IDENT.
NB-95	6.418E-01	NOT IDENT.
NB-95M	1.906E+00	NOT IDENT.
ZR-95	1.450E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.294E-02	NOT IDENT.
RH-102	4.873E-02	NOT IDENT.
RU-103	5.282E+00	FAIL ABUN
RH-106	3.332E-01	NOT IDENT.
RU-106	3.332E-01	NOT IDENT.
AG-108M	2.496E-02	NOT IDENT.
AG-110M	5.990E-02	NOT IDENT.
SN-113	1.829E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	9.882E-02	NOT IDENT.
SB-124	1.618E+00	NOT IDENT.
SB-125	8.710E-02	FAIL ABUN
TE-125M	2.216E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.016E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.216E-02	FAIL ABUN
CS-135	1.036E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	8.953E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.871E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.602E-01	NOT IDENT.
PM-144	3.521E-02	NOT IDENT.
PR-144	3.062E+00	NOT IDENT.
PM-146	3.711E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	6.033E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.892E-02	FAIL ABUN
EU-152	6.572E-02	FAIL ABUN
GD-153	1.480E-01	NOT IDENT.
EU-154	9.296E-02	FAIL ABUN
EU-155	9.894E-02	FAIL ABUN
TB-160	1.547E+00	FAIL ABUN
HO-166M	4.973E-02	FAIL ABUN
TM-171	2.975E+01	NOT IDENT.
HF-172	1.547E-01	FAIL ABUN
LU-172	7.359E-02	FAIL ABUN
LU-176	1.919E-02	FAIL ABUN
HF-181	2.773E+00	FAIL ABUN
TA-182	7.936E-01	FAIL ABUN

RE-183	3.301E+00	FAIL ABUN
RE-184	2.587E+01	NOT IDENT.
W-188	8.199E+01	FAIL ABUN
IR-192	3.910E-01	FAIL ABUN
HG-203	1.816E+00	NOT IDENT.
BI-207	3.049E-02	FAIL ABUN
PB-210	5.892E+00	NOT IDENT.
PB-211	5.064E-01	NOT IDENT.
BI-212	6.410E-01	FAIL ABUN
RN-219	2.946E-01	NOT IDENT.
RA-223	4.392E-01	FAIL ABUN
AC-227	1.927E-01	FAIL ABUN
TH-227	1.927E-01	FAIL ABUN
TH-229	3.965E-01	FAIL ABUN
TH-231	4.392E-01	FAIL ABUN
PA-233	4.320E-02	FAIL ABUN
PA-234	2.402E-01	NOT IDENT.
PA-234M	3.725E+00	NOT IDENT.
TH-234	1.446E+00	FAIL ABUN
U-235	1.419E-01	FAIL ABUN
NP-237	4.320E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	1.446E+00	FAIL ABUN
NP-239	1.813E-01	NOT IDENT.
PU-239	2.624E+02	NOT IDENT.
CM-243	7.638E-02	NOT IDENT.
BK-247	5.670E-02	FAIL ABUN
CM-247	2.749E-02	NOT IDENT.
CF-249	2.923E-02	NOT IDENT.
CF-251	9.565E-02	NOT IDENT.

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235004.CNF;1  *
* Acquisition date   : 3-OCT-2016 08:01:44 Sensitivity      : 3.000          *
* Detector ID        : GAM09 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.56 Half life ratio : *****      *
* Sample date        : 9-DEC-2015 14:00:00 Nuclide Library : SOLID      *
* Sample ID          : G405235004 Analyst initials: MXR1         *
* Batch Number       : 1596247 Sample Quantity : 1.4894E+02 GRAM      *
*                               Quantity Err(%) : 1.3428E-03 %      *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000          *
*                               Dry Weight : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date     : 3-JUN-2016 07:32:22 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM09 CAN.CNF;16      *
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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.398E+01	1.761E+00	1.761E+00
NB-94	4.576E-02	5.647E-02	5.647E-02
CD-109	4.830E+00	2.663E+00	2.663E+00
SN-126	3.083E-01	1.692E-01	1.692E-01
BA-137M	1.980E-01	6.327E-02	6.327E-02
CS-137	2.092E-01	6.684E-02	6.684E-02
TL-208	3.877E-01	8.558E-02	8.558E-02
BI-211	1.803E-01	9.829E-01	9.829E-01
PB-212	1.167E+00	1.454E-01	1.454E-01
BI-214	8.804E-01	2.082E-01	2.082E-01
PB-214	1.159E+00	2.218E-01	2.218E-01
RN-222	8.804E-01	2.082E-01	2.082E-01
RA-224	1.444E+00	1.521E+00	1.521E+00
RA-226	8.804E-01	2.082E-01	2.082E-01
AC-228	1.062E+00	2.606E-01	2.606E-01
RA-228	1.062E+00	2.606E-01	2.606E-01
TH-228	1.167E+00	1.454E-01	1.454E-01
TH-230	8.801E-01	2.081E-01	2.081E-01
PA-231	6.560E-01	6.634E-01	6.634E-01
TH-232	1.062E+00	2.606E-01	2.606E-01
U-234	8.801E-01	2.081E-01	2.081E-01
AM-241	4.495E-01	3.359E-01	3.359E-01
AM-243	1.280E-01	1.159E-01	1.159E-01
ANH-511	6.485E-02	8.534E-02	8.534E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-1.312E+00	1.196E+01	1.198E+01	NOT IDENT.
NA-22	2.943E-02	3.673E-02	3.905E-02	NOT IDENT.
NA-24	1.000E+41	1.933E+41	0.000E+00	SHORT HLIF
AL-26	-5.207E-03	2.343E-02	2.354E-02	NOT IDENT.
SC-46	-7.557E-02	3.229E-01	3.247E-01	FAIL ABUN
V-48	1.075E+03	1.251E+04	1.252E+04	SHORT HLIF

CR-51	-2.238E+02	4.079E+02	4.202E+02	SHORT HLIF
MN-54	7.091E-03	6.386E-02	6.394E-02	NOT IDENT.
CO-56	-4.387E-02	4.399E-01	4.404E-01	FAIL ABUN
MN-56	-1.000E+41	8.989E+41	0.000E+00	SHORT HLIF
CO-57	-1.608E-02	3.948E-02	4.014E-02	NOT IDENT.
CO-58	1.278E-01	4.763E-01	4.798E-01	NOT IDENT.
FE-59	-7.773E+00	8.294E+00	9.004E+00	NOT IDENT.
CO-60	-2.285E-02	2.700E-02	2.890E-02	NOT IDENT.
ZN-65	-8.201E-03	1.538E-01	1.539E-01	NOT IDENT.
GE-68	-3.959E-01	2.345E+00	2.352E+00	NOT IDENT.
AS-73	7.034E+00	1.188E+01	1.230E+01	NOT IDENT.
AS-74	1.324E+03	5.265E+03	5.299E+03	SHORT HLIF
SE-75	1.159E-01	1.818E-01	1.891E-01	NOT IDENT.
BR-77	1.533E+38	1.322E+39	0.000E+00	SHORT HLIF
SR-82	1.195E+02	6.308E+02	6.331E+02	SHORT HLIF
RB-83	5.138E-01	6.189E-01	6.608E-01	NOT IDENT.
KR-85	4.621E+00	6.937E+00	7.243E+00	NOT IDENT.
SR-85	4.825E-01	7.246E-01	7.566E-01	NOT IDENT.
RB-86	-6.350E+02	2.671E+04	2.671E+04	SHORT HLIF
Y-88	8.201E-02	1.546E-01	1.590E-01	NOT IDENT.
Y-91	3.388E+02	5.519E+02	5.726E+02	NOT IDENT.
NB-95	-2.377E-01	8.956E-01	9.020E-01	NOT IDENT.
NB-95M	3.039E-01	2.355E+00	2.359E+00	NOT IDENT.
ZR-95	2.840E-01	1.845E+00	1.849E+00	NOT IDENT.
NB-97	-1.000E+41	2.193E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	3.295E+41	0.000E+00	SHORT HLIF
MO-99	-4.049E+31	1.327E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	5.879E+41	0.000E+00	SHORT HLIF
RH-101	-2.655E-02	2.820E-02	3.063E-02	NOT IDENT.
RH-102	7.622E-03	5.477E-02	5.488E-02	NOT IDENT.
RU-103	4.191E+00	5.421E+00	5.741E+00	FAIL ABUN
RH-106	4.606E-02	3.733E-01	3.739E-01	NOT IDENT.
RU-106	4.606E-02	3.733E-01	3.739E-01	NOT IDENT.
AG-108M	2.466E-02	2.480E-02	2.718E-02	NOT IDENT.
AG-110M	-6.962E-02	8.801E-02	9.344E-02	NOT IDENT.
SN-113	-2.848E-02	2.040E-01	2.044E-01	NOT IDENT.
CD-115	1.572E+39	2.042E+39	0.000E+00	SHORT HLIF
SN-117M	1.471E+04	7.415E+04	7.445E+04	SHORT HLIF
TE-123M	3.041E-02	1.078E-01	1.086E-01	NOT IDENT.
SB-124	7.987E-01	1.643E+00	1.682E+00	NOT IDENT.
SB-125	-2.940E-02	9.972E-02	1.006E-01	FAIL ABUN
TE-125M	2.234E+02	2.224E+02	2.441E+02	NOT IDENT.
I-126	7.169E+05	7.315E+05	7.997E+05	SHORT HLIF
SB-126	8.367E+05	9.405E+05	1.013E+06	SHORT HLIF
SB-127	-3.384E+21	1.742E+22	0.000E+00	SHORT HLIF
I-131	2.533E+09	4.401E+09	4.547E+09	SHORT HLIF
I-132	-1.000E+41	1.857E+42	0.000E+00	SHORT HLIF
TE-132	-1.554E+26	3.000E+26	0.000E+00	SHORT HLIF
BA-133	1.473E-03	3.922E-02	3.922E-02	NOT IDENT.
I-133	-1.000E+41	2.884E+41	0.000E+00	SHORT HLIF
CS-134	1.183E-01	6.141E-02	8.133E-02	FAIL ABUN
CS-135	-1.026E-01	1.338E-01	1.416E-01	NOT IDENT.
I-135	1.000E+41	1.184E+42	0.000E+00	SHORT HLIF
CS-136	-1.122E+05	2.528E+05	2.578E+05	SHORT HLIF
CE-139	-3.435E-04	1.007E-01	1.007E-01	NOT IDENT.
BA-140	-5.276E+05	1.062E+06	1.088E+06	SHORT HLIF
LA-140	1.248E+03	2.202E+05	2.202E+05	SHORT HLIF
CE-141	6.175E-01	2.076E+01	2.076E+01	NOT IDENT.
CE-143	-1.000E+41	1.517E+41	0.000E+00	SHORT HLIF
CE-144	-1.473E-01	3.012E-01	3.085E-01	NOT IDENT.
PM-144	5.270E-03	4.420E-02	4.426E-02	NOT IDENT.
PR-144	4.725E-01	3.840E+00	3.846E+00	NOT IDENT.
PM-146	1.615E-02	3.932E-02	3.999E-02	NOT IDENT.
ND-147	-2.097E+07	2.884E+07	3.035E+07	SHORT HLIF
PM-147	-2.104E+02	6.816E+02	6.882E+02	NOT IDENT.
PM-149	-1.076E+40	3.261E+40	0.000E+00	SHORT HLIF
EU-150	-1.637E-02	2.737E-02	2.835E-02	FAIL ABUN
EU-152	-7.932E-03	8.013E-02	8.021E-02	FAIL ABUN
GD-153	5.437E-03	1.603E-01	1.603E-01	NOT IDENT.
EU-154	6.543E-02	9.362E-02	9.815E-02	FAIL ABUN
EU-155	1.214E-01	9.842E-02	1.126E-01	FAIL ABUN
TB-160	1.399E-01	1.814E+00	1.815E+00	FAIL ABUN
HO-166M	1.280E-02	5.585E-02	5.615E-02	FAIL ABUN
TM-171	6.161E+00	3.042E+01	3.055E+01	NOT IDENT.
HF-172	-6.209E-02	1.766E-01	1.788E-01	FAIL ABUN
LU-172	2.174E-03	8.933E-02	8.933E-02	FAIL ABUN
LU-176	2.479E-03	2.245E-02	2.248E-02	FAIL ABUN
HF-181	-5.894E-01	3.197E+00	3.208E+00	FAIL ABUN

TA-182	9.666E-01	7.581E-01	8.744E-01	FAIL ABUN
RE-183	9.053E+00	6.876E+00	7.996E+00	FAIL ABUN
RE-184	-8.777E-02	3.088E+01	3.088E+01	NOT IDENT.
W-188	8.756E+01	9.018E+01	9.844E+01	FAIL ABUN
IR-192	-5.684E-02	4.725E-01	4.732E-01	FAIL ABUN
HG-203	-1.680E+00	2.337E+00	2.457E+00	NOT IDENT.
BI-207	-8.270E-04	3.599E-02	3.599E-02	FAIL ABUN
PB-210	6.344E-01	6.095E+00	6.102E+00	NOT IDENT.
PB-211	-1.763E-01	5.785E-01	5.839E-01	NOT IDENT.
BI-212	2.064E+00	1.069E+00	1.417E+00	FAIL ABUN
RN-219	6.745E-02	3.162E-01	3.176E-01	NOT IDENT.
RA-223	-4.703E-02	5.776E-01	5.780E-01	FAIL ABUN
AC-227	-8.334E-02	2.341E-01	2.371E-01	FAIL ABUN
TH-227	-8.334E-02	2.341E-01	2.371E-01	FAIL ABUN
TH-229	2.894E-01	4.552E-01	4.736E-01	FAIL ABUN
TH-231	-4.703E-02	5.776E-01	5.780E-01	FAIL ABUN
PA-233	-1.322E-02	5.324E-02	5.358E-02	FAIL ABUN
PA-234	3.338E-02	2.843E-01	2.847E-01	NOT IDENT.
PA-234M	-3.346E-01	4.292E+00	4.295E+00	NOT IDENT.
TH-234	1.868E+00	3.597E+00	3.695E+00	FAIL ABUN
U-235	-2.460E-02	1.600E-01	1.604E-01	FAIL ABUN
NP-237	-1.322E-02	5.324E-02	5.358E-02	FAIL ABUN
NP-238	1.000E+41	1.898E+41	0.000E+00	SHORT HLIF
U-238	1.868E+00	3.597E+00	3.695E+00	FAIL ABUN
NP-239	-4.922E-02	2.029E-01	2.041E-01	NOT IDENT.
PU-239	2.068E+02	2.725E+02	2.880E+02	NOT IDENT.
CM-243	-5.301E-02	8.755E-02	9.075E-02	NOT IDENT.
BK-247	2.268E-03	6.610E-02	6.610E-02	FAIL ABUN
CM-247	1.361E-02	2.871E-02	2.936E-02	NOT IDENT.
CF-249	-1.180E-02	3.732E-02	3.770E-02	NOT IDENT.
CF-251	5.653E-02	1.031E-01	1.062E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	44.2373	87.09	72.3018	136.47	63.3131
45.60	48.4640	87.57	72.3787	140.51	0.0000
46.54	43.1295	88.03	94.6541	143.76	59.1933
49.72	0.0000	88.34	94.7184	144.24	57.2949
51.35	50.9800	88.47	94.7455	145.44	60.3198
51.87	47.8720	89.96	77.4505	152.43	73.7423
52.39	53.5440	1093.63	135.1493	153.25	0.0000
52.97	51.2388	91.11	0.0000	323.87	58.1628
53.44	46.5024	92.59	75.2317	156.02	0.0000
54.07	57.8386	93.35	107.2662	158.56	0.0000
57.36	0.0000	94.56	120.8698	159.00	46.6572
57.53	51.9465	94.65	120.8915	162.33	52.8641
57.98	58.5162	94.67	120.8967	162.66	0.0000
59.27	58.7348	94.87	104.0505	163.33	55.9359
59.32	58.7433	97.43	58.1113	165.86	60.1447
59.54	58.7802	98.43	68.9799	176.31	56.9408
60.96	44.2631	98.44	68.9811	176.60	0.0000
61.17	44.2893	99.53	61.0528	177.52	49.9039
62.93	69.2328	100.11	67.4160	181.07	0.0000
63.29	69.3013	102.03	59.5532	181.52	54.6037
63.58	69.3563	103.18	65.1143	184.41	57.5492
64.28	69.4888	103.37	65.1385	143.76	57.6466
66.73	75.4984	105.21	56.2930	193.51	48.5145
67.24	82.2706	105.31	49.0388	197.03	54.2947
125.81	74.5749	106.12	47.2964	198.01	48.0882
67.75	75.7010	106.47	53.6992	201.83	52.5131
69.67	74.6816	109.28	41.1764	203.43	69.4513
70.83	90.8935	111.00	74.3567	205.31	52.0297
72.81	94.7316	111.76	0.0000	210.85	49.5399
72.87	94.7461	114.06	60.9299	215.65	45.9021
74.66	91.7677	116.30	0.0000	222.11	48.3913
74.82	91.8040	116.74	55.6604	227.09	42.1724
74.97	91.8377	119.76	45.7012	227.38	47.5946
77.11	92.3148	121.12	54.2250	228.16	0.0000
78.74	92.6741	121.22	54.2343	228.18	56.2982
79.69	92.8817	121.78	56.1594	116.74	56.2982
80.12	68.8708	122.06	56.1868	235.69	52.3938
80.19	0.0000	122.92	41.2653	235.96	50.9534
80.57	67.2193	123.07	45.0282	238.63	53.6536
81.00	67.2865	265.00	47.8930	238.98	0.0000
81.07	75.9258	125.81	49.0107	240.99	53.7881
81.75	67.4038	127.23	63.3007	242.00	53.8457
83.79	72.9277	127.91	54.8609	244.70	41.1415
84.00	72.9623	129.30	54.0402	252.40	0.0000
85.43	73.1975	131.20	64.6735	252.80	41.1169
86.55	72.2154	133.02	59.1439	254.15	0.0000
86.79	72.2539	133.52	60.1469	256.23	54.6420
86.94	72.2778	136.00	57.5139	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	30.3626	355.39	0.0000	584.27	19.7302
264.80	35.9902	356.01	25.9889	595.83	0.0000
265.00	38.2469	364.49	0.0000	427.87	19.8994
268.22	50.7816	366.42	0.0000	602.52	0.0000
269.46	36.1553	372.51	28.3773	604.72	14.2444
270.03	47.4794	375.05	27.1959	607.14	17.1145
271.23	48.6663	377.52	23.5308	609.32	17.1335
273.65	0.0000	356.01	31.1073	610.33	17.1423
276.40	35.2600	388.16	32.4548	614.28	20.0396
277.37	42.1230	388.63	0.0000	618.01	9.5610
277.60	40.9933	391.69	30.0359	620.36	18.1867
278.00	34.1739	264.66	28.5512	621.93	11.4956
279.20	51.3199	401.81	23.5316	630.19	0.0000
279.54	36.5059	402.40	21.0195	631.29	17.3240
279.70	39.9336	404.85	29.4786	633.25	15.4141
280.46	38.8207	410.95	43.1392	634.78	0.0000
283.69	30.9221	413.71	23.7298	635.95	14.4702
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	37.8541	423.72	0.0000	645.85	18.4178
285.90	0.0000	427.09	33.3585	657.76	19.0120
287.50	26.4344	427.87	32.5202	657.90	0.0000
290.67	18.4429	433.94	18.0456	661.66	18.5593
293.27	0.0000	439.40	26.7359	664.57	0.0000
351.93	38.5824	453.88	21.7667	666.33	0.0000
295.96	38.6078	463.37	14.0160	666.50	0.0000
879.38	25.5416	468.07	14.0576	667.71	0.0000
299.98	34.0984	473.00	0.0000	677.62	13.7790
300.09	34.1011	475.06	25.5921	685.70	0.0000
300.13	34.1029	476.78	33.5701	695.00	0.0000
301.36	34.1405	477.60	26.5161	696.49	10.4252
302.85	29.5236	482.18	16.8415	696.51	10.4252
256.23	32.6792	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	11.9189
306.78	32.7450	497.08	19.6783	697.49	11.9199
308.46	43.3345	505.52	22.9247	702.65	16.9260
311.90	32.8920	507.63	0.0000	706.68	16.4584
316.51	41.2794	511.00	19.8422	711.68	17.9956
319.41	0.0000	514.00	20.3293	720.70	0.0000
320.08	0.0000	514.00	20.3293	721.93	0.0000
321.04	27.2311	520.40	17.2311	722.78	12.0566
323.87	31.6479	520.69	0.0000	722.91	12.0571
325.23	23.7634	522.65	0.0000	723.31	13.5670
328.76	0.0000	527.90	0.0000	724.19	15.0800
333.37	22.3302	528.26	13.6652	727.33	16.1081
333.97	41.4904	529.59	22.7926	733.00	0.0000
334.37	39.9078	529.87	0.0000	735.93	15.1587
338.28	33.6302	531.02	0.0000	333.97	9.1011
338.32	33.6311	537.26	0.0000	739.50	0.0000
311.90	32.0858	546.56	0.0000	747.24	13.7098
340.48	32.0858	552.55	24.9368	748.06	13.7148
340.55	0.0000	563.25	17.6509	752.31	20.3556
344.28	26.5527	569.33	24.2343	753.82	0.0000
345.93	22.9620	946.00	24.2364	756.73	22.9431
351.06	33.9772	569.70	19.5773	756.80	22.9440
351.93	34.0011	583.19	19.7191	884.68	15.3430

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	19.9610	1274.44	14.5224	1620.50	4.9722
766.42	19.9666	1001.03	12.3083	1621.92	4.9738
766.84	16.8975	1002.74	14.5546	1678.03	0.0000
772.60	0.0000	1004.73	13.4438	1690.97	2.0200
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	1.6415
778.90	11.3227	1028.54	0.0000	1063.66	5.1361
783.70	0.0000	1037.84	9.0625	1771.35	3.0822
785.37	10.3210	1038.76	0.0000	1791.20	0.0000
792.07	13.9719	631.29	7.9525	1808.65	1.0354
794.95	10.3617	1048.07	0.0000	1810.72	0.0000
795.86	10.3658	1049.04	9.0957	1836.06	1.0411
810.06	4.6917	1050.41	20.4741		
810.29	4.6921	1063.66	5.7117		
344.28	4.6924	1077.00	0.0000		
810.76	7.8217	1077.34	12.6212		
815.77	0.0000	1085.87	14.9561		
1048.07	0.0000	1093.63	17.2998		
832.01	18.9324	1099.45	25.4196		
834.85	16.8477	1112.07	8.1200		
835.71	13.6935	1112.84	6.9614		
836.80	0.0000	1115.54	8.7091		
846.75	0.0000	1120.29	13.9551		
846.77	14.8106	1120.55	13.9561		
856.80	0.0000	1221.41	13.9590		
860.56	12.7632	1129.67	12.8289		
871.09	13.8823	1131.51	0.0000		
873.19	13.8934	1147.95	0.0000		
875.33	0.0000	1173.23	15.0670		
879.38	13.9262	1177.95	5.9167		
880.51	7.5019	1189.05	11.1941		
883.24	9.6552	1204.77	13.4180		
884.68	15.0277	1221.41	3.5952		
889.28	11.8276	1231.02	12.9788		
894.76	10.7743	1235.36	0.0000		
898.04	14.0241	1238.28	19.8690		
900.72	12.9580	1260.41	0.0000		
903.28	16.2128	1271.87	10.0285		
911.20	14.0923	1274.44	5.4741		
912.08	14.6393	1274.54	4.5618		
923.98	0.0000	1291.59	8.2502		
926.50	9.8108	1298.22	0.0000		
929.11	10.9111	1312.11	0.0000		
937.49	15.3216	1332.49	7.4146		
944.13	0.0000	1362.66	0.0000		
946.00	14.2706	1365.19	12.1534		
949.00	17.5827	1368.63	0.0000		
667.71	0.0000	1384.29	6.5766		
962.31	19.8735	1408.01	4.7260		
964.08	11.6002	1457.56	0.0000		
966.17	6.6335	1460.82	5.7466		
911.20	13.2798	1489.16	1.9288		
968.97	13.2798	1505.03	5.8088		
983.53	0.0000	1584.12	5.9176		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:04:17.52

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235005.CNF;1
Background file : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM19.CNF;561
Background date : 2-OCT-2016 11:01:07.
Sample date : 10-DEC-2015 13:15:00 Acquisition date : 3-OCT-2016 08:02:09.
Sample ID : G405235005 Sample quantity : 1.57331E+02 GRAM
Detector name : GAM19 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.81 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : 1596247 Detector SN# :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	53.91	3	179	1.51	108.59	102	10	7.37E-04	956.6	
2	0	63.56*	51	190	0.74	127.90	123	10	1.43E-02	53.2	
3	6	74.83*	157	150	1.16	150.45	145	17	4.35E-02	15.5	1.19E+00
4	6	77.19*	221	118	1.06	155.17	145	17	6.15E-02	10.6	
5	5	87.35	75	256	1.56	175.52	170	23	2.08E-02	37.1	3.61E+00
6	5	90.10	32	170	1.21	181.00	170	23	9.01E-03	68.7	
7	5	92.75*	100	195	1.73	186.31	170	23	2.77E-02	31.3	
8	0	185.62*	135	164	1.38	372.14	365	14	3.74E-02	22.4	
9	0	208.99	26	120	1.26	418.88	416	8	7.22E-03	75.6	
10	4	238.58*	364	91	1.14	478.09	472	18	1.01E-01	6.9	1.84E+00
11	4	241.88	93	111	1.70	484.71	472	18	2.58E-02	25.2	
12	0	270.49	60	73	1.20	541.94	538	9	1.68E-02	28.7	
13	0	295.09*	166	85	1.18	591.15	584	13	4.60E-02	14.1	
14	0	300.17	36	70	1.09	601.33	598	9	9.93E-03	44.9	
15	0	326.32	74	98	5.86	653.64	643	18	2.07E-02	33.4	
16	0	338.70	125	56	1.70	678.41	672	15	3.48E-02	15.8	
17	0	351.79*	246	84	1.35	704.61	698	12	6.83E-02	9.9	
18	0	463.18	66	55	2.43	927.47	918	18	1.83E-02	29.7	
19	0	471.99	13	45	0.86	945.12	940	10	3.61E-03	100.4	
20	0	489.26*	23	17	4.22	979.67	974	11	6.41E-03	42.2	
21	0	510.87*	45	72	2.01	1022.91	1014	18	1.26E-02	51.6	
22	0	561.21	18	34	1.39	1123.63	1118	11	5.12E-03	64.8	
23	0	569.64*	16	24	1.19	1140.49	1136	11	4.35E-03	98.9	
24	0	583.12*	127	33	1.57	1167.46	1161	12	3.52E-02	12.9	
25	0	609.18*	186	32	1.59	1219.62	1213	13	5.17E-02	9.9	
26	0	614.42*	14	30	0.83	1230.09	1226	9	3.94E-03	76.8	
27	0	661.60	55	18	1.50	1324.50	1320	9	1.54E-02	19.2	
28	0	665.45	25	19	2.40	1332.20	1329	9	6.99E-03	36.5	
29	0	727.26	38	35	1.59	1455.87	1448	13	1.06E-02	37.0	
30	0	757.10	22	22	2.86	1515.57	1509	14	6.24E-03	48.3	
31	0	763.15*	17	8	1.09	1527.69	1523	8	4.78E-03	38.6	
32	0	829.83	21	7	1.22	1661.10	1656	10	5.75E-03	33.0	
33	0	911.02*	97	23	2.05	1823.55	1817	15	2.68E-02	15.1	
34	8	948.19	16	4	3.21	1897.92	1894	15	4.33E-03	32.2	1.63E+00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	8	951.23	17	9	1.93	1904.00	1894	15	4.66E-03	38.1	
36	2	962.21	16	2	1.73	1925.97	1923	12	4.46E-03	33.6	7.21E-01
37	2	964.22	26	12	1.94	1930.00	1923	12	7.24E-03	32.8	
38	0	969.02	58	20	2.28	1939.60	1934	13	1.60E-02	20.6	
39	0	1024.33	4	10	0.47	2050.27	2044	8	1.01E-03	160.1	
40	0	1120.64	48	12	1.23	2242.97	2236	12	1.33E-02	20.5	
41	0	1130.03	22	10	4.80	2261.75	2253	16	6.00E-03	41.4	
42	0	1197.83	28	41	8.79	2397.43	2382	28	7.64E-03	69.3	
43	5	1212.75	10	3	1.49	2427.27	2426	11	2.65E-03	32.6	2.29E+00
44	5	1215.68	17	5	1.82	2433.14	2426	11	4.61E-03	30.9	
45	0	1376.89	17	6	4.26	2755.69	2749	13	4.79E-03	38.5	
46	0	1460.49	391	4	1.98	2922.98	2916	15	1.09E-01	5.2	
47	0	1694.43	7	3	1.47	3391.07	3384	10	2.00E-03	56.0	
48	0	1764.28*	43	0	2.21	3530.83	3523	15	1.19E-02	16.1	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235005.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 10-DEC-2015 13:15:00 Acquisition date : 3-OCT-2016 08:02:09
Sample ID : G405235005 Sample quantity : 157.33 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA19 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.81 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.161E+00	1.461E+01	1.461E+01	10.35	OK
AS-73	53.44	10.30*	2.017E+00	8.281E-02	1.083E+00	1913.23	OK
CD-109	88.03	3.70*	5.494E+00	1.200E+00	1.876E+00	143.99	OK
SN-126	64.28	9.60	3.338E+00	1.024E+00	1.024E+00	106.41	OK
	86.94	8.90	5.494E+00	4.987E-01	4.987E-01	143.99	OK
	87.57	37.00*	5.494E+00	1.200E-01	1.200E-01	143.99	OK
BA-137M	661.66	89.90*	2.164E+00	1.444E-01	1.471E-01	38.46	OK
CS-137	661.66	85.10*	2.164E+00	1.526E-01	1.554E-01	38.46	OK
TL-208	277.37	6.60	4.415E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	2.392E+00	3.206E-01	3.206E-01	25.76	OK
	860.56	12.50	1.763E+00	-----	Line Not Found	-----	Absent
PB-212	74.82	10.28	4.545E+00	1.445E+00	1.445E+00	47.20	OK
	77.11	17.10	4.754E+00	1.710E+00	1.710E+00	21.10	OK
	238.63	43.60*	4.960E+00	9.499E-01	9.499E-01	13.81	OK
	300.09	3.30	4.141E+00	1.443E+00	1.443E+00	89.83	OK
BI-214	609.32	45.49*	2.310E+00	9.063E-01	9.066E-01	19.71	OK
	1120.29	14.92	1.437E+00	1.064E+00	1.065E+00	41.00	OK
	1764.49	15.30	9.862E-01	1.282E+00	1.282E+00	32.20	OK
PB-214	74.82	5.80	4.544E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	4.754E+00	3.015E+00	3.016E+00	21.10	OK
	87.09	3.41	5.478E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	4.908E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	4.199E+00	1.183E+00	1.183E+00	28.12	OK
	351.93	35.60*	3.630E+00	1.032E+00	1.033E+00	19.83	OK
RN-222	609.32	45.49*	2.310E+00	9.063E-01	9.066E-01	19.71	OK
	1120.29	14.92	1.437E+00	1.064E+00	1.065E+00	41.00	OK
	1764.49	15.30	9.862E-01	1.282E+00	1.282E+00	32.20	OK
RA-224	240.99	4.10*	4.910E+00	5.045E-01	5.045E-01	284.33	OK
RA-226	609.32	45.49*	2.310E+00	9.063E-01	9.066E-01	19.71	OK
	1120.29	14.92	1.437E+00	1.064E+00	1.065E+00	41.00	OK
	1764.49	15.30	9.862E-01	1.282E+00	1.282E+00	32.20	OK
AC-228	105.21	1.10	6.259E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.747E+00	1.616E+00	1.616E+00	31.60	OK
	794.95	4.25	1.875E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.803E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.687E+00	1.084E+00	1.084E+00	30.29	OK
	968.97	15.80	1.609E+00	1.098E+00	1.098E+00	41.21	OK
RA-228	105.21	1.10	6.259E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.747E+00	1.616E+00	1.616E+00	31.60	OK
	794.95	4.25	1.875E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.803E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.687E+00	1.084E+00	1.084E+00	30.29	OK
	968.97	15.80	1.609E+00	1.098E+00	1.098E+00	41.21	OK
TH-228	74.82	10.28	4.545E+00	1.445E+00	1.445E+00	47.20	OK
	77.11	17.10	4.754E+00	1.710E+00	1.710E+00	21.10	OK
	238.63	43.60*	4.960E+00	9.499E-01	9.499E-01	13.81	OK
	300.09	3.30	4.141E+00	1.443E+00	1.443E+00	89.83	OK
TH-230	609.32	45.49*	2.310E+00	9.063E-01	9.063E-01	19.71	OK
	1120.29	14.92	1.437E+00	1.064E+00	1.064E+00	41.00	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff,	Uncorrected	Decay Corr	2-Sigma	Status
				pCi/GRAM	pCi/GRAM	%Error	
PA-231	1764.49	15.30	9.862E-01	1.282E+00	1.282E+00	32.20	OK
	283.69	1.70	4.336E+00	-----	Line Not Found	-----	Absent
	301.36	5.35*	4.141E+00	8.901E-01	8.901E-01	89.83	OK
TH-232	105.21	1.10	6.259E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.747E+00	1.616E+00	1.616E+00	31.60	OK
	835.71	1.61	1.803E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.687E+00	1.084E+00	1.084E+00	30.29	OK
	968.97	15.80	1.609E+00	1.098E+00	1.098E+00	41.21	OK
TH-234	63.29	3.70*	3.338E+00	2.657E+00	2.657E+00	106.41	OK
	92.59	4.23	5.791E+00	2.516E+00	2.516E+00	62.65	OK
U-234	609.32	45.49*	2.310E+00	9.063E-01	9.063E-01	19.71	OK
	1120.29	14.92	1.437E+00	1.064E+00	1.064E+00	41.00	OK
	1764.49	15.30	9.862E-01	1.282E+00	1.282E+00	32.20	OK
U-235	89.96	3.47	5.653E+00	1.024E+00	1.024E+00	137.50	OK
	93.35	5.60	5.791E+00	1.900E+00	1.900E+00	62.65	OK
	143.76	10.96*	6.462E+00	-----	Line Not Found	-----	Absent
	163.33	5.08	6.216E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	5.848E+00	2.332E-01	2.332E-01	44.76	OK
	205.31	5.01	5.506E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	3.338E+00	2.657E+00	2.657E+00	106.41	OK
	92.59	4.23	5.791E+00	2.516E+00	2.516E+00	62.65	OK
AM-243	43.53	5.90	5.190E-01	-----	Line Not Found	-----	Absent
	74.66	67.20*	4.545E+00	2.211E-01	2.211E-01	47.20	OK
ANH-511	511.00	100.00*	2.662E+00	8.853E-02	8.853E-02	103.14	OK

Flag: "*" = Keyline

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.461E+01	1.481E+00	6.721E-01
AS-73	1.083E+00	2.030E+01	1.538E+01
CD-109	1.876E+00	2.648E+00	2.107E+00
SN-126	1.200E-01	1.693E-01	1.354E-01
BA-137M	1.471E-01	5.546E-02	5.420E-02
CS-137	1.554E-01	5.858E-02	5.726E-02
TL-208	3.206E-01	8.095E-02	5.774E-02
PB-212	9.499E-01	1.285E-01	9.481E-02
BI-214	9.066E-01	1.751E-01	1.201E-01
PB-214	1.033E+00	2.006E-01	1.353E-01
RN-222	9.066E-01	1.751E-01	1.201E-01
RA-224	5.045E-01	1.406E+00	1.016E+00
RA-226	9.066E-01	1.751E-01	1.201E-01
AC-228	1.084E+00	3.219E-01	2.582E-01
RA-228	1.084E+00	3.219E-01	2.582E-01
TH-228	9.499E-01	1.285E-01	9.481E-02
TH-230	9.063E-01	1.751E-01	1.201E-01
PA-231	8.901E-01	7.835E-01	8.240E-01
TH-232	1.084E+00	3.219E-01	2.582E-01
TH-234	2.657E+00	2.771E+00	2.013E+00
U-234	9.063E-01	1.751E-01	1.201E-01
U-235	-4.374E-02	1.754E-01	3.346E-01
U-238	2.657E+00	2.771E+00	2.013E+00
AM-243	2.211E-01	1.023E-01	9.013E-02
ANH-511	8.853E-02	8.948E-02	5.654E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	1.076E+01	1.249E+01	2.588E+01	NOT IDENT.
NA-22	4.948E-03	4.450E-02	8.902E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	-3.904E-03	2.083E-02	4.619E-02	FAIL ABUN
SC-46	1.237E-01	3.257E-01	6.951E-01	FAIL ABUN

V-48	0.000E+00	1.287E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.153E+02	0.000E+00	SHORT HLIF
MN-54	-8.393E-03	7.391E-02	1.255E-01	NOT IDENT.
CO-56	-1.813E-01	4.386E-01	8.220E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	2.589E-02	4.520E-02	9.408E-02	NOT IDENT.
CO-58	-3.563E-01	5.850E-01	1.064E+00	NOT IDENT.
FE-59	-4.730E-02	5.995E+00	1.186E+01	NOT IDENT.
CO-60	1.429E-03	3.289E-02	6.726E-02	NOT IDENT.
ZN-65	2.099E-02	1.873E-01	3.293E-01	NOT IDENT.
GE-68	-7.859E-01	1.695E+00	3.141E+00	NOT IDENT.
AS-74	0.000E+00	5.432E+03	0.000E+00	SHORT HLIF
SE-75	-2.272E-02	2.061E-01	3.943E-01	NOT IDENT.
BR-77	0.000E+00	1.273E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.671E+02	0.000E+00	SHORT HLIF
RB-83	-3.352E-01	7.244E-01	1.278E+00	NOT IDENT.
KR-85	-2.354E+00	8.780E+00	1.394E+01	NOT IDENT.
SR-85	-2.437E-01	9.080E-01	1.441E+00	NOT IDENT.
RB-86	0.000E+00	1.979E+04	0.000E+00	SHORT HLIF
Y-88	1.075E-01	1.516E-01	4.219E-01	NOT IDENT.
Y-91	1.331E+02	5.863E+02	1.042E+03	NOT IDENT.
NB-94	4.733E-03	3.297E-02	6.606E-02	NOT IDENT.
NB-95	1.607E-01	9.452E-01	1.689E+00	NOT IDENT.
NB-95M	-9.658E-01	2.638E+00	4.397E+00	NOT IDENT.
ZR-95	2.661E+00	2.518E+00	3.235E+00	FAIL ABUN
NB-97	0.000E+00	8.289E+40	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	7.667E+40	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.064E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.643E+41	0.000E+00	SHORT HLIF
RH-101	2.392E-02	3.357E-02	6.960E-02	FAIL ABUN
RH-102	-1.925E-02	6.311E-02	1.125E-01	NOT IDENT.
RU-103	-2.171E+00	5.207E+00	9.347E+00	FAIL ABUN
RH-106	-7.927E-02	5.362E-01	9.786E-01	NOT IDENT.
RU-106	-7.927E-02	5.362E-01	9.786E-01	NOT IDENT.
AG-108M	-7.699E-04	3.053E-02	5.740E-02	FAIL ABUN
AG-110M	2.930E-02	9.489E-02	1.976E-01	FAIL ABUN
SN-113	-9.900E-02	2.233E-01	4.050E-01	NOT IDENT.
CD-115	0.000E+00	1.782E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	8.822E+04	0.000E+00	SHORT HLIF
TE-123M	-4.327E-02	1.294E-01	2.495E-01	NOT IDENT.
SB-124	1.082E-01	1.674E+00	3.422E+00	NOT IDENT.
SB-125	-1.718E-02	1.041E-01	1.941E-01	FAIL ABUN
TE-125M	-2.351E+02	2.895E+02	4.908E+02	NOT IDENT.
I-126	0.000E+00	1.105E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.263E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.380E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.066E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.699E+26	0.000E+00	SHORT HLIF
BA-133	3.556E-02	4.089E-02	7.893E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	4.287E-02	5.612E-02	1.184E-01	FAIL ABUN
CS-135	7.152E-02	1.535E-01	2.784E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.387E+05	0.000E+00	SHORT HLIF
CE-139	-7.430E-02	1.067E-01	2.002E-01	NOT IDENT.
BA-140	0.000E+00	1.271E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.458E+05	0.000E+00	SHORT HLIF
CE-141	4.671E+00	2.202E+01	4.422E+01	NOT IDENT.
CE-143	0.000E+00	6.428E+40	0.000E+00	SHORT HLIF
CE-144	-2.000E-01	3.390E-01	6.502E-01	NOT IDENT.
PM-144	-5.629E-02	5.442E-02	9.538E-02	NOT IDENT.
PR-144	-4.870E+00	4.724E+00	8.285E+00	NOT IDENT.
PM-146	-4.808E-02	4.381E-02	7.142E-02	NOT IDENT.
ND-147	0.000E+00	3.376E+07	0.000E+00	SHORT HLIF
PM-147	-1.015E+02	7.754E+02	1.543E+03	NOT IDENT.
PM-149	0.000E+00	2.610E+40	0.000E+00	SHORT HLIF
EU-150	-8.023E-03	2.560E-02	4.216E-02	FAIL ABUN
EU-152	2.626E-03	8.486E-02	1.484E-01	FAIL ABUN
GD-153	-4.101E-02	1.947E-01	3.238E-01	NOT IDENT.
EU-154	9.896E-03	1.088E-01	2.170E-01	FAIL ABUN
EU-155	-1.051E-02	1.152E-01	2.083E-01	FAIL ABUN
TB-160	5.362E-01	1.681E+00	3.524E+00	FAIL ABUN
HO-166M	-5.176E-02	5.397E-02	9.423E-02	FAIL ABUN
TM-171	1.322E+01	2.074E+01	4.122E+01	NOT IDENT.
HF-172	-1.790E-01	2.219E-01	4.211E-01	FAIL ABUN
LU-172	-1.386E-02	7.778E-02	1.478E-01	FAIL ABUN
LU-176	1.804E-02	2.493E-02	5.073E-02	FAIL ABUN

HF-181	-1.929E+00	4.398E+00	7.850E+00	NOT IDENT.
TA-182	-5.309E-01	1.051E+00	1.775E+00	FAIL ABUN
RE-183	9.693E-01	2.792E+00	5.408E+00	NOT IDENT.
RE-184	-9.237E+00	2.423E+01	4.590E+01	NOT IDENT.
W-188	-7.491E+01	1.312E+02	2.094E+02	FAIL ABUN
IR-192	2.868E-01	4.517E-01	9.166E-01	FAIL ABUN
HG-203	-5.437E-01	2.322E+00	4.376E+00	NOT IDENT.
BI-207	-7.770E-02	9.420E-02	2.223E-01	FAIL ABUN
PB-210	-9.949E-02	3.206E+00	6.122E+00	NOT IDENT.
BI-211	0.000E+00	5.526E-01	8.424E-01	FAIL ABUN
PB-211	5.173E-01	6.659E-01	1.367E+00	NOT IDENT.
BI-212	0.000E+00	1.037E+00	1.307E+00	FAIL ABUN
RN-219	2.706E-02	3.912E-01	7.474E-01	FAIL ABUN
RA-223	2.309E-01	6.365E-01	1.249E+00	FAIL ABUN
AC-227	-5.213E-04	2.273E-01	4.389E-01	FAIL ABUN
TH-227	-5.213E-04	2.273E-01	4.389E-01	FAIL ABUN
TH-229	4.061E-02	4.873E-01	9.525E-01	FAIL ABUN
TH-231	2.309E-01	6.365E-01	1.249E+00	FAIL ABUN
PA-233	4.542E-02	6.106E-02	1.244E-01	FAIL ABUN
PA-234	-2.884E-02	2.437E-01	4.246E-01	FAIL ABUN
PA-234M	6.096E-01	4.818E+00	9.595E+00	NOT IDENT.
NP-237	4.542E-02	6.106E-02	1.244E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-2.650E-02	2.318E-01	4.623E-01	NOT IDENT.
PU-239	2.374E+02	3.222E+02	6.651E+02	NOT IDENT.
AM-241	9.053E-02	1.381E-01	2.545E-01	NOT IDENT.
CM-243	-8.033E-02	1.089E-01	1.866E-01	NOT IDENT.
BK-247	-3.373E-02	7.300E-02	1.354E-01	NOT IDENT.
CM-247	2.414E-04	3.662E-02	6.939E-02	NOT IDENT.
CF-249	-1.809E-02	3.760E-02	6.786E-02	NOT IDENT.
CF-251	-4.791E-03	1.119E-01	2.190E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	379	10.66*	1.161E+00	1.461E+01	1.461E+01	10.35
AS-73	53.44	4	10.30*	2.017E+00	8.281E-02	1.083E+00	1913.23
CD-109	88.03	98	3.70*	5.494E+00	2.290E+00	3.582E+00	74.24
SN-126	64.28	69	9.60	3.338E+00	1.024E+00	1.024E+00	106.41
	86.94	98	8.90	5.494E+00	9.519E-01	9.519E-01	74.24
	87.57	98	37.00*	5.494E+00	2.290E-01	2.290E-01	74.24
BA-137M	661.66	59	89.90*	2.164E+00	1.444E-01	1.471E-01	38.46
CS-137	661.66	59	85.10*	2.164E+00	1.526E-01	1.554E-01	38.46
TL-208	277.37	-----	6.60	4.415E+00	-----	Line Not Found	-----
	583.19	137	85.00*	2.392E+00	3.206E-01	3.206E-01	25.76
	860.56	-----	12.50	1.763E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	4.361E+00	-----	Line Not Found	-----
	351.06	280	12.92*	3.630E+00	2.844E+00	2.844E+00	19.83
PB-212	74.82	207	10.28	4.545E+00	2.113E+00	2.113E+00	31.05
	77.11	291	17.10	4.754E+00	1.710E+00	1.710E+00	21.10
	238.63	431	43.60*	4.960E+00	9.499E-01	9.499E-01	13.81
	300.09	41	3.30	4.141E+00	1.443E+00	1.443E+00	89.83
BI-214	609.32	200	45.49*	2.310E+00	9.063E-01	9.066E-01	19.71
	1120.29	48	14.92	1.437E+00	1.064E+00	1.065E+00	41.00
	1764.49	41	15.30	9.862E-01	1.282E+00	1.282E+00	32.20
PB-214	74.82	207	5.80	4.545E+00	3.745E+00	3.746E+00	31.05
	77.11	291	9.70	4.754E+00	3.015E+00	3.016E+00	21.10
	87.09	98	3.41	5.494E+00	2.485E+00	2.485E+00	74.24
	242.00	110	7.25	4.910E+00	1.468E+00	1.469E+00	50.39
	295.22	192	18.42	4.199E+00	1.183E+00	1.183E+00	28.12
	351.93	280	35.60*	3.630E+00	1.032E+00	1.033E+00	19.83
RN-222	609.32	200	45.49*	2.310E+00	9.063E-01	9.066E-01	19.71
	1120.29	48	14.92	1.437E+00	1.064E+00	1.065E+00	41.00
	1764.49	41	15.30	9.862E-01	1.282E+00	1.282E+00	32.20
RA-224	240.99	110	4.10*	4.910E+00	2.596E+00	2.596E+00	50.39
RA-226	609.32	200	45.49*	2.310E+00	9.063E-01	9.066E-01	19.71
	1120.29	48	14.92	1.437E+00	1.064E+00	1.065E+00	41.00
	1764.49	41	15.30	9.862E-01	1.282E+00	1.282E+00	32.20
AC-228	105.21	-----	1.10	6.259E+00	-----	Line Not Found	-----
	338.32	143	11.27	3.747E+00	1.616E+00	1.616E+00	31.60
	794.95	-----	4.25	1.875E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.803E+00	-----	Line Not Found	-----
	911.20	99	25.80*	1.687E+00	1.084E+00	1.084E+00	30.29
	968.97	59	15.80	1.609E+00	1.098E+00	1.098E+00	41.21
RA-228	105.21	-----	1.10	6.259E+00	-----	Line Not Found	-----
	338.32	143	11.27	3.747E+00	1.616E+00	1.616E+00	31.60
	794.95	-----	4.25	1.875E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.803E+00	-----	Line Not Found	-----
	911.20	99	25.80*	1.687E+00	1.084E+00	1.084E+00	30.29
	968.97	59	15.80	1.609E+00	1.098E+00	1.098E+00	41.21
TH-228	74.82	207	10.28	4.545E+00	2.113E+00	2.113E+00	31.05
	77.11	291	17.10	4.754E+00	1.710E+00	1.710E+00	21.10

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	238.63	431	43.60*	4.960E+00	9.499E-01	9.499E-01	13.81
	300.09	41	3.30	4.141E+00	1.443E+00	1.443E+00	89.83
TH-230	609.32	200	45.49*	2.310E+00	9.063E-01	9.063E-01	19.71
	1120.29	48	14.92	1.437E+00	1.064E+00	1.064E+00	41.00
	1764.49	41	15.30	9.862E-01	1.282E+00	1.282E+00	32.20
PA-231	283.69	-----	1.70	4.336E+00	-----	Line Not Found	-----
	301.36	41	5.35*	4.141E+00	8.901E-01	8.901E-01	89.83
TH-232	105.21	-----	1.10	6.259E+00	-----	Line Not Found	-----
	338.32	143	11.27	3.747E+00	1.616E+00	1.616E+00	31.60
	835.71	-----	1.61	1.803E+00	-----	Line Not Found	-----
	911.20	99	25.80*	1.687E+00	1.084E+00	1.084E+00	30.29
	968.97	59	15.80	1.609E+00	1.098E+00	1.098E+00	41.21
TH-234	63.29	69	3.70*	3.338E+00	2.657E+00	2.657E+00	106.41
	92.59	129	4.23	5.791E+00	2.516E+00	2.516E+00	62.65
U-234	609.32	200	45.49*	2.310E+00	9.063E-01	9.063E-01	19.71
	1120.29	48	14.92	1.437E+00	1.064E+00	1.064E+00	41.00
	1764.49	41	15.30	9.862E-01	1.282E+00	1.282E+00	32.20
U-235	89.96	42	3.47	5.653E+00	1.024E+00	1.024E+00	137.50
	93.35	129	5.60	5.791E+00	1.900E+00	1.900E+00	62.65
	143.76	-----	10.96*	6.462E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.216E+00	-----	Line Not Found	-----
	185.72	163	57.20	5.848E+00	2.332E-01	2.332E-01	44.76
	205.31	-----	5.01	5.506E+00	-----	Line Not Found	-----
U-238	63.29	69	3.70*	3.338E+00	2.657E+00	2.657E+00	106.41
	92.59	129	4.23	5.791E+00	2.516E+00	2.516E+00	62.65
AM-243	43.53	-----	5.90	5.190E-01	-----	Line Not Found	-----
	74.66	207	67.20*	4.545E+00	3.232E-01	3.232E-01	31.05
ANH-511	511.00	49	100.00*	2.662E+00	8.853E-02	8.853E-02	103.14

Flag: "*" = Keyline

Total number of lines in spectrum 48
Number of unidentified lines 11
Number of lines tentatively identified by NID 37 77.08%

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	1.461E+01	1.461E+01	0.151E+01	10.35	
AS-73	80.30D	13.1	8.281E-02	1.083E+00	20.71E+00	1913.23	
CD-109	461.40D	1.56	2.290E+00	3.582E+00	2.659E+00	74.24	
SN-126	2.30E+05Y	1.00	2.290E-01	2.290E-01	1.700E-01	74.24	
BA-137M	30.08Y	1.02	1.444E-01	1.471E-01	0.566E-01	38.46	
CS-137	30.08Y	1.02	1.526E-01	1.554E-01	0.598E-01	38.46	
TL-208	1.41E+10Y	1.00	3.206E-01	3.206E-01	0.826E-01	25.76	
BI-211	7.04E+08Y	1.00	2.844E+00	2.844E+00	0.564E+00	19.83	
PB-212	1.41E+10Y	1.00	9.499E-01	9.499E-01	1.311E-01	13.81	
BI-214	1600.00Y	1.00	9.063E-01	9.066E-01	1.787E-01	19.71	
PB-214	1600.00Y	1.00	1.032E+00	1.033E+00	0.205E+00	19.83	
RN-222	1600.00Y	1.00	9.063E-01	9.066E-01	1.787E-01	19.71	
RA-224	1.41E+10Y	1.00	2.596E+00	2.596E+00	1.308E+00	50.39	
RA-226	1600.00Y	1.00	9.063E-01	9.066E-01	1.787E-01	19.71	
AC-228	1.41E+10Y	1.00	1.084E+00	1.084E+00	0.328E+00	30.29	
RA-228	1.41E+10Y	1.00	1.084E+00	1.084E+00	0.328E+00	30.29	
TH-228	1.41E+10Y	1.00	9.499E-01	9.499E-01	1.311E-01	13.81	
TH-230	7.54E+04Y	1.00	9.063E-01	9.063E-01	1.787E-01	19.71	
PA-231	7.04E+08Y	1.00	8.901E-01	8.901E-01	7.995E-01	89.83	
TH-232	1.41E+10Y	1.00	1.084E+00	1.084E+00	0.328E+00	30.29	
TH-234	4.47E+09Y	1.00	2.657E+00	2.657E+00	2.827E+00	106.41	
U-234	2.45E+05Y	1.00	9.063E-01	9.063E-01	1.787E-01	19.71	
U-235	7.04E+08Y	1.00	2.332E-01	2.332E-01	1.044E-01	44.76	K
U-238	4.47E+09Y	1.00	2.657E+00	2.657E+00	2.827E+00	106.41	
AM-243	7370.00Y	1.00	3.232E-01	3.232E-01	1.004E-01	31.05	
ANH-511	1.00E+09Y	1.00	8.853E-02	8.853E-02	9.131E-02	103.14	

Total Activity : 4.083E+01 4.313E+01

Grand Total Activity : 4.083E+01 4.313E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	208.99	31	144	1.26	418.88	416	8	7.22E-03	****	5.44E+00	
0	270.49	71	85	1.20	541.94	538	9	1.68E-02	57.3	4.50E+00	T
0	326.32	85	112	5.86	653.64	643	18	2.07E-02	66.8	3.87E+00	T
0	463.18	73	61	2.43	927.47	918	18	1.83E-02	59.4	2.89E+00	T
0	471.99	14	50	0.86	945.12	940	10	3.61E-03	****	2.84E+00	T
0	489.26	25	18	4.22	979.67	974	11	6.41E-03	84.3	2.76E+00	
0	561.21	20	36	1.39	1123.63	1118	11	5.12E-03	****	2.47E+00	
0	569.64	17	26	1.19	1140.49	1136	11	4.35E-03	****	2.44E+00	T
0	614.42	15	32	0.83	1230.09	1226	9	3.94E-03	****	2.29E+00	T
0	665.45	27	20	2.40	1332.20	1329	9	6.99E-03	73.1	2.15E+00	T
0	727.26	40	37	1.59	1455.87	1448	13	1.06E-02	74.0	2.01E+00	T
0	757.10	23	23	2.86	1515.57	1509	14	6.24E-03	96.5	1.95E+00	T
0	763.15	18	8	1.09	1527.69	1523	8	4.78E-03	77.2	1.93E+00	T
0	829.83	21	8	1.22	1661.10	1656	10	5.75E-03	66.1	1.81E+00	
8	948.19	16	4	3.21	1897.92	1894	15	4.33E-03	64.4	1.64E+00	T
8	951.23	17	9	1.93	1904.00	1894	15	4.66E-03	76.1	1.63E+00	
2	962.21	16	2	1.73	1925.97	1923	12	4.46E-03	67.1	1.62E+00	T
2	964.22	27	12	1.94	1930.00	1923	12	7.24E-03	65.6	1.61E+00	T
0	1024.33	4	10	0.47	2050.27	2044	8	1.01E-03	****	1.54E+00	
0	1130.03	22	10	4.80	2261.75	2253	16	6.00E-03	82.8	1.43E+00	T
0	1197.83	27	41	8.79	2397.43	2382	28	7.64E-03	****	1.36E+00	
5	1212.75	9	3	1.49	2427.27	2426	11	2.65E-03	65.1	1.35E+00	
5	1215.68	16	4	1.82	2433.14	2426	11	4.61E-03	61.7	1.35E+00	
0	1376.89	17	6	4.26	2755.69	2749	13	4.79E-03	77.0	1.22E+00	
0	1694.43	7	3	1.47	3391.07	3384	10	2.00E-03	****	1.02E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235005.CNF;1  *
* Acquisition date   : 3-OCT-2016 08:02:09 Sensitivity      : 3.000          *
* Detector ID        : GAM19 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.81 Half life ratio : *****      *
* Sample date       : 10-DEC-2015 13:15:00 Nuclide Library : SOLID      *
* Sample ID         : G405235005 Analyst initials: MXR1         *
* Batch Number      : 1596247 Sample Quantity : 1.5733E+02 GRAM      *
* Wet wt corr       : 1.00000 Wet Weight      : 0.00000          *
*                                     Dry Weight      : 0.00000          *
*****
*                                     CALIBRATION INFORMATION                  *
*
* Eff. Cal. date    : 15-JUN-2016 10:35:16 Eff. Geometry   : CAN          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM19 CAN.CNF;17          *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.835E-01
AS-73	7.232E+00
CD-109	1.001E+00
SN-126	6.427E-02
BA-137M	2.362E-02
CS-137	2.495E-02
TL-208	2.559E-02
PB-212	4.426E-02
BI-214	5.372E-02
PB-214	6.241E-02
RN-222	5.372E-02
RA-224	4.744E-01
RA-226	5.372E-02
AC-228	1.140E-01
RA-228	1.140E-01
TH-228	4.426E-02
TH-230	5.371E-02
PA-231	3.814E-01
TH-232	1.140E-01
TH-234	9.491E-01
U-234	5.371E-02
U-235	1.576E-01
U-238	9.491E-01
AM-243	4.277E-02
ANH-511	2.576E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.184E+01	NOT IDENT.
NA-22	3.825E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.636E-02	FAIL ABUN
SC-46	3.025E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF

CR-51	0.000E+00	SHORT HLIF
MN-54	5.568E-02	NOT IDENT.
CO-56	3.574E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.439E-02	NOT IDENT.
CO-58	4.658E-01	NOT IDENT.
FE-59	5.106E+00	NOT IDENT.
CO-60	2.783E-02	NOT IDENT.
ZN-65	1.437E-01	NOT IDENT.
GE-68	1.276E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.831E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.770E-01	NOT IDENT.
KR-85	6.356E+00	NOT IDENT.
SR-85	6.573E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.634E-01	NOT IDENT.
Y-91	4.578E+02	NOT IDENT.
NB-94	2.982E-02	NOT IDENT.
NB-95	7.580E-01	NOT IDENT.
NB-95M	2.061E+00	NOT IDENT.
ZR-95	1.461E+00	FAIL ABUN
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.296E-02	FAIL ABUN
RH-102	5.012E-02	NOT IDENT.
RU-103	4.155E+00	FAIL ABUN
RH-106	4.380E-01	NOT IDENT.
RU-106	4.380E-01	NOT IDENT.
AG-108M	2.626E-02	FAIL ABUN
AG-110M	8.678E-02	FAIL ABUN
SN-113	1.837E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.174E-01	NOT IDENT.
SB-124	1.301E+00	NOT IDENT.
SB-125	8.806E-02	FAIL ABUN
TE-125M	2.306E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.628E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.380E-02	FAIL ABUN
CS-135	1.299E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.388E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.085E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.055E-01	NOT IDENT.
PM-144	4.203E-02	NOT IDENT.
PR-144	3.651E+00	NOT IDENT.
PM-146	3.181E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.255E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.919E-02	FAIL ABUN
EU-152	6.704E-02	FAIL ABUN
GD-153	1.525E-01	NOT IDENT.
EU-154	9.313E-02	FAIL ABUN
EU-155	9.822E-02	FAIL ABUN
TB-160	1.542E+00	FAIL ABUN
HO-166M	4.111E-02	FAIL ABUN
TM-171	1.948E+01	NOT IDENT.
HF-172	1.979E-01	FAIL ABUN
LU-172	6.430E-02	FAIL ABUN
LU-176	2.359E-02	FAIL ABUN
HF-181	3.537E+00	NOT IDENT.

TA-182	7.780E-01	FAIL ABUN
RE-183	2.554E+00	NOT IDENT.
RE-184	1.948E+01	NOT IDENT.
W-188	9.706E+01	FAIL ABUN
IR-192	4.245E-01	FAIL ABUN
HG-203	2.029E+00	NOT IDENT.
BI-207	1.052E-01	FAIL ABUN
PB-210	2.874E+00	NOT IDENT.
BI-211	4.070E-01	FAIL ABUN
PB-211	6.286E-01	NOT IDENT.
BI-212	6.042E-01	FAIL ABUN
RN-219	3.424E-01	FAIL ABUN
RA-223	5.808E-01	FAIL ABUN
AC-227	2.043E-01	FAIL ABUN
TH-227	2.043E-01	FAIL ABUN
TH-229	4.491E-01	FAIL ABUN
TH-231	5.808E-01	FAIL ABUN
PA-233	5.784E-02	FAIL ABUN
PA-234	1.788E-01	FAIL ABUN
PA-234M	4.299E+00	NOT IDENT.
NP-237	5.784E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.177E-01	NOT IDENT.
PU-239	3.158E+02	NOT IDENT.
AM-241	1.203E-01	NOT IDENT.
CM-243	8.786E-02	NOT IDENT.
BK-247	6.275E-02	NOT IDENT.
CM-247	3.181E-02	NOT IDENT.
CF-249	3.087E-02	NOT IDENT.
CF-251	1.029E-01	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235005.CNF;1
* Acquisition date   : 3-OCT-2016 08:02:09 Sensitivity      : 3.000
* Detector ID        : GAM19 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.81 Half life ratio : *****
* Sample date       : 10-DEC-2015 13:15:00 Nuclide Library: SOLID
* Sample ID         : G405235005 Analyst initials: MXR1
* Batch Number      : 1596247 Sample Quantity : 1.5733E+02 GRAM
*                               Quantity Err(%) : 1.2712E-03 %
* Wet wt corr       : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 15-JUN-2016 10:35:16 Eff. Geometry : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM19 CAN.CNF;17
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.461E+01	1.667E+00	1.667E+00
AS-73	1.083E+00	2.030E+01	2.030E+01
CD-109	1.876E+00	2.661E+00	2.661E+00
SN-126	1.200E-01	1.700E-01	1.700E-01
BA-137M	1.471E-01	5.582E-02	5.582E-02
CS-137	1.554E-01	5.897E-02	5.897E-02
TL-208	3.206E-01	8.211E-02	8.211E-02
PB-212	9.499E-01	1.381E-01	1.381E-01
BI-214	9.066E-01	1.795E-01	1.795E-01
PB-214	1.033E+00	2.052E-01	2.052E-01
RN-222	9.066E-01	1.795E-01	1.795E-01
RA-224	5.045E-01	1.413E+00	1.413E+00
RA-226	9.066E-01	1.795E-01	1.795E-01
AC-228	1.084E+00	3.267E-01	3.267E-01
RA-228	1.084E+00	3.267E-01	3.267E-01
TH-228	9.499E-01	1.381E-01	1.381E-01
TH-230	9.063E-01	1.794E-01	1.794E-01
PA-231	8.901E-01	8.062E-01	8.062E-01
TH-232	1.084E+00	3.267E-01	3.267E-01
TH-234	2.657E+00	2.833E+00	2.833E+00
U-234	9.063E-01	1.794E-01	1.794E-01
U-235	-4.374E-02	1.754E-01	1.754E-01
U-238	2.657E+00	2.833E+00	2.833E+00
AM-243	2.211E-01	1.040E-01	1.040E-01
ANH-511	8.853E-02	8.955E-02	8.955E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	1.076E+01	1.250E+01	1.341E+01	NOT IDENT.
NA-22	4.948E-03	4.450E-02	4.456E-02	NOT IDENT.
NA-24	-1.000E+41	3.245E+41	0.000E+00	SHORT HLIF
AL-26	-3.904E-03	2.083E-02	2.090E-02	FAIL ABUN
SC-46	1.237E-01	3.258E-01	3.305E-01	FAIL ABUN

V-48	6.546E+03	1.287E+04	1.321E+04	SHORT HLIF
CR-51	-1.643E+02	4.154E+02	4.219E+02	SHORT HLIF
MN-54	-8.393E-03	7.391E-02	7.401E-02	NOT IDENT.
CO-56	-1.813E-01	4.387E-01	4.462E-01	NOT IDENT.
MN-56	-1.000E+41	2.420E+41	0.000E+00	SHORT HLIF
CO-57	2.889E-02	4.522E-02	4.705E-02	NOT IDENT.
CO-58	-3.563E-01	5.852E-01	6.069E-01	NOT IDENT.
FE-59	-4.730E-02	5.995E+00	5.995E+00	NOT IDENT.
CO-60	1.429E-03	3.289E-02	3.289E-02	NOT IDENT.
ZN-65	2.099E-02	1.873E-01	1.875E-01	NOT IDENT.
GE-68	-7.859E-01	1.695E+00	1.732E+00	NOT IDENT.
AS-74	-4.299E+02	5.432E+03	5.436E+03	SHORT HLIF
SE-75	-2.272E-02	2.062E-01	2.064E-01	NOT IDENT.
BR-77	9.409E+37	8.088E+38	0.000E+00	SHORT HLIF
SR-82	-7.664E+02	6.681E+02	7.521E+02	SHORT HLIF
RB-83	-3.352E-01	7.258E-01	7.414E-01	NOT IDENT.
KR-85	-2.354E+00	8.781E+00	8.845E+00	NOT IDENT.
SR-85	-2.437E-01	9.080E-01	9.147E-01	NOT IDENT.
RB-86	-5.544E+03	1.979E+04	1.995E+04	SHORT HLIF
Y-88	1.075E-01	1.518E-01	1.593E-01	NOT IDENT.
Y-91	1.331E+02	5.863E+02	5.894E+02	NOT IDENT.
NB-94	4.733E-03	3.297E-02	3.304E-02	NOT IDENT.
NB-95	1.607E-01	9.452E-01	9.480E-01	NOT IDENT.
NB-95M	-9.658E-01	2.639E+00	2.675E+00	NOT IDENT.
ZR-95	2.661E+00	2.520E+00	2.791E+00	FAIL ABUN
NB-97	-1.000E+41	8.300E+40	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	7.678E+40	0.000E+00	SHORT HLIF
MO-99	-1.402E+31	1.064E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	1.646E+41	0.000E+00	SHORT HLIF
RH-101	2.392E-02	3.385E-02	3.552E-02	FAIL ABUN
RH-102	-1.925E-02	6.313E-02	6.373E-02	NOT IDENT.
RU-103	-2.171E+00	5.208E+00	5.299E+00	FAIL ABUN
RH-106	-7.927E-02	5.362E-01	5.374E-01	NOT IDENT.
RU-106	-7.927E-02	5.362E-01	5.374E-01	NOT IDENT.
AG-108M	-7.699E-04	3.053E-02	3.053E-02	FAIL ABUN
AG-110M	2.930E-02	9.490E-02	9.581E-02	FAIL ABUN
SN-113	-9.900E-02	2.233E-01	2.277E-01	NOT IDENT.
CD-115	6.419E+38	1.785E+39	0.000E+00	SHORT HLIF
SN-117M	-1.092E+04	8.823E+04	8.836E+04	SHORT HLIF
TE-123M	-4.327E-02	1.294E-01	1.309E-01	NOT IDENT.
SB-124	1.082E-01	1.674E+00	1.675E+00	NOT IDENT.
SB-125	-1.718E-02	1.041E-01	1.044E-01	FAIL ABUN
TE-125M	-2.351E+02	2.898E+02	3.086E+02	NOT IDENT.
I-126	1.543E+06	1.124E+06	1.322E+06	SHORT HLIF
SB-126	-7.978E+04	1.263E+06	1.264E+06	SHORT HLIF
SB-127	-4.045E+21	1.487E+22	0.000E+00	SHORT HLIF
I-131	1.159E+09	4.067E+09	4.100E+09	SHORT HLIF
I-132	-1.000E+41	1.901E+42	0.000E+00	SHORT HLIF
TE-132	-3.288E+25	2.703E+26	0.000E+00	SHORT HLIF
BA-133	3.556E-02	4.092E-02	4.394E-02	NOT IDENT.
I-133	-1.000E+41	4.526E+41	0.000E+00	SHORT HLIF
CS-134	4.287E-02	5.615E-02	5.938E-02	FAIL ABUN
CS-135	7.152E-02	1.535E-01	1.569E-01	NOT IDENT.
I-135	-1.000E+41	1.298E+42	0.000E+00	SHORT HLIF
CS-136	-7.556E+04	2.389E+05	2.413E+05	SHORT HLIF
CE-139	-7.430E-02	1.077E-01	1.128E-01	NOT IDENT.
BA-140	-3.243E+05	1.271E+06	1.280E+06	SHORT HLIF
LA-140	-2.754E+04	4.458E+05	4.459E+05	SHORT HLIF
CE-141	4.671E+00	2.202E+01	2.212E+01	NOT IDENT.
CE-143	1.000E+41	6.508E+40	0.000E+00	SHORT HLIF
CE-144	-2.000E-01	3.391E-01	3.509E-01	NOT IDENT.
PM-144	-5.629E-02	5.453E-02	6.014E-02	NOT IDENT.
PR-144	-4.870E+00	4.729E+00	5.214E+00	NOT IDENT.
PM-146	-4.808E-02	4.395E-02	4.900E-02	NOT IDENT.
ND-147	7.985E+06	3.376E+07	3.395E+07	SHORT HLIF
PM-147	-1.015E+02	7.754E+02	7.768E+02	NOT IDENT.
PM-149	-3.334E+39	2.611E+40	0.000E+00	SHORT HLIF
EU-150	-8.023E-03	2.560E-02	2.586E-02	FAIL ABUN
EU-152	2.626E-03	8.486E-02	8.487E-02	FAIL ABUN
GD-153	-4.101E-02	1.948E-01	1.956E-01	NOT IDENT.
EU-154	9.896E-03	1.088E-01	1.089E-01	FAIL ABUN
EU-155	-1.051E-02	1.152E-01	1.153E-01	FAIL ABUN
TB-160	5.362E-01	1.681E+00	1.698E+00	FAIL ABUN
HO-166M	-5.176E-02	5.404E-02	5.886E-02	FAIL ABUN
TM-171	1.322E+01	2.077E+01	2.161E+01	NOT IDENT.
HF-172	-1.790E-01	2.238E-01	2.379E-01	FAIL ABUN
LU-172	-1.386E-02	7.779E-02	7.804E-02	FAIL ABUN
LU-176	1.804E-02	2.494E-02	2.623E-02	FAIL ABUN

HF-181	-1.929E+00	4.398E+00	4.484E+00	NOT IDENT.
TA-182	-5.309E-01	1.051E+00	1.078E+00	FAIL ABUN
RE-183	9.693E-01	2.796E+00	2.830E+00	NOT IDENT.
RE-184	-9.237E+00	2.433E+01	2.469E+01	NOT IDENT.
W-188	-7.491E+01	1.314E+02	1.357E+02	FAIL ABUN
IR-192	2.868E-01	4.519E-01	4.700E-01	FAIL ABUN
HG-203	-5.437E-01	2.322E+00	2.335E+00	NOT IDENT.
BI-207	-7.770E-02	9.425E-02	1.005E-01	FAIL ABUN
PB-210	-9.949E-02	3.206E+00	3.206E+00	NOT IDENT.
BI-211	2.844E+00	5.671E-01	1.402E+00	FAIL ABUN
PB-211	5.173E-01	6.664E-01	7.060E-01	NOT IDENT.
BI-212	1.431E+00	1.040E+00	1.223E+00	FAIL ABUN
RN-219	2.706E-02	3.912E-01	3.914E-01	FAIL ABUN
RA-223	2.309E-01	6.366E-01	6.451E-01	FAIL ABUN
AC-227	-5.213E-04	2.273E-01	2.273E-01	FAIL ABUN
TH-227	-5.213E-04	2.273E-01	2.273E-01	FAIL ABUN
TH-229	4.061E-02	4.873E-01	4.876E-01	FAIL ABUN
TH-231	2.309E-01	6.366E-01	6.451E-01	FAIL ABUN
PA-233	4.542E-02	6.110E-02	6.444E-02	FAIL ABUN
PA-234	-2.884E-02	2.459E-01	2.463E-01	FAIL ABUN
PA-234M	6.096E-01	4.818E+00	4.826E+00	NOT IDENT.
NP-237	4.542E-02	6.110E-02	6.444E-02	FAIL ABUN
NP-238	8.874E+40	2.429E+41	0.000E+00	SHORT HLIF
NP-239	-2.650E-02	2.318E-01	2.321E-01	NOT IDENT.
PU-239	2.374E+02	3.224E+02	3.397E+02	NOT IDENT.
AM-241	9.053E-02	1.382E-01	1.441E-01	NOT IDENT.
CM-243	-8.033E-02	1.092E-01	1.150E-01	NOT IDENT.
BK-247	-3.373E-02	7.332E-02	7.488E-02	NOT IDENT.
CM-247	2.414E-04	3.662E-02	3.662E-02	NOT IDENT.
CF-249	-1.809E-02	3.763E-02	3.850E-02	NOT IDENT.
CF-251	-4.791E-03	1.119E-01	1.120E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	83.8463	87.09	117.3344	136.47	87.6127
45.60	77.4971	87.57	117.4180	140.51	0.0000
46.54	73.1555	88.03	117.4979	143.76	90.0468
49.72	0.0000	88.34	117.5512	144.24	80.5642
51.35	69.7358	88.47	117.5742	145.44	85.0043
51.87	81.9514	89.96	117.8302	152.43	92.6217
52.39	82.0382	1093.63	117.9472	153.25	0.0000
52.97	82.1346	91.11	0.0000	323.87	90.1659
53.44	82.2123	92.59	118.2780	156.02	0.0000
54.07	82.3162	93.35	118.4060	158.56	0.0000
57.36	0.0000	94.56	118.6095	159.00	93.2460
57.53	90.9330	94.65	89.6816	162.33	75.0226
57.98	86.4029	94.67	89.6844	162.66	0.0000
59.27	87.7696	94.87	89.7096	163.33	82.1649
59.32	87.7779	97.43	86.7563	165.86	92.9976
59.54	80.1111	98.43	82.3683	176.31	87.6730
60.96	105.0388	98.44	82.3698	176.60	0.0000
61.17	95.8082	99.53	94.8048	177.52	81.5033
62.93	90.6917	100.11	104.7377	181.07	0.0000
63.29	90.7511	102.03	87.7143	181.52	74.1656
63.58	90.7987	103.18	107.6462	184.41	82.9258
64.28	90.9129	103.37	107.6734	143.76	83.0250
66.73	120.1840	105.21	94.2891	193.51	89.0587
67.24	131.2269	105.31	94.3013	197.03	76.5728
125.81	125.0741	106.12	90.6758	198.01	73.9015
67.75	98.5074	106.47	90.7170	201.83	83.2991
69.67	118.8364	109.28	104.7680	203.43	84.3305
70.83	139.8981	111.00	99.9988	205.31	89.5148
72.81	127.7457	111.76	0.0000	210.85	78.8647
72.87	127.7589	114.06	99.5492	215.65	63.8993
74.66	115.0854	116.30	0.0000	222.11	75.4069
74.82	115.1150	116.74	89.8089	227.09	75.7076
74.97	115.1431	119.76	79.1891	227.38	85.0746
77.11	115.5427	121.12	85.2259	228.16	0.0000
78.74	115.8424	121.22	85.2362	228.18	83.2573
79.69	119.6045	121.78	77.6933	116.74	83.2573
80.12	119.6854	122.06	77.7195	235.69	84.6890
80.19	0.0000	122.92	65.1148	235.96	80.4711
80.57	99.0093	123.07	76.9673	238.63	66.0181
81.00	81.4976	265.00	94.7979	238.98	0.0000
81.07	81.5064	125.81	101.8250	240.99	66.1377
81.75	135.9875	127.23	87.5446	242.00	66.1883
83.79	154.0664	127.91	91.8677	244.70	52.5851
84.00	154.1162	129.30	97.9788	252.40	0.0000
85.43	133.5342	131.20	100.7545	252.80	66.7259
86.55	117.2404	133.02	105.2414	254.15	0.0000
86.79	117.2818	133.52	95.0282	256.23	60.2045
86.94	117.3085	136.00	72.9725	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	58.6495	355.39	0.0000	584.27	22.1938
264.80	59.6172	356.01	27.5284	595.83	0.0000
265.00	63.4716	364.49	0.0000	427.87	27.4951
268.22	53.4969	366.42	0.0000	602.52	0.0000
269.46	53.5432	372.51	36.0233	604.72	24.0975
270.03	63.6985	375.05	42.2587	607.14	20.6748
271.23	63.7522	377.52	37.1565	609.32	24.1411
273.65	0.0000	356.01	30.0372	610.33	24.1505
276.40	68.8304	388.16	42.5665	614.28	24.1881
277.37	57.2355	388.63	0.0000	618.01	20.7634
277.60	57.2451	391.69	39.5277	620.36	28.8635
278.00	46.5850	264.66	43.9004	621.93	26.5713
279.20	54.3936	401.81	38.6975	630.19	0.0000
279.54	70.9222	402.40	40.8027	631.29	26.6667
279.70	70.9311	404.85	30.3800	633.25	17.4048
280.46	68.0518	410.95	38.8849	634.78	0.0000
283.69	51.6381	413.71	35.7840	635.95	19.7455
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	65.3547	423.72	0.0000	645.85	31.4791
285.90	0.0000	427.09	37.0921	657.76	21.0798
287.50	61.5401	427.87	34.9860	657.90	0.0000
290.67	61.6721	433.94	39.3479	661.66	15.4811
293.27	0.0000	439.40	34.1237	664.57	0.0000
351.93	48.6037	453.88	39.7393	666.33	0.0000
295.96	48.6269	463.37	35.6063	666.50	0.0000
879.38	17.7133	468.07	19.4656	667.71	0.0000
299.98	47.2783	473.00	0.0000	677.62	17.6953
300.09	47.2822	475.06	35.8057	685.70	0.0000
300.13	47.2832	476.78	35.8346	695.00	0.0000
301.36	51.7577	477.60	24.9855	696.49	29.3967
302.85	66.6101	482.18	34.8372	696.51	29.3967
256.23	53.3452	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	24.0584
306.78	44.5203	497.08	27.4043	697.49	21.3867
308.46	63.3854	505.52	29.7109	702.65	26.7828
311.90	43.6742	507.63	0.0000	706.68	27.7144
316.51	40.8148	511.00	35.2995	711.68	27.7636
319.41	0.0000	514.00	41.4215	720.70	0.0000
320.08	0.0000	514.00	41.4215	721.93	0.0000
321.04	38.9349	520.40	36.5557	722.78	33.0861
323.87	52.0042	520.69	0.0000	722.91	27.3329
325.23	52.0487	522.65	0.0000	723.31	27.3366
328.76	0.0000	527.90	0.0000	724.19	37.4194
333.37	40.7406	528.26	22.2314	727.33	29.7159
333.97	40.7554	529.59	31.1423	733.00	19.5918
334.37	49.8243	529.87	0.0000	735.93	18.9665
338.28	40.3573	531.02	0.0000	333.97	23.4943
338.32	40.3589	537.26	0.0000	739.50	0.0000
311.90	40.4110	546.56	0.0000	747.24	20.8529
340.48	40.4110	552.55	30.3278	748.06	19.9516
340.55	0.0000	563.25	30.4640	752.31	26.1554
344.28	28.8583	569.33	16.9678	753.82	0.0000
345.93	42.5699	946.00	16.9690	756.73	14.5527
351.06	47.7822	569.70	16.9702	756.80	14.5527
351.93	47.8061	583.19	20.4771	884.68	37.9285

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	23.3547	1274.44	16.6176	1620.50	6.7394
766.42	16.0596	1001.03	18.5970	1621.92	5.6177
766.84	14.6016	1002.74	23.5012	1678.03	0.0000
772.60	0.0000	1004.73	15.6763	1690.97	3.0340
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	2.7662
778.90	21.0733	1028.54	0.0000	1063.66	11.9990
783.70	0.0000	1037.84	20.7578	1771.35	3.6926
785.37	24.7909	1038.76	0.0000	1791.20	0.0000
792.07	36.8079	631.29	14.8608	1808.65	2.7872
794.95	21.1842	1048.07	0.0000	1810.72	0.0000
795.86	22.1111	1049.04	13.8787	1836.06	0.9333
810.06	28.6907	1050.41	13.8838		
810.29	26.8415	1063.66	9.9512		
344.28	26.8432	1077.00	0.0000		
810.76	24.0687	1077.34	9.9860		
815.77	0.0000	1085.87	14.0111		
1048.07	0.0000	1093.63	17.0467		
832.01	19.3845	1099.45	13.0555		
834.85	22.3865	1112.07	16.1191		
835.71	25.5912	1112.84	13.0992		
836.80	0.0000	1115.54	14.5195		
846.75	0.0000	1120.29	13.1230		
846.77	19.6599	1120.55	13.1238		
856.80	0.0000	1221.41	14.5406		
860.56	23.5039	1129.67	17.2013		
871.09	15.0903	1131.51	0.0000		
873.19	15.1001	1147.95	0.0000		
875.33	0.0000	1173.23	22.4968		
879.38	13.2369	1177.95	17.4036		
880.51	15.1333	1189.05	13.1383		
883.24	17.0387	1204.77	14.8359		
884.68	14.2049	1221.41	23.6398		
889.28	11.3796	1231.02	13.4753		
894.76	18.0468	1235.36	0.0000		
898.04	10.4582	1238.28	20.7654		
900.72	17.1271	1260.41	0.0000		
903.28	14.2831	1271.87	8.3701		
911.20	19.0881	1274.44	11.5156		
912.08	19.0930	1274.54	11.5156		
923.98	0.0000	1291.59	15.7626		
926.50	14.3797	1298.22	0.0000		
929.11	24.9439	1312.11	0.0000		
937.49	17.3101	1332.49	7.4221		
944.13	0.0000	1362.66	0.0000		
946.00	10.7967	1365.19	4.2712		
949.00	10.6129	1368.63	0.0000		
667.71	0.0000	1384.29	9.6487		
962.31	3.0989	1408.01	3.2324		
964.08	7.7512	1457.56	0.0000		
966.17	7.7556	1460.82	9.8020		
911.20	13.9711	1489.16	6.5717		
968.97	13.9711	1505.03	7.6913		
983.53	0.0000	1584.12	14.5028		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:05:32.50

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235006.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM20.CNF;515
Sample date       : 10-DEC-2015 13:25:00      Background date   : 2-OCT-2016 11:01:13.
Sample ID        : G405235006                Acquisition date    : 3-OCT-2016 08:02:32.
Detector name    : GAM20                     Sample quantity     : 1.56342E+02 GRAM
Elapsed live time: 0 01:00:00.00             Detector geometry:  CAN
Energy tolerance : 1.50000 keV               Elapsed real time:  0 01:00:14.99   0.4%
Abundance limit  : 75.00000                  Analyst Initials    : MXR1
Batch ID        : 1596247                    Sensitivity         : 3.00000
Matrix Spike ID  :                           Detector SN#      :
LCS ID          : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	7	26.75*	15	7	1.19	53.71	51	16	4.30E-03	69.1	2.88E+00
2	7	28.24*	38	68	2.00	56.68	51	16	1.05E-02	59.6	
3	0	63.57*	0	243	0.50	127.29	123	9	1.01E-04	*****	
4	1	73.54	51	190	1.23	147.22	144	16	1.42E-02	50.3	2.27E+01
5	1	76.84	316	172	1.24	153.82	144	16	8.78E-02	9.5	
6	0	84.32*	33	119	0.77	168.76	166	6	9.21E-03	56.2	
7	0	87.19	83	181	1.03	174.51	172	7	2.29E-02	29.0	
8	3	89.95*	36	107	0.96	180.02	178	13	1.00E-02	42.8	3.01E+00
9	3	92.82*	94	201	1.51	185.76	178	13	2.60E-02	30.6	
10	0	105.40	42	147	1.17	210.90	207	10	1.17E-02	55.6	
11	0	121.39	32	99	1.33	242.85	239	7	8.84E-03	55.2	
12	0	128.75	38	82	1.75	257.57	255	6	1.05E-02	41.4	
13	0	186.06*	63	164	0.93	372.12	367	11	1.76E-02	42.8	
14	0	210.28	35	146	2.42	420.54	411	12	9.85E-03	70.3	
15	0	238.45*	473	122	1.22	476.85	471	10	1.31E-01	6.5	
16	0	241.57	80	84	1.22	483.08	481	7	2.21E-02	22.5	
17	0	270.34	66	106	1.48	540.60	535	13	1.84E-02	34.5	
18	0	295.06*	201	72	0.98	590.03	584	11	5.59E-02	10.8	
19	0	300.35	53	61	1.02	600.60	596	11	1.46E-02	31.8	
20	0	338.55*	96	78	1.14	676.98	671	13	2.68E-02	21.6	
21	0	351.77*	288	60	1.24	703.41	698	12	8.01E-02	8.0	
22	0	446.92	39	30	2.59	893.68	885	15	1.09E-02	34.4	
23	0	462.90	46	50	1.74	925.64	919	15	1.29E-02	36.1	
24	0	511.01*	15	79	1.85	1021.84	1016	15	4.17E-03	143.3	
25	0	543.83	64	30	5.63	1087.48	1074	30	1.76E-02	28.1	
26	0	583.49*	164	42	1.32	1166.82	1159	16	4.55E-02	12.0	
27	0	609.34*	179	49	1.52	1218.53	1211	13	4.97E-02	11.1	
28	0	654.51	26	14	1.06	1308.89	1304	10	7.08E-03	34.5	
29	0	727.18	32	14	2.01	1454.27	1448	11	8.96E-03	28.4	
30	0	786.46	17	29	0.64	1572.89	1568	14	4.75E-03	70.2	
31	0	794.94	29	7	2.70	1589.85	1585	9	8.14E-03	24.4	
32	0	835.82	18	15	4.43	1671.64	1664	12	4.99E-03	49.2	
33	0	911.38*	142	19	1.54	1822.85	1817	15	3.95E-02	10.8	
34	0	957.75	14	11	3.21	1915.67	1910	9	3.83E-03	51.5	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	1	964.57	41	10	1.94	1929.32	1922	22	1.15E-02	22.3	2.97E+00
36	1	969.00	73	17	1.87	1938.18	1922	22	2.03E-02	14.7	
37	0	1088.96	11	12	1.19	2178.31	2174	9	2.92E-03	65.5	
38	0	1095.52	29	11	4.82	2191.43	2183	17	8.07E-03	33.4	
39	0	1104.64	12	6	3.10	2209.70	2204	11	3.19E-03	49.3	
40	0	1108.77	11	4	1.17	2217.95	2214	7	2.92E-03	42.7	
41	0	1120.71	33	22	1.18	2241.86	2239	8	9.18E-03	30.1	
42	1	1203.69	17	9	1.87	2408.00	2400	20	4.59E-03	40.0	6.67E-01
43	1	1206.69	14	7	1.87	2414.00	2400	20	3.77E-03	54.5	
44	0	1238.48	27	7	2.23	2477.66	2472	10	7.42E-03	27.2	
45	0	1258.60	11	11	1.01	2517.96	2512	9	3.12E-03	61.3	
46	0	1288.43	15	7	2.88	2577.68	2572	13	4.17E-03	43.8	
47	0	1334.20	17	6	1.19	2669.34	2664	12	4.73E-03	37.6	
48	0	1360.53	6	5	0.55	2722.08	2718	6	1.53E-03	74.4	
49	0	1377.89	22	5	1.34	2756.85	2751	11	6.08E-03	29.7	
50	0	1416.25	6	9	0.55	2833.68	2823	12	1.74E-03	103.4	
51	0	1460.92*	480	0	2.16	2923.15	2916	14	1.33E-01	4.6	
52	0	1588.20	11	6	4.32	3178.14	3171	12	3.06E-03	53.8	
53	0	1630.78	11	0	0.83	3263.45	3257	11	3.06E-03	30.2	
54	0	1729.10	13	3	0.72	3460.47	3453	13	3.67E-03	39.0	
55	0	1764.39	43	0	2.54	3531.19	3525	12	1.19E-02	15.2	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235006.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 10-DEC-2015 13:25:00 Acquisition date : 3-OCT-2016 08:02:32
Sample ID        : G405235006 Sample quantity : 156.34 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA20 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:14.99 0.4%
Energy tolerance  : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type   : Linear Efficiencies at : Peak Energy
Abundance limit   : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	87.09	EU-155	86.55
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	87.09	TH-229	88.47
PB-214	242.00	RA-224	240.99
PB-214	74.82	BI-211	72.87
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.312E+00	1.597E+01	1.597E+01	9.18	OK
MN-54	834.85	99.98*	2.057E+00	4.332E-02	8.395E-02	98.38	OK
CO-57	122.06	85.60*	7.574E+00	2.963E-02	6.333E-02	110.46	OK
	136.47	10.68	7.468E+00	-----	Line Not Found	-----	Absent
Y-91	1204.77	0.26*	1.543E+00	1.960E+01	6.675E+02	79.96	OK
CD-109	88.03	3.70*	6.842E+00	8.453E-01	1.322E+00	142.57	OK
SN-126	64.28	9.60	4.822E+00	5.031E-03	5.031E-03	*****	OK
	86.94	8.90	6.842E+00	3.514E-01	3.514E-01	142.57	OK
	87.57	37.00*	6.842E+00	8.453E-02	8.453E-02	142.57	OK
PM-147	121.22	0.00*	7.574E+00	8.899E+02	1.104E+03	110.46	OK
EU-155	86.55	30.70	6.842E+00	1.019E-01	1.147E-01	142.57	OK
	105.31	21.10*	7.457E+00	1.643E-01	1.850E-01	111.18	OK
TL-208	277.37	6.60	4.947E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	2.718E+00	3.661E-01	3.661E-01	24.08	OK
	860.56	12.50	2.011E+00	-----	Line Not Found	-----	Absent
BI-212	727.33	6.67*	2.290E+00	1.064E+00	1.064E+00	56.79	OK
	785.37	1.10	2.156E+00	3.600E+00	3.600E+00	140.46	OK
	1620.50	1.47	1.197E+00	-----	Line Not Found	-----	Absent
PB-212	74.82	10.28	5.996E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	17.10	6.163E+00	1.887E+00	1.887E+00	19.08	OK
	238.63	43.60*	5.555E+00	1.105E+00	1.105E+00	12.91	OK
	300.09	3.30	4.643E+00	1.896E+00	1.896E+00	63.67	OK
BI-214	609.32	45.49*	2.627E+00	7.694E-01	7.696E-01	22.24	OK
	1120.29	14.92	1.635E+00	6.500E-01	6.502E-01	60.22	OK
	1764.49	15.30	1.106E+00	1.155E+00	1.155E+00	30.50	OK
PB-214	74.82	5.80	5.884E+00	9.459E-01	9.463E-01	100.67	OK
	77.11	9.70	6.163E+00	3.326E+00	3.328E+00	19.08	OK
	87.09	3.41	6.836E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	5.502E+00	1.127E+00	1.128E+00	45.00	OK
	295.22	18.42	4.710E+00	1.287E+00	1.287E+00	21.68	OK
	351.93	35.60*	4.085E+00	1.079E+00	1.080E+00	16.10	OK
RN-222	609.32	45.49*	2.627E+00	7.694E-01	7.696E-01	22.24	OK
	1120.29	14.92	1.635E+00	6.500E-01	6.502E-01	60.22	OK
	1764.49	15.30	1.106E+00	1.155E+00	1.155E+00	30.50	OK
RA-226	609.32	45.49*	2.627E+00	7.694E-01	7.696E-01	22.24	OK
	1120.29	14.92	1.635E+00	6.500E-01	6.502E-01	60.22	OK
	1764.49	15.30	1.106E+00	1.155E+00	1.155E+00	30.50	OK
AC-228	105.21	1.10	7.457E+00	3.151E+00	3.151E+00	111.18	OK
	338.32	11.27	4.214E+00	1.110E+00	1.110E+00	43.25	OK
	794.95	4.25	2.138E+00	1.609E+00	1.609E+00	48.85	OK
	835.71	1.61	2.057E+00	2.690E+00	2.690E+00	98.38	OK
	911.20	25.80*	1.923E+00	1.408E+00	1.408E+00	21.64	OK
	968.97	15.80	1.834E+00	1.229E+00	1.229E+00	29.49	OK
RA-228	105.21	1.10	7.457E+00	3.151E+00	3.151E+00	111.18	OK
	338.32	11.27	4.214E+00	1.110E+00	1.110E+00	43.25	OK
	794.95	4.25	2.138E+00	1.609E+00	1.609E+00	48.85	OK
	835.71	1.61	2.057E+00	2.690E+00	2.690E+00	98.38	OK
	911.20	25.80*	1.923E+00	1.408E+00	1.408E+00	21.64	OK
	968.97	15.80	1.834E+00	1.229E+00	1.229E+00	29.49	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-228	74.82	10.28	5.996E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	17.10	6.163E+00	1.887E+00	1.887E+00	19.08	OK
	238.63	43.60*	5.555E+00	1.105E+00	1.105E+00	12.91	OK
	300.09	3.30	4.643E+00	1.896E+00	1.896E+00	63.67	OK
TH-229	85.43	14.70	6.681E+00	2.108E-01	2.108E-01	112.36	OK
	88.47	24.00	6.842E+00	1.303E-01	1.303E-01	142.57	OK
	193.51	4.41*	6.409E+00	----- Line	Not Found	-----	Absent
	210.85	2.80	6.074E+00	1.196E+00	1.196E+00	140.62	OK
TH-230	609.32	45.49*	2.627E+00	7.694E-01	7.694E-01	22.24	OK
	1120.29	14.92	1.635E+00	6.500E-01	6.500E-01	60.22	OK
	1764.49	15.30	1.106E+00	1.155E+00	1.155E+00	30.50	OK
PA-231	283.69	1.70	4.860E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	4.643E+00	1.169E+00	1.169E+00	63.67	OK
TH-232	105.21	1.10	7.457E+00	3.151E+00	3.151E+00	111.18	OK
	338.32	11.27	4.214E+00	1.110E+00	1.110E+00	43.25	OK
	835.71	1.61	2.057E+00	2.690E+00	2.690E+00	98.38	OK
	911.20	25.80*	1.923E+00	1.408E+00	1.408E+00	21.64	OK
	968.97	15.80	1.834E+00	1.229E+00	1.229E+00	29.49	OK
TH-234	63.29	3.70*	4.822E+00	1.305E-02	1.305E-02*****		OK
	92.59	4.23	7.101E+00	1.932E+00	1.932E+00	61.25	OK
U-234	609.32	45.49*	2.627E+00	7.694E-01	7.694E-01	22.24	OK
	1120.29	14.92	1.635E+00	6.500E-01	6.500E-01	60.22	OK
	1764.49	15.30	1.106E+00	1.155E+00	1.155E+00	30.50	OK
U-235	89.96	3.47	6.978E+00	9.241E-01	9.241E-01	85.65	OK
	93.35	5.60	7.101E+00	1.459E+00	1.459E+00	61.25	OK
	143.76	10.96*	7.370E+00	----- Line	Not Found	-----	Absent
	163.33	5.08	7.024E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	6.562E+00	9.797E-02	9.797E-02	85.62	OK
	205.31	5.01	6.171E+00	----- Line	Not Found	-----	Absent
U-238	63.29	3.70*	4.822E+00	1.305E-02	1.305E-02*****		OK
	92.59	4.23	7.101E+00	1.932E+00	1.932E+00	61.25	OK
ANH-511	511.00	100.00*	3.019E+00	2.603E-02	2.603E-02	286.68	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235006.CNF;1
* Acquisition date   : 3-OCT-2016 08:02:32 Sensitivity      : 3.000
* Detector ID        : GAM20 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:14.99 Half life ratio : *****
* Sample date       : 10-DEC-2015 13:25:00 Analyst initials: MXR1
* Sample ID         : G405235006 Sample Quantity : 1.5634E+02 GRAM
* Batch Number      : 1596247 Wet Weight      : 0.00000
* Wet wt corr       : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 30-JUN-2016 06:52:39 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM20 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.597E+01	1.437E+00	3.706E-01
MN-54	8.395E-02	8.094E-02	1.126E-01
CO-57	6.333E-02	6.855E-02	7.947E-02
Y-91	6.675E+02	5.231E+02	6.999E+02
CD-109	1.322E+00	1.847E+00	1.773E+00
SN-126	8.453E-02	1.181E-01	1.137E-01
PM-147	1.104E+03	1.195E+03	1.179E+03
EU-155	1.850E-01	2.016E-01	1.643E-01
TL-208	3.661E-01	8.638E-02	5.374E-02
BI-212	1.064E+00	5.920E-01	6.980E-01
PB-212	1.105E+00	1.398E-01	8.502E-02
BI-214	7.696E-01	1.678E-01	1.143E-01
PB-214	1.080E+00	1.703E-01	1.083E-01
RN-222	7.696E-01	1.678E-01	1.143E-01
RA-226	7.696E-01	1.678E-01	1.143E-01
AC-228	1.408E+00	2.987E-01	1.578E-01
RA-228	1.408E+00	2.987E-01	1.578E-01
TH-228	1.105E+00	1.398E-01	8.502E-02
TH-229	7.367E-02	4.123E-01	8.250E-01
TH-230	7.694E-01	1.677E-01	1.143E-01
PA-231	1.169E+00	7.297E-01	6.113E-01
TH-232	1.408E+00	2.987E-01	1.578E-01
TH-234	1.305E-02	2.015E+00	1.560E+00
U-234	7.694E-01	1.677E-01	1.143E-01
U-235	-2.283E-02	1.683E-01	3.042E-01
U-238	1.305E-02	2.015E+00	1.560E+00
ANH-511	2.603E-02	7.312E-02	4.614E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	1.023E+00		8.808E+00	1.761E+01	NOT IDENT.
NA-22	-2.495E-02		3.358E-02	5.855E-02	NOT IDENT.
NA-24	0.000E+00		1.960E+41	0.000E+00	SHORT HLIF

AL-26	0.000E+00	8.732E-03	1.210E-02	NOT IDENT.
SC-46	1.332E-01	2.927E-01	6.099E-01	FAIL ABUN
V-48	0.000E+00	1.052E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.021E+02	0.000E+00	SHORT HLIF
CO-56	1.650E-01	2.952E-01	6.507E-01	FAIL ABUN
MN-56	0.000E+00	1.789E+41	0.000E+00	SHORT HLIF
CO-58	-3.271E-01	4.576E-01	7.628E-01	NOT IDENT.
FE-59	4.920E+00	3.163E+00	9.091E+00	NOT IDENT.
CO-60	4.019E-02	2.818E-02	7.222E-02	NOT IDENT.
ZN-65	-3.067E-02	1.335E-01	2.514E-01	NOT IDENT.
GR-68	-2.497E-01	1.905E+00	3.777E+00	NOT IDENT.
AS-73	4.709E-02	5.122E+00	9.820E+00	NOT IDENT.
AS-74	0.000E+00	4.730E+03	0.000E+00	SHORT HLIF
SE-75	-6.351E-02	1.680E-01	3.059E-01	FAIL ABUN
BR-77	0.000E+00	1.382E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.250E+02	0.000E+00	SHORT HLIF
RB-83	3.126E-02	5.566E-01	1.083E+00	NOT IDENT.
KR-85	1.789E+00	6.540E+00	1.171E+01	NOT IDENT.
SR-85	1.852E-01	6.763E-01	1.211E+00	NOT IDENT.
RB-86	0.000E+00	2.298E+04	0.000E+00	SHORT HLIF
Y-88	4.852E-02	7.663E-02	2.677E-01	NOT IDENT.
NB-94	2.643E-02	2.816E-02	5.967E-02	NOT IDENT.
NB-95	-4.482E-01	7.824E-01	1.348E+00	NOT IDENT.
NB-95M	-7.774E-02	2.027E+00	3.588E+00	NOT IDENT.
ZR-95	-1.106E-01	1.356E+00	2.525E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	9.017E+31	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	1.017E-02	3.106E-02	5.424E-02	NOT IDENT.
RH-102	-1.268E-02	4.314E-02	8.041E-02	NOT IDENT.
RU-103	-8.177E-01	4.273E+00	8.146E+00	FAIL ABUN
RH-106	2.870E-01	4.005E-01	8.522E-01	NOT IDENT.
RU-106	2.870E-01	4.005E-01	8.522E-01	NOT IDENT.
AG-108M	-2.404E-02	2.189E-02	3.677E-02	NOT IDENT.
AG-110M	-2.067E-02	7.810E-02	1.429E-01	NOT IDENT.
SN-113	-1.728E-01	2.027E-01	3.583E-01	NOT IDENT.
CD-115	0.000E+00	1.463E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	8.675E+04	0.000E+00	SHORT HLIF
TE-123M	7.504E-02	1.194E-01	2.273E-01	NOT IDENT.
SB-124	1.068E+00	1.509E+00	3.831E+00	NOT IDENT.
SB-125	5.590E-02	8.202E-02	1.728E-01	FAIL ABUN
TE-125M	3.300E+01	2.511E+02	4.330E+02	NOT IDENT.
I-126	0.000E+00	6.554E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	9.492E+05	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.293E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	3.417E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.209E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.209E+26	0.000E+00	SHORT HLIF
BA-133	-1.606E-03	3.919E-02	7.061E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.032E-02	1.001E-01	FAIL ABUN
CS-135	6.807E-02	1.326E-01	2.466E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.078E+05	0.000E+00	SHORT HLIF
BA-137M	3.260E-02	3.657E-02	7.489E-02	NOT IDENT.
CS-137	3.443E-02	3.863E-02	7.911E-02	NOT IDENT.
CE-139	3.492E-02	9.631E-02	1.800E-01	NOT IDENT.
BA-140	0.000E+00	8.021E+05	0.000E+00	SHORT HLIF
LA-140	0.000E+00	2.277E+05	0.000E+00	SHORT HLIF
CE-141	-2.549E+00	2.069E+01	3.738E+01	NOT IDENT.
CE-143	0.000E+00	4.447E+40	0.000E+00	SHORT HLIF
CE-144	8.658E-02	3.246E-01	6.052E-01	NOT IDENT.
PM-144	9.297E-03	3.994E-02	8.052E-02	NOT IDENT.
PR-144	7.690E-01	3.459E+00	6.964E+00	NOT IDENT.
PM-146	-4.613E-03	3.653E-02	6.994E-02	NOT IDENT.
ND-147	0.000E+00	2.538E+07	0.000E+00	SHORT HLIF
PM-149	0.000E+00	1.938E+40	0.000E+00	SHORT HLIF
EU-150	-1.374E-02	2.402E-02	3.900E-02	FAIL ABUN
EU-152	2.263E-02	8.124E-02	1.563E-01	FAIL ABUN
GD-153	3.451E-02	1.485E-01	2.811E-01	NOT IDENT.
EU-154	-5.181E-02	8.030E-02	1.437E-01	NOT IDENT.
TB-160	-1.190E+00	1.530E+00	2.487E+00	FAIL ABUN
HO-166M	2.688E-02	4.531E-02	9.477E-02	NOT IDENT.
TM-171	-1.661E+00	1.166E+01	2.218E+01	NOT IDENT.
HF-172	2.763E-02	2.097E-01	3.599E-01	FAIL ABUN
LU-172	8.659E-02	6.847E-02	1.520E-01	FAIL ABUN
LU-176	3.988E-03	2.147E-02	4.260E-02	FAIL ABUN

HF-181	1.079E+00	3.284E+00	6.687E+00	NOT IDENT.
TA-182	7.436E-01	8.528E-01	1.849E+00	FAIL ABUN
RE-183	-2.026E-01	1.829E+00	3.463E+00	NOT IDENT.
RE-184	-2.740E+00	2.614E+01	4.846E+01	NOT IDENT.
W-188	-4.717E+01	1.004E+02	1.672E+02	FAIL ABUN
IR-192	-1.267E-01	3.466E-01	6.595E-01	FAIL ABUN
HG-203	-7.852E-02	2.006E+00	3.918E+00	FAIL ABUN
BI-207	-1.900E-02	3.968E-02	7.421E-02	FAIL ABUN
PB-210	-1.283E+00	1.617E+00	2.972E+00	NOT IDENT.
BI-211	0.000E+00	4.691E-01	7.832E-01	FAIL ABUN
PB-211	3.265E-02	5.032E-01	9.959E-01	NOT IDENT.
RN-219	8.218E-02	3.087E-01	6.196E-01	FAIL ABUN
RA-223	2.836E-01	4.879E-01	1.005E+00	FAIL ABUN
RA-224	0.000E+00	8.792E-01	1.309E+00	FAIL ABUN
AC-227	1.949E-02	1.984E-01	3.929E-01	FAIL ABUN
TH-227	1.949E-02	1.984E-01	3.929E-01	FAIL ABUN
TH-231	2.836E-01	4.879E-01	1.005E+00	FAIL ABUN
PA-233	-2.120E-02	5.083E-02	9.575E-02	FAIL ABUN
PA-234	1.098E-01	2.475E-01	5.245E-01	NOT IDENT.
PA-234M	2.820E+00	3.809E+00	8.419E+00	NOT IDENT.
NP-237	-2.120E-02	5.083E-02	9.575E-02	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-1.976E-01	2.067E-01	3.502E-01	FAIL ABUN
PU-239	4.764E+02	3.862E+02	5.310E+02	FAIL ABUN
AM-241	2.954E-02	9.556E-02	1.724E-01	NOT IDENT.
AM-243	8.165E-02	8.055E-02	1.100E-01	FAIL ABUN
CM-243	1.654E-02	7.731E-02	1.368E-01	NOT IDENT.
BK-247	-1.296E-02	6.102E-02	1.061E-01	FAIL ABUN
CM-247	-1.052E-02	2.867E-02	5.364E-02	NOT IDENT.
CF-249	1.569E-02	3.256E-02	6.621E-02	NOT IDENT.
CF-251	6.862E-02	1.006E-01	2.083E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	465	10.66*	1.312E+00	1.597E+01	1.597E+01	9.18
MN-54	834.85	19	99.98*	2.057E+00	4.332E-02	8.395E-02	98.38
CO-57	122.06	40	85.60*	7.574E+00	2.963E-02	6.333E-02	110.46
	136.47	-----	10.68	7.468E+00	-----	Line Not Found	-----
Y-91	1204.77	16	0.26*	1.543E+00	1.960E+01	6.675E+02	79.96
CD-109	88.03	107	3.70*	6.842E+00	2.031E+00	3.177E+00	57.97
SN-126	64.28	0	9.60	4.822E+00	5.031E-03	5.031E-03	15752.45
	86.94	107	8.90	6.842E+00	8.444E-01	8.444E-01	57.97
	87.57	107	37.00*	6.842E+00	2.031E-01	2.031E-01	57.97
PM-147	121.22	40	0.00*	7.574E+00	8.899E+02	1.104E+03	110.46
EU-155	86.55	107	30.70	6.842E+00	2.448E-01	2.757E-01	57.97
	105.31	54	21.10*	7.457E+00	1.643E-01	1.850E-01	111.18
TL-208	277.37	-----	6.60	4.947E+00	-----	Line Not Found	-----
	583.19	176	85.00*	2.718E+00	3.661E-01	3.661E-01	24.08
	860.56	-----	12.50	2.011E+00	-----	Line Not Found	-----
BI-211	72.87	67	1.23	5.884E+00	4.460E+00	4.460E+00	100.67
	351.06	327	12.92*	4.085E+00	2.974E+00	2.974E+00	16.10
BI-212	727.33	34	6.67*	2.290E+00	1.064E+00	1.064E+00	56.79
	785.37	18	1.10	2.156E+00	3.600E+00	3.600E+00	140.46
	1620.50	-----	1.47	1.197E+00	-----	Line Not Found	-----
PB-212	74.82	67	10.28	5.884E+00	5.337E-01	5.337E-01	100.67
	77.11	414	17.10	6.163E+00	1.887E+00	1.887E+00	19.08
	238.63	557	43.60*	5.555E+00	1.105E+00	1.105E+00	12.91
	300.09	60	3.30	4.643E+00	1.896E+00	1.896E+00	63.67
BI-214	609.32	191	45.49*	2.627E+00	7.694E-01	7.696E-01	22.24
	1120.29	33	14.92	1.635E+00	6.500E-01	6.502E-01	60.22
	1764.49	41	15.30	1.106E+00	1.155E+00	1.155E+00	30.50
PB-214	74.82	67	5.80	5.884E+00	9.459E-01	9.463E-01	100.67
	77.11	414	9.70	6.163E+00	3.326E+00	3.328E+00	19.08
	87.09	107	3.41	6.842E+00	2.204E+00	2.205E+00	57.97
	242.00	94	7.25	5.502E+00	1.127E+00	1.128E+00	45.00
	295.22	232	18.42	4.710E+00	1.287E+00	1.287E+00	21.68
	351.93	327	35.60*	4.085E+00	1.079E+00	1.080E+00	16.10
RN-222	609.32	191	45.49*	2.627E+00	7.694E-01	7.696E-01	22.24
	1120.29	33	14.92	1.635E+00	6.500E-01	6.502E-01	60.22
	1764.49	41	15.30	1.106E+00	1.155E+00	1.155E+00	30.50
RA-224	240.99	94	4.10*	5.502E+00	1.994E+00	1.994E+00	45.00
RA-226	609.32	191	45.49*	2.627E+00	7.694E-01	7.696E-01	22.24
	1120.29	33	14.92	1.635E+00	6.500E-01	6.502E-01	60.22
	1764.49	41	15.30	1.106E+00	1.155E+00	1.155E+00	30.50
AC-228	105.21	54	1.10	7.457E+00	3.151E+00	3.151E+00	111.18
	338.32	110	11.27	4.214E+00	1.110E+00	1.110E+00	43.25
	794.95	30	4.25	2.138E+00	1.609E+00	1.609E+00	48.85
	835.71	19	1.61	2.057E+00	2.690E+00	2.690E+00	98.38
	911.20	146	25.80*	1.923E+00	1.408E+00	1.408E+00	21.64
	968.97	74	15.80	1.834E+00	1.229E+00	1.229E+00	29.49
RA-228	105.21	54	1.10	7.457E+00	3.151E+00	3.151E+00	111.18

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	338.32	110	11.27	4.214E+00	1.110E+00	1.110E+00	43.25
	794.95	30	4.25	2.138E+00	1.609E+00	1.609E+00	48.85
	835.71	19	1.61	2.057E+00	2.690E+00	2.690E+00	98.38
	911.20	146	25.80*	1.923E+00	1.408E+00	1.408E+00	21.64
	968.97	74	15.80	1.834E+00	1.229E+00	1.229E+00	29.49
TH-228	74.82	67	10.28	5.884E+00	5.337E-01	5.337E-01	100.67
	77.11	414	17.10	6.163E+00	1.887E+00	1.887E+00	19.08
	238.63	557	43.60*	5.555E+00	1.105E+00	1.105E+00	12.91
	300.09	60	3.30	4.643E+00	1.896E+00	1.896E+00	63.67
TH-229	85.43	43	14.70	6.681E+00	2.108E-01	2.108E-01	112.36
	88.47	107	24.00	6.842E+00	3.131E-01	3.131E-01	57.97
	193.51	-----	4.41*	6.409E+00	-----	Line Not Found	-----
	210.85	42	2.80	6.074E+00	1.196E+00	1.196E+00	140.62
TH-230	609.32	191	45.49*	2.627E+00	7.694E-01	7.694E-01	22.24
	1120.29	33	14.92	1.635E+00	6.500E-01	6.500E-01	60.22
	1764.49	41	15.30	1.106E+00	1.155E+00	1.155E+00	30.50
PA-231	283.69	-----	1.70	4.860E+00	-----	Line Not Found	-----
	301.36	60	5.35*	4.643E+00	1.169E+00	1.169E+00	63.67
TH-232	105.21	54	1.10	7.457E+00	3.151E+00	3.151E+00	111.18
	338.32	110	11.27	4.214E+00	1.110E+00	1.110E+00	43.25
	835.71	19	1.61	2.057E+00	2.690E+00	2.690E+00	98.38
	911.20	146	25.80*	1.923E+00	1.408E+00	1.408E+00	21.64
	968.97	74	15.80	1.834E+00	1.229E+00	1.229E+00	29.49
TH-234	63.29	0	3.70*	4.822E+00	1.305E-02	1.305E-02	15752.45
	92.59	121	4.23	7.101E+00	1.932E+00	1.932E+00	61.25
U-234	609.32	191	45.49*	2.627E+00	7.694E-01	7.694E-01	22.24
	1120.29	33	14.92	1.635E+00	6.500E-01	6.500E-01	60.22
	1764.49	41	15.30	1.106E+00	1.155E+00	1.155E+00	30.50
U-235	89.96	47	3.47	6.978E+00	9.241E-01	9.241E-01	85.65
	93.35	121	5.60	7.101E+00	1.459E+00	1.459E+00	61.25
	143.76	-----	10.96*	7.370E+00	-----	Line Not Found	-----
	163.33	-----	5.08	7.024E+00	-----	Line Not Found	-----
	185.72	77	57.20	6.562E+00	9.797E-02	9.797E-02	85.62
	205.31	-----	5.01	6.171E+00	-----	Line Not Found	-----
U-238	63.29	0	3.70*	4.822E+00	1.305E-02	1.305E-02	15752.45
	92.59	121	4.23	7.101E+00	1.932E+00	1.932E+00	61.25
AM-243	43.53	-----	5.90	1.315E+00	-----	Line Not Found	-----
	74.66	67	67.20*	5.884E+00	8.164E-02	8.165E-02	100.67
ANH-511	511.00	16	100.00*	3.019E+00	2.603E-02	2.603E-02	286.68

Flag: "*" = Keyline

Total number of lines in spectrum 55
Number of unidentified lines 20
Number of lines tentatively identified by NID 35 63.64%

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	1.597E+01	1.597E+01	0.147E+01	9.18	
MN-54	312.05D	1.94	4.332E-02	8.395E-02	8.259E-02	98.38	
CO-57	271.74D	2.14	2.963E-02	6.333E-02	6.995E-02	110.46	
Y-91	58.51D	34.1	1.960E+01	6.675E+02	5.337E+02	79.96	
CD-109	461.40D	1.56	2.031E+00	3.177E+00	1.842E+00	57.97	
SN-126	2.30E+05Y	1.00	2.031E-01	2.031E-01	1.177E-01	57.97	
PM-147	2.62Y	1.24	8.899E+02	1.104E+03	1.219E+03	110.46	
EU-155	4.75Y	1.13	1.643E-01	1.850E-01	2.057E-01	111.18	
TL-208	1.41E+10Y	1.00	3.661E-01	3.661E-01	0.881E-01	24.08	
BI-211	7.04E+08Y	1.00	2.974E+00	2.974E+00	0.479E+00	16.10	
BI-212	1.41E+10Y	1.00	1.064E+00	1.064E+00	0.604E+00	56.79	
PB-212	1.41E+10Y	1.00	1.105E+00	1.105E+00	0.143E+00	12.91	
BI-214	1600.00Y	1.00	7.694E-01	7.696E-01	1.712E-01	22.24	
PB-214	1600.00Y	1.00	1.079E+00	1.080E+00	0.174E+00	16.10	
RN-222	1600.00Y	1.00	7.694E-01	7.696E-01	1.712E-01	22.24	
RA-224	1.41E+10Y	1.00	1.994E+00	1.994E+00	0.897E+00	45.00	
RA-226	1600.00Y	1.00	7.694E-01	7.696E-01	1.712E-01	22.24	
AC-228	1.41E+10Y	1.00	1.408E+00	1.408E+00	0.305E+00	21.64	
RA-228	1.41E+10Y	1.00	1.408E+00	1.408E+00	0.305E+00	21.64	
TH-228	1.41E+10Y	1.00	1.105E+00	1.105E+00	0.143E+00	12.91	
TH-229	7340.00Y	1.00	3.131E-01	3.131E-01	1.815E-01	57.97	K
TH-230	7.54E+04Y	1.00	7.694E-01	7.694E-01	1.711E-01	22.24	
PA-231	7.04E+08Y	1.00	1.169E+00	1.169E+00	0.745E+00	63.67	
TH-232	1.41E+10Y	1.00	1.408E+00	1.408E+00	0.305E+00	21.64	
TH-234	4.47E+09Y	1.00	1.305E-02	1.305E-02	205.6E-02	15752.45	
U-234	2.45E+05Y	1.00	7.694E-01	7.694E-01	1.711E-01	22.24	
U-235	7.04E+08Y	1.00	9.797E-02	9.797E-02	8.388E-02	85.62	K
U-238	4.47E+09Y	1.00	1.305E-02	1.305E-02	205.6E-02	15752.45	
AM-243	7370.00Y	1.00	8.164E-02	8.165E-02	8.220E-02	100.67	
ANH-511	1.00E+09Y	1.00	2.603E-02	2.603E-02	7.461E-02	286.68	

Total Activity : 9.474E+02 1.811E+03

Grand Total Activity : 9.474E+02 1.811E+03

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
7	26.75	22	11	1.19	53.71	51	16	4.30E-03	****	1.71E-07	
7	28.24	54	98	2.00	56.68	51	16	1.05E-02	****	1.29E-05	
0	128.75	47	103	1.75	257.57	255	6	1.05E-02	82.7	7.54E+00	T
0	270.34	77	123	1.48	540.60	535	13	1.84E-02	69.1	5.05E+00	T
0	446.92	43	33	2.59	893.68	885	15	1.09E-02	68.8	3.36E+00	
0	462.90	51	55	1.74	925.64	919	15	1.29E-02	72.2	3.27E+00	T
0	543.83	69	33	5.63	1087.48	1074	30	1.76E-02	56.2	2.87E+00	
0	654.51	27	15	1.06	1308.89	1304	10	7.08E-03	69.0	2.48E+00	
0	957.75	14	11	3.21	1915.67	1910	9	3.83E-03	****	1.85E+00	
1	964.57	42	10	1.94	1929.32	1922	22	1.15E-02	44.6	1.84E+00	T
0	1088.96	11	12	1.19	2178.31	2174	9	2.92E-03	****	1.67E+00	
0	1095.52	29	11	4.82	2191.43	2183	17	8.07E-03	66.8	1.66E+00	
0	1104.64	12	6	3.10	2209.70	2204	11	3.19E-03	98.6	1.65E+00	
0	1108.77	11	4	1.17	2217.95	2214	7	2.92E-03	85.4	1.65E+00	
1	1206.69	13	7	1.87	2414.00	2400	20	3.77E-03	****	1.54E+00	
0	1238.48	26	7	2.23	2477.66	2472	10	7.42E-03	54.4	1.51E+00	T
0	1258.60	11	11	1.01	2517.96	2512	9	3.12E-03	****	1.49E+00	
0	1288.43	15	7	2.88	2577.68	2572	13	4.17E-03	87.6	1.46E+00	
0	1334.20	17	6	1.19	2669.34	2664	12	4.73E-03	75.1	1.42E+00	
0	1360.53	5	4	0.55	2722.08	2718	6	1.53E-03	****	1.39E+00	
0	1377.89	21	5	1.34	2756.85	2751	11	6.08E-03	59.3	1.38E+00	
0	1416.25	6	8	0.55	2833.68	2823	12	1.74E-03	****	1.35E+00	
0	1588.20	11	6	4.32	3178.14	3171	12	3.06E-03	****	1.22E+00	
0	1630.78	11	0	0.83	3263.45	3257	11	3.06E-03	60.3	1.19E+00	
0	1729.10	13	3	0.72	3460.47	3453	13	3.67E-03	78.0	1.13E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235006.CNF;1
* Acquisition date   : 3-OCT-2016 08:02:32 Sensitivity      : 3.000
* Detector ID        : GAM20 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:14.99 Half life ratio : *****
* Sample date        : 10-DEC-2015 13:25:00 Nuclide Library : SOLID
* Sample ID          : G405235006 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.5634E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 30-JUN-2016 06:52:39 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM20 CAN.CNF;15
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.384E-01
MN-54	5.004E-02
CO-57	3.745E-02
Y-91	2.941E+02
CD-109	8.436E-01
SN-126	5.411E-02
PM-147	5.496E+02
EU-155	7.715E-02
TL-208	2.397E-02
BI-212	3.053E-01
PB-212	3.968E-02
BI-214	5.156E-02
PB-214	4.948E-02
RN-222	5.156E-02
RA-226	5.156E-02
AC-228	6.554E-02
RA-228	6.554E-02
TH-228	3.968E-02
TH-229	3.882E-01
TH-230	5.154E-02
PA-231	2.781E-01
TH-232	6.554E-02
TH-234	7.400E-01
U-234	5.154E-02
U-235	1.435E-01
U-238	7.400E-01
ANH-511	2.085E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	7.828E+00	NOT IDENT.
NA-22	2.373E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	0.000E+00	NOT IDENT.

SC-46	2.652E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
CO-56	2.781E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-58	3.229E-01	NOT IDENT.
FE-59	3.818E+00	NOT IDENT.
CO-60	3.097E-02	NOT IDENT.
ZN-65	1.072E-01	NOT IDENT.
GE-68	1.628E+00	NOT IDENT.
AS-73	4.638E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.403E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.866E-01	NOT IDENT.
KR-85	5.311E+00	NOT IDENT.
SR-85	5.493E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	9.115E-02	NOT IDENT.
NB-94	2.700E-02	NOT IDENT.
NB-95	5.977E-01	NOT IDENT.
NB-95M	1.670E+00	NOT IDENT.
ZR-95	1.124E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.551E-02	NOT IDENT.
RH-102	3.477E-02	NOT IDENT.
RU-103	3.613E+00	FAIL ABUN
RH-106	3.807E-01	NOT IDENT.
RU-106	3.807E-01	NOT IDENT.
AG-108M	1.621E-02	NOT IDENT.
AG-110M	6.085E-02	NOT IDENT.
SN-113	1.624E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.071E-01	NOT IDENT.
SB-124	1.548E+00	NOT IDENT.
SB-125	7.840E-02	FAIL ABUN
TE-125M	2.040E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.246E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	4.526E-02	FAIL ABUN
CS-135	1.149E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.438E-02	NOT IDENT.
CS-137	3.632E-02	NOT IDENT.
CE-139	8.445E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.757E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.854E-01	NOT IDENT.
PM-144	3.526E-02	NOT IDENT.
PR-144	3.048E+00	NOT IDENT.
PM-146	3.151E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-149	0.000E+00	SHORT HLIF
EU-150	1.781E-02	FAIL ABUN
EU-152	7.175E-02	FAIL ABUN
GD-153	1.327E-01	NOT IDENT.
EU-154	5.823E-02	NOT IDENT.
TB-160	1.050E+00	FAIL ABUN
HO-166M	4.209E-02	NOT IDENT.
TM-171	1.044E+01	NOT IDENT.
HF-172	1.689E-01	FAIL ABUN
LU-172	6.752E-02	FAIL ABUN
LU-176	1.971E-02	FAIL ABUN
HF-181	2.999E+00	NOT IDENT.

TA-182	8.279E-01	FAIL ABUN
RE-183	1.634E+00	NOT IDENT.
RE-184	2.117E+01	NOT IDENT.
W-188	7.674E+01	FAIL ABUN
IR-192	2.995E-01	FAIL ABUN
HG-203	1.817E+00	FAIL ABUN
BI-207	3.182E-02	FAIL ABUN
PB-210	1.398E+00	NOT IDENT.
BI-211	3.789E-01	FAIL ABUN
PB-211	4.488E-01	NOT IDENT.
RN-219	2.818E-01	FAIL ABUN
RA-223	4.637E-01	FAIL ABUN
RA-224	6.245E-01	FAIL ABUN
AC-227	1.828E-01	FAIL ABUN
TH-227	1.828E-01	FAIL ABUN
TH-231	4.637E-01	FAIL ABUN
PA-233	4.395E-02	FAIL ABUN
PA-234	2.327E-01	NOT IDENT.
PA-234M	3.770E+00	NOT IDENT.
NP-237	4.395E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.635E-01	FAIL ABUN
PU-239	2.509E+02	FAIL ABUN
AM-241	8.159E-02	NOT IDENT.
AM-243	5.328E-02	FAIL ABUN
CM-243	6.378E-02	NOT IDENT.
BK-247	4.862E-02	FAIL ABUN
CM-247	2.425E-02	NOT IDENT.
CF-249	3.038E-02	NOT IDENT.
CF-251	9.823E-02	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235006.CNF;1
* Acquisition date   : 3-OCT-2016 08:02:32 Sensitivity      : 3.000
* Detector ID        : GAM20 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:14.99 Half life ratio : *****
* Sample date       : 10-DEC-2015 13:25:00 Nuclide Library : SOLID
* Sample ID         : G405235006 Analyst initials: MXR1
* Batch Number      : 1596247 Sample Quantity : 1.5634E+02 GRAM
*                               Quantity Err(%) : 1.2792E-03 %
* Wet wt corr       : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 30-JUN-2016 06:52:39 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM20 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.597E+01	1.661E+00	1.661E+00
MN-54	8.395E-02	8.101E-02	8.101E-02
CO-57	6.333E-02	6.862E-02	6.862E-02
Y-91	6.675E+02	5.236E+02	5.236E+02
CD-109	1.322E+00	1.865E+00	1.865E+00
SN-126	8.453E-02	1.191E-01	1.191E-01
PM-147	1.104E+03	1.196E+03	1.196E+03
EU-155	1.850E-01	2.020E-01	2.020E-01
TL-208	3.661E-01	8.776E-02	8.776E-02
BI-212	1.064E+00	5.944E-01	5.944E-01
PB-212	1.105E+00	1.515E-01	1.515E-01
BI-214	7.696E-01	1.710E-01	1.710E-01
PB-214	1.080E+00	1.761E-01	1.761E-01
RN-222	7.696E-01	1.710E-01	1.710E-01
RA-226	7.696E-01	1.710E-01	1.710E-01
AC-228	1.408E+00	3.072E-01	3.072E-01
RA-228	1.408E+00	3.072E-01	3.072E-01
TH-228	1.105E+00	1.515E-01	1.515E-01
TH-229	7.367E-02	4.123E-01	4.123E-01
TH-230	7.694E-01	1.709E-01	1.709E-01
PA-231	1.169E+00	7.712E-01	7.712E-01
TH-232	1.408E+00	3.072E-01	3.072E-01
TH-234	1.305E-02	2.015E+00	2.015E+00
U-234	7.694E-01	1.709E-01	1.709E-01
U-235	-2.283E-02	1.684E-01	1.684E-01
U-238	1.305E-02	2.015E+00	2.015E+00
ANH-511	2.603E-02	7.313E-02	7.313E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	1.023E+00	8.808E+00	8.820E+00	NOT IDENT.
NA-22	-2.495E-02	3.359E-02	3.542E-02	NOT IDENT.
NA-24	1.000E+41	3.151E+41	0.000E+00	SHORT HLIF

AL-26	0.000E+00	0.000E+00	0.000E+00	NOT IDENT.
SC-46	1.332E-01	2.928E-01	2.989E-01	FAIL ABUN
V-48	-7.895E+02	1.052E+04	1.053E+04	SHORT HLIF
CR-51	-1.589E+02	3.022E+02	3.105E+02	SHORT HLIF
CO-56	1.650E-01	2.953E-01	3.045E-01	FAIL ABUN
MN-56	1.000E+41	1.790E+41	0.000E+00	SHORT HLIF
CO-58	-3.271E-01	4.578E-01	4.809E-01	NOT IDENT.
FE-59	4.920E+00	3.183E+00	3.880E+00	NOT IDENT.
CO-60	4.019E-02	2.821E-02	3.353E-02	NOT IDENT.
ZN-65	-3.067E-02	1.335E-01	1.342E-01	NOT IDENT.
GE-68	-2.497E-01	1.905E+00	1.909E+00	NOT IDENT.
AS-73	4.709E-02	5.122E+00	5.122E+00	NOT IDENT.
AS-74	5.866E+02	4.730E+03	4.738E+03	SHORT HLIF
SE-75	-6.351E-02	1.681E-01	1.705E-01	FAIL ABUN
BR-77	1.092E+38	9.390E+38	0.000E+00	SHORT HLIF
SR-82	-3.489E+02	6.252E+02	6.447E+02	SHORT HLIF
RB-83	3.126E-02	5.566E-01	5.568E-01	NOT IDENT.
KR-85	1.789E+00	6.540E+00	6.590E+00	NOT IDENT.
SR-85	1.852E-01	6.763E-01	6.815E-01	NOT IDENT.
RB-86	-8.693E+03	2.298E+04	2.331E+04	SHORT HLIF
Y-88	4.852E-02	7.669E-02	7.975E-02	NOT IDENT.
NB-94	2.643E-02	2.818E-02	3.059E-02	NOT IDENT.
NB-95	-4.482E-01	7.827E-01	8.083E-01	NOT IDENT.
NB-95M	-7.774E-02	2.027E+00	2.028E+00	NOT IDENT.
ZR-95	-1.106E-01	1.356E+00	1.356E+00	NOT IDENT.
NB-97	-1.000E+41	1.063E+42	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.758E+42	0.000E+00	SHORT HLIF
MO-99	-2.556E+31	9.018E+31	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	4.493E+41	0.000E+00	SHORT HLIF
RH-101	1.017E-02	3.111E-02	3.145E-02	NOT IDENT.
RH-102	-1.268E-02	4.315E-02	4.353E-02	NOT IDENT.
RU-103	-8.177E-01	4.273E+00	4.289E+00	FAIL ABUN
RH-106	2.870E-01	4.009E-01	4.212E-01	NOT IDENT.
RU-106	2.870E-01	4.009E-01	4.212E-01	NOT IDENT.
AG-108M	-2.404E-02	2.191E-02	2.444E-02	NOT IDENT.
AG-110M	-2.067E-02	7.810E-02	7.866E-02	NOT IDENT.
SN-113	-1.728E-01	2.029E-01	2.173E-01	NOT IDENT.
CD-115	-2.604E+38	1.464E+39	0.000E+00	SHORT HLIF
SN-117M	-6.846E+03	8.675E+04	8.681E+04	SHORT HLIF
TE-123M	7.504E-02	1.195E-01	1.242E-01	NOT IDENT.
SB-124	1.068E+00	1.510E+00	1.585E+00	NOT IDENT.
SB-125	5.590E-02	8.205E-02	8.583E-02	FAIL ABUN
TE-125M	3.300E+01	2.511E+02	2.516E+02	NOT IDENT.
I-126	2.407E+04	6.554E+05	6.555E+05	SHORT HLIF
SB-126	-2.921E+05	9.508E+05	9.598E+05	SHORT HLIF
SB-127	-1.057E+21	1.301E+22	0.000E+00	SHORT HLIF
I-131	2.058E+09	3.419E+09	3.542E+09	SHORT HLIF
I-132	-1.000E+41	1.839E+42	0.000E+00	SHORT HLIF
TE-132	1.221E+26	2.263E+26	0.000E+00	SHORT HLIF
BA-133	-1.606E-03	3.919E-02	3.919E-02	NOT IDENT.
I-133	-1.000E+41	1.045E+43	0.000E+00	SHORT HLIF
CS-134	1.051E-01	5.052E-02	6.926E-02	FAIL ABUN
CS-135	6.807E-02	1.327E-01	1.362E-01	NOT IDENT.
I-135	-1.000E+41	2.090E+42	0.000E+00	SHORT HLIF
CS-136	-4.409E+03	2.078E+05	2.078E+05	SHORT HLIF
BA-137M	3.260E-02	3.659E-02	3.943E-02	NOT IDENT.
CS-137	3.443E-02	3.866E-02	4.166E-02	NOT IDENT.
CE-139	3.492E-02	9.656E-02	9.784E-02	NOT IDENT.
BA-140	2.207E+04	8.021E+05	8.022E+05	SHORT HLIF
LA-140	-5.841E+04	2.277E+05	2.292E+05	SHORT HLIF
CE-141	-2.549E+00	2.069E+01	2.072E+01	NOT IDENT.
CE-143	1.000E+41	4.561E+40	0.000E+00	SHORT HLIF
CE-144	8.658E-02	3.247E-01	3.270E-01	NOT IDENT.
PM-144	9.297E-03	3.995E-02	4.017E-02	NOT IDENT.
PR-144	7.690E-01	3.460E+00	3.477E+00	NOT IDENT.
PM-146	-4.613E-03	3.653E-02	3.659E-02	NOT IDENT.
ND-147	-1.414E+07	2.539E+07	2.618E+07	SHORT HLIF
PM-149	-1.459E+40	1.964E+40	0.000E+00	SHORT HLIF
EU-150	-1.374E-02	2.403E-02	2.481E-02	FAIL ABUN
EU-152	2.263E-02	8.125E-02	8.189E-02	FAIL ABUN
GD-153	3.451E-02	1.485E-01	1.493E-01	NOT IDENT.
EU-154	-5.181E-02	8.033E-02	8.365E-02	NOT IDENT.
TB-160	-1.190E+00	1.532E+00	1.623E+00	FAIL ABUN
HO-166M	2.688E-02	4.533E-02	4.692E-02	NOT IDENT.
TM-171	-1.661E+00	1.166E+01	1.168E+01	NOT IDENT.
HF-172	2.763E-02	2.097E-01	2.101E-01	FAIL ABUN
LU-172	8.659E-02	6.902E-02	7.930E-02	FAIL ABUN
LU-176	3.988E-03	2.147E-02	2.154E-02	FAIL ABUN

HF-181	1.079E+00	3.284E+00	3.320E+00	NOT IDENT.
TA-182	7.436E-01	8.532E-01	9.167E-01	FAIL ABUN
RE-183	-2.026E-01	1.829E+00	1.832E+00	NOT IDENT.
RE-184	-2.740E+00	2.614E+01	2.617E+01	NOT IDENT.
W-188	-4.717E+01	1.005E+02	1.027E+02	FAIL ABUN
IR-192	-1.267E-01	3.466E-01	3.513E-01	FAIL ABUN
HG-203	-7.852E-02	2.006E+00	2.007E+00	FAIL ABUN
BI-207	-1.900E-02	3.968E-02	4.060E-02	FAIL ABUN
PB-210	-1.283E+00	1.621E+00	1.721E+00	NOT IDENT.
BI-211	2.974E+00	4.874E-01	1.426E+00	FAIL ABUN
PB-211	3.265E-02	5.032E-01	5.034E-01	NOT IDENT.
RN-219	8.218E-02	3.089E-01	3.111E-01	FAIL ABUN
RA-223	2.836E-01	4.882E-01	5.047E-01	FAIL ABUN
RA-224	1.994E+00	8.856E-01	1.262E+00	FAIL ABUN
AC-227	1.949E-02	1.984E-01	1.986E-01	FAIL ABUN
TH-227	1.949E-02	1.984E-01	1.986E-01	FAIL ABUN
TH-231	2.836E-01	4.882E-01	5.047E-01	FAIL ABUN
PA-233	-2.120E-02	5.084E-02	5.173E-02	FAIL ABUN
PA-234	1.098E-01	2.776E-01	2.820E-01	NOT IDENT.
PA-234M	2.820E+00	3.811E+00	4.018E+00	NOT IDENT.
NP-237	-2.120E-02	5.084E-02	5.173E-02	FAIL ABUN
NP-238	-2.635E+40	2.010E+41	0.000E+00	SHORT HLIF
NP-239	-1.976E-01	2.073E-01	2.257E-01	FAIL ABUN
PU-239	4.764E+02	3.868E+02	4.424E+02	FAIL ABUN
AM-241	2.954E-02	9.558E-02	9.651E-02	NOT IDENT.
AM-243	8.165E-02	8.071E-02	8.870E-02	FAIL ABUN
CM-243	1.654E-02	7.733E-02	7.769E-02	NOT IDENT.
BK-247	-1.296E-02	6.107E-02	6.135E-02	FAIL ABUN
CM-247	-1.052E-02	2.873E-02	2.911E-02	NOT IDENT.
CF-249	1.569E-02	3.259E-02	3.335E-02	NOT IDENT.
CF-251	6.862E-02	1.009E-01	1.055E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	95.6707	87.09	127.8269	136.47	90.6452
45.60	88.5982	87.57	127.9089	140.51	0.0000
46.54	95.1794	88.03	127.9884	143.76	91.3067
49.72	0.0000	88.34	114.3227	144.24	88.9131
51.35	100.3728	88.47	114.3421	145.44	81.7012
51.87	99.3889	89.96	97.7650	152.43	84.7055
52.39	89.7516	1093.63	97.8522	153.25	0.0000
52.97	87.6816	91.11	0.0000	323.87	92.2256
53.44	96.4237	92.59	98.1009	156.02	0.0000
54.07	90.0252	93.35	98.1973	158.56	0.0000
57.36	0.0000	94.56	87.5926	159.00	69.1694
57.53	90.5761	94.65	87.6031	162.33	68.1407
57.98	97.1988	94.67	87.6054	162.66	0.0000
59.27	94.8598	94.87	87.6274	163.33	70.6829
59.32	94.8677	97.43	84.4413	165.86	68.3581
59.54	94.9031	98.43	85.7053	176.31	75.2582
60.96	98.0573	98.44	85.7065	176.60	0.0000
61.17	98.0917	99.53	86.9820	177.52	75.3369
62.93	114.5288	100.11	70.7961	181.07	0.0000
63.29	114.5964	102.03	69.7998	181.52	69.2938
63.58	114.6506	103.18	68.3440	184.41	75.7764
64.28	114.7809	103.37	59.0379	143.76	74.1739
66.73	115.2322	105.21	79.4105	193.51	80.5873
67.24	143.4160	105.31	79.4198	197.03	73.1591
125.81	134.6384	106.12	79.4966	198.01	61.2971
67.75	134.6532	106.47	79.5298	201.83	64.0450
69.67	129.1194	109.28	84.4868	203.43	67.9726
70.83	141.2427	111.00	94.0619	205.31	71.9260
72.81	118.5529	111.76	0.0000	210.85	77.3932
72.87	118.5634	114.06	96.7519	215.65	69.0454
74.66	118.8796	116.30	0.0000	222.11	74.5816
74.82	118.9079	116.74	91.1279	227.09	76.5954
74.97	118.9338	119.76	71.2473	227.38	76.6115
77.11	119.3066	121.12	63.0289	228.16	0.0000
78.74	102.2885	121.22	63.0358	228.18	63.5898
79.69	100.9205	121.78	77.7523	116.74	63.5898
80.12	85.9099	122.06	88.8866	235.69	61.7442
80.19	0.0000	122.92	73.0823	235.96	61.7556
80.57	83.7022	123.07	77.8615	238.63	65.8218
81.00	90.5438	265.00	79.5029	238.98	0.0000
81.07	104.1359	125.81	74.9039	240.99	79.1171
81.75	83.8411	127.23	75.0167	242.00	62.0188
83.79	93.9259	127.91	76.6682	244.70	37.0166
84.00	84.8608	129.30	78.3799	252.40	0.0000
85.43	93.3780	131.20	88.1520	252.80	46.0850
86.55	93.5194	133.02	83.0999	254.15	0.0000
86.79	93.5494	133.52	84.3480	256.23	57.7399
86.94	127.8013	136.00	88.1857	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	48.2377	355.39	0.0000	584.27	22.9722
264.80	48.2421	356.01	35.3600	595.83	0.0000
265.00	44.2279	364.49	0.0000	427.87	23.1127
268.22	51.0358	366.42	0.0000	602.52	0.0000
269.46	49.2854	372.51	35.1934	604.72	23.6737
270.03	49.3033	375.05	36.1925	607.14	28.4337
271.23	49.3413	377.52	26.7023	609.32	28.4568
273.65	0.0000	356.01	26.7889	610.33	22.1416
276.40	47.5256	388.16	33.5595	614.28	31.6760
277.37	51.3373	388.63	0.0000	618.01	16.9167
277.60	49.5439	391.69	46.1064	620.36	29.6304
278.00	45.0511	264.66	34.7344	621.93	14.8232
279.20	55.0045	401.81	29.9272	630.19	0.0000
279.54	52.3100	402.40	35.7301	631.29	16.9980
279.70	55.9239	404.85	27.0715	633.25	12.7573
280.46	60.4625	410.95	35.8799	634.78	0.0000
283.69	43.4043	413.71	33.0150	635.95	22.3467
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	53.4087	423.72	0.0000	645.85	20.2896
285.90	0.0000	427.09	26.3859	657.76	22.5193
287.50	41.6950	427.87	22.4848	657.90	0.0000
290.67	51.7676	433.94	34.3143	661.66	24.6967
293.27	0.0000	439.40	24.7688	664.57	0.0000
351.93	28.6879	453.88	29.6832	666.33	0.0000
295.96	30.0681	463.37	24.8418	666.50	0.0000
879.38	27.3779	468.07	23.8979	667.71	0.0000
299.98	34.2514	473.00	0.0000	677.62	16.1951
300.09	34.2537	475.06	16.9799	685.70	0.0000
300.13	34.2545	476.78	20.9910	695.00	0.0000
301.36	34.2796	477.60	19.9984	696.49	14.1251
302.85	39.7998	482.18	21.0402	696.51	14.1251
256.23	42.5872	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	19.5630
306.78	47.6889	497.08	23.1919	697.49	20.6514
308.46	54.1626	505.52	21.2508	702.65	17.4199
311.90	49.6736	507.63	0.0000	706.68	19.6238
316.51	38.7393	511.00	29.4136	711.68	14.1960
319.41	0.0000	514.00	27.4197	720.70	0.0000
320.08	0.0000	514.00	27.4197	721.93	0.0000
321.04	44.3896	520.40	25.4557	722.78	27.9467
323.87	37.0516	520.69	0.0000	722.91	27.9477
325.23	56.5471	522.65	0.0000	723.31	23.0192
328.76	0.0000	527.90	0.0000	724.19	11.5130
333.37	51.6857	528.26	26.5586	727.33	16.4636
333.97	48.9090	529.59	20.4411	733.00	19.7922
334.37	53.1128	529.87	0.0000	735.93	13.2075
338.28	40.1550	531.02	0.0000	333.97	17.6185
338.32	40.1559	537.26	0.0000	739.50	0.0000
311.90	51.8912	546.56	0.0000	747.24	19.8823
340.48	51.8912	552.55	10.8303	748.06	15.4680
340.55	0.0000	563.25	18.6445	752.31	25.4454
344.28	37.1024	569.33	24.9180	753.82	0.0000
345.93	43.8883	946.00	30.1104	756.73	23.2653
351.06	37.6164	569.70	30.1128	756.80	23.2661
351.93	37.6343	583.19	22.9623	884.68	16.6559

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	28.8861	1274.44	12.4457	1620.50	6.0806
766.42	27.7812	1001.03	12.4606	1621.92	4.0547
766.84	18.8933	1002.74	13.3566	1678.03	0.0000
772.60	0.0000	1004.73	24.0535	1690.97	2.0516
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	0.0000
778.90	11.1552	1028.54	0.0000	1063.66	3.1183
783.70	0.0000	1037.84	10.7798	1771.35	3.1190
785.37	15.0892	1038.76	0.0000	1791.20	0.0000
792.07	10.0800	631.29	14.4043	1808.65	0.0000
794.95	13.4517	1048.07	0.0000	1810.72	0.0000
795.86	18.5014	1049.04	11.7098	1836.06	0.0000
810.06	19.1430	1050.41	12.6149		
810.29	22.5228	1063.66	17.1758		
344.28	20.2712	1077.00	0.0000		
810.76	18.0208	1077.34	14.5117		
815.77	0.0000	1085.87	8.7252		
1048.07	0.0000	1093.63	7.2842		
832.01	13.6006	1099.45	0.0000		
834.85	21.5520	1112.07	8.7791		
835.71	21.5575	1112.84	14.6348		
836.80	0.0000	1115.54	13.5985		
846.75	0.0000	1120.29	11.7281		
846.77	6.8293	1120.55	16.1272		
856.80	0.0000	1221.41	19.2466		
860.56	7.9992	1129.67	13.7741		
871.09	12.6077	1131.51	0.0000		
873.19	11.4685	1147.95	0.0000		
875.33	0.0000	1173.23	20.4048		
879.38	18.3815	1177.95	18.5693		
880.51	14.9397	1189.05	17.6849		
883.24	6.9004	1204.77	9.3402		
884.68	13.8066	1221.41	14.0616		
889.28	10.3682	1231.02	15.9697		
894.76	17.3065	1235.36	0.0000		
898.04	16.1676	1238.28	15.0537		
900.72	13.8682	1260.41	0.0000		
903.28	17.3474	1271.87	7.5815		
911.20	8.1128	1274.44	11.3782		
912.08	8.1148	1274.54	12.3264		
923.98	0.0000	1291.59	7.6128		
926.50	12.8020	1298.22	0.0000		
929.11	12.8110	1312.11	0.0000		
937.49	20.1348	1332.49	1.5355		
944.13	0.0000	1362.66	0.0000		
946.00	15.7934	1365.19	11.5928		
949.00	17.5623	1368.63	0.0000		
667.71	0.0000	1384.29	8.7275		
962.31	7.0496	1408.01	6.2355		
964.08	15.1130	1457.56	0.0000		
966.17	15.1214	1460.82	2.9528		
911.20	15.1324	1489.16	3.9583		
968.97	15.1324	1505.03	12.9024		
983.53	0.0000	1584.12	6.4441		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:06:26.57

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235007.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM32.CNF;277
Background date    : Z-OCT-2016 11:01:57.
Sample date       : 10-DEC-2015 13:55:00 Acquisition date : 3-OCT-2016 08:02:54.
Sample ID        : G405235007 Sample quantity : 1.52523E+02 GRAM
Detector name    : GAM32 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.63 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596247 Detector SN# :
Matrix Spike ID : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.99*	45	145	1.34	127.20	123	9	1.25E-02	51.6	
2	2	75.19	109	157	1.29	151.59	147	13	3.02E-02	23.0	9.54E-01
3	2	77.47	181	135	1.14	156.14	147	13	5.02E-02	13.1	
4	0	87.49	38	136	1.68	176.20	174	6	1.05E-02	51.5	
5	5	93.12*	46	153	1.93	187.46	184	10	1.28E-02	51.7	4.56E+00
6	5	94.77	32	84	1.26	190.76	184	10	8.77E-03	57.2	
7	0	129.53	31	117	1.78	260.27	256	8	8.50E-03	64.0	
8	0	186.37*	139	169	1.23	373.96	368	13	3.85E-02	21.6	
9	0	209.43	71	76	1.25	420.08	416	8	1.97E-02	24.4	
10	2	239.11*	381	91	1.23	479.43	474	17	1.06E-01	6.6	1.54E+00
11	2	242.11	93	90	1.62	485.43	474	17	2.57E-02	25.5	
12	0	270.47	46	61	1.08	542.17	537	10	1.27E-02	35.6	
13	0	295.71*	168	74	1.34	592.64	588	11	4.66E-02	12.7	
14	0	300.59	24	52	1.45	602.40	599	8	6.67E-03	55.9	
15	0	338.59	114	63	1.03	678.40	673	11	3.15E-02	16.5	
16	0	352.25*	255	67	1.13	705.72	699	12	7.08E-02	9.0	
17	0	464.99	14	51	0.67	931.20	925	11	3.97E-03	101.1	
18	0	511.31*	46	53	1.96	1023.86	1017	14	1.28E-02	41.6	
19	0	534.57	24	36	3.98	1070.37	1064	13	6.57E-03	56.1	
20	0	583.92*	139	38	1.19	1169.08	1162	14	3.85E-02	12.8	
21	0	609.94*	165	38	1.42	1221.11	1215	14	4.59E-02	11.3	
22	0	662.17	91	55	1.77	1325.59	1319	13	2.52E-02	19.9	
23	7	707.28	11	9	1.96	1415.81	1413	25	3.12E-03	48.2	1.37E+00
24	7	710.32	27	15	2.00	1421.88	1413	25	7.41E-03	35.6	
25	0	720.76	14	7	3.40	1442.77	1438	10	3.86E-03	45.4	
26	0	728.15*	35	27	0.95	1457.55	1450	12	9.78E-03	34.8	
27	0	797.49	23	26	1.86	1596.23	1586	14	6.26E-03	53.8	
28	0	803.54*	19	11	0.66	1608.33	1604	11	5.25E-03	44.7	
29	0	812.25	13	11	3.67	1625.76	1617	13	3.52E-03	64.3	
30	0	816.56	9	15	1.70	1634.38	1630	8	2.62E-03	76.6	
31	0	861.47*	20	18	1.45	1724.20	1719	10	5.62E-03	45.5	
32	0	911.71*	103	8	1.62	1824.69	1819	11	2.87E-02	11.5	
33	0	969.39	56	44	1.73	1940.04	1933	17	1.56E-02	30.9	
34	0	996.21	12	13	1.17	1993.69	1989	12	3.43E-03	63.2	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1049.83	19	6	3.87	2100.93	2093	14	5.20E-03	37.6	
36	0	1121.18*	38	14	1.72	2243.64	2238	10	1.05E-02	25.4	
37	0	1190.02	9	7	0.61	2381.31	2378	6	2.57E-03	56.4	
38	0	1227.61	16	12	3.52	2456.49	2449	15	4.58E-03	50.8	
39	0	1234.03	27	5	2.60	2469.34	2464	10	7.53E-03	24.6	
40	0	1239.00	23	6	1.24	2479.29	2475	11	6.25E-03	29.2	
41	0	1245.45	17	3	3.62	2492.19	2486	11	4.79E-03	30.4	
42	0	1250.95	17	15	3.83	2503.18	2497	14	4.77E-03	52.4	
43	0	1333.81	15	3	4.00	2668.91	2663	11	4.25E-03	33.0	
44	0	1337.86	6	0	1.50	2677.00	2674	6	1.67E-03	40.8	
45	0	1461.22*	389	3	1.96	2923.73	2917	14	1.08E-01	5.2	
46	0	1544.74	9	2	0.52	3090.77	3086	8	2.58E-03	41.8	
47	0	1765.38*	23	0	1.50	3532.08	3527	10	6.40E-03	22.4	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235007.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 10-DEC-2015 13:55:00 Acquisition date : 3-OCT-2016 08:02:54
 Sample ID : G405235007 Sample quantity : 152.52 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA32 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.63 0.0%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.119E+00	1.552E+01	1.552E+01	10.42	OK
CO-58	810.76	99.45*	1.793E+00	3.603E-02	6.633E-01	128.52	OK
CD-109	88.03	3.70*	4.577E+00	2.402E-01	3.758E-01	612.50	OK
SN-126	64.28	9.60	2.075E+00	1.451E+00	1.451E+00	103.12	OK
	86.94	8.90	4.577E+00	9.988E-02	9.988E-02	612.50	OK
	87.57	37.00*	4.577E+00	2.402E-02	2.402E-02	612.50	OK
BA-137M	661.66	89.90*	2.104E+00	2.484E-01	2.531E-01	39.80	OK
CS-137	661.66	85.10*	2.104E+00	2.624E-01	2.674E-01	39.80	OK
TL-208	277.37	6.60	4.277E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	2.325E+00	3.684E-01	3.684E-01	25.69	OK
	860.56	12.50	1.712E+00	4.765E-01	4.765E-01	90.96	OK
PB-212	74.82	10.28	3.461E+00	1.229E+00	1.229E+00	73.91	OK
	77.11	17.10	3.693E+00	1.813E+00	1.813E+00	26.24	OK
	238.63	43.60*	4.786E+00	1.046E+00	1.046E+00	13.16	OK
	300.09	3.30	4.011E+00	1.017E+00	1.017E+00	111.80	OK
BI-214	609.32	45.49*	2.246E+00	8.454E-01	8.457E-01	22.62	OK
	1120.29	14.92	1.392E+00	8.904E-01	8.907E-01	50.87	OK
	1764.49	15.30	9.459E-01	7.405E-01	7.408E-01	44.75	OK
PB-214	74.82	5.80	3.423E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	3.693E+00	3.196E+00	3.197E+00	26.24	OK
	87.09	3.41	4.545E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	4.745E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	4.064E+00	1.258E+00	1.258E+00	25.48	OK
	351.93	35.60*	3.521E+00	1.122E+00	1.122E+00	18.06	OK
RN-222	609.32	45.49*	2.246E+00	8.454E-01	8.457E-01	22.62	OK
	1120.29	14.92	1.392E+00	8.904E-01	8.907E-01	50.87	OK
	1764.49	15.30	9.459E-01	7.405E-01	7.408E-01	44.75	OK
RA-224	240.99	4.10*	4.743E+00	4.991E-01	4.991E-01	300.41	OK
RA-226	609.32	45.49*	2.246E+00	8.454E-01	8.457E-01	22.62	OK
	1120.29	14.92	1.392E+00	8.904E-01	8.907E-01	50.87	OK
	1764.49	15.30	9.459E-01	7.405E-01	7.408E-01	44.75	OK
AC-228	105.21	1.10	5.586E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.639E+00	1.535E+00	1.535E+00	32.99	OK
	794.95	4.25	1.823E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.753E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.638E+00	1.226E+00	1.226E+00	22.98	OK
	968.97	15.80	1.561E+00	1.130E+00	1.130E+00	61.71	OK
RA-228	105.21	1.10	5.586E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.639E+00	1.535E+00	1.535E+00	32.99	OK
	794.95	4.25	1.823E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.753E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.638E+00	1.226E+00	1.226E+00	22.98	OK
	968.97	15.80	1.561E+00	1.130E+00	1.130E+00	61.71	OK
TH-228	74.82	10.28	3.461E+00	1.229E+00	1.229E+00	73.91	OK
	77.11	17.10	3.693E+00	1.813E+00	1.813E+00	26.24	OK
	238.63	43.60*	4.786E+00	1.046E+00	1.046E+00	13.16	OK
	300.09	3.30	4.011E+00	1.017E+00	1.017E+00	111.80	OK
TH-230	609.32	45.49*	2.246E+00	8.454E-01	8.455E-01	22.62	OK
	1120.29	14.92	1.392E+00	8.904E-01	8.904E-01	50.87	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
PA-231	1764.49	15.30	9.459E-01	7.405E-01	7.405E-01	44.75	OK
	283.69	1.70	4.201E+00	-----	Line Not Found	-----	Absent
	301.36	5.35*	4.011E+00	6.271E-01	6.271E-01	111.80	OK
TH-232	105.21	1.10	5.586E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.639E+00	1.535E+00	1.535E+00	32.99	OK
	835.71	1.61	1.753E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.638E+00	1.226E+00	1.226E+00	22.98	OK
	968.97	15.80	1.561E+00	1.130E+00	1.130E+00	61.71	OK
TH-234	63.29	3.70*	2.075E+00	3.764E+00	3.764E+00	103.12	OK
	92.59	4.23	4.971E+00	1.370E+00	1.370E+00	103.36	OK
U-234	609.32	45.49*	2.246E+00	8.454E-01	8.454E-01	22.62	OK
	1120.29	14.92	1.392E+00	8.904E-01	8.904E-01	50.87	OK
	1764.49	15.30	9.459E-01	7.405E-01	7.405E-01	44.75	OK
U-238	63.29	3.70*	2.075E+00	3.764E+00	3.764E+00	103.12	OK
	92.59	4.23	4.971E+00	1.370E+00	1.370E+00	103.36	OK
AM-243	43.53	5.90	1.701E-01	-----	Line Not Found	-----	Absent
	74.66	67.20*	3.461E+00	1.880E-01	1.880E-01	73.91	OK
ANH-511	511.00	100.00*	2.588E+00	9.466E-02	9.466E-02	83.19	OK

Flag: "*" = Keyline

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235007.CNF;1
* Acquisition date   : 3-OCT-2016 08:02:54 Sensitivity      : 3.000
* Detector ID        : GAM32 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.63 Half life ratio : *****
* Sample date        : 10-DEC-2015 13:55:00 Analyst initials: MXR1
* Sample ID          : G405235007 Sample Quantity : 1.5252E+02 GRAM
* Batch Number       : 1596247 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight       : 0.00000
* Nuclide Library     : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 23-AUG-2016 07:56:33 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM32 CAN.CNF;11
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.552E+01	1.585E+00	5.415E-01
CO-58	6.633E-01	8.354E-01	8.694E-01
CD-109	3.758E-01	2.256E+00	2.825E+00
SN-126	2.402E-02	1.442E-01	1.669E-01
BA-137M	2.531E-01	9.871E-02	7.217E-02
CS-137	2.674E-01	1.043E-01	7.624E-02
TL-208	3.684E-01	9.275E-02	5.456E-02
PB-212	1.046E+00	1.349E-01	1.025E-01
BI-214	8.457E-01	1.875E-01	1.254E-01
PB-214	1.122E+00	1.986E-01	1.280E-01
RN-222	8.457E-01	1.875E-01	1.254E-01
RA-224	4.991E-01	1.470E+00	1.098E+00
RA-226	8.457E-01	1.875E-01	1.254E-01
AC-228	1.226E+00	2.762E-01	2.634E-01
RA-228	1.226E+00	2.762E-01	2.634E-01
TH-228	1.046E+00	1.349E-01	1.025E-01
TH-230	8.455E-01	1.874E-01	1.254E-01
PA-231	6.271E-01	6.871E-01	8.744E-01
TH-232	1.226E+00	2.762E-01	2.634E-01
TH-234	3.764E+00	3.804E+00	3.193E+00
U-234	8.454E-01	1.874E-01	1.254E-01
U-238	3.764E+00	3.804E+00	3.193E+00
AM-243	1.880E-01	1.362E-01	1.165E-01
ANH-511	9.466E-02	7.717E-02	4.992E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	2.468E+00	1.180E+01	2.337E+01	NOT IDENT.
NA-22	-1.801E-02	4.318E-02	8.088E-02	NOT IDENT.
NA-24	0.000E+00	1.523E+41	0.000E+00	SHORT HLIF
AL-26	2.599E-02	3.510E-02	8.479E-02	NOT IDENT.
SC-46	-7.774E-02	4.446E-01	8.057E-01	FAIL ABUN
V-48	0.000E+00	1.266E+04	0.000E+00	SHORT HLIF

CR-51	0.000E+00	4.162E+02	0.000E+00	SHORT HLIF
MN-54	8.976E+03	6.462E-02	1.236E-01	NOT IDENT.
CO-56	-1.060E-02	4.543E-01	8.620E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	3.147E-02	5.427E-02	1.030E-01	NOT IDENT.
FE-59	-3.185E+00	5.999E+00	1.110E+01	NOT IDENT.
CO-60	6.774E-02	4.386E-02	8.395E-02	FAIL ABUN
ZN-65	-3.150E-02	2.052E-01	3.480E-01	NOT IDENT.
GE-68	1.743E+00	2.387E+00	5.269E+00	NOT IDENT.
AS-73	-3.993E-01	1.505E+01	2.858E+01	NOT IDENT.
AS-74	0.000E+00	5.810E+03	0.000E+00	SHORT HLIF
SE-75	-3.559E-02	2.054E-01	3.949E-01	NOT IDENT.
BR-77	0.000E+00	1.326E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.736E+02	0.000E+00	SHORT HLIF
RB-83	-5.887E-01	6.134E-01	1.020E+00	NOT IDENT.
KR-85	5.211E+00	8.053E+00	1.500E+01	NOT IDENT.
SR-85	5.350E-01	8.321E-01	1.550E+00	NOT IDENT.
RB-86	0.000E+00	2.647E+04	0.000E+00	SHORT HLIF
Y-88	1.131E-01	1.280E-01	4.065E-01	NOT IDENT.
Y-91	-1.149E+01	5.321E+02	1.050E+03	NOT IDENT.
NB-94	8.328E-03	3.326E-02	6.198E-02	NOT IDENT.
NB-95	4.546E-01	9.760E-01	1.920E+00	NOT IDENT.
NB-95M	8.656E-01	2.662E+00	4.785E+00	NOT IDENT.
ZR-95	8.962E-02	1.322E+00	2.572E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.305E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.158E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	5.080E-03	3.847E-02	6.507E-02	NOT IDENT.
RH-102	3.756E-02	5.752E-02	1.208E-01	NOT IDENT.
RU-103	-3.909E+00	5.100E+00	8.823E+00	FAIL ABUN
RH-106	-7.579E-02	4.995E-01	9.362E-01	FAIL ABUN
RU-106	-7.579E-02	4.995E-01	9.362E-01	FAIL ABUN
AG-108M	1.727E-02	2.729E-02	5.656E-02	NOT IDENT.
AG-110M	-8.523E-02	1.004E-01	1.593E-01	FAIL ABUN
SN-113	-2.925E-02	2.040E-01	3.917E-01	NOT IDENT.
CD-115	0.000E+00	1.825E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	9.374E+04	0.000E+00	SHORT HLIF
TE-123M	4.718E-03	1.414E-01	2.795E-01	NOT IDENT.
SB-124	-1.878E+00	1.637E+00	1.776E+00	NOT IDENT.
SB-125	-1.082E-02	9.934E-02	1.901E-01	NOT IDENT.
TE-125M	6.273E+01	3.059E+02	5.674E+02	NOT IDENT.
I-126	0.000E+00	9.549E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.086E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.598E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.096E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.430E+26	0.000E+00	SHORT HLIF
BA-133	2.323E-02	4.307E-02	8.057E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	5.025E-02	6.329E-02	1.281E-01	NOT IDENT.
CS-135	-6.215E-02	1.478E-01	2.463E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.422E+05	0.000E+00	SHORT HLIF
CE-139	2.333E-02	1.015E-01	2.050E-01	NOT IDENT.
BA-140	0.000E+00	1.297E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	3.761E+05	0.000E+00	SHORT HLIF
CE-141	1.001E+01	2.238E+01	4.585E+01	NOT IDENT.
CE-143	0.000E+00	1.576E+41	0.000E+00	SHORT HLIF
CE-144	6.062E-02	4.104E-01	7.478E-01	NOT IDENT.
PM-144	-2.192E-02	5.275E-02	9.415E-02	NOT IDENT.
PR-144	-1.887E+00	4.579E+00	8.179E+00	NOT IDENT.
PM-146	1.579E-03	4.119E-02	8.030E-02	NOT IDENT.
ND-147	0.000E+00	3.634E+07	0.000E+00	SHORT HLIF
PM-147	2.177E+02	9.659E+02	1.781E+03	NOT IDENT.
PM-149	0.000E+00	2.348E+40	0.000E+00	SHORT HLIF
EU-150	2.461E-02	2.784E-02	5.355E-02	FAIL ABUN
EU-152	-1.533E-02	9.628E-02	1.832E-01	NOT IDENT.
GD-153	5.333E-02	2.075E-01	3.610E-01	NOT IDENT.
EU-154	-7.429E-03	9.930E-02	2.006E-01	FAIL ABUN
EU-155	9.166E-02	1.201E-01	2.338E-01	FAIL ABUN
TB-160	-9.629E-01	2.004E+00	3.461E+00	FAIL ABUN
HO-166M	0.000E+00	8.884E-02	1.223E-01	FAIL ABUN
TM-171	-1.473E+01	4.019E+01	7.396E+01	NOT IDENT.
HF-172	3.379E-03	2.709E-01	4.519E-01	FAIL ABUN
LU-172	7.175E-02	7.846E-02	1.765E-01	FAIL ABUN
LU-176	-1.076E-02	2.381E-02	4.436E-02	FAIL ABUN
HF-181	1.271E+00	3.789E+00	7.711E+00	NOT IDENT.

TA-182	3.677E-01	9.252E-01	1.780E+00	FAIL ABUN
RE-183	-1.069E-02	4.879E+00	9.182E+00	NOT IDENT.
RE-184	1.417E+01	2.767E+01	5.768E+01	NOT IDENT.
W-188	-4.823E+01	1.084E+02	1.923E+02	FAIL ABUN
IR-192	3.096E-01	4.344E-01	9.031E-01	FAIL ABUN
HG-203	2.435E+00	2.341E+00	4.928E+00	NOT IDENT.
BI-207	-4.060E-02	4.397E-02	7.559E-02	FAIL ABUN
PB-210	-6.291E-01	8.393E+00	1.595E+01	NOT IDENT.
BI-211	0.000E+00	5.470E-01	7.906E-01	FAIL ABUN
PB-211	-2.468E-02	6.710E-01	1.289E+00	NOT IDENT.
BI-212	0.000E+00	9.448E-01	1.374E+00	FAIL ABUN
RN-219	-3.656E-02	3.732E-01	7.139E-01	FAIL ABUN
RA-223	-3.302E-01	5.544E-01	1.015E+00	FAIL ABUN
AC-227	-7.881E-02	2.487E-01	4.705E-01	FAIL ABUN
TH-227	-7.881E-02	2.487E-01	4.705E-01	FAIL ABUN
TH-229	4.338E-02	4.603E-01	9.108E-01	FAIL ABUN
TH-231	-3.302E-01	5.544E-01	1.015E+00	FAIL ABUN
PA-233	-6.032E-03	5.711E-02	1.102E-01	FAIL ABUN
PA-234	-9.698E-02	2.745E-01	5.269E-01	FAIL ABUN
PA-234M	1.616E+00	3.597E+00	7.521E+00	NOT IDENT.
U-235	-2.144E-02	1.797E-01	3.545E-01	FAIL ABUN
NP-237	-6.032E-03	5.711E-02	1.102E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	1.792E-02	2.553E-01	4.693E-01	NOT IDENT.
PU-239	4.826E+02	6.058E+02	6.983E+02	FAIL ABUN
AM-241	-1.091E-01	2.368E-01	3.916E-01	NOT IDENT.
CM-243	-1.018E-01	1.076E-01	1.803E-01	NOT IDENT.
BK-247	1.296E-02	7.448E-02	1.413E-01	NOT IDENT.
CM-247	-2.391E-03	3.386E-02	6.502E-02	NOT IDENT.
CF-249	1.156E-02	3.690E-02	7.375E-02	NOT IDENT.
CF-251	-3.520E-02	1.088E-01	2.104E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	376	10.66*	1.119E+00	1.552E+01	1.552E+01	10.42
CO-58	810.76	13	99.45*	1.793E+00	3.603E-02	6.633E-01	128.52
CD-109	88.03	48	3.70*	4.577E+00	1.399E+00	2.189E+00	103.01
SN-126	64.28	59	9.60	2.075E+00	1.451E+00	1.451E+00	103.12
	86.94	48	8.90	4.577E+00	5.818E-01	5.818E-01	103.01
	87.57	48	37.00*	4.577E+00	1.399E-01	1.400E-01	103.01
BA-137M	661.66	95	89.90*	2.104E+00	2.484E-01	2.531E-01	39.80
CS-137	661.66	95	85.10*	2.104E+00	2.624E-01	2.674E-01	39.80
TL-208	277.37	-----	6.60	4.277E+00	-----	Line Not Found	-----
	583.19	148	85.00*	2.325E+00	3.684E-01	3.684E-01	25.69
	860.56	21	12.50	1.712E+00	4.765E-01	4.765E-01	90.96
BI-211	72.87	-----	1.23	3.214E+00	-----	Line Not Found	-----
	351.06	286	12.92*	3.521E+00	3.091E+00	3.091E+00	18.06
PB-212	74.82	140	10.28	3.461E+00	1.938E+00	1.938E+00	45.91
	77.11	233	17.10	3.693E+00	1.813E+00	1.813E+00	26.24
	238.63	443	43.60*	4.786E+00	1.046E+00	1.046E+00	13.16
	300.09	27	3.30	4.011E+00	1.017E+00	1.017E+00	111.80
BI-214	609.32	175	45.49*	2.246E+00	8.454E-01	8.457E-01	22.62
	1120.29	38	14.92	1.392E+00	8.904E-01	8.907E-01	50.87
	1764.49	22	15.30	9.459E-01	7.405E-01	7.408E-01	44.75
PB-214	74.82	140	5.80	3.461E+00	3.436E+00	3.437E+00	45.91
	77.11	233	9.70	3.693E+00	3.196E+00	3.197E+00	26.24
	87.09	48	3.41	4.577E+00	1.519E+00	1.519E+00	103.01
	242.00	108	7.25	4.743E+00	1.540E+00	1.541E+00	50.98
	295.22	191	18.42	4.064E+00	1.258E+00	1.258E+00	25.48
	351.93	286	35.60*	3.521E+00	1.122E+00	1.122E+00	18.06
RN-222	609.32	175	45.49*	2.246E+00	8.454E-01	8.457E-01	22.62
	1120.29	38	14.92	1.392E+00	8.904E-01	8.907E-01	50.87
	1764.49	22	15.30	9.459E-01	7.405E-01	7.408E-01	44.75
RA-224	240.99	108	4.10*	4.743E+00	2.723E+00	2.723E+00	50.98
RA-226	609.32	175	45.49*	2.246E+00	8.454E-01	8.457E-01	22.62
	1120.29	38	14.92	1.392E+00	8.904E-01	8.907E-01	50.87
	1764.49	22	15.30	9.459E-01	7.405E-01	7.408E-01	44.75
AC-228	105.21	-----	1.10	5.586E+00	-----	Line Not Found	-----
	338.32	128	11.27	3.639E+00	1.535E+00	1.535E+00	32.99
	794.95	-----	4.25	1.823E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.753E+00	-----	Line Not Found	-----
	911.20	105	25.80*	1.638E+00	1.226E+00	1.226E+00	22.98
	968.97	57	15.80	1.561E+00	1.130E+00	1.130E+00	61.71
RA-228	105.21	-----	1.10	5.586E+00	-----	Line Not Found	-----
	338.32	128	11.27	3.639E+00	1.535E+00	1.535E+00	32.99
	794.95	-----	4.25	1.823E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.753E+00	-----	Line Not Found	-----
	911.20	105	25.80*	1.638E+00	1.226E+00	1.226E+00	22.98
	968.97	57	15.80	1.561E+00	1.130E+00	1.130E+00	61.71
TH-228	74.82	140	10.28	3.461E+00	1.938E+00	1.938E+00	45.91
	77.11	233	17.10	3.693E+00	1.813E+00	1.813E+00	26.24

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	238.63	443	43.60*	4.786E+00	1.046E+00	1.046E+00	13.16
	300.09	27	3.30	4.011E+00	1.017E+00	1.017E+00	111.80
TH-230	609.32	175	45.49*	2.246E+00	8.454E-01	8.455E-01	22.62
	1120.29	38	14.92	1.392E+00	8.904E-01	8.904E-01	50.87
	1764.49	22	15.30	9.459E-01	7.405E-01	7.405E-01	44.75
PA-231	283.69	-----	1.70	4.201E+00	-----	Line Not Found	-----
	301.36	27	5.35*	4.011E+00	6.271E-01	6.271E-01	111.80
TH-232	105.21	-----	1.10	5.586E+00	-----	Line Not Found	-----
	338.32	128	11.27	3.639E+00	1.535E+00	1.535E+00	32.99
	835.71	-----	1.61	1.753E+00	-----	Line Not Found	-----
	911.20	105	25.80*	1.638E+00	1.226E+00	1.226E+00	22.98
	968.97	57	15.80	1.561E+00	1.130E+00	1.130E+00	61.71
TH-234	63.29	59	3.70*	2.075E+00	3.764E+00	3.764E+00	103.12
	92.59	59	4.23	4.971E+00	1.370E+00	1.370E+00	103.36
U-234	609.32	175	45.49*	2.246E+00	8.454E-01	8.454E-01	22.62
	1120.29	38	14.92	1.392E+00	8.904E-01	8.904E-01	50.87
	1764.49	22	15.30	9.459E-01	7.405E-01	7.405E-01	44.75
U-238	63.29	59	3.70*	2.075E+00	3.764E+00	3.764E+00	103.12
	92.59	59	4.23	4.971E+00	1.370E+00	1.370E+00	103.36
AM-243	43.53	-----	5.90	1.701E-01	-----	Line Not Found	-----
	74.66	140	67.20*	3.461E+00	2.965E-01	2.965E-01	45.91
ANH-511	511.00	50	100.00*	2.588E+00	9.466E-02	9.466E-02	83.19

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G405235007

Page : 3
Acquisition date : 3-OCT-2016 08:02:54

Total number of lines in spectrum 47
Number of unidentified lines 9
Number of lines tentatively identified by NID 38 80.85%

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	1.552E+01	1.552E+01	0.162E+01	10.42	
CO-58	70.86D	18.4	3.603E-02	6.633E-01	8.525E-01	128.52	
CD-109	461.40D	1.56	1.399E+00	2.189E+00	2.255E+00	103.01	
SN-126	2.30E+05Y	1.00	1.399E-01	1.400E-01	1.442E-01	103.01	
BA-137M	30.08Y	1.02	2.484E-01	2.531E-01	1.007E-01	39.80	
CS-137	30.08Y	1.02	2.624E-01	2.674E-01	1.064E-01	39.80	
TL-208	1.41E+10Y	1.00	3.684E-01	3.684E-01	0.946E-01	25.69	
BI-211	7.04E+08Y	1.00	3.091E+00	3.091E+00	0.558E+00	18.06	
PB-212	1.41E+10Y	1.00	1.046E+00	1.046E+00	0.138E+00	13.16	
BI-214	1600.00Y	1.00	8.454E-01	8.457E-01	1.913E-01	22.62	
PB-214	1600.00Y	1.00	1.122E+00	1.122E+00	0.203E+00	18.06	
RN-222	1600.00Y	1.00	8.454E-01	8.457E-01	1.913E-01	22.62	
RA-224	1.41E+10Y	1.00	2.723E+00	2.723E+00	1.388E+00	50.98	
RA-226	1600.00Y	1.00	8.454E-01	8.457E-01	1.913E-01	22.62	
AC-228	1.41E+10Y	1.00	1.226E+00	1.226E+00	0.282E+00	22.98	
RA-228	1.41E+10Y	1.00	1.226E+00	1.226E+00	0.282E+00	22.98	
TH-228	1.41E+10Y	1.00	1.046E+00	1.046E+00	0.138E+00	13.16	
TH-230	7.54E+04Y	1.00	8.454E-01	8.455E-01	1.912E-01	22.62	
PA-231	7.04E+08Y	1.00	6.271E-01	6.271E-01	7.011E-01	111.80	
TH-232	1.41E+10Y	1.00	1.226E+00	1.226E+00	0.282E+00	22.98	
TH-234	4.47E+09Y	1.00	3.764E+00	3.764E+00	3.882E+00	103.12	
U-234	2.45E+05Y	1.00	8.454E-01	8.454E-01	1.912E-01	22.62	
U-238	4.47E+09Y	1.00	3.764E+00	3.764E+00	3.882E+00	103.12	
AM-243	7370.00Y	1.00	2.965E-01	2.965E-01	1.362E-01	45.91	
ANH-511	1.00E+09Y	1.00	9.466E-02	9.466E-02	7.874E-02	83.19	
Total Activity :			4.345E+01	4.488E+01			

Grand Total Activity : 4.345E+01 4.488E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	94.77	40	106	1.26	190.76	184	10	8.77E-03	****	5.07E+00	T
0	129.53	38	145	1.78	260.27	256	8	8.50E-03	****	6.09E+00	T
0	186.37	165	201	1.23	373.96	368	13	3.85E-02	43.1	5.60E+00	T
0	209.43	84	90	1.25	420.08	416	8	1.97E-02	48.7	5.24E+00	T
0	270.47	52	71	1.08	542.17	537	10	1.27E-02	71.2	4.36E+00	T
0	464.99	16	55	0.67	931.20	925	11	3.97E-03	****	2.80E+00	
0	534.57	25	39	3.98	1070.37	1064	13	6.57E-03	****	2.50E+00	
7	707.28	12	9	1.96	1415.81	1413	25	3.12E-03	96.3	2.00E+00	T
7	710.32	28	16	2.00	1421.88	1413	25	7.41E-03	71.1	1.99E+00	T
0	720.76	14	7	3.40	1442.77	1438	10	3.86E-03	90.8	1.97E+00	T
0	728.15	37	29	0.95	1457.55	1450	12	9.78E-03	69.5	1.95E+00	T
0	797.49	23	27	1.86	1596.23	1586	14	6.26E-03	****	1.82E+00	
0	803.54	19	12	0.66	1608.33	1604	11	5.25E-03	89.5	1.81E+00	
0	816.56	10	15	1.70	1634.38	1630	8	2.62E-03	****	1.79E+00	T
0	996.21	12	13	1.17	1993.69	1989	12	3.43E-03	****	1.53E+00	T
0	1049.83	19	6	3.87	2100.93	2093	14	5.20E-03	75.2	1.47E+00	T
0	1190.02	9	7	0.61	2381.31	2378	6	2.57E-03	****	1.33E+00	T
0	1227.61	16	11	3.52	2456.49	2449	15	4.58E-03	****	1.29E+00	
0	1234.03	27	5	2.60	2469.34	2464	10	7.53E-03	49.2	1.29E+00	T
0	1239.00	22	5	1.24	2479.29	2475	11	6.25E-03	58.4	1.28E+00	T
0	1245.45	17	3	3.62	2492.19	2486	11	4.79E-03	60.9	1.28E+00	
0	1250.95	17	15	3.83	2503.18	2497	14	4.77E-03	****	1.27E+00	
0	1333.81	15	3	4.00	2668.91	2663	11	4.25E-03	66.1	1.21E+00	T
0	1337.86	6	0	1.50	2677.00	2674	6	1.67E-03	81.6	1.21E+00	
0	1544.74	9	2	0.52	3090.77	3086	8	2.58E-03	83.5	1.07E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235007.CNF;1  *
* Acquisition date   : 3-OCT-2016 08:02:54 Sensitivity      : 3.000          *
* Detector ID        : GAM32 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.63 Half life ratio : *****      *
* Sample date       : 10-DEC-2015 13:55:00 Nuclide Library : SOLID      *
* Sample ID         : G405235007 Analyst initials: MXR1         *
* Batch Number      : 1596247 Sample Quantity : 1.5252E+02 GRAM      *
* Wet wt corr       : 1.00000 Wet Weight : 0.00000          *
*                                     Dry Weight : 0.00000        *
*****
*                                     CALIBRATION INFORMATION                  *
*
* Eff. Cal. date    : 23-AUG-2016 07:56:33 Eff. Geometry   : CAN          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM32 CAN.CNF;11          *
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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.145E-01
CO-58	3.645E-01
CD-109	1.347E+00
SN-126	7.925E-02
BA-137M	3.241E-02
CS-137	3.424E-02
TL-208	2.382E-02
PB-212	4.791E-02
BI-214	5.602E-02
PB-214	5.848E-02
RN-222	5.602E-02
RA-224	5.134E-01
RA-226	5.602E-02
AC-228	1.157E-01
RA-228	1.157E-01
TH-228	4.791E-02
TH-230	5.600E-02
PA-231	4.048E-01
TH-232	1.157E-01
TH-234	1.504E+00
U-234	5.600E-02
U-238	1.504E+00
AM-243	5.511E-02
ANH-511	2.231E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.052E+01	NOT IDENT.
NA-22	3.377E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	3.517E-02	NOT IDENT.
SC-46	3.552E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF

MN-54	5.427E-02	NOT IDENT.
CO-56	3.743E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	4.857E-02	NOT IDENT.
FE-59	4.676E+00	NOT IDENT.
CO-60	3.579E-02	FAIL ABUN
ZN-65	1.518E-01	NOT IDENT.
GE-68	2.322E+00	NOT IDENT.
AS-73	1.334E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.825E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.445E-01	NOT IDENT.
KR-85	6.854E+00	NOT IDENT.
SR-85	7.079E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.522E-01	NOT IDENT.
Y-91	4.580E+02	NOT IDENT.
NB-94	2.759E-02	NOT IDENT.
NB-95	8.686E-01	NOT IDENT.
NB-95M	2.246E+00	NOT IDENT.
ZR-95	1.120E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.050E-02	NOT IDENT.
RH-102	5.390E-02	NOT IDENT.
RU-103	3.863E+00	FAIL ABUN
RH-106	4.138E-01	FAIL ABUN
RU-106	4.138E-01	FAIL ABUN
AG-108M	2.571E-02	NOT IDENT.
AG-110M	6.691E-02	FAIL ABUN
SN-113	1.760E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.318E-01	NOT IDENT.
SB-124	4.471E-01	NOT IDENT.
SB-125	8.557E-02	NOT IDENT.
TE-125M	2.670E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.691E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.834E-02	NOT IDENT.
CS-135	1.132E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.582E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.155E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.523E-01	NOT IDENT.
PM-144	4.108E-02	NOT IDENT.
PR-144	3.569E+00	NOT IDENT.
PM-146	3.604E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	8.393E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.478E-02	FAIL ABUN
EU-152	8.402E-02	NOT IDENT.
GD-153	1.694E-01	NOT IDENT.
EU-154	8.393E-02	FAIL ABUN
EU-155	1.101E-01	FAIL ABUN
TB-160	1.498E+00	FAIL ABUN
HO-166M	5.479E-02	FAIL ABUN
TM-171	3.458E+01	NOT IDENT.
HF-172	2.120E-01	FAIL ABUN
LU-172	7.807E-02	FAIL ABUN
LU-176	2.030E-02	FAIL ABUN
HF-181	3.445E+00	NOT IDENT.
TA-182	7.733E-01	FAIL ABUN

RE-183	4.320E+00	NOT IDENT.
RE-184	2.517E+01	NOT IDENT.
W-188	8.804E+01	FAIL ABUN
IR-192	4.158E-01	FAIL ABUN
HG-203	2.296E+00	NOT IDENT.
BI-207	3.144E-02	FAIL ABUN
PB-210	7.468E+00	NOT IDENT.
BI-211	3.802E-01	FAIL ABUN
PB-211	5.862E-01	NOT IDENT.
BI-212	6.347E-01	FAIL ABUN
RN-219	3.238E-01	FAIL ABUN
RA-223	4.613E-01	FAIL ABUN
AC-227	2.191E-01	FAIL ABUN
TH-227	2.191E-01	FAIL ABUN
TH-229	4.264E-01	FAIL ABUN
TH-231	4.613E-01	FAIL ABUN
PA-233	5.045E-02	FAIL ABUN
PA-234	2.280E-01	FAIL ABUN
PA-234M	3.232E+00	NOT IDENT.
U-235	1.667E-01	FAIL ABUN
NP-237	5.045E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.195E-01	NOT IDENT.
PU-239	3.307E+02	FAIL ABUN
AM-241	1.837E-01	NOT IDENT.
CM-243	8.386E-02	NOT IDENT.
BK-247	6.539E-02	NOT IDENT.
CM-247	2.947E-02	NOT IDENT.
CF-249	3.364E-02	NOT IDENT.
CF-251	9.812E-02	NOT IDENT.

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235007.CNF;1
* Acquisition date   : 3-OCT-2016 08:02:54 Sensitivity      : 3.000
* Detector ID        : GAM32 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.63 Half life ratio : *****
* Sample date        : 10-DEC-2015 13:55:00 Nuclide Library: SOLID
* Sample ID          : G405235007 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.5252E+02 GRAM
*                               Quantity Err(%) : 1.3113E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 23-AUG-2016 07:56:33 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM32 CAN.CNF;11
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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.552E+01	1.780E+00	1.780E+00
CO-58	6.633E-01	8.359E-01	8.359E-01
CD-109	3.758E-01	2.267E+00	2.267E+00
SN-126	2.402E-02	1.449E-01	1.449E-01
BA-137M	2.531E-01	9.931E-02	9.931E-02
CS-137	2.674E-01	1.049E-01	1.049E-01
TL-208	3.684E-01	9.407E-02	9.407E-02
PB-212	1.046E+00	1.459E-01	1.459E-01
BI-214	8.457E-01	1.909E-01	1.909E-01
PB-214	1.122E+00	2.041E-01	2.041E-01
RN-222	8.457E-01	1.909E-01	1.909E-01
RA-224	4.991E-01	1.477E+00	1.477E+00
RA-226	8.457E-01	1.909E-01	1.909E-01
AC-228	1.226E+00	2.832E-01	2.832E-01
RA-228	1.226E+00	2.832E-01	2.832E-01
TH-228	1.046E+00	1.459E-01	1.459E-01
TH-230	8.455E-01	1.909E-01	1.909E-01
PA-231	6.271E-01	7.000E-01	7.000E-01
TH-232	1.226E+00	2.832E-01	2.832E-01
TH-234	3.764E+00	3.895E+00	3.895E+00
U-234	8.454E-01	1.909E-01	1.909E-01
U-238	3.764E+00	3.895E+00	3.895E+00
AM-243	1.880E-01	1.373E-01	1.373E-01
ANH-511	9.466E-02	7.726E-02	7.726E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	2.468E+00	1.180E+01	1.185E+01	NOT IDENT.
NA-22	-1.801E-02	4.319E-02	4.395E-02	NOT IDENT.
NA-24	1.000E+41	1.583E+41	0.000E+00	SHORT HLIF
AL-26	2.599E-02	3.513E-02	3.704E-02	NOT IDENT.
SC-46	-7.774E-02	4.446E-01	4.460E-01	FAIL ABUN
V-48	7.600E+03	1.266E+04	1.312E+04	SHORT HLIF

CR-51	6.530E+01	4.162E+02	4.173E+02	SHORT HLIF
MN-54	8.976E-03	6.462E-02	6.475E-02	NOT IDENT.
CO-56	-1.060E-02	4.543E-01	4.543E-01	FAIL ABUN
MN-56	-1.000E+41	4.285E+42	0.000E+00	SHORT HLIF
CO-57	3.147E-02	5.429E-02	5.612E-02	NOT IDENT.
FE-59	-3.185E+00	6.003E+00	6.173E+00	NOT IDENT.
CO-60	6.774E-02	4.393E-02	5.350E-02	FAIL ABUN
ZN-65	-3.150E-02	2.052E-01	2.057E-01	NOT IDENT.
GE-68	1.743E+00	2.388E+00	2.514E+00	NOT IDENT.
AS-73	-3.993E-01	1.505E+01	1.505E+01	NOT IDENT.
AS-74	2.245E+03	5.813E+03	5.901E+03	SHORT HLIF
SE-75	-3.559E-02	2.054E-01	2.060E-01	NOT IDENT.
BR-77	1.028E+38	8.832E+38	0.000E+00	SHORT HLIF
SR-82	-2.144E+02	6.737E+02	6.806E+02	SHORT HLIF
RB-83	-5.887E-01	6.187E-01	6.732E-01	NOT IDENT.
KR-85	5.211E+00	8.056E+00	8.391E+00	NOT IDENT.
SR-85	5.350E-01	8.324E-01	8.667E-01	NOT IDENT.
RB-86	1.804E+04	2.648E+04	2.770E+04	SHORT HLIF
Y-88	1.131E-01	1.282E-01	1.380E-01	NOT IDENT.
Y-91	-1.149E+01	5.321E+02	5.322E+02	NOT IDENT.
NB-94	8.328E-03	3.326E-02	3.347E-02	NOT IDENT.
NB-95	4.546E-01	9.762E-01	9.975E-01	NOT IDENT.
NB-95M	8.656E-01	2.663E+00	2.691E+00	NOT IDENT.
ZR-95	8.962E-02	1.322E+00	1.323E+00	NOT IDENT.
NB-97	-1.000E+41	2.015E+41	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	1.306E+41	0.000E+00	SHORT HLIF
MO-99	-6.792E+31	1.159E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.054E+42	0.000E+00	SHORT HLIF
RH-101	5.080E-03	3.848E-02	3.854E-02	NOT IDENT.
RH-102	3.756E-02	5.760E-02	6.004E-02	NOT IDENT.
RU-103	-3.909E+00	5.104E+00	5.399E+00	FAIL ABUN
RH-106	-7.579E-02	4.995E-01	5.007E-01	FAIL ABUN
RU-106	-7.579E-02	4.995E-01	5.007E-01	FAIL ABUN
AG-108M	1.727E-02	2.730E-02	2.839E-02	NOT IDENT.
AG-110M	-8.523E-02	1.005E-01	1.076E-01	FAIL ABUN
SN-113	-2.925E-02	2.040E-01	2.044E-01	NOT IDENT.
CD-115	7.006E+38	1.830E+39	0.000E+00	SHORT HLIF
SN-117M	4.147E+04	9.386E+04	9.571E+04	SHORT HLIF
TE-123M	4.718E-03	1.414E-01	1.414E-01	NOT IDENT.
SB-124	-1.878E+00	1.640E+00	1.846E+00	NOT IDENT.
SB-125	-1.082E-02	9.934E-02	9.946E-02	NOT IDENT.
TE-125M	6.273E+01	3.059E+02	3.072E+02	NOT IDENT.
I-126	4.551E+05	9.569E+05	9.787E+05	SHORT HLIF
SB-126	1.220E+06	1.110E+06	1.239E+06	SHORT HLIF
SB-127	4.058E+21	1.691E+22	0.000E+00	SHORT HLIF
I-131	-3.554E+09	4.099E+09	4.401E+09	SHORT HLIF
I-132	-1.000E+41	1.865E+42	0.000E+00	SHORT HLIF
TE-132	-3.447E+24	2.430E+26	0.000E+00	SHORT HLIF
BA-133	2.323E-02	4.308E-02	4.434E-02	NOT IDENT.
I-133	1.000E+41	7.821E+41	0.000E+00	SHORT HLIF
CS-134	5.025E-02	6.332E-02	6.725E-02	NOT IDENT.
CS-135	-6.215E-02	1.478E-01	1.505E-01	NOT IDENT.
I-135	1.000E+41	8.076E+41	0.000E+00	SHORT HLIF
CS-136	-9.321E+04	2.425E+05	2.461E+05	SHORT HLIF
CE-139	2.333E-02	1.016E-01	1.022E-01	NOT IDENT.
BA-140	1.476E+05	1.297E+06	1.299E+06	SHORT HLIF
LA-140	4.078E+04	3.761E+05	3.766E+05	SHORT HLIF
CE-141	1.001E+01	2.238E+01	2.283E+01	NOT IDENT.
CE-143	1.000E+41	1.579E+41	0.000E+00	SHORT HLIF
CE-144	6.062E-02	4.105E-01	4.114E-01	NOT IDENT.
PM-144	-2.192E-02	5.277E-02	5.368E-02	NOT IDENT.
PR-144	-1.887E+00	4.580E+00	4.658E+00	NOT IDENT.
PM-146	1.579E-03	4.119E-02	4.120E-02	NOT IDENT.
ND-147	-7.968E+06	3.635E+07	3.652E+07	SHORT HLIF
PM-147	2.177E+02	9.659E+02	9.709E+02	NOT IDENT.
PM-149	1.655E+40	2.375E+40	0.000E+00	SHORT HLIF
EU-150	2.461E-02	2.786E-02	2.999E-02	FAIL ABUN
EU-152	-1.533E-02	9.629E-02	9.653E-02	NOT IDENT.
GD-153	5.333E-02	2.075E-01	2.089E-01	NOT IDENT.
EU-154	-7.429E-03	9.930E-02	9.936E-02	FAIL ABUN
EU-155	9.166E-02	1.203E-01	1.272E-01	FAIL ABUN
TB-160	-9.629E-01	2.005E+00	2.052E+00	FAIL ABUN
HO-166M	1.275E-01	8.911E-02	1.060E-01	FAIL ABUN
TM-171	-1.473E+01	4.021E+01	4.076E+01	NOT IDENT.
HF-172	3.379E-03	2.709E-01	2.709E-01	FAIL ABUN
LU-172	7.175E-02	7.880E-02	8.518E-02	FAIL ABUN
LU-176	-1.076E-02	2.382E-02	2.431E-02	FAIL ABUN
HF-181	1.271E+00	3.789E+00	3.832E+00	NOT IDENT.

TA-182	3.677E-01	9.253E-01	9.400E-01	FAIL ABUN
RE-183	-1.069E-02	4.879E+00	4.879E+00	NOT IDENT.
RE-184	1.417E+01	2.788E+01	2.860E+01	NOT IDENT.
W-188	-4.823E+01	1.085E+02	1.106E+02	FAIL ABUN
IR-192	3.096E-01	4.346E-01	4.564E-01	FAIL ABUN
HG-203	2.435E+00	2.344E+00	2.588E+00	NOT IDENT.
BI-207	-4.060E-02	4.399E-02	4.765E-02	FAIL ABUN
PB-210	-6.291E-01	8.393E+00	8.398E+00	NOT IDENT.
BI-211	3.091E+00	5.643E-01	1.503E+00	FAIL ABUN
PB-211	-2.468E-02	6.710E-01	6.711E-01	NOT IDENT.
BI-212	1.387E+00	9.474E-01	1.135E+00	FAIL ABUN
RN-219	-3.656E-02	3.732E-01	3.736E-01	FAIL ABUN
RA-223	-3.302E-01	5.548E-01	5.744E-01	FAIL ABUN
AC-227	-7.881E-02	2.489E-01	2.514E-01	FAIL ABUN
TH-227	-7.881E-02	2.489E-01	2.514E-01	FAIL ABUN
TH-229	4.338E-02	4.603E-01	4.607E-01	FAIL ABUN
TH-231	-3.302E-01	5.548E-01	5.744E-01	FAIL ABUN
PA-233	-6.032E-03	5.711E-02	5.718E-02	FAIL ABUN
PA-234	-9.698E-02	2.961E-01	2.993E-01	FAIL ABUN
PA-234M	1.616E+00	3.598E+00	3.671E+00	NOT IDENT.
U-235	-2.144E-02	1.797E-01	1.799E-01	FAIL ABUN
NP-237	-6.032E-03	5.711E-02	5.718E-02	FAIL ABUN
NP-238	-1.000E+41	1.995E+41	0.000E+00	SHORT HLIF
NP-239	1.792E-02	2.553E-01	2.554E-01	NOT IDENT.
PU-239	4.826E+02	6.061E+02	6.440E+02	FAIL ABUN
AM-241	-1.091E-01	2.370E-01	2.420E-01	NOT IDENT.
CM-243	-1.018E-01	1.080E-01	1.173E-01	NOT IDENT.
BK-247	1.296E-02	7.453E-02	7.476E-02	NOT IDENT.
CM-247	-2.391E-03	3.386E-02	3.388E-02	NOT IDENT.
CF-249	1.156E-02	3.691E-02	3.728E-02	NOT IDENT.
CF-251	-3.520E-02	1.089E-01	1.101E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	60.1854	87.09	115.6747	136.47	95.9819
45.60	71.5991	87.57	117.7241	140.51	0.0000
46.54	68.3569	88.03	141.1892	143.76	85.6973
49.72	0.0000	88.34	141.2417	144.24	82.3725
51.35	66.6640	88.47	146.0260	145.44	71.5216
51.87	72.3762	89.96	135.9516	152.43	83.8122
52.39	78.0977	1093.63	109.8045	153.25	0.0000
52.97	71.3746	91.11	0.0000	323.87	84.7890
53.44	66.8942	92.59	105.2728	156.02	0.0000
54.07	82.8521	93.35	105.3661	158.56	0.0000
57.36	0.0000	94.56	105.5151	159.00	91.0932
57.53	73.0383	94.65	105.5259	162.33	83.6625
57.98	84.5096	94.67	105.5286	162.66	0.0000
59.27	76.2866	94.87	105.5527	163.33	79.4602
59.32	99.1800	97.43	70.5753	165.86	63.3574
59.54	90.0554	98.43	75.8743	176.31	60.4368
60.96	68.8346	98.44	75.8752	176.60	0.0000
61.17	68.8564	99.53	73.5568	177.52	70.8641
62.93	88.5981	100.11	74.8113	181.07	0.0000
63.29	88.6451	102.03	83.4357	181.52	66.3173
63.58	88.6830	103.18	85.9630	184.41	82.1030
64.28	102.9933	103.37	82.3479	143.76	69.5744
66.73	87.9318	105.21	67.9522	193.51	69.9821
67.24	83.3648	105.31	67.9599	197.03	72.7947
125.81	99.6370	106.12	72.8778	198.01	55.2935
67.75	99.6468	106.47	88.7014	201.83	75.6892
69.67	97.5925	109.28	79.2183	203.43	49.3429
70.83	85.3366	111.00	90.3512	205.31	55.5851
72.81	99.5703	111.76	0.0000	210.85	65.1035
72.87	101.1340	114.06	77.1663	215.65	79.9850
74.66	102.9377	116.30	0.0000	222.11	62.4862
74.82	102.9598	116.74	68.7806	227.09	55.5303
74.97	102.9807	119.76	85.0066	227.38	52.8536
77.11	103.2727	121.12	82.6551	228.16	0.0000
78.74	106.6284	121.22	82.6633	228.18	60.0522
79.69	108.3291	121.78	69.1301	116.74	60.0522
80.12	111.5305	122.06	75.3234	235.69	70.2582
80.19	0.0000	122.92	74.1513	235.96	70.2701
80.57	73.8726	123.07	74.1623	238.63	68.5874
81.00	86.4936	265.00	89.0480	238.98	0.0000
81.07	86.5015	125.81	76.0139	240.99	68.6918
81.75	97.9888	127.23	71.1540	242.00	68.7358
83.79	106.5255	127.91	81.1361	244.70	62.5130
84.00	113.6565	129.30	83.3165	252.40	0.0000
85.43	104.3704	131.20	94.6799	252.80	58.2786
86.55	131.4335	133.02	93.1784	254.15	0.0000
86.79	131.4724	133.52	84.8983	256.23	68.4406
86.94	115.6539	136.00	90.9342	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	53.2009	355.39	0.0000	584.27	15.8948
264.80	48.4355	356.01	30.3689	595.83	0.0000
265.00	48.4408	364.49	0.0000	427.87	24.5105
268.22	52.3950	366.42	0.0000	602.52	0.0000
269.46	43.2354	372.51	28.1846	604.72	24.0115
270.03	43.2497	375.05	32.1111	607.14	30.4401
271.23	43.2803	377.52	37.9939	609.32	23.5155
273.65	0.0000	356.01	32.2454	610.33	23.5236
276.40	46.1843	388.16	31.3314	614.28	22.4843
277.37	55.4529	388.63	0.0000	618.01	13.9363
277.60	54.5359	391.69	28.4407	620.36	26.8219
278.00	49.0006	264.66	24.6195	621.93	21.4689
279.20	41.6336	401.81	33.4999	630.19	0.0000
279.54	58.2986	402.40	32.5233	631.29	15.0755
279.70	58.3037	404.85	34.5329	633.25	16.1627
280.46	50.9224	410.95	31.6602	634.78	0.0000
283.69	38.0321	413.71	31.6992	635.95	20.4913
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	42.7123	423.72	0.0000	645.85	16.2299
285.90	0.0000	427.09	30.8909	657.76	19.5520
287.50	53.9183	427.87	28.9080	657.90	0.0000
290.67	48.0559	433.94	23.9868	661.66	26.1016
293.27	0.0000	439.40	31.0561	664.57	0.0000
351.93	44.8184	453.88	25.1994	666.33	0.0000
295.96	44.8369	463.37	26.3110	666.50	0.0000
879.38	36.4832	468.07	34.9808	667.71	0.0000
299.98	36.5117	473.00	0.0000	677.62	18.5834
300.09	44.9404	475.06	23.3870	685.70	0.0000
300.13	44.9414	476.78	27.4735	695.00	0.0000
301.36	51.9985	477.60	24.4292	696.49	20.8926
302.85	36.5696	482.18	19.3753	696.51	20.8926
256.23	36.6030	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	18.6982
306.78	46.9859	497.08	26.6713	697.49	20.8995
308.46	31.9795	505.52	32.4203	702.65	17.1869
311.90	41.4631	507.63	0.0000	706.68	21.5098
316.51	33.0639	511.00	23.7225	711.68	9.9430
319.41	0.0000	514.00	26.3311	720.70	0.0000
320.08	0.0000	514.00	26.3311	721.93	0.0000
321.04	36.9315	520.40	27.9492	722.78	13.3022
323.87	43.6257	520.69	0.0000	722.91	13.3027
325.23	48.4019	522.65	0.0000	723.31	13.3042
328.76	0.0000	527.90	0.0000	724.19	13.3076
333.37	35.7414	528.26	19.9344	727.33	10.6563
333.97	34.3220	529.59	21.8135	733.00	12.0085
334.37	35.7597	529.87	0.0000	735.93	13.3545
338.28	39.1757	531.02	0.0000	333.97	15.5876
338.32	39.1766	537.26	0.0000	739.50	0.0000
311.90	31.5673	546.56	0.0000	747.24	18.9825
340.48	31.5673	552.55	31.4294	748.06	13.4028
340.55	0.0000	563.25	18.9309	752.31	22.3657
344.28	44.0880	569.33	20.0267	753.82	0.0000
345.93	39.1374	946.00	20.0275	756.73	14.5568
351.06	37.5067	569.70	20.0290	756.80	14.5573
351.93	37.5234	583.19	15.8887	884.68	28.0528

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	23.5771	1274.44	8.9459	1620.50	1.0120
766.42	31.4419	1001.03	5.7320	1621.92	1.0123
766.84	35.9375	1002.74	16.7253	1678.03	0.0000
772.60	0.0000	1004.73	12.5499	1690.97	6.1425
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	4.9714
778.90	9.0156	1028.54	0.0000	1063.66	7.2563
783.70	0.0000	1037.84	7.2271	1771.35	5.1840
785.37	11.2903	1038.76	0.0000	1791.20	0.0000
792.07	11.8774	631.29	10.1384	1808.65	3.1282
794.95	22.6424	1048.07	0.0000	1810.72	0.0000
795.86	22.6481	1049.04	12.6807	1836.06	0.0000
810.06	9.0954	1050.41	12.6849		
810.29	9.0960	1063.66	13.6322		
344.28	9.0964	1077.00	0.0000		
810.76	9.0970	1077.34	10.9395		
815.77	0.0000	1085.87	6.3937		
1048.07	0.0000	1093.63	10.0648		
832.01	16.0132	1099.45	14.6582		
834.85	14.8810	1112.07	13.7805		
835.71	18.3197	1112.84	11.9455		
836.80	0.0000	1115.54	17.6531		
846.75	0.0000	1120.29	14.7256		
846.77	14.9292	1120.55	14.7266		
856.80	0.0000	1221.41	13.2565		
860.56	10.3740	1129.67	15.6781		
871.09	11.5588	1131.51	0.0000		
873.19	10.4088	1147.95	0.0000		
875.33	0.0000	1173.23	15.8254		
879.38	19.6929	1177.95	12.1145		
880.51	15.0635	1189.05	12.1423		
883.24	13.9150	1204.77	15.9313		
884.68	18.5599	1221.41	10.5314		
889.28	20.9055	1231.02	7.5376		
894.76	15.1196	1235.36	0.0000		
898.04	17.4609	1238.28	0.0000		
900.72	17.4725	1260.41	0.0000		
903.28	10.4905	1271.87	12.3502		
911.20	17.5195	1274.44	9.5050		
912.08	17.5238	1274.54	12.3565		
923.98	0.0000	1291.59	9.5374		
926.50	7.9146	1298.22	0.0000		
929.11	15.8395	1312.11	0.0000		
937.49	25.5732	1332.49	12.3055		
944.13	0.0000	1362.66	0.0000		
946.00	17.6740	1365.19	5.8041		
949.00	9.7281	1368.63	0.0000		
667.71	0.0000	1384.29	6.7958		
962.31	21.2944	1408.01	7.8008		
964.08	14.2026	1457.56	0.0000		
966.17	17.0520	1460.82	4.9228		
911.20	15.1085	1489.16	3.9583		
968.97	15.1085	1505.03	3.9692		
983.53	0.0000	1584.12	4.0237		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:07:22.76

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235008.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM39.CNF;134
Background date    : 2-OCT-2016 11:02:13.
Sample.date       : 10-DEC-2015 14:05:00 Acquisition date : 3-OCT-2016 08:03:23.
Sample ID        : G405235008 Sample quantity : 1.47889E+02 GRAM
Detector name     : GAM39 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:07.23 0.2%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1596247 Detector SN# :
Matrix Spike ID   : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.75*	50	157	1.60	93.34	89	8	1.39E-02	47.5	
2	0	63.19*	1	252	1.10	126.23	123	8	3.42E-04	****	
3	2	72.81	32	141	1.27	145.47	143	16	8.84E-03	64.2	8.87E-01
4	2	74.90*	222	172	1.17	149.65	143	16	6.17E-02	12.1	
5	2	77.17*	272	159	1.08	154.17	143	16	7.56E-02	9.8	
6	0	87.21	56	169	1.17	174.26	171	7	1.55E-02	40.8	
7	0	92.82*	74	176	1.48	185.47	183	8	2.05E-02	35.8	
8	0	129.55	49	107	0.95	258.94	256	8	1.36E-02	39.1	
9	0	153.90*	21	107	0.61	307.64	305	8	5.81E-03	89.8	
10	0	185.18*	91	175	1.55	370.20	364	15	2.53E-02	34.0	
11	0	209.61	31	101	0.98	419.06	413	10	8.56E-03	64.0	
12	0	217.41	35	79	0.74	434.67	430	9	9.66E-03	49.5	
13	3	238.66*	392	74	1.20	477.17	472	17	1.09E-01	6.4	1.84E+00
14	3	241.62	77	95	1.83	483.09	472	17	2.15E-02	33.2	
15	0	270.81*	25	64	1.90	541.47	536	9	6.87E-03	62.7	
16	1	295.22*	111	60	1.56	590.28	586	21	3.09E-02	16.1	7.31E-01
17	1	299.64*	24	62	1.57	599.12	586	21	6.57E-03	65.0	
18	0	338.10*	78	89	1.12	676.04	669	14	2.15E-02	28.4	
19	0	352.09*	210	62	1.44	704.03	698	12	5.84E-02	10.5	
20	0	375.96	9	32	1.27	751.77	748	8	2.42E-03	115.6	
21	0	411.76	61	34	6.89	823.38	816	17	1.69E-02	25.4	
22	0	454.53	39	16	6.16	908.93	902	15	1.09E-02	26.8	
23	0	464.96	74	57	9.36	929.79	917	28	2.06E-02	30.9	
24	0	511.52*	12	82	1.73	1022.92	1016	17	3.24E-03	201.7	
25	0	534.00	14	13	1.46	1067.88	1065	6	3.80E-03	50.2	
26	0	552.45	21	21	1.27	1104.78	1099	11	5.72E-03	49.2	
27	0	562.62	13	34	1.79	1125.13	1118	10	3.61E-03	89.4	
28	0	583.26*	72	51	1.59	1166.40	1160	12	2.00E-02	23.8	
29	0	595.97	9	28	1.27	1191.82	1185	10	2.54E-03	112.4	
30	0	609.56*	130	49	1.22	1219.01	1214	10	3.61E-02	13.3	
31	0	663.04	52	24	2.17	1325.97	1319	17	1.45E-02	25.9	
32	0	669.35	14	6	1.24	1338.59	1335	8	3.97E-03	39.6	
33	0	693.49	33	24	6.10	1386.88	1378	20	9.10E-03	41.2	
34	0	808.79	37	4	4.03	1617.50	1610	16	1.03E-02	20.5	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	860.71	30	14	2.16	1721.35	1715	11	8.40E-03	29.9	
36	0	870.96	14	12	1.14	1741.86	1736	10	3.96E-03	53.1	
37	0	881.92	27	23	8.82	1763.78	1749	23	7.50E-03	50.0	
38	0	911.61*	55	26	1.16	1823.17	1816	13	1.52E-02	24.4	
39	1	964.70	22	17	2.03	1929.37	1919	26	6.05E-03	42.6	9.26E-01
40	1	969.17*	51	14	2.03	1938.30	1919	26	1.42E-02	22.5	
41	0	1033.58	14	2	1.12	2067.13	2063	8	3.91E-03	31.7	
42	0	1120.49	23	25	1.73	2241.00	2236	8	6.31E-03	39.4	
43	0	1160.33	18	3	1.58	2320.67	2315	10	5.10E-03	28.4	
44	0	1175.83	28	9	0.75	2351.69	2343	17	7.64E-03	30.9	
45	0	1228.04	9	7	0.90	2456.12	2453	8	2.39E-03	61.6	
46	0	1384.20	7	5	1.35	2768.50	2763	10	1.94E-03	70.7	
47	0	1460.83*	284	4	1.75	2921.78	2914	16	7.89E-02	6.3	
48	0	1509.87	9	2	0.93	3019.90	3014	10	2.39E-03	48.3	
49	0	1587.75	13	0	1.53	3175.69	3170	11	3.61E-03	27.7	
50	0	1764.45	18	0	2.02	3529.17	3524	10	5.00E-03	23.6	
51	0	1887.13	4	3	1.36	3774.60	3767	10	1.23E-03	82.2	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235008.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 10-DEC-2015 14:05:00 Acquisition date : 3-OCT-2016 08:03:23
Sample ID : G405235008 Sample quantity : 147.89 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA39 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:07.23 0.2%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	8.984E-01	1.449E+01	1.449E+01	12.51	OK
CD-109	88.03	3.70*	6.754E+00	5.138E-01	8.037E-01	232.54	OK
SN-126	64.28	9.60	6.932E+00	1.205E-02	1.205E-02	4690.27	OK
	86.94	8.90	6.754E+00	2.136E-01	2.136E-01	232.54	OK
	87.57	37.00*	6.754E+00	5.138E-02	5.138E-02	232.54	OK
BA-137M	661.66	89.90*	1.755E+00	1.757E-01	1.790E-01	51.88	OK
CS-137	661.66	85.10*	1.755E+00	1.856E-01	1.891E-01	51.88	OK
TL-208	277.37	6.60	3.709E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	1.953E+00	2.325E-01	2.325E-01	47.52	OK
	860.56	12.50	1.416E+00	8.818E-01	8.818E-01	59.82	OK
PB-210	46.54	4.25*	6.842E+00	1.145E+00	1.174E+00	94.92	OK
BI-211	72.87	1.23	6.824E+00	2.436E+00	2.436E+00	128.32	OK
	351.06	12.92*	3.013E+00	3.292E-01	3.292E-01	327.48	OK
PB-212	74.82	10.28	6.811E+00	1.481E+00	1.481E+00	35.42	OK
	77.11	17.10	6.799E+00	1.497E+00	1.497E+00	19.65	OK
	238.63	43.60*	4.211E+00	1.242E+00	1.242E+00	12.83	OK
	300.09	3.30	3.469E+00	1.178E+00	1.178E+00	130.01	OK
BI-214	609.32	45.49*	1.882E+00	8.100E-01	8.103E-01	26.57	OK
	1120.29	14.92	1.136E+00	6.735E-01	6.737E-01	78.75	OK
	1764.49	15.30	7.485E-01	7.533E-01	7.536E-01	47.14	OK
PB-214	74.82	5.80	6.812E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	6.799E+00	2.640E+00	2.641E+00	19.65	OK
	87.09	3.41	6.755E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	4.163E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	3.514E+00	9.817E-01	9.821E-01	32.23	OK
	351.93	35.60*	3.014E+00	-----	Line Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	1.882E+00	8.100E-01	8.103E-01	26.57	OK
	1120.29	14.92	1.136E+00	6.735E-01	6.737E-01	78.75	OK
	1764.49	15.30	7.485E-01	7.533E-01	7.536E-01	47.14	OK
RA-224	240.99	4.10*	4.168E+00	8.981E-01	8.981E-01	204.49	OK
RA-226	609.32	45.49*	1.882E+00	8.100E-01	8.103E-01	26.57	OK
	1120.29	14.92	1.136E+00	6.735E-01	6.737E-01	78.75	OK
	1764.49	15.30	7.485E-01	7.533E-01	7.536E-01	47.14	OK
AC-228	105.21	1.10	6.612E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.122E+00	1.243E+00	1.243E+00	56.75	OK
	794.95	4.25	1.512E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.451E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.350E+00	8.054E-01	8.054E-01	48.84	OK
	968.97	15.80	1.284E+00	1.288E+00	1.288E+00	44.91	OK
RA-228	105.21	1.10	6.612E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.122E+00	1.243E+00	1.243E+00	56.75	OK
	794.95	4.25	1.512E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.451E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.350E+00	8.054E-01	8.054E-01	48.84	OK
	968.97	15.80	1.284E+00	1.288E+00	1.288E+00	44.91	OK
TH-228	74.82	10.28	6.811E+00	1.481E+00	1.481E+00	35.42	OK
	77.11	17.10	6.799E+00	1.497E+00	1.497E+00	19.65	OK
	238.63	43.60*	4.211E+00	1.242E+00	1.242E+00	12.83	OK
	300.09	3.30	3.469E+00	1.178E+00	1.178E+00	130.01	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	609.32	45.49*	1.882E+00	8.100E-01	8.100E-01	26.57	OK
	1120.29	14.92	1.136E+00	6.735E-01	6.735E-01	78.75	OK
	1764.49	15.30	7.485E-01	7.533E-01	7.533E-01	47.14	OK
TH-232	105.21	1.10	6.612E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.122E+00	1.243E+00	1.243E+00	56.75	OK
	835.71	1.61	1.451E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.350E+00	8.054E-01	8.054E-01	48.84	OK
	968.97	15.80	1.284E+00	1.288E+00	1.288E+00	44.91	OK
TH-234	63.29	3.70*	6.932E+00	3.126E-02	3.126E-02	4690.27	OK
	92.59	4.23	6.722E+00	1.635E+00	1.635E+00	71.63	OK
U-234	609.32	45.49*	1.882E+00	8.100E-01	8.100E-01	26.57	OK
	1120.29	14.92	1.136E+00	6.735E-01	6.735E-01	78.75	OK
	1764.49	15.30	7.485E-01	7.533E-01	7.533E-01	47.14	OK
U-238	63.29	3.70*	6.932E+00	3.126E-02	3.126E-02	4690.27	OK
	92.59	4.23	6.722E+00	1.635E+00	1.635E+00	71.63	OK
PU-239	129.30	0.01*	6.237E+00	7.647E+02	7.647E+02	78.19	OK
	375.05	0.00	2.845E+00	1.099E+03	1.099E+03	231.16	OK
	413.71	0.00	2.617E+00	----- Line	Not Found	-----	Absent
AM-243	43.53	5.90	6.236E+00	----- Line	Not Found	-----	Absent
	74.66	67.20*	6.811E+00	2.266E-01	2.266E-01	35.42	OK
ANH-511	511.00	100.00*	2.181E+00	2.903E-02	2.903E-02	403.36	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*                                     *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235008.CNF;1 *
* Acquisition date   : 3-OCT-2016 08:03:23 Sensitivity      : 3.000          *
* Detector ID        : GAM39 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 01:00:07.23 Half life ratio : ****          *
* Sample date       : 10-DEC-2015 14:05:00 Analyst initials: MXR1      *
* Sample ID         : G405235008 Sample Quantity : 1.4789E+02 GRAM *
* Batch Number      : 1596247 Wet Weight      : 0.00000      *
* Wet wt corr       : 1.00000 Dry Weight      : 0.00000      *
* Nuclide Library    : SOLID.NLB;6                                           *
*****
*                                     CALIBRATION INFORMATION                *
*                                     *                                       *
* Eff. Cal. date    : 27-JUL-2016 13:04:01 Eff. Geometry   : CAN          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM39 CAN.CNF;4          *
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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.449E+01	1.777E+00	8.112E-01
CD-109	8.037E-01	1.832E+00	2.195E+00
SN-126	5.138E-02	1.171E-01	1.308E-01
BA-137M	1.790E-01	9.101E-02	7.925E-02
CS-137	1.891E-01	9.614E-02	8.372E-02
TL-208	2.325E-01	1.083E-01	8.491E-02
PB-210	1.174E+00	1.092E+00	9.860E-01
BI-211	3.292E-01	1.057E+00	4.359E-01
PB-212	1.242E+00	1.561E-01	1.111E-01
BI-214	8.103E-01	2.110E-01	1.622E-01
PB-214	1.102E+00	2.257E-01	3.711E-01
RN-222	8.103E-01	2.110E-01	1.622E-01
RA-224	8.981E-01	1.800E+00	1.192E+00
RA-226	8.103E-01	2.110E-01	1.622E-01
AC-228	8.054E-01	3.855E-01	3.191E-01
RA-228	8.054E-01	3.855E-01	3.191E-01
TH-228	1.242E+00	1.561E-01	1.111E-01
TH-230	8.100E-01	2.109E-01	1.621E-01
TH-232	8.054E-01	3.855E-01	3.191E-01
TH-234	3.126E-02	1.437E+00	1.238E+00
U-234	8.100E-01	2.109E-01	1.621E-01
U-238	3.126E-02	1.437E+00	1.238E+00
PU-239	7.647E+02	5.860E+02	6.159E+02
AM-243	2.266E-01	7.864E-02	6.463E-02
ANH-511	2.903E-02	1.147E-01	6.277E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	3.700E+00	1.362E+01	2.698E+01	NOT IDENT.
NA-22	1.582E-03	5.716E-02	1.145E-01	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	8.283E-03	3.889E-02	8.760E-02	NOT IDENT.
SC-46	1.544E-01	4.379E-01	9.111E-01	FAIL ABUN

V-48	0.000E+00	1.467E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	5.071E+02	0.000E+00	SHORT HLIF
MN-54	-2.318E-02	7.886E-02	1.514E-01	NOT IDENT.
CO-56	-2.644E-01	5.683E-01	1.066E+00	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	1.366E-02	4.783E-02	8.895E-02	NOT IDENT.
CO-58	6.019E-01	6.532E-01	1.490E+00	NOT IDENT.
FE-59	2.132E-01	6.512E+00	1.349E+01	NOT IDENT.
CO-60	-3.340E-03	4.175E-02	8.481E-02	NOT IDENT.
ZN-65	-7.592E-02	2.510E-01	4.065E-01	NOT IDENT.
GE-68	1.875E-01	3.101E+00	6.185E+00	NOT IDENT.
AS-73	1.305E-01	2.674E+00	5.001E+00	NOT IDENT.
AS-74	0.000E+00	1.055E+04	0.000E+00	SHORT HLIF
SE-75	2.219E-01	2.432E-01	5.059E-01	NOT IDENT.
BR-77	0.000E+00	1.531E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	8.059E+02	0.000E+00	SHORT HLIF
RB-83	4.312E-02	7.892E-01	1.517E+00	FAIL ABUN
KR-85	4.428E+00	8.639E+00	1.731E+01	NOT IDENT.
SR-85	4.578E-01	8.931E-01	1.789E+00	NOT IDENT.
RB-86	0.000E+00	3.395E+04	0.000E+00	SHORT HLIF
Y-88	-1.521E-02	2.493E-01	5.313E-01	NOT IDENT.
Y-91	6.165E+01	6.898E+02	1.360E+03	NOT IDENT.
NB-94	7.994E-03	4.165E-02	7.975E-02	FAIL ABUN
NB-95	-6.481E-01	1.134E+00	1.916E+00	NOT IDENT.
NB-95M	2.790E+00	2.797E+00	5.364E+00	NOT IDENT.
ZR-95	1.184E+00	1.798E+00	3.723E+00	NOT IDENT.
NB-97	0.000E+00	1.657E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.439E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.315E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-2.661E-03	4.124E-02	6.760E-02	NOT IDENT.
RH-102	3.605E-02	6.848E-02	1.413E-01	NOT IDENT.
RU-103	2.292E+00	6.649E+00	1.327E+01	FAIL ABUN
RH-106	-7.648E-02	6.488E-01	1.203E+00	NOT IDENT.
RU-106	-7.648E-02	6.488E-01	1.203E+00	NOT IDENT.
AG-108M	-1.319E-02	2.899E-02	5.281E-02	NOT IDENT.
AG-110M	3.183E-02	1.457E-01	2.676E-01	FAIL ABUN
SN-113	-2.081E-02	2.744E-01	5.218E-01	NOT IDENT.
CD-115	0.000E+00	2.009E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	9.913E+04	0.000E+00	SHORT HLIF
TE-123M	5.890E-03	1.393E-01	2.645E-01	NOT IDENT.
SB-124	1.653E+00	2.049E+00	5.536E+00	NOT IDENT.
SB-125	-5.299E-02	1.243E-01	2.259E-01	NOT IDENT.
TE-125M	-7.003E+01	2.762E+02	4.901E+02	NOT IDENT.
I-126	0.000E+00	6.358E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.277E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.434E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.927E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	4.267E+40	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.028E+26	0.000E+00	SHORT HLIF
BA-133	-9.803E-03	5.528E-02	9.266E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	3.874E-02	7.077E-02	1.476E-01	FAIL ABUN
CS-135	-8.423E-02	1.764E-01	2.891E-01	NOT IDENT.
I-135	0.000E+00	1.552E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.474E+05	0.000E+00	SHORT HLIF
CE-139	-8.275E-02	1.131E-01	2.114E-01	NOT IDENT.
BA-140	0.000E+00	1.509E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.638E+05	0.000E+00	SHORT HLIF
CE-141	-1.571E+01	2.454E+01	4.663E+01	NOT IDENT.
CE-143	0.000E+00	9.757E+40	0.000E+00	SHORT HLIF
CE-144	2.523E-01	4.242E-01	7.943E-01	NOT IDENT.
PM-144	3.898E-03	6.171E-02	1.187E-01	NOT IDENT.
PR-144	3.382E-01	5.354E+00	1.030E+01	NOT IDENT.
PM-146	0.000E+00	8.015E-02	1.067E-01	FAIL ABUN
ND-147	0.000E+00	3.842E+07	0.000E+00	SHORT HLIF
PM-147	-4.548E+02	8.518E+02	1.466E+03	NOT IDENT.
PM-149	0.000E+00	2.847E+40	0.000E+00	SHORT HLIF
EU-150	-4.633E-03	2.973E-02	5.055E-02	FAIL ABUN
EU-152	4.066E-03	1.131E-01	2.089E-01	FAIL ABUN
GD-153	-2.382E-01	2.075E-01	3.089E-01	NOT IDENT.
EU-154	6.934E-03	1.409E-01	2.832E-01	NOT IDENT.
EU-155	3.278E-02	1.168E-01	2.159E-01	FAIL ABUN
TB-160	4.738E-01	2.158E+00	4.395E+00	FAIL ABUN
HO-166M	4.661E-03	6.804E-02	1.301E-01	FAIL ABUN
TM-171	-2.266E-01	5.845E+00	1.089E+01	NOT IDENT.
HF-172	1.805E-01	2.778E-01	4.889E-01	FAIL ABUN
LU-172	-5.872E-02	8.580E-02	1.515E-01	FAIL ABUN

LU-176	-2.576E-02	2.683E-02	4.501E-02	FAIL ABUN
HF-181	1.594E+00	4.821E+00	9.668E+00	NOT IDENT.
TA-182	1.301E+00	1.153E+00	2.620E+00	FAIL ABUN
RE-183	-5.289E-01	1.231E+00	2.220E+00	NOT IDENT.
RE-184	8.884E+00	3.801E+01	7.801E+01	NOT IDENT.
W-188	-1.235E+02	1.460E+02	2.257E+02	FAIL ABUN
IR-192	-1.293E-01	5.466E-01	1.029E+00	FAIL ABUN
HG-203	7.372E-01	2.945E+00	5.769E+00	FAIL ABUN
BI-207	4.104E-02	6.548E-02	1.399E-01	FAIL ABUN
PB-211	4.073E-01	7.909E-01	1.548E+00	NOT IDENT.
BI-212	-4.087E-02	6.376E-01	1.190E+00	NOT IDENT.
RN-219	1.161E-01	4.444E-01	8.780E-01	FAIL ABUN
RA-223	-1.003E-01	7.311E-01	1.384E+00	FAIL ABUN
AC-227	-1.829E-02	2.469E-01	4.781E-01	FAIL ABUN
TH-227	-1.829E-02	2.469E-01	4.781E-01	FAIL ABUN
TH-229	2.750E-02	4.927E-01	9.700E-01	FAIL ABUN
PA-231	2.686E-01	5.359E-01	1.072E+00	NOT IDENT.
TH-231	-1.003E-01	7.311E-01	1.384E+00	FAIL ABUN
PA-233	5.629E-04	6.771E-02	1.311E-01	FAIL ABUN
PA-234	-7.937E-02	3.624E-01	6.983E-01	FAIL ABUN
PA-234M	-1.304E+00	5.456E+00	1.058E+01	NOT IDENT.
U-235	1.313E-02	1.897E-01	3.775E-01	FAIL ABUN
NP-237	5.629E-04	6.771E-02	1.311E-01	FAIL ABUN
NP-238	0.000E+00	1.900E+41	0.000E+00	SHORT HLIF
NP-239	-8.397E-02	2.566E-01	4.509E-01	NOT IDENT.
AM-241	4.371E-02	7.067E-02	1.263E-01	NOT IDENT.
CM-243	-4.231E-02	1.013E-01	1.776E-01	NOT IDENT.
BK-247	9.072E-02	8.940E-02	1.808E-01	NOT IDENT.
CM-247	-3.040E-02	4.226E-02	7.421E-02	NOT IDENT.
CF-249	7.471E-03	4.250E-02	8.354E-02	NOT IDENT.
CF-251	1.046E-02	1.315E-01	2.587E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	273	10.66*	8.984E-01	1.449E+01	1.449E+01	12.51
CD-109	88.03	70	3.70*	6.754E+00	1.419E+00	2.219E+00	81.68
SN-126	64.28	2	9.60	6.932E+00	1.205E-02	1.205E-02	4690.27
	86.94	70	8.90	6.754E+00	5.898E-01	5.898E-01	81.68
	87.57	70	37.00*	6.754E+00	1.419E-01	1.419E-01	81.68
BA-137M	661.66	55	89.90*	1.755E+00	1.757E-01	1.790E-01	51.88
CS-137	661.66	55	85.10*	1.755E+00	1.856E-01	1.891E-01	51.88
TL-208	277.37	-----	6.60	3.709E+00	-----	Line Not Found	-----
	583.19	76	85.00*	1.953E+00	2.325E-01	2.325E-01	47.52
	860.56	31	12.50	1.416E+00	8.818E-01	8.818E-01	59.82
PB-210	46.54	66	4.25*	6.842E+00	1.145E+00	1.174E+00	94.92
BI-211	72.87	40	1.23	6.824E+00	2.436E+00	2.436E+00	128.32
	351.06	233	12.92*	3.013E+00	3.034E+00	3.034E+00	20.91
PB-212	74.82	281	10.28	6.811E+00	2.035E+00	2.035E+00	24.24
	77.11	343	17.10	6.799E+00	1.497E+00	1.497E+00	19.65
	238.63	449	43.60*	4.211E+00	1.242E+00	1.242E+00	12.83
	300.09	27	3.30	3.469E+00	1.178E+00	1.178E+00	130.01
BI-214	609.32	137	45.49*	1.882E+00	8.100E-01	8.103E-01	26.57
	1120.29	22	14.92	1.136E+00	6.735E-01	6.737E-01	78.75
	1764.49	17	15.30	7.485E-01	7.533E-01	7.536E-01	47.14
PB-214	74.82	281	5.80	6.811E+00	3.607E+00	3.608E+00	24.24
	77.11	343	9.70	6.799E+00	2.640E+00	2.641E+00	19.65
	87.09	70	3.41	6.754E+00	1.539E+00	1.540E+00	81.68
	242.00	89	7.25	4.168E+00	1.490E+00	1.490E+00	66.41
	295.22	125	18.42	3.514E+00	9.817E-01	9.821E-01	32.23
	351.93	233	35.60*	3.013E+00	1.101E+00	1.102E+00	20.91
RN-222	609.32	137	45.49*	1.882E+00	8.100E-01	8.103E-01	26.57
	1120.29	22	14.92	1.136E+00	6.735E-01	6.737E-01	78.75
	1764.49	17	15.30	7.485E-01	7.533E-01	7.536E-01	47.14
RA-224	240.99	89	4.10*	4.168E+00	2.634E+00	2.634E+00	66.41
RA-226	609.32	137	45.49*	1.882E+00	8.100E-01	8.103E-01	26.57
	1120.29	22	14.92	1.136E+00	6.735E-01	6.737E-01	78.75
	1764.49	17	15.30	7.485E-01	7.533E-01	7.536E-01	47.14
AC-228	105.21	-----	1.10	6.612E+00	-----	Line Not Found	-----
	338.32	86	11.27	3.122E+00	1.243E+00	1.243E+00	56.75
	794.95	-----	4.25	1.512E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.451E+00	-----	Line Not Found	-----
	911.20	55	25.80*	1.350E+00	8.054E-01	8.054E-01	48.84
	968.97	51	15.80	1.284E+00	1.288E+00	1.288E+00	44.91
RA-228	105.21	-----	1.10	6.612E+00	-----	Line Not Found	-----
	338.32	86	11.27	3.122E+00	1.243E+00	1.243E+00	56.75
	794.95	-----	4.25	1.512E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.451E+00	-----	Line Not Found	-----
	911.20	55	25.80*	1.350E+00	8.054E-01	8.054E-01	48.84
	968.97	51	15.80	1.284E+00	1.288E+00	1.288E+00	44.91
TH-228	74.82	281	10.28	6.811E+00	2.035E+00	2.035E+00	24.24
	77.11	343	17.10	6.799E+00	1.497E+00	1.497E+00	19.65

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	238.63	449	43.60*	4.211E+00	1.242E+00	1.242E+00	12.83
	300.09	27	3.30	3.469E+00	1.178E+00	1.178E+00	130.01
TH-230	609.32	137	45.49*	1.882E+00	8.100E-01	8.100E-01	26.57
	1120.29	22	14.92	1.136E+00	6.735E-01	6.735E-01	78.75
	1764.49	17	15.30	7.485E-01	7.533E-01	7.533E-01	47.14
TH-232	105.21	-----	1.10	6.612E+00	-----	Line Not Found	-----
	338.32	86	11.27	3.122E+00	1.243E+00	1.243E+00	56.75
	835.71	-----	1.61	1.451E+00	-----	Line Not Found	-----
	911.20	55	25.80*	1.350E+00	8.054E-01	8.054E-01	48.84
	968.97	51	15.80	1.284E+00	1.288E+00	1.288E+00	44.91
TH-234	63.29	2	3.70*	6.932E+00	3.126E-02	3.126E-02	4690.27
	92.59	92	4.23	6.722E+00	1.635E+00	1.635E+00	71.63
U-234	609.32	137	45.49*	1.882E+00	8.100E-01	8.100E-01	26.57
	1120.29	22	14.92	1.136E+00	6.735E-01	6.735E-01	78.75
	1764.49	17	15.30	7.485E-01	7.533E-01	7.533E-01	47.14
U-238	63.29	2	3.70*	6.932E+00	3.126E-02	3.126E-02	4690.27
	92.59	92	4.23	6.722E+00	1.635E+00	1.635E+00	71.63
PU-239	129.30	59	0.01*	6.237E+00	7.647E+02	7.647E+02	78.19
	375.05	10	0.00	2.845E+00	1.099E+03	1.099E+03	231.16
	413.71	-----	0.00	2.617E+00	-----	Line Not Found	-----
AM-243	43.53	-----	5.90	6.236E+00	-----	Line Not Found	-----
	74.66	281	67.20*	6.811E+00	3.113E-01	3.113E-01	24.24
ANH-511	511.00	12	100.00*	2.181E+00	2.903E-02	2.903E-02	403.36

Flag: "*" = Keyline

Total number of lines in spectrum 51
Number of unidentified lines 12
Number of lines tentatively identified by NID 39 76.47%

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	1.449E+01	1.449E+01	0.181E+01	12.51	
CD-109	461.40D	1.56	1.419E+00	2.219E+00	1.812E+00	81.68	
SN-126	2.30E+05Y	1.00	1.419E-01	1.419E-01	1.159E-01	81.68	
BA-137M	30.08Y	1.02	1.757E-01	1.790E-01	0.929E-01	51.88	
CS-137	30.08Y	1.02	1.856E-01	1.891E-01	0.981E-01	51.88	
TL-208	1.41E+10Y	1.00	2.325E-01	2.325E-01	1.105E-01	47.52	
PB-210	22.20Y	1.03	1.145E+00	1.174E+00	1.114E+00	94.92	
BI-211	7.04E+08Y	1.00	3.034E+00	3.034E+00	0.634E+00	20.91	
PB-212	1.41E+10Y	1.00	1.242E+00	1.242E+00	0.159E+00	12.83	
BI-214	1600.00Y	1.00	8.100E-01	8.103E-01	2.153E-01	26.57	
PB-214	1600.00Y	1.00	1.101E+00	1.102E+00	0.230E+00	20.91	
RN-222	1600.00Y	1.00	8.100E-01	8.103E-01	2.153E-01	26.57	
RA-224	1.41E+10Y	1.00	2.634E+00	2.634E+00	1.749E+00	66.41	
RA-226	1600.00Y	1.00	8.100E-01	8.103E-01	2.153E-01	26.57	
AC-228	1.41E+10Y	1.00	8.054E-01	8.054E-01	3.933E-01	48.84	
RA-228	1.41E+10Y	1.00	8.054E-01	8.054E-01	3.933E-01	48.84	
TH-228	1.41E+10Y	1.00	1.242E+00	1.242E+00	0.159E+00	12.83	
TH-230	7.54E+04Y	1.00	8.100E-01	8.100E-01	2.153E-01	26.57	
TH-232	1.41E+10Y	1.00	8.054E-01	8.054E-01	3.933E-01	48.84	
TH-234	4.47E+09Y	1.00	3.126E-02	3.126E-02	146.6E-02	4690.27	
U-234	2.45E+05Y	1.00	8.100E-01	8.100E-01	2.152E-01	26.57	
U-238	4.47E+09Y	1.00	3.126E-02	3.126E-02	146.6E-02	4690.27	
PU-239	24110.00Y	1.00	7.647E+02	7.647E+02	5.980E+02	78.19	
AM-243	7370.00Y	1.00	3.113E-01	3.113E-01	0.755E-01	24.24	
ANH-511	1.00E+09Y	1.00	2.903E-02	2.903E-02	11.71E-02	403.36	

Total Activity : 7.986E+02 7.995E+02

Grand Total Activity : 7.986E+02 7.995E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	153.90	25	128	0.61	307.64	305	8	5.81E-03	****	5.75E+00	T
0	185.18	107	205	1.55	370.20	364	15	2.53E-02	67.9	5.12E+00	T
0	209.61	36	117	0.98	419.06	413	10	8.56E-03	****	4.67E+00	T
0	217.41	40	92	0.74	434.67	430	9	9.66E-03	98.9	4.54E+00	
0	270.81	28	73	1.90	541.47	536	9	6.87E-03	****	3.79E+00	T
0	411.76	67	37	6.89	823.38	816	17	1.69E-02	50.7	2.63E+00	T
0	454.53	43	17	6.16	908.93	902	15	1.09E-02	53.6	2.41E+00	T
0	464.96	80	61	9.36	929.79	917	28	2.06E-02	61.8	2.37E+00	
0	534.00	15	14	1.46	1067.88	1065	6	3.80E-03	****	2.10E+00	
0	552.45	22	23	1.27	1104.78	1099	11	5.72E-03	98.3	2.04E+00	T
0	562.62	14	36	1.79	1125.13	1118	10	3.61E-03	****	2.01E+00	T
0	595.97	10	29	1.27	1191.82	1185	10	2.54E-03	****	1.92E+00	T
0	669.35	15	6	1.24	1338.59	1335	8	3.97E-03	79.1	1.74E+00	
0	693.49	34	25	6.10	1386.88	1378	20	9.10E-03	82.3	1.69E+00	
0	808.79	38	4	4.03	1617.50	1610	16	1.03E-02	40.9	1.49E+00	T
0	870.96	14	12	1.14	1741.86	1736	10	3.96E-03	****	1.40E+00	T
0	881.92	27	23	8.82	1763.78	1749	23	7.50E-03	****	1.39E+00	T
1	964.70	22	17	2.03	1929.37	1919	26	6.05E-03	85.2	1.29E+00	T
0	1033.58	14	2	1.12	2067.13	2063	8	3.91E-03	63.5	1.22E+00	
0	1160.33	18	3	1.58	2320.67	2315	10	5.10E-03	56.9	1.10E+00	
0	1175.83	27	8	0.75	2351.69	2343	17	7.64E-03	61.8	1.09E+00	
0	1228.04	8	7	0.90	2456.12	2453	8	2.39E-03	****	1.05E+00	
0	1384.20	7	5	1.35	2768.50	2763	10	1.94E-03	****	9.44E-01	T
0	1509.87	8	2	0.93	3019.90	3014	10	2.39E-03	96.7	8.71E-01	
0	1587.75	12	0	1.53	3175.69	3170	11	3.61E-03	55.5	8.31E-01	
0	1887.13	4	2	1.36	3774.60	3767	10	1.23E-03	****	6.98E-01	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235008.CNF;1
* Acquisition date   : 3-OCT-2016 08:03:23 Sensitivity      : 3.000
* Detector ID        : GAM39 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:07.23 Half life ratio : *****
* Sample date        : 10-DEC-2015 14:05:00 Nuclide Library : SOLID
* Sample ID          : G405235008 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.4789E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 27-JUL-2016 13:04:01 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM39 CAN.CNF;4
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	3.335E-01
CD-109	1.052E+00
SN-126	6.250E-02
BA-137M	3.510E-02
CS-137	3.708E-02
TL-208	3.822E-02
PB-210	4.668E-01
BI-211	1.997E-01
PB-212	5.165E-02
BI-214	7.288E-02
PB-214	1.790E-01
RN-222	7.288E-02
RA-224	5.541E-01
RA-226	7.288E-02
AC-228	1.396E-01
RA-228	1.396E-01
TH-228	5.165E-02
TH-230	7.286E-02
TH-232	1.396E-01
TH-234	5.902E-01
U-234	7.286E-02
U-238	5.902E-01
PU-239	2.895E+02
AM-243	3.072E-02
ANH-511	2.815E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.207E+01	NOT IDENT.
NA-22	4.879E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	3.437E-02	NOT IDENT.
SC-46	3.961E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF

CR-51	0.000E+00	SHORT HLIF
MN-54	6.639E-02	NOT IDENT.
CO-56	4.626E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.162E-02	NOT IDENT.
CO-58	6.582E-01	NOT IDENT.
FE-59	5.643E+00	NOT IDENT.
CO-60	3.452E-02	NOT IDENT.
ZN-65	1.752E-01	NOT IDENT.
GE-68	2.699E+00	NOT IDENT.
AS-73	2.368E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	2.353E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.784E-01	FAIL ABUN
KR-85	7.863E+00	NOT IDENT.
SR-85	8.129E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.989E-01	NOT IDENT.
Y-91	5.950E+02	NOT IDENT.
NB-94	3.568E-02	FAIL ABUN
NB-95	8.452E-01	NOT IDENT.
NB-95M	2.511E+00	NOT IDENT.
ZR-95	1.656E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.178E-02	NOT IDENT.
RH-102	6.266E-02	NOT IDENT.
RU-103	5.969E+00	FAIL ABUN
RH-106	5.350E-01	NOT IDENT.
RU-106	5.350E-01	NOT IDENT.
AG-108M	2.328E-02	NOT IDENT.
AG-110M	1.180E-01	FAIL ABUN
SN-113	2.370E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.236E-01	NOT IDENT.
SB-124	2.197E+00	NOT IDENT.
SB-125	1.015E-01	NOT IDENT.
TE-125M	2.301E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	4.227E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	6.667E-02	FAIL ABUN
CS-135	1.328E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.834E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.187E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.753E-01	NOT IDENT.
PM-144	5.196E-02	NOT IDENT.
PR-144	4.509E+00	NOT IDENT.
PM-146	4.837E-02	FAIL ABUN
ND-147	0.000E+00	SHORT HLIF
PM-147	6.835E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.289E-02	FAIL ABUN
EU-152	9.539E-02	FAIL ABUN
GD-153	1.456E-01	NOT IDENT.
EU-154	1.208E-01	NOT IDENT.
EU-155	1.021E-01	FAIL ABUN
TB-160	1.908E+00	FAIL ABUN
HO-166M	5.722E-02	FAIL ABUN
TM-171	5.146E+00	NOT IDENT.
HF-172	2.307E-01	FAIL ABUN
LU-172	6.289E-02	FAIL ABUN
LU-176	2.026E-02	FAIL ABUN

HF-181	4.335E+00	NOT IDENT.
TA-182	1.162E+00	FAIL ABUN
RE-183	1.052E+00	NOT IDENT.
RE-184	3.443E+01	NOT IDENT.
W-188	1.032E+02	FAIL ABUN
IR-192	4.718E-01	FAIL ABUN
HG-203	2.685E+00	FAIL ABUN
BI-207	6.196E-02	FAIL ABUN
PB-211	7.036E-01	NOT IDENT.
BI-212	5.302E-01	NOT IDENT.
RN-219	3.989E-01	FAIL ABUN
RA-223	6.370E-01	FAIL ABUN
AC-227	2.200E-01	FAIL ABUN
TH-227	2.200E-01	FAIL ABUN
TH-229	4.520E-01	FAIL ABUN
PA-231	4.976E-01	NOT IDENT.
TH-231	6.370E-01	FAIL ABUN
PA-233	6.002E-02	FAIL ABUN
PA-234	3.048E-01	FAIL ABUN
PA-234M	4.627E+00	NOT IDENT.
U-235	1.777E-01	FAIL ABUN
NP-237	6.002E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.113E-01	NOT IDENT.
AM-241	6.022E-02	NOT IDENT.
CM-243	8.343E-02	NOT IDENT.
BK-247	8.423E-02	NOT IDENT.
CM-247	3.343E-02	NOT IDENT.
CF-249	3.787E-02	NOT IDENT.
CF-251	1.214E-01	NOT IDENT.

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235008.CNF;1
* Acquisition date   : 3-OCT-2016 08:03:23 Sensitivity      : 3.000
* Detector ID        : GAM39 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:07.23 Half life ratio : *****
* Sample date        : 10-DEC-2015 14:05:00 Nuclide Library : SOLID
* Sample ID          : G405235008 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.4789E+02 GRAM
*                               Quantity Err(%) : 1.3524E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 27-JUL-2016 13:04:01 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM39 CAN.CNF;4
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
      (pCi/GRAM )      (1.96-sigma)      (1.96-sigma)
K-40          1.449E+01      1.931E+00      1.931E+00
CD-109         8.037E-01      1.841E+00      1.841E+00
SN-126         5.138E-02      1.177E-01      1.177E-01
BA-137M        1.790E-01      9.134E-02      9.134E-02
CS-137         1.891E-01      9.649E-02      9.649E-02
TL-208         2.325E-01      1.087E-01      1.087E-01
PB-210         1.174E+00      1.096E+00      1.096E+00
BI-211         3.292E-01      1.070E+00      1.070E+00
PB-212         1.242E+00      1.694E-01      1.694E-01
BI-214         8.103E-01      2.139E-01      2.139E-01
PB-214         1.102E+00      2.303E-01      2.303E-01
RN-222         8.103E-01      2.139E-01      2.139E-01
RA-224         8.981E-01      1.804E+00      1.804E+00
RA-226         8.103E-01      2.139E-01      2.139E-01
AC-228         8.054E-01      3.877E-01      3.877E-01
RA-228         8.054E-01      3.877E-01      3.877E-01
TH-228         1.242E+00      1.694E-01      1.694E-01
TH-230         8.100E-01      2.138E-01      2.138E-01
TH-232         8.054E-01      3.877E-01      3.877E-01
TH-234         3.126E-02      1.437E+00      1.437E+00
U-234          8.100E-01      2.138E-01      2.138E-01
U-238          3.126E-02      1.437E+00      1.437E+00
PU-239         7.647E+02      5.870E+02      5.870E+02
AM-243         2.266E-01      8.058E-02      8.058E-02
ANH-511        2.903E-02      1.148E-01      1.148E-01

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

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Nuclide      Key-Line
              Activity      K.L Act error      TPU
              (pCi/GRAM )      (1.96-sigma)      (1.96-sigma)
BE-7          3.700E+00      1.362E+01      1.372E+01 NOT IDENT.
NA-22         1.582E-03      5.716E-02      5.717E-02 NOT IDENT.
NA-24         1.000E+41      2.556E+43      0.000E+00 SHORT HLIF
AL-26         8.283E-03      3.889E-02      3.907E-02 NOT IDENT.
SC-46         1.544E-01      4.379E-01      4.434E-01 FAIL ABUN

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V-48	1.063E+04	1.468E+04	1.544E+04	SHORT HLIF
CR-51	-5.832E+01	5.071E+02	5.078E+02	SHORT HLIF
MN-54	-2.318E-02	7.886E-02	7.955E-02	NOT IDENT.
CO-56	-2.644E-01	5.684E-01	5.808E-01	NOT IDENT.
MN-56	-1.000E+41	2.187E+41	0.000E+00	SHORT HLIF
CO-57	1.366E-02	4.783E-02	4.822E-02	NOT IDENT.
CO-58	6.019E-01	6.537E-01	7.078E-01	NOT IDENT.
FE-59	2.132E-01	6.512E+00	6.513E+00	NOT IDENT.
CO-60	-3.340E-03	4.175E-02	4.177E-02	NOT IDENT.
ZN-65	-7.592E-02	2.510E-01	2.533E-01	NOT IDENT.
GE-68	1.875E-01	3.101E+00	3.102E+00	NOT IDENT.
AS-73	1.305E-01	2.674E+00	2.675E+00	NOT IDENT.
AS-74	4.791E+03	1.056E+04	1.078E+04	SHORT HLIF
SE-75	2.219E-01	2.434E-01	2.631E-01	NOT IDENT.
BR-77	1.218E+38	1.047E+39	0.000E+00	SHORT HLIF
SR-82	1.689E+02	8.059E+02	8.095E+02	SHORT HLIF
RB-83	4.312E-02	7.892E-01	7.894E-01	FAIL ABUN
KR-85	4.428E+00	8.641E+00	8.869E+00	NOT IDENT.
SR-85	4.578E-01	8.933E-01	9.168E-01	NOT IDENT.
RB-86	1.566E+04	3.396E+04	3.468E+04	SHORT HLIF
Y-88	-1.521E-02	2.493E-01	2.494E-01	NOT IDENT.
Y-91	6.165E+01	6.898E+02	6.903E+02	NOT IDENT.
NB-94	7.994E-03	4.165E-02	4.180E-02	FAIL ABUN
NB-95	-6.481E-01	1.134E+00	1.171E+00	NOT IDENT.
NB-95M	2.790E+00	2.806E+00	3.075E+00	NOT IDENT.
ZR-95	1.184E+00	1.799E+00	1.877E+00	NOT IDENT.
NB-97	1.000E+41	1.658E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.439E+41	0.000E+00	SHORT HLIF
MO-99	-5.484E+31	1.315E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	4.182E+41	0.000E+00	SHORT HLIF
RH-101	-2.661E-03	4.125E-02	4.126E-02	NOT IDENT.
RH-102	3.605E-02	6.854E-02	7.044E-02	NOT IDENT.
RU-103	2.292E+00	6.650E+00	6.730E+00	FAIL ABUN
RH-106	-7.648E-02	6.489E-01	6.498E-01	NOT IDENT.
RU-106	-7.648E-02	6.489E-01	6.498E-01	NOT IDENT.
AG-108M	-1.319E-02	2.900E-02	2.960E-02	NOT IDENT.
AG-110M	3.183E-02	1.457E-01	1.464E-01	FAIL ABUN
SN-113	-2.081E-02	2.744E-01	2.746E-01	NOT IDENT.
CD-115	2.413E+38	2.010E+39	0.000E+00	SHORT HLIF
SN-117M	2.909E+03	9.913E+04	9.913E+04	SHORT HLIF
TE-123M	5.890E-03	1.393E-01	1.394E-01	NOT IDENT.
SB-124	1.653E+00	2.051E+00	2.182E+00	NOT IDENT.
SB-125	-5.299E-02	1.243E-01	1.266E-01	NOT IDENT.
TE-125M	-7.003E+01	2.762E+02	2.780E+02	NOT IDENT.
I-126	1.392E+06	6.630E+05	9.130E+05	SHORT HLIF
SB-126	-7.973E+05	1.286E+06	1.335E+06	SHORT HLIF
SB-127	-3.168E+20	2.434E+22	0.000E+00	SHORT HLIF
I-131	-2.939E+08	4.927E+09	4.929E+09	SHORT HLIF
I-132	1.000E+41	1.836E+42	0.000E+00	SHORT HLIF
TE-132	2.547E+25	3.029E+26	0.000E+00	SHORT HLIF
BA-133	-9.803E-03	5.528E-02	5.546E-02	NOT IDENT.
I-133	-1.000E+41	2.749E+41	0.000E+00	SHORT HLIF
CS-134	3.874E-02	7.079E-02	7.292E-02	FAIL ABUN
CS-135	-8.423E-02	1.764E-01	1.805E-01	NOT IDENT.
I-135	-1.000E+41	6.905E+41	0.000E+00	SHORT HLIF
CS-136	-1.289E+05	3.477E+05	3.525E+05	SHORT HLIF
CE-139	-8.275E-02	1.143E-01	1.203E-01	NOT IDENT.
BA-140	2.024E+05	1.509E+06	1.512E+06	SHORT HLIF
LA-140	2.085E+05	4.639E+05	4.733E+05	SHORT HLIF
CE-141	-1.571E+01	2.455E+01	2.555E+01	NOT IDENT.
CE-143	1.000E+41	9.810E+40	0.000E+00	SHORT HLIF
CE-144	2.523E-01	4.245E-01	4.394E-01	NOT IDENT.
PM-144	3.898E-03	6.171E-02	6.173E-02	NOT IDENT.
PR-144	3.382E-01	5.354E+00	5.356E+00	NOT IDENT.
PM-146	1.527E-01	8.091E-02	1.062E-01	FAIL ABUN
ND-147	-1.039E+06	3.842E+07	3.843E+07	SHORT HLIF
PM-147	-4.548E+02	8.521E+02	8.764E+02	NOT IDENT.
PM-149	-8.392E+39	2.853E+40	0.000E+00	SHORT HLIF
EU-150	-4.633E-03	2.973E-02	2.981E-02	FAIL ABUN
EU-152	4.066E-03	1.131E-01	1.132E-01	FAIL ABUN
GD-153	-2.382E-01	2.080E-01	2.340E-01	NOT IDENT.
EU-154	6.934E-03	1.409E-01	1.410E-01	NOT IDENT.
EU-155	3.278E-02	1.169E-01	1.178E-01	FAIL ABUN
TB-160	4.738E-01	2.159E+00	2.169E+00	FAIL ABUN
HO-166M	4.661E-03	6.804E-02	6.808E-02	FAIL ABUN
TM-171	-2.266E-01	5.845E+00	5.846E+00	NOT IDENT.
HF-172	1.805E-01	2.793E-01	2.909E-01	FAIL ABUN
LU-172	-5.872E-02	8.601E-02	8.999E-02	FAIL ABUN

LU-176	-2.576E-02	2.686E-02	2.926E-02	FAIL ABUN
HF-181	1.594E+00	4.822E+00	4.875E+00	NOT IDENT.
TA-182	1.301E+00	1.154E+00	1.294E+00	FAIL ABUN
RE-183	-5.289E-01	1.234E+00	1.257E+00	NOT IDENT.
RE-184	8.884E+00	3.807E+01	3.828E+01	NOT IDENT.
W-188	-1.235E+02	1.467E+02	1.569E+02	FAIL ABUN
IR-192	-1.293E-01	5.466E-01	5.497E-01	FAIL ABUN
HG-203	7.372E-01	2.946E+00	2.964E+00	FAIL ABUN
BI-207	4.104E-02	6.550E-02	6.806E-02	FAIL ABUN
PB-211	4.073E-01	7.912E-01	8.122E-01	NOT IDENT.
BI-212	-4.087E-02	6.376E-01	6.379E-01	NOT IDENT.
RN-219	1.161E-01	4.446E-01	4.477E-01	FAIL ABUN
RA-223	-1.003E-01	7.311E-01	7.325E-01	FAIL ABUN
AC-227	-1.829E-02	2.470E-01	2.471E-01	FAIL ABUN
TH-227	-1.829E-02	2.470E-01	2.471E-01	FAIL ABUN
TH-229	2.750E-02	4.927E-01	4.929E-01	FAIL ABUN
PA-231	2.686E-01	5.389E-01	5.524E-01	NOT IDENT.
TH-231	-1.003E-01	7.311E-01	7.325E-01	FAIL ABUN
PA-233	5.629E-04	6.771E-02	6.771E-02	FAIL ABUN
PA-234	-7.937E-02	3.736E-01	3.753E-01	FAIL ABUN
PA-234M	-1.304E+00	5.456E+00	5.487E+00	NOT IDENT.
U-235	1.313E-02	1.897E-01	1.898E-01	FAIL ABUN
NP-237	5.629E-04	6.771E-02	6.771E-02	FAIL ABUN
NP-238	1.000E+41	1.900E+41	0.000E+00	SHORT HLIF
NP-239	-8.397E-02	2.567E-01	2.594E-01	NOT IDENT.
AM-241	4.371E-02	7.074E-02	7.343E-02	NOT IDENT.
CM-243	-4.231E-02	1.013E-01	1.031E-01	NOT IDENT.
BK-247	9.072E-02	9.125E-02	1.000E-01	NOT IDENT.
CM-247	-3.040E-02	4.257E-02	4.472E-02	NOT IDENT.
CF-249	7.471E-03	4.250E-02	4.264E-02	NOT IDENT.
CF-251	1.046E-02	1.315E-01	1.316E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	84.9955	87.09	151.3662	136.47	76.0925
45.60	104.8623	87.57	151.4658	140.51	0.0000
46.54	105.0630	88.03	175.2441	143.76	71.6081
49.72	0.0000	88.34	153.2064	144.24	66.5855
51.35	101.5943	88.47	153.2330	145.44	79.3240
51.87	94.9898	89.96	87.8530	152.43	86.6695
52.39	89.4901	1093.63	123.5825	153.25	0.0000
52.97	89.5877	91.11	0.0000	323.87	69.7948
53.44	94.1498	92.59	123.9063	156.02	0.0000
54.07	99.8704	93.35	124.0308	158.56	0.0000
57.36	0.0000	94.56	101.9316	159.00	67.7201
57.53	123.0845	94.65	100.3505	162.33	73.7645
57.98	120.9224	94.67	100.3537	162.66	0.0000
59.27	110.2482	94.87	100.3800	163.33	55.8038
59.32	110.2578	97.43	127.8914	165.86	75.7271
59.54	117.8549	98.43	82.8361	176.31	70.3617
60.96	151.4684	98.44	82.8372	176.60	0.0000
61.17	145.4619	99.53	81.7502	177.52	76.5238
62.93	140.1993	100.11	78.2011	181.07	0.0000
63.29	140.2847	102.03	104.9228	181.52	70.6822
63.58	140.3530	103.18	91.7883	184.41	62.9854
64.28	138.6134	103.37	91.8103	143.76	63.0557
66.73	131.5265	105.21	92.0191	193.51	61.7072
67.24	134.6972	105.31	92.0307	197.03	62.7707
125.81	130.9636	106.12	88.4853	198.01	53.0884
67.75	134.4252	106.47	88.5232	201.83	57.6909
69.67	110.6375	109.28	85.1747	203.43	63.9866
70.83	121.6157	111.00	87.7879	205.31	57.4073
72.81	121.6057	111.76	0.0000	210.85	64.3638
72.87	121.6169	114.06	67.3025	215.65	69.9885
74.66	121.9510	116.30	0.0000	222.11	61.6786
74.82	121.9806	116.74	82.2421	227.09	69.6935
74.97	122.0079	119.76	77.5988	227.38	69.7084
77.11	122.4012	121.12	76.4844	228.16	0.0000
78.74	143.3419	121.22	76.4929	228.18	67.0328
79.69	127.9390	121.78	64.1958	116.74	67.0328
80.12	128.0191	122.06	64.2161	235.69	49.1869
80.19	0.0000	122.92	72.9303	235.96	43.7300
80.57	106.2320	123.07	76.6514	238.63	58.4199
81.00	120.3673	265.00	82.8892	238.98	0.0000
81.07	132.8860	125.81	74.4035	240.99	58.5189
81.75	129.1043	127.23	84.4547	242.00	58.5612
83.79	116.1403	127.91	82.8603	244.70	38.5047
84.00	116.1745	129.30	82.1548	252.40	0.0000
85.43	125.8472	131.20	86.4805	252.80	54.3984
86.55	151.2529	133.02	76.6508	254.15	0.0000
86.79	151.3027	133.52	81.2758	256.23	46.2097
86.94	151.3350	136.00	80.2344	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	41.8277	355.39	0.0000	584.27	27.8035
264.80	41.8323	356.01	39.7881	595.83	0.0000
265.00	41.2799	364.49	0.0000	427.87	18.6519
268.22	53.1082	366.42	0.0000	602.52	0.0000
269.46	43.8273	372.51	20.8154	604.72	26.3730
270.03	43.8435	375.05	17.8660	607.14	26.3965
271.23	46.2129	377.52	32.7966	609.32	26.4180
273.65	0.0000	356.01	28.9174	610.33	31.3841
276.40	52.4590	388.16	28.9817	614.28	24.8135
277.37	52.4920	388.63	0.0000	618.01	19.8779
277.60	53.4375	391.69	34.0408	620.36	19.8955
278.00	53.4514	264.66	19.1098	621.93	23.2251
279.20	55.3701	401.81	29.1847	630.19	0.0000
279.54	55.3821	402.40	39.2603	631.29	14.4266
279.70	55.3881	404.85	25.3994	633.25	15.5478
280.46	53.5372	410.95	31.3406	634.78	0.0000
283.69	57.4134	413.71	31.3835	635.95	22.2323
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	42.4008	423.72	0.0000	645.85	23.4276
285.90	0.0000	427.09	36.6841	657.76	15.1249
287.50	30.1921	427.87	32.6204	657.90	0.0000
290.67	56.7236	433.94	24.5366	661.66	20.1943
293.27	0.0000	439.40	28.7007	664.57	0.0000
351.93	45.5088	453.88	15.4797	666.33	0.0000
295.96	45.5303	463.37	17.1022	666.50	0.0000
879.38	45.6045	468.07	17.1388	667.71	0.0000
299.98	45.6436	473.00	0.0000	677.62	21.4353
300.09	45.6465	475.06	28.7590	685.70	0.0000
300.13	45.6475	476.78	18.7701	695.00	0.0000
301.36	45.6826	477.60	18.7771	696.49	15.8970
302.85	41.4379	482.18	20.9062	696.51	15.8970
256.23	24.3156	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	13.6299
306.78	42.0145	497.08	22.0950	697.49	13.6304
308.46	27.7197	505.52	30.0957	702.65	21.6193
311.90	39.2716	507.63	0.0000	706.68	13.6729
316.51	45.1430	511.00	25.4028	711.68	17.1198
319.41	0.0000	514.00	25.4355	720.70	0.0000
320.08	0.0000	514.00	25.4355	721.93	0.0000
321.04	49.1168	520.40	23.3786	722.78	18.3288
323.87	47.2694	520.69	0.0000	722.91	18.3294
325.23	52.1334	522.65	0.0000	723.31	16.0405
328.76	0.0000	527.90	0.0000	724.19	19.4833
333.37	30.5554	528.26	25.5879	727.33	18.3561
333.97	33.4766	529.59	25.6025	733.00	14.9419
334.37	34.9402	529.87	0.0000	735.93	23.0103
338.28	27.2367	531.02	0.0000	333.97	17.2662
338.32	27.2372	537.26	0.0000	739.50	0.0000
311.90	37.9836	546.56	0.0000	747.24	18.4753
340.48	37.9836	552.55	16.1517	748.06	10.3953
340.55	0.0000	563.25	27.5762	752.31	17.3492
344.28	36.3084	569.33	28.1847	753.82	0.0000
345.93	37.5148	946.00	28.1857	756.73	13.8989
351.06	40.1692	569.70	28.1878	756.80	13.8994
351.93	40.1884	583.19	27.2471	884.68	13.9307

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	26.7163	1274.44	8.3752	1620.50	4.2529
766.42	27.8838	1001.03	14.9072	1621.92	2.1270
766.84	20.9158	1002.74	15.8462	1678.03	0.0000
772.60	0.0000	1004.73	14.9219	1690.97	1.0764
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	1.7438
778.90	22.1613	1028.54	0.0000	1063.66	0.0000
783.70	0.0000	1037.84	12.0383	1771.35	2.1824
785.37	24.5436	1038.76	0.0000	1791.20	0.0000
792.07	30.7425	631.29	12.2534	1808.65	3.2937
794.95	28.1328	1048.07	0.0000	1810.72	0.0000
795.86	21.9849	1049.04	17.9203	1836.06	3.3083
810.06	9.7153	1050.41	15.0957		
810.29	9.7160	1063.66	13.2523		
344.28	9.7166	1077.00	0.0000		
810.76	9.7177	1077.34	15.1963		
815.77	0.0000	1085.87	14.2767		
1048.07	0.0000	1093.63	14.3033		
832.01	15.1142	1099.45	8.5941		
834.85	20.4661	1112.07	14.3665		
835.71	17.8009	1112.84	17.2430		
836.80	0.0000	1115.54	16.8706		
846.75	0.0000	1120.29	29.1735		
846.77	19.6448	1120.55	19.9621		
856.80	0.0000	1221.41	15.3584		
860.56	16.1378	1129.67	15.3887		
871.09	9.5924	1131.51	0.0000		
873.19	7.1987	1147.95	0.0000		
875.33	0.0000	1173.23	14.5743		
879.38	12.3624	1177.95	12.4500		
880.51	12.3662	1189.05	11.7012		
883.24	12.3758	1204.77	14.6786		
884.68	15.8893	1221.41	8.8401		
889.28	11.3641	1231.02	17.3239		
894.76	14.4858	1235.36	0.0000		
898.04	19.0300	1238.28	16.7603		
900.72	13.6034	1260.41	0.0000		
903.28	16.3356	1271.87	5.9590		
911.20	16.3718	1274.44	10.9308		
912.08	16.3757	1274.54	10.9308		
923.98	0.0000	1291.59	9.9731		
926.50	12.7875	1298.22	0.0000		
929.11	8.2263	1312.11	0.0000		
937.49	14.6582	1332.49	7.0419		
944.13	0.0000	1362.66	0.0000		
946.00	18.3649	1365.19	8.1021		
949.00	12.8661	1368.63	0.0000		
667.71	0.0000	1384.29	8.1333		
962.31	14.7563	1408.01	5.1077		
964.08	14.7637	1457.56	0.0000		
966.17	14.7720	1460.82	7.2252		
911.20	14.7827	1489.16	2.0756		
968.97	14.7827	1505.03	4.9966		
983.53	0.0000	1584.12	3.3801		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:08:34.60

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235009.CNF;1
Background file     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM25.CNF;357
Sample date        : 10-DEC-2015 10:30:00      Background date   : Z-OCT-2016 11:01:25.
Sample ID          : G405235009                Acquisition date  : 3-OCT-2016 08:06:24.
Detector name      : GAM25                     Sample quantity   : 1.34381E+02 GRAM
Elapsed live time  : 0 01:00:00.00             Detector geometry: CAN
Energy tolerance   : 1.50000 keV               Elapsed real time : 0 01:00:00.62  0.0%
Abundance limit    : 75.00000                  Analyst Initials  : MXR1
Batch ID           : 1596247                    Sensitivity       : 3.00000
Matrix Spike ID    :                           Detector SN#      :
LCS ID             : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.38*	76	207	1.01	92.26	88	9	2.12E-02	36.9	
2	0	63.59*	35	307	1.04	126.67	121	10	9.62E-03	99.1	
3	2	74.85*	252	186	0.99	149.20	145	14	6.99E-02	10.8	9.42E-01
4	2	77.11*	432	147	0.85	153.72	145	14	1.20E-01	6.6	
5	0	84.01*	51	199	1.42	167.51	164	7	1.41E-02	48.8	
6	0	87.39	137	180	1.52	174.27	171	7	3.80E-02	18.5	
7	3	90.02	55	171	1.01	179.53	177	12	1.52E-02	37.8	2.80E+00
8	3	92.97*	144	168	1.15	185.42	177	12	4.01E-02	18.6	
9	6	186.07*	118	138	1.32	371.60	367	11	3.27E-02	20.3	2.78E+00
10	6	188.01	27	51	0.74	375.48	367	11	7.42E-03	49.9	
11	0	209.48	41	94	0.60	418.42	415	7	1.15E-02	41.9	
12	6	238.76*	481	61	1.00	476.98	471	18	1.34E-01	5.3	2.10E+00
13	6	241.66	147	116	2.04	482.78	471	18	4.09E-02	21.4	
14	0	269.95	31	95	0.60	539.36	535	9	8.59E-03	59.5	
15	1	295.28*	218	43	1.36	590.02	583	34	6.07E-02	8.5	3.16E+00
16	1	297.40	28	31	1.18	594.25	583	34	7.78E-03	48.8	
17	1	300.15	57	32	1.36	599.75	583	34	1.60E-02	22.6	
18	1	304.40	28	28	1.37	608.25	583	34	7.66E-03	45.6	
19	0	328.57	42	46	1.66	656.61	653	9	1.18E-02	32.5	
20	0	338.73*	69	94	1.29	676.91	672	11	1.91E-02	30.5	
21	0	352.20*	269	76	1.26	703.86	698	12	7.48E-02	9.0	
22	0	359.52	12	45	0.89	718.50	714	6	3.43E-03	90.3	
23	0	365.92	22	53	3.16	731.31	725	10	6.01E-03	69.4	
24	0	463.66	56	80	2.90	926.81	917	18	1.55E-02	40.0	
25	0	481.50	13	28	0.66	962.48	958	7	3.67E-03	71.8	
26	0	511.58*	53	51	1.89	1022.65	1016	16	1.48E-02	38.1	
27	0	583.51*	138	59	1.65	1166.55	1162	14	3.82E-02	15.2	
28	0	609.59*	214	41	1.36	1218.72	1213	14	5.95E-02	9.5	
29	0	628.56	16	20	1.65	1256.67	1250	10	4.44E-03	58.1	
30	0	661.82	477	23	1.45	1323.20	1317	12	1.32E-01	5.0	
31	0	728.64	54	23	2.05	1456.89	1449	17	1.49E-02	26.6	
32	0	794.87	14	21	1.64	1589.39	1584	9	3.78E-03	68.0	
33	0	861.31	30	19	1.07	1722.34	1715	15	8.32E-03	36.5	
34	0	911.58*	98	18	1.50	1822.92	1816	15	2.73E-02	14.1	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	5	931.00	10	3	2.15	1861.77	1859	12	2.79E-03	34.6	3.10E-01
36	5	934.05	14	3	1.37	1867.88	1859	12	3.87E-03	33.3	
37	0	968.97*	46	18	2.45	1937.76	1934	11	1.27E-02	23.8	
38	0	1087.13	12	2	1.60	2174.21	2168	10	3.33E-03	37.5	
39	0	1120.99*	25	24	1.41	2241.97	2235	12	6.92E-03	46.1	
40	0	1198.08	10	20	3.41	2396.26	2385	14	2.87E-03	98.5	
41	0	1277.97	15	34	7.78	2556.16	2542	23	4.07E-03	107.3	
42	0	1294.72	10	2	0.68	2589.68	2585	9	2.72E-03	42.2	
43	0	1377.63	11	7	5.07	2755.63	2745	14	2.95E-03	61.4	
44	0	1444.68	7	0	0.99	2889.86	2883	12	1.94E-03	37.8	
45	0	1460.82*	355	7	1.99	2922.17	2915	15	9.86E-02	5.6	
46	0	1848.28	9	3	1.79	3697.89	3692	10	2.63E-03	45.2	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235009.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 10-DEC-2015 10:30:00 Acquisition date : 3-OCT-2016 08:06:24
Sample ID : G405235009 Sample quantity : 134.38 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA25 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.62 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	87.09	TH-229	88.47
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.131E+00	1.571E+01	1.571E+01	11.22	OK
CD-109	88.03	3.70*	9.275E+00	1.166E+00	1.824E+00	85.38	OK
SN-126	64.28	9.60	9.538E+00	2.527E-01	2.527E-01	198.23	OK
	86.94	8.90	9.275E+00	4.846E-01	4.846E-01	85.38	OK
	87.57	37.00*	9.275E+00	1.166E-01	1.166E-01	85.38	OK
BA-137M	661.66	89.90*	2.257E+00	1.333E+00	1.359E+00	10.04	OK
CS-137	661.66	85.10*	2.257E+00	1.409E+00	1.435E+00	10.04	OK
TL-208	277.37	6.60	4.809E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.509E+00	3.698E-01	3.698E-01	30.35	OK
	860.56	12.50	1.809E+00	7.369E-01	7.369E-01	72.92	OK
PB-210	46.54	4.25*	9.109E+00	1.347E+00	1.381E+00	73.81	OK
PB-212	74.82	10.28	9.404E+00	8.358E-01	8.358E-01	47.84	OK
	77.11	17.10	9.383E+00	1.775E+00	1.775E+00	13.12	OK
	238.63	43.60*	5.476E+00	1.232E+00	1.232E+00	10.64	OK
	300.09	3.30	4.485E+00	2.336E+00	2.336E+00	45.10	OK
BI-214	609.32	45.49*	2.418E+00	1.112E+00	1.112E+00	18.92	OK
	1120.29	14.92	1.443E+00	6.310E-01	6.312E-01	92.16	OK
	1764.49	15.30	9.336E-01	----- Line	Not Found	-----	Absent
PB-214	74.82	5.80	9.405E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	9.383E+00	3.130E+00	3.131E+00	13.12	OK
	87.09	3.41	9.279E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	5.413E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.551E+00	1.570E+00	1.570E+00	17.08	OK
	351.93	35.60*	3.891E+00	1.155E+00	1.156E+00	18.02	OK
RN-222	609.32	45.49*	2.418E+00	1.112E+00	1.112E+00	18.92	OK
	1120.29	14.92	1.443E+00	6.310E-01	6.312E-01	92.16	OK
	1764.49	15.30	9.336E-01	----- Line	Not Found	-----	Absent
RA-224	240.99	4.10*	5.420E+00	1.275E+00	1.275E+00	141.00	OK
RA-226	609.32	45.49*	2.418E+00	1.112E+00	1.112E+00	18.92	OK
	1120.29	14.92	1.443E+00	6.310E-01	6.312E-01	92.16	OK
	1764.49	15.30	9.336E-01	----- Line	Not Found	-----	Absent
AC-228	105.21	1.10	8.977E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.029E+00	9.021E-01	9.021E-01	61.06	OK
	794.95	4.25	1.935E+00	9.264E-01	9.264E-01	135.94	OK
	835.71	1.61	1.856E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.724E+00	1.225E+00	1.225E+00	28.29	OK
	968.97	15.80	1.637E+00	9.749E-01	9.749E-01	47.53	OK
RA-228	105.21	1.10	8.977E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.029E+00	9.021E-01	9.021E-01	61.06	OK
	794.95	4.25	1.935E+00	9.264E-01	9.264E-01	135.94	OK
	835.71	1.61	1.856E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.724E+00	1.225E+00	1.225E+00	28.29	OK
	968.97	15.80	1.637E+00	9.749E-01	9.749E-01	47.53	OK
TH-228	74.82	10.28	9.404E+00	8.358E-01	8.358E-01	47.84	OK
	77.11	17.10	9.383E+00	1.775E+00	1.775E+00	13.12	OK
	238.63	43.60*	5.476E+00	1.232E+00	1.232E+00	10.64	OK
	300.09	3.30	4.485E+00	2.336E+00	2.336E+00	45.10	OK
TH-229	85.43	14.70	9.314E+00	2.437E-01	2.437E-01	97.55	OK
	88.47	24.00	9.275E+00	1.797E-01	1.797E-01	85.38	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	193.51	4.41*	6.496E+00	----- Line	Not Found	-----	Absent
	210.85	2.80	6.103E+00	1.494E+00	1.494E+00	83.76	OK
TH-230	609.32	45.49*	2.418E+00	1.112E+00	1.112E+00	18.92	OK
	1120.29	14.92	1.443E+00	6.310E-01	6.310E-01	92.16	OK
	1764.49	15.30	9.336E-01	----- Line	Not Found	-----	Absent
PA-231	283.69	1.70	4.715E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	4.485E+00	1.441E+00	1.441E+00	45.10	OK
TH-232	105.21	1.10	8.977E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.029E+00	9.021E-01	9.021E-01	61.06	OK
	835.71	1.61	1.856E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.724E+00	1.225E+00	1.225E+00	28.29	OK
	968.97	15.80	1.637E+00	9.749E-01	9.749E-01	47.53	OK
TH-234	63.29	3.70*	9.538E+00	6.556E-01	6.556E-01	198.23	OK
	92.59	4.23	9.199E+00	2.418E+00	2.418E+00	37.13	OK
U-234	609.32	45.49*	2.418E+00	1.112E+00	1.112E+00	18.92	OK
	1120.29	14.92	1.443E+00	6.310E-01	6.310E-01	92.16	OK
	1764.49	15.30	9.336E-01	----- Line	Not Found	-----	Absent
U-235	89.96	3.47	9.241E+00	1.118E+00	1.118E+00	75.64	OK
	93.35	5.60	9.199E+00	1.827E+00	1.827E+00	37.13	OK
	143.76	10.96*	7.922E+00	----- Line	Not Found	-----	Absent
	163.33	5.08	7.333E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	6.691E+00	1.913E-01	1.913E-01	40.58	OK
	205.31	5.01	6.202E+00	----- Line	Not Found	-----	Absent
U-238	63.29	3.70*	9.538E+00	6.556E-01	6.556E-01	198.23	OK
	92.59	4.23	9.199E+00	2.418E+00	2.418E+00	37.13	OK
AM-243	43.53	5.90	8.344E+00	----- Line	Not Found	-----	Absent
	74.66	67.20*	9.404E+00	1.279E-01	1.279E-01	47.84	OK
ANH-511	511.00	100.00*	2.807E+00	1.099E-01	1.099E-01	76.13	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235009.CNF;1
* Acquisition date   : 3-OCT-2016 08:06:24 Sensitivity      : 3.000
* Detector ID        : GAM25 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.62 Half life ratio : *****
* Sample date       : 10-DEC-2015 10:30:00 Analyst initials: MXR1
* Sample ID         : G405235009 Sample Quantity : 1.3438E+02 GRAM
* Batch Number      : 1596247 Wet Weight : 0.00000
* Wet wt corr       : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 1-AUG-2016 08:41:33 Eff. Geometry : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM25 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.571E+01	1.727E+00	5.843E-01
CD-109	1.824E+00	1.526E+00	1.295E+00
SN-126	1.166E-01	9.753E-02	8.267E-02
BA-137M	1.359E+00	1.336E-01	7.723E-02
CS-137	1.435E+00	1.412E-01	8.159E-02
TL-208	3.698E-01	1.100E-01	7.677E-02
PB-210	1.381E+00	9.991E-01	6.610E-01
PB-212	1.232E+00	1.284E-01	8.755E-02
BI-214	1.112E+00	2.062E-01	1.304E-01
PB-214	1.156E+00	2.041E-01	1.252E-01
RN-222	1.112E+00	2.062E-01	1.304E-01
RA-224	1.275E+00	1.761E+00	9.401E-01
RA-226	1.112E+00	2.062E-01	1.304E-01
AC-228	1.225E+00	3.396E-01	2.891E-01
RA-228	1.225E+00	3.396E-01	2.891E-01
TH-228	1.232E+00	1.284E-01	8.755E-02
TH-229	-3.296E-01	4.288E-01	7.339E-01
TH-230	1.112E+00	2.061E-01	1.303E-01
PA-231	1.441E+00	6.369E-01	6.375E-01
TH-232	1.225E+00	3.396E-01	2.891E-01
TH-234	6.556E-01	1.274E+00	8.056E-01
U-234	1.112E+00	2.061E-01	1.303E-01
U-235	4.637E-02	1.639E-01	3.117E-01
U-238	6.556E-01	1.274E+00	8.056E-01
AM-243	1.279E-01	5.995E-02	4.413E-02
ANH-511	1.099E-01	8.199E-02	5.541E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	2.661E+00	1.476E+01	2.592E+01	NOT IDENT.
NA-22	3.162E-02	5.806E-02	1.205E-01	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	6.255E-03	2.080E-02	5.709E-02	NOT IDENT.

SC-46	1.855E-01	4.335E-01	8.997E-01	FAIL ABUN
V-48	0.000E+00	1.611E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.361E+02	0.000E+00	SHORT HLIF
MN-54	1.633E-02	7.268E-02	1.465E-01	NOT IDENT.
CO-56	-5.956E-02	4.434E-01	8.743E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-2.905E-02	3.876E-02	6.981E-02	NOT IDENT.
CO-58	3.051E-02	4.858E-01	1.009E+00	NOT IDENT.
FE-59	1.751E+00	6.862E+00	1.432E+01	NOT IDENT.
CO-60	1.350E-02	4.504E-02	9.302E-02	NOT IDENT.
ZN-65	-1.109E-01	2.428E-01	3.679E-01	NOT IDENT.
GE-68	8.788E-01	2.899E+00	5.824E+00	NOT IDENT.
AS-73	1.073E+00	1.691E+00	3.508E+00	NOT IDENT.
AS-74	0.000E+00	6.245E+03	0.000E+00	SHORT HLIF
SE-75	-3.233E-02	1.893E-01	3.366E-01	NOT IDENT.
BR-77	0.000E+00	1.317E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	8.213E+02	0.000E+00	SHORT HLIF
RB-83	3.231E-01	6.745E-01	1.366E+00	NOT IDENT.
KR-85	4.405E+00	7.677E+00	1.539E+01	NOT IDENT.
SR-85	4.537E-01	7.946E-01	1.592E+00	NOT IDENT.
RB-86	0.000E+00	2.881E+04	0.000E+00	SHORT HLIF
Y-88	-1.335E-01	2.806E-01	5.170E-01	NOT IDENT.
Y-91	1.692E+02	5.887E+02	1.181E+03	NOT IDENT.
NB-94	7.792E-03	3.280E-02	6.358E-02	NOT IDENT.
NB-95	1.508E-01	1.069E+00	1.980E+00	NOT IDENT.
NB-95M	7.155E-01	2.422E+00	4.167E+00	NOT IDENT.
ZR-95	-6.851E-03	1.372E+00	2.599E+00	NOT IDENT.
NB-97	0.000E+00	1.852E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.355E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-2.969E-02	2.744E-02	4.788E-02	NOT IDENT.
RH-102	1.982E-02	5.620E-02	1.052E-01	NOT IDENT.
RU-103	-7.399E-01	6.537E+00	1.202E+01	FAIL ABUN
RH-106	4.417E-01	5.306E-01	1.087E+00	NOT IDENT.
RU-106	4.417E-01	5.306E-01	1.087E+00	NOT IDENT.
AG-108M	-1.515E-02	2.932E-02	5.325E-02	NOT IDENT.
AG-110M	-4.508E-02	1.170E-01	2.178E-01	NOT IDENT.
SN-113	1.091E-01	2.420E-01	4.872E-01	NOT IDENT.
CD-115	0.000E+00	1.862E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	7.590E+04	0.000E+00	SHORT HLIF
TE-123M	2.173E-02	1.111E-01	2.113E-01	NOT IDENT.
SB-124	5.418E-01	1.661E+00	4.176E+00	NOT IDENT.
SB-125	3.870E-02	1.256E-01	2.457E-01	FAIL ABUN
TE-125M	2.269E+02	2.014E+02	4.163E+02	NOT IDENT.
I-126	0.000E+00	9.701E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.109E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.618E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	8.383E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.480E+26	0.000E+00	SHORT HLIF
BA-133	-1.782E-02	5.633E-02	7.376E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	6.054E-02	8.065E-02	1.199E-01	FAIL ABUN
CS-135	3.691E-02	1.595E-01	2.701E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.272E+05	0.000E+00	SHORT HLIF
CE-139	-4.642E-02	9.727E-02	1.740E-01	NOT IDENT.
BA-140	0.000E+00	1.451E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.369E+05	0.000E+00	SHORT HLIF
CE-141	-5.909E+00	2.174E+01	3.970E+01	NOT IDENT.
CE-143	0.000E+00	5.509E+40	0.000E+00	SHORT HLIF
CE-144	-4.959E-02	2.739E-01	5.136E-01	NOT IDENT.
PM-144	-4.640E-03	5.639E-02	1.046E-01	NOT IDENT.
PR-144	-4.345E-01	4.889E+00	9.061E+00	NOT IDENT.
PM-146	-6.640E-02	4.803E-02	7.713E-02	NOT IDENT.
ND-147	0.000E+00	3.458E+07	0.000E+00	SHORT HLIF
PM-147	2.122E+02	6.514E+02	1.274E+03	NOT IDENT.
PM-149	0.000E+00	2.676E+40	0.000E+00	SHORT HLIF
EU-150	2.936E-03	2.949E-02	5.224E-02	FAIL ABUN
EU-152	-1.635E-02	1.027E-01	1.880E-01	FAIL ABUN
GD-153	-1.370E-02	1.225E-01	2.330E-01	NOT IDENT.
EU-154	7.697E-02	1.424E-01	2.954E-01	NOT IDENT.
EU-155	6.138E-02	7.207E-02	1.484E-01	FAIL ABUN
TB-160	-9.744E-01	1.701E+00	3.108E+00	FAIL ABUN
HO-166M	-2.264E-02	6.623E-02	1.166E-01	NOT IDENT.
TM-171	1.070E+00	3.740E+00	7.617E+00	NOT IDENT.
HF-172	-6.646E-02	1.776E-01	3.291E-01	FAIL ABUN

LU-172	1.140E-01	9.308E-02	2.091E-01	FAIL ABUN
LU-176	1.849E-02	2.267E-02	4.486E-02	FAIL ABUN
HF-181	4.208E+00	5.925E+00	9.140E+00	FAIL ABUN
TA-182	7.320E-02	9.871E-01	1.925E+00	FAIL ABUN
RE-183	8.592E-02	7.612E-01	1.540E+00	NOT IDENT.
RE-184	-2.544E+00	3.071E+01	6.019E+01	NOT IDENT.
W-188	-8.215E+00	1.243E+02	2.019E+02	FAIL ABUN
IR-192	-4.103E-01	4.411E-01	7.933E-01	FAIL ABUN
HG-203	-1.422E+00	2.615E+00	4.400E+00	NOT IDENT.
BI-207	-6.303E-03	4.881E-02	9.438E-02	FAIL ABUN
BI-211	0.000E+00	5.623E-01	8.326E-01	FAIL ABUN
PB-211	1.501E-01	7.320E-01	1.433E+00	NOT IDENT.
BI-212	0.000E+00	1.134E+00	1.475E+00	FAIL ABUN
RN-219	-3.899E-01	4.248E-01	7.423E-01	FAIL ABUN
RA-223	-5.684E-01	6.527E-01	1.117E+00	FAIL ABUN
AC-227	-1.566E-01	2.106E-01	3.488E-01	FAIL ABUN
TH-227	-1.566E-01	2.106E-01	3.488E-01	FAIL ABUN
TH-231	-5.684E-01	6.527E-01	1.117E+00	FAIL ABUN
PA-233	1.157E-02	6.159E-02	1.222E-01	FAIL ABUN
PA-234	5.117E-02	2.771E-01	5.682E-01	NOT IDENT.
PA-234M	-1.149E+00	4.204E+00	8.188E+00	NOT IDENT.
NP-237	1.157E-02	6.159E-02	1.222E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-3.652E-02	1.884E-01	3.558E-01	NOT IDENT.
PU-239	2.896E+01	2.737E+02	5.202E+02	NOT IDENT.
AM-241	1.940E-02	4.328E-02	8.364E-02	NOT IDENT.
CM-243	-1.326E-02	6.780E-02	1.296E-01	NOT IDENT.
BK-247	-1.995E-02	6.859E-02	1.199E-01	FAIL ABUN
CM-247	-2.568E-02	3.748E-02	6.723E-02	NOT IDENT.
CF-249	-3.489E-04	4.091E-02	7.876E-02	NOT IDENT.
CF-251	-8.440E-03	1.038E-01	1.910E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	339	10.66*	1.131E+00	1.571E+01	1.571E+01	11.22
CD-109	88.03	160	3.70*	9.275E+00	2.612E+00	4.087E+00	36.90
SN-126	64.28	41	9.60	9.538E+00	2.527E-01	2.527E-01	198.23
	86.94	160	8.90	9.275E+00	1.086E+00	1.086E+00	36.90
	87.57	160	37.00*	9.275E+00	2.612E-01	2.612E-01	36.90
BA-137M	661.66	484	89.90*	2.257E+00	1.333E+00	1.359E+00	10.04
CS-137	661.66	484	85.10*	2.257E+00	1.409E+00	1.435E+00	10.04
TL-208	277.37	-----	6.60	4.809E+00	-----	Line Not Found	-----
	583.19	141	85.00*	2.509E+00	3.698E-01	3.698E-01	30.35
	860.56	30	12.50	1.809E+00	7.369E-01	7.369E-01	72.92
PB-210	46.54	93	4.25*	9.109E+00	1.347E+00	1.381E+00	73.81
BI-211	72.87	-----	1.23	9.424E+00	-----	Line Not Found	-----
	351.06	286	12.92*	3.891E+00	3.183E+00	3.183E+00	18.02
PB-212	74.82	298	10.28	9.404E+00	1.722E+00	1.722E+00	21.50
	77.11	510	17.10	9.383E+00	1.775E+00	1.775E+00	13.12
	238.63	527	43.60*	5.476E+00	1.232E+00	1.232E+00	10.64
	300.09	62	3.30	4.485E+00	2.336E+00	2.336E+00	45.10
BI-214	609.32	219	45.49*	2.418E+00	1.112E+00	1.112E+00	18.92
	1120.29	24	14.92	1.443E+00	6.310E-01	6.312E-01	92.16
	1764.49	-----	15.30	9.336E-01	-----	Line Not Found	-----
PB-214	74.82	298	5.80	9.404E+00	3.051E+00	3.052E+00	21.50
	77.11	510	9.70	9.383E+00	3.130E+00	3.131E+00	13.12
	87.09	160	3.41	9.275E+00	2.835E+00	2.836E+00	36.90
	242.00	161	7.25	5.420E+00	2.291E+00	2.291E+00	42.80
	295.22	236	18.42	4.551E+00	1.570E+00	1.570E+00	17.08
	351.93	286	35.60*	3.891E+00	1.155E+00	1.156E+00	18.02
RN-222	609.32	219	45.49*	2.418E+00	1.112E+00	1.112E+00	18.92
	1120.29	24	14.92	1.443E+00	6.310E-01	6.312E-01	92.16
	1764.49	-----	15.30	9.336E-01	-----	Line Not Found	-----
RA-224	240.99	161	4.10*	5.420E+00	4.050E+00	4.050E+00	42.80
RA-226	609.32	219	45.49*	2.418E+00	1.112E+00	1.112E+00	18.92
	1120.29	24	14.92	1.443E+00	6.310E-01	6.312E-01	92.16
	1764.49	-----	15.30	9.336E-01	-----	Line Not Found	-----
AC-228	105.21	-----	1.10	8.977E+00	-----	Line Not Found	-----
	338.32	73	11.27	4.029E+00	9.021E-01	9.021E-01	61.06
	794.95	14	4.25	1.935E+00	9.264E-01	9.264E-01	135.94
	835.71	-----	1.61	1.856E+00	-----	Line Not Found	-----
	911.20	98	25.80*	1.724E+00	1.225E+00	1.225E+00	28.29
	968.97	45	15.80	1.637E+00	9.749E-01	9.749E-01	47.53
RA-228	105.21	-----	1.10	8.977E+00	-----	Line Not Found	-----
	338.32	73	11.27	4.029E+00	9.021E-01	9.021E-01	61.06
	794.95	14	4.25	1.935E+00	9.264E-01	9.264E-01	135.94
	835.71	-----	1.61	1.856E+00	-----	Line Not Found	-----
	911.20	98	25.80*	1.724E+00	1.225E+00	1.225E+00	28.29
	968.97	45	15.80	1.637E+00	9.749E-01	9.749E-01	47.53
TH-228	74.82	298	10.28	9.404E+00	1.722E+00	1.722E+00	21.50
	77.11	510	17.10	9.383E+00	1.775E+00	1.775E+00	13.12

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	238.63	527	43.60*	5.476E+00	1.232E+00	1.232E+00	10.64
	300.09	62	3.30	4.485E+00	2.336E+00	2.336E+00	45.10
TH-229	85.43	60	14.70	9.314E+00	2.437E-01	2.437E-01	97.55
	88.47	160	24.00	9.275E+00	4.027E-01	4.028E-01	36.90
	193.51	-----	4.41*	6.496E+00	-----	Line Not Found	-----
	210.85	46	2.80	6.103E+00	1.494E+00	1.494E+00	83.76
TH-230	609.32	219	45.49*	2.418E+00	1.112E+00	1.112E+00	18.92
	1120.29	24	14.92	1.443E+00	6.310E-01	6.310E-01	92.16
	1764.49	-----	15.30	9.336E-01	-----	Line Not Found	-----
PA-231	283.69	-----	1.70	4.715E+00	-----	Line Not Found	-----
	301.36	62	5.35*	4.485E+00	1.441E+00	1.441E+00	45.10
TH-232	105.21	-----	1.10	8.977E+00	-----	Line Not Found	-----
	338.32	73	11.27	4.029E+00	9.021E-01	9.021E-01	61.06
	835.71	-----	1.61	1.856E+00	-----	Line Not Found	-----
	911.20	98	25.80*	1.724E+00	1.225E+00	1.225E+00	28.29
	968.97	45	15.80	1.637E+00	9.749E-01	9.749E-01	47.53
TH-234	63.29	41	3.70*	9.538E+00	6.556E-01	6.556E-01	198.23
	92.59	168	4.23	9.199E+00	2.418E+00	2.418E+00	37.13
U-234	609.32	219	45.49*	2.418E+00	1.112E+00	1.112E+00	18.92
	1120.29	24	14.92	1.443E+00	6.310E-01	6.310E-01	92.16
	1764.49	-----	15.30	9.336E-01	-----	Line Not Found	-----
U-235	89.96	64	3.47	9.241E+00	1.118E+00	1.118E+00	75.64
	93.35	168	5.60	9.199E+00	1.827E+00	1.827E+00	37.13
	143.76	-----	10.96*	7.922E+00	-----	Line Not Found	-----
	163.33	-----	5.08	7.333E+00	-----	Line Not Found	-----
	185.72	131	57.20	6.691E+00	1.913E-01	1.913E-01	40.58
	205.31	-----	5.01	6.202E+00	-----	Line Not Found	-----
U-238	63.29	41	3.70*	9.538E+00	6.556E-01	6.556E-01	198.23
	92.59	168	4.23	9.199E+00	2.418E+00	2.418E+00	37.13
AM-243	43.53	-----	5.90	8.344E+00	-----	Line Not Found	-----
	74.66	298	67.20*	9.404E+00	2.634E-01	2.634E-01	21.50
ANH-511	511.00	55	100.00*	2.807E+00	1.099E-01	1.099E-01	76.13

Flag: "*" = Keyline

Total number of lines in spectrum 46
Number of unidentified lines 11
Number of lines tentatively identified by NID 35 76.09%

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	1.571E+01	1.571E+01	0.176E+01	11.22	
CD-109	461.40D	1.56	2.612E+00	4.087E+00	1.508E+00	36.90	
SN-126	2.30E+05Y	1.00	2.612E-01	2.612E-01	0.964E-01	36.90	
BA-137M	30.08Y	1.02	1.333E+00	1.359E+00	0.136E+00	10.04	
CS-137	30.08Y	1.02	1.409E+00	1.435E+00	0.144E+00	10.04	
TL-208	1.41E+10Y	1.00	3.698E-01	3.698E-01	1.122E-01	30.35	
PB-210	22.20Y	1.03	1.347E+00	1.381E+00	1.019E+00	73.81	
BI-211	7.04E+08Y	1.00	3.183E+00	3.183E+00	0.574E+00	18.02	
PB-212	1.41E+10Y	1.00	1.232E+00	1.232E+00	0.131E+00	10.64	
BI-214	1600.00Y	1.00	1.112E+00	1.112E+00	0.210E+00	18.92	
PB-214	1600.00Y	1.00	1.155E+00	1.156E+00	0.208E+00	18.02	
RN-222	1600.00Y	1.00	1.112E+00	1.112E+00	0.210E+00	18.92	
RA-224	1.41E+10Y	1.00	4.050E+00	4.050E+00	1.733E+00	42.80	
RA-226	1600.00Y	1.00	1.112E+00	1.112E+00	0.210E+00	18.92	
AC-228	1.41E+10Y	1.00	1.225E+00	1.225E+00	0.347E+00	28.29	
RA-228	1.41E+10Y	1.00	1.225E+00	1.225E+00	0.347E+00	28.29	
TH-228	1.41E+10Y	1.00	1.232E+00	1.232E+00	0.131E+00	10.64	
TH-229	7340.00Y	1.00	4.027E-01	4.028E-01	1.486E-01	36.90	K
TH-230	7.54E+04Y	1.00	1.112E+00	1.112E+00	0.210E+00	18.92	
PA-231	7.04E+08Y	1.00	1.441E+00	1.441E+00	0.650E+00	45.10	
TH-232	1.41E+10Y	1.00	1.225E+00	1.225E+00	0.347E+00	28.29	
TH-234	4.47E+09Y	1.00	6.556E-01	6.556E-01	13.00E-01	198.23	
U-234	2.45E+05Y	1.00	1.112E+00	1.112E+00	0.210E+00	18.92	
U-235	7.04E+08Y	1.00	1.913E-01	1.913E-01	0.776E-01	40.58	K
U-238	4.47E+09Y	1.00	6.556E-01	6.556E-01	13.00E-01	198.23	
AM-243	7370.00Y	1.00	2.634E-01	2.634E-01	0.566E-01	21.50	
ANH-511	1.00E+09Y	1.00	1.099E-01	1.099E-01	0.837E-01	76.13	
Total Activity :			4.685E+01	4.841E+01			

Grand Total Activity : 4.685E+01 4.841E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
6	188.01	30	56	0.74	375.48	367	11	7.42E-03	99.8	6.64E+00	
0	269.95	34	103	0.60	539.36	535	9	8.59E-03	****	4.92E+00	T
1	297.40	30	34	1.18	594.25	583	34	7.78E-03	97.6	4.52E+00	T
1	304.40	30	30	1.37	608.25	583	34	7.66E-03	91.2	4.43E+00	T
0	328.57	45	49	1.66	656.61	653	9	1.18E-02	65.0	4.14E+00	T
0	359.52	13	47	0.89	718.50	714	6	3.43E-03	****	3.82E+00	
0	365.92	23	57	3.16	731.31	725	10	6.01E-03	****	3.76E+00	T
0	463.66	58	84	2.90	926.81	917	18	1.55E-02	80.1	3.06E+00	T
0	481.50	14	29	0.66	962.48	958	7	3.67E-03	****	2.96E+00	T
0	628.56	16	20	1.65	1256.67	1250	10	4.44E-03	****	2.36E+00	
0	728.64	54	24	2.05	1456.89	1449	17	1.49E-02	53.2	2.08E+00	T
5	931.00	10	2	2.15	1861.77	1859	12	2.79E-03	69.3	1.69E+00	
5	934.05	14	3	1.37	1867.88	1859	12	3.87E-03	66.6	1.69E+00	
0	1087.13	12	2	1.60	2174.21	2168	10	3.33E-03	75.0	1.48E+00	T
0	1198.08	10	19	3.41	2396.26	2385	14	2.87E-03	****	1.36E+00	
0	1277.97	14	33	7.78	2556.16	2542	23	4.07E-03	****	1.28E+00	
0	1294.72	9	2	0.68	2589.68	2585	9	2.72E-03	84.4	1.27E+00	
0	1377.63	10	7	5.07	2755.63	2745	14	2.95E-03	****	1.20E+00	
0	1444.68	7	0	0.99	2889.86	2883	12	1.94E-03	75.6	1.14E+00	
0	1848.28	9	2	1.79	3697.89	3692	10	2.63E-03	90.3	8.88E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235009.CNF;1
* Acquisition date   : 3-OCT-2016 08:06:24 Sensitivity      : 3.000
* Detector ID        : GAM25 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.62 Half life ratio : *****
* Sample date        : 10-DEC-2015 10:30:00 Nuclide Library : SOLID
* Sample ID          : G405235009 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.3438E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 1-AUG-2016 08:41:33 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM25 CAN.CNF;15
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

----- Identified Nuclides -----

Nuclide	Lc (pCi/GRAM)
K-40	2.294E-01
CD-109	6.115E-01
SN-126	3.904E-02
BA-137M	3.477E-02
CS-137	3.673E-02
TL-208	3.479E-02
PB-210	3.094E-01
PB-212	4.052E-02
BI-214	5.822E-02
PB-214	5.700E-02
RN-222	5.822E-02
RA-224	4.351E-01
RA-226	5.822E-02
AC-228	1.274E-01
RA-228	1.274E-01
TH-228	4.052E-02
TH-229	3.397E-01
TH-230	5.820E-02
PA-231	2.863E-01
TH-232	1.274E-01
TH-234	3.803E-01
U-234	5.820E-02
U-235	1.468E-01
U-238	3.803E-01
AM-243	2.081E-02
ANH-511	2.497E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.176E+01	NOT IDENT.
NA-22	5.294E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.023E-02	NOT IDENT.
SC-46	3.990E-01	FAIL ABUN

V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	6.531E-02	NOT IDENT.
CO-56	3.768E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	3.261E-02	NOT IDENT.
CO-58	4.299E-01	NOT IDENT.
FE-59	6.209E+00	NOT IDENT.
CO-60	3.967E-02	NOT IDENT.
ZN-65	1.598E-01	NOT IDENT.
GE-68	2.574E+00	NOT IDENT.
AS-73	1.649E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.535E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.153E-01	NOT IDENT.
KR-85	7.026E+00	NOT IDENT.
SR-85	7.271E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.996E-01	NOT IDENT.
Y-91	5.172E+02	NOT IDENT.
NB-94	2.822E-02	NOT IDENT.
NB-95	8.934E-01	NOT IDENT.
NB-95M	1.941E+00	NOT IDENT.
ZR-95	1.124E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.231E-02	NOT IDENT.
RH-102	4.582E-02	NOT IDENT.
RU-103	5.446E+00	FAIL ABUN
RH-106	4.870E-01	NOT IDENT.
RU-106	4.870E-01	NOT IDENT.
AG-108M	2.399E-02	NOT IDENT.
AG-110M	9.534E-02	NOT IDENT.
SN-113	2.234E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	9.859E-02	NOT IDENT.
SB-124	1.586E+00	NOT IDENT.
SB-125	1.132E-01	FAIL ABUN
TE-125M	1.962E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.347E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.386E-02	FAIL ABUN
CS-135	1.252E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	8.096E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.867E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.390E-01	NOT IDENT.
PM-144	4.603E-02	NOT IDENT.
PR-144	3.985E+00	NOT IDENT.
PM-146	3.434E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	5.971E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.412E-02	FAIL ABUN
EU-152	8.634E-02	FAIL ABUN
GD-153	1.095E-01	NOT IDENT.
EU-154	1.297E-01	NOT IDENT.
EU-155	6.949E-02	FAIL ABUN
TB-160	1.306E+00	FAIL ABUN
HO-166M	5.164E-02	NOT IDENT.
TM-171	3.572E+00	NOT IDENT.
HF-172	1.534E-01	FAIL ABUN
LU-172	9.348E-02	FAIL ABUN

LU-176	2.055E-02	FAIL ABUN
HF-181	4.148E+00	FAIL ABUN
TA-182	8.349E-01	FAIL ABUN
RE-183	7.237E-01	NOT IDENT.
RE-184	2.616E+01	NOT IDENT.
W-188	9.289E+01	FAIL ABUN
IR-192	3.607E-01	FAIL ABUN
HG-203	2.033E+00	NOT IDENT.
BI-207	4.033E-02	FAIL ABUN
BI-211	4.011E-01	FAIL ABUN
PB-211	6.572E-01	NOT IDENT.
BI-212	6.826E-01	FAIL ABUN
RN-219	3.373E-01	FAIL ABUN
RA-223	5.120E-01	FAIL ABUN
AC-227	1.585E-01	FAIL ABUN
TH-227	1.585E-01	FAIL ABUN
TH-231	5.120E-01	FAIL ABUN
PA-233	5.648E-02	FAIL ABUN
PA-234	2.461E-01	NOT IDENT.
PA-234M	3.525E+00	NOT IDENT.
NP-237	5.648E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.665E-01	NOT IDENT.
PU-239	2.452E+02	NOT IDENT.
AM-241	3.951E-02	NOT IDENT.
CM-243	6.052E-02	NOT IDENT.
BK-247	5.478E-02	FAIL ABUN
CM-247	3.051E-02	NOT IDENT.
CF-249	3.610E-02	NOT IDENT.
CF-251	8.898E-02	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235009.CNF;1
* Acquisition date   : 3-OCT-2016 08:06:24 Sensitivity      : 3.000
* Detector ID        : GAM25 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.62 Half life ratio : *****
* Sample date        : 10-DEC-2015 10:30:00 Nuclide Library : SOLID
* Sample ID          : G405235009 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.3438E+02 GRAM
*                               Quantity Err(%) : 1.4883E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 1-AUG-2016 08:41:33 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM25 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.571E+01	1.912E+00	1.912E+00
CD-109	1.824E+00	1.559E+00	1.559E+00
SN-126	1.166E-01	9.943E-02	9.943E-02
BA-137M	1.359E+00	1.458E-01	1.458E-01
CS-137	1.435E+00	1.540E-01	1.540E-01
TL-208	3.698E-01	1.111E-01	1.111E-01
PB-210	1.381E+00	1.006E+00	1.006E+00
PB-212	1.232E+00	1.440E-01	1.440E-01
BI-214	1.112E+00	2.117E-01	2.117E-01
PB-214	1.156E+00	2.097E-01	2.097E-01
RN-222	1.112E+00	2.117E-01	2.117E-01
RA-224	1.275E+00	1.772E+00	1.772E+00
RA-226	1.112E+00	2.117E-01	2.117E-01
AC-228	1.225E+00	3.453E-01	3.453E-01
RA-228	1.225E+00	3.453E-01	3.453E-01
TH-228	1.232E+00	1.440E-01	1.440E-01
TH-229	-3.296E-01	4.291E-01	4.291E-01
TH-230	1.112E+00	2.116E-01	2.116E-01
PA-231	1.441E+00	7.072E-01	7.072E-01
TH-232	1.225E+00	3.453E-01	3.453E-01
TH-234	6.556E-01	1.282E+00	1.282E+00
U-234	1.112E+00	2.116E-01	2.116E-01
U-235	4.637E-02	1.639E-01	1.639E-01
U-238	6.556E-01	1.282E+00	1.282E+00
AM-243	1.279E-01	6.285E-02	6.285E-02
ANH-511	1.099E-01	8.211E-02	8.211E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	2.661E+00	1.476E+01	1.481E+01	NOT IDENT.
NA-22	3.162E-02	5.807E-02	5.980E-02	NOT IDENT.
NA-24	-1.000E+41	5.479E+41	0.000E+00	SHORT HLIF
AL-26	6.255E-03	2.081E-02	2.100E-02	NOT IDENT.

SC-46	1.855E-01	4.335E-01	4.415E-01	FAIL ABUN
V-48	-9.990E+02	1.611E+04	1.612E+04	SHORT HLIF
CR-51	3.589E+02	4.363E+02	4.654E+02	SHORT HLIF
MN-54	1.633E-02	7.269E-02	7.306E-02	NOT IDENT.
CO-56	-5.956E-02	4.434E-01	4.442E-01	NOT IDENT.
MN-56	-1.000E+41	8.191E+41	0.000E+00	SHORT HLIF
CO-57	-2.905E-02	3.878E-02	4.093E-02	NOT IDENT.
CO-58	3.051E-02	4.858E-01	4.860E-01	NOT IDENT.
FE-59	1.751E+00	6.864E+00	6.909E+00	NOT IDENT.
CO-60	1.350E-02	4.504E-02	4.545E-02	NOT IDENT.
ZN-65	-1.109E-01	2.429E-01	2.480E-01	NOT IDENT.
GE-68	8.788E-01	2.899E+00	2.926E+00	NOT IDENT.
AS-73	1.073E+00	1.706E+00	1.773E+00	NOT IDENT.
AS-74	4.227E+03	6.254E+03	6.538E+03	SHORT HLIF
SE-75	-3.233E-02	1.893E-01	1.899E-01	NOT IDENT.
BR-77	1.263E+38	1.086E+39	0.000E+00	SHORT HLIF
SR-82	-3.719E+02	8.215E+02	8.384E+02	SHORT HLIF
RB-83	3.231E-01	6.759E-01	6.915E-01	NOT IDENT.
KR-85	4.405E+00	7.679E+00	7.932E+00	NOT IDENT.
SR-85	4.537E-01	7.948E-01	8.207E-01	NOT IDENT.
RB-86	2.143E+04	2.883E+04	3.040E+04	SHORT HLIF
Y-88	-1.335E-01	2.808E-01	2.871E-01	NOT IDENT.
Y-91	1.692E+02	5.887E+02	5.936E+02	NOT IDENT.
NB-94	7.792E-03	3.280E-02	3.298E-02	NOT IDENT.
NB-95	1.508E-01	1.069E+00	1.071E+00	NOT IDENT.
NB-95M	7.155E-01	2.423E+00	2.444E+00	NOT IDENT.
ZR-95	-6.851E-03	1.372E+00	1.372E+00	NOT IDENT.
NB-97	-1.000E+41	1.852E+41	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	1.019E+43	0.000E+00	SHORT HLIF
MO-99	-4.374E+31	1.356E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.210E+42	0.000E+00	SHORT HLIF
RH-101	-2.969E-02	2.796E-02	3.100E-02	NOT IDENT.
RH-102	1.982E-02	5.623E-02	5.693E-02	NOT IDENT.
RU-103	-7.399E-01	6.537E+00	6.546E+00	FAIL ABUN
RH-106	4.417E-01	5.313E-01	5.674E-01	NOT IDENT.
RU-106	4.417E-01	5.313E-01	5.674E-01	NOT IDENT.
AG-108M	-1.515E-02	2.932E-02	3.011E-02	NOT IDENT.
AG-110M	-4.508E-02	1.171E-01	1.188E-01	NOT IDENT.
SN-113	1.091E-01	2.420E-01	2.470E-01	NOT IDENT.
CD-115	3.038E+38	1.862E+39	0.000E+00	SHORT HLIF
SN-117M	2.652E+04	7.597E+04	7.690E+04	SHORT HLIF
TE-123M	2.173E-02	1.111E-01	1.115E-01	NOT IDENT.
SB-124	5.418E-01	1.662E+00	1.679E+00	NOT IDENT.
SB-125	3.870E-02	1.256E-01	1.268E-01	FAIL ABUN
TE-125M	2.269E+02	2.018E+02	2.263E+02	NOT IDENT.
I-126	8.903E+05	9.775E+05	1.057E+06	SHORT HLIF
SB-126	4.828E+05	1.112E+06	1.134E+06	SHORT HLIF
SB-127	8.216E+21	1.969E+22	0.000E+00	SHORT HLIF
I-131	6.167E+09	8.388E+09	8.837E+09	SHORT HLIF
I-132	-1.000E+41	1.858E+42	0.000E+00	SHORT HLIF
TE-132	2.070E+26	2.617E+26	0.000E+00	SHORT HLIF
BA-133	-1.782E-02	5.634E-02	5.691E-02	NOT IDENT.
I-133	-1.000E+41	9.416E+41	0.000E+00	SHORT HLIF
CS-134	6.054E-02	8.069E-02	8.518E-02	FAIL ABUN
CS-135	3.691E-02	1.595E-01	1.604E-01	NOT IDENT.
I-135	-1.000E+41	1.271E+43	0.000E+00	SHORT HLIF
CS-136	3.652E+03	3.272E+05	3.272E+05	SHORT HLIF
CE-139	-4.642E-02	9.772E-02	9.994E-02	NOT IDENT.
BA-140	8.721E+05	1.452E+06	1.504E+06	SHORT HLIF
LA-140	-1.823E+05	4.370E+05	4.446E+05	SHORT HLIF
CE-141	-5.909E+00	2.174E+01	2.190E+01	NOT IDENT.
CE-143	1.000E+41	5.601E+40	0.000E+00	SHORT HLIF
CE-144	-4.959E-02	2.739E-01	2.748E-01	NOT IDENT.
PM-144	-4.640E-03	5.639E-02	5.643E-02	NOT IDENT.
PR-144	-4.345E-01	4.889E+00	4.893E+00	NOT IDENT.
PM-146	-6.640E-02	4.827E-02	5.680E-02	NOT IDENT.
ND-147	-1.046E+07	3.458E+07	3.490E+07	SHORT HLIF
PM-147	2.122E+02	6.515E+02	6.585E+02	NOT IDENT.
PM-149	1.439E+40	2.694E+40	0.000E+00	SHORT HLIF
EU-150	2.936E-03	2.949E-02	2.952E-02	FAIL ABUN
EU-152	-1.635E-02	1.028E-01	1.030E-01	FAIL ABUN
GD-153	-1.370E-02	1.225E-01	1.227E-01	NOT IDENT.
EU-154	7.697E-02	1.424E-01	1.466E-01	NOT IDENT.
EU-155	6.138E-02	7.220E-02	7.732E-02	FAIL ABUN
TB-160	-9.744E-01	1.702E+00	1.758E+00	FAIL ABUN
HO-166M	-2.264E-02	6.624E-02	6.702E-02	NOT IDENT.
TM-171	1.070E+00	3.741E+00	3.772E+00	NOT IDENT.
HF-172	-6.646E-02	1.779E-01	1.804E-01	FAIL ABUN

LU-172	1.140E-01	9.379E-02	1.069E-01	FAIL ABUN
LU-176	1.849E-02	2.268E-02	2.416E-02	FAIL ABUN
HF-181	4.208E+00	5.928E+00	6.224E+00	FAIL ABUN
TA-182	7.320E-02	9.871E-01	9.877E-01	FAIL ABUN
RE-183	8.592E-02	7.614E-01	7.623E-01	NOT IDENT.
RE-184	-2.544E+00	3.071E+01	3.073E+01	NOT IDENT.
W-188	-8.215E+00	1.243E+02	1.244E+02	FAIL ABUN
IR-192	-4.103E-01	4.415E-01	4.787E-01	FAIL ABUN
HG-203	-1.422E+00	2.616E+00	2.693E+00	NOT IDENT.
BI-207	-6.303E-03	4.881E-02	4.889E-02	FAIL ABUN
BI-211	3.183E+00	5.799E-01	1.548E+00	FAIL ABUN
PB-211	1.501E-01	7.320E-01	7.352E-01	NOT IDENT.
BI-212	2.176E+00	1.140E+00	1.504E+00	FAIL ABUN
RN-219	-3.899E-01	4.276E-01	4.623E-01	FAIL ABUN
RA-223	-5.684E-01	6.536E-01	7.021E-01	FAIL ABUN
AC-227	-1.566E-01	2.116E-01	2.231E-01	FAIL ABUN
TH-227	-1.566E-01	2.116E-01	2.231E-01	FAIL ABUN
TH-231	-5.684E-01	6.536E-01	7.021E-01	FAIL ABUN
PA-233	1.157E-02	6.159E-02	6.181E-02	FAIL ABUN
PA-234	5.117E-02	2.832E-01	2.842E-01	NOT IDENT.
PA-234M	-1.149E+00	4.204E+00	4.236E+00	NOT IDENT.
NP-237	1.157E-02	6.159E-02	6.181E-02	FAIL ABUN
NP-238	-1.000E+41	2.176E+41	0.000E+00	SHORT HLIF
NP-239	-3.652E-02	1.884E-01	1.892E-01	NOT IDENT.
PU-239	2.896E+01	2.737E+02	2.740E+02	NOT IDENT.
AM-241	1.940E-02	4.331E-02	4.418E-02	NOT IDENT.
CM-243	-1.326E-02	6.781E-02	6.808E-02	NOT IDENT.
BK-247	-1.995E-02	6.871E-02	6.930E-02	FAIL ABUN
CM-247	-2.568E-02	3.773E-02	3.947E-02	NOT IDENT.
CF-249	-3.489E-04	4.091E-02	4.091E-02	NOT IDENT.
CF-251	-8.440E-03	1.038E-01	1.039E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	73.4783	87.09	95.5220	136.47	69.6050
45.60	71.3332	87.57	95.6613	140.51	0.0000
46.54	71.6618	88.03	95.7946	143.76	70.6794
49.72	0.0000	88.34	68.4888	144.24	72.7150
51.35	79.2780	88.47	68.5156	145.44	79.7888
51.87	76.4654	89.96	100.9381	152.43	78.9144
52.39	66.8749	1093.63	101.1413	153.25	0.0000
52.97	68.5541	91.11	0.0000	323.87	69.1664
53.44	64.9216	92.59	101.7205	156.02	0.0000
54.07	71.1566	93.35	101.9443	158.56	0.0000
57.36	0.0000	94.56	66.2623	159.00	60.7004
57.53	80.6626	94.65	69.7675	162.33	64.1372
57.98	74.6553	94.67	69.7717	162.66	0.0000
59.27	99.0366	94.87	69.8114	163.33	56.0969
59.32	80.4835	97.43	79.1071	165.86	70.7056
59.54	80.5557	98.43	79.3275	176.31	61.6009
60.96	99.7124	98.44	79.3295	176.60	0.0000
61.17	99.7959	99.53	71.6116	177.52	63.8231
62.93	94.9933	100.11	80.5803	181.07	0.0000
63.29	95.1262	102.03	63.1992	181.52	71.6389
63.58	95.2328	103.18	71.4301	184.41	88.9302
64.28	95.4895	103.37	71.4667	143.76	74.2714
66.73	88.1461	105.21	54.7595	193.51	68.7832
67.24	91.5053	105.31	54.7740	197.03	60.5271
125.81	89.5226	106.12	72.8871	198.01	62.7861
67.75	87.9466	106.47	74.7552	201.83	72.9674
69.67	115.9398	109.28	62.5981	203.43	76.4258
70.83	87.3166	111.00	91.1186	205.31	81.0290
72.81	115.0662	111.76	0.0000	210.85	63.3120
72.87	114.0042	114.06	91.8175	215.65	55.6122
74.66	91.7690	116.30	0.0000	222.11	48.2818
74.82	91.8186	116.74	75.7864	227.09	66.7216
74.97	91.8656	119.76	64.2358	227.38	64.4868
77.11	92.5321	121.12	67.2446	228.16	0.0000
78.74	76.4198	121.22	67.2605	228.18	45.3052
79.69	102.2104	121.78	83.2508	116.74	45.3052
80.12	102.3536	122.06	85.1778	235.69	54.9397
80.19	0.0000	122.92	64.7154	235.96	54.9602
80.57	90.2466	123.07	62.8616	238.63	51.7140
81.00	92.0454	265.00	65.7692	238.98	0.0000
81.07	92.0664	125.81	71.7579	240.99	51.8802
81.75	86.1159	127.23	88.0922	242.00	51.9509
83.79	102.4324	127.91	87.2800	244.70	49.4362
84.00	102.5000	129.30	87.5527	252.40	0.0000
85.43	101.8259	131.20	80.2791	252.80	38.6467
86.55	95.3647	133.02	89.2366	254.15	0.0000
86.79	95.4340	133.52	64.3593	256.23	47.0526
86.94	95.4784	136.00	62.7744	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	39.2358	355.39	0.0000	584.27	31.4380
264.80	35.6754	356.01	39.4482	595.83	0.0000
265.00	42.8214	364.49	0.0000	427.87	24.3523
268.22	49.3621	366.42	0.0000	602.52	0.0000
269.46	52.6273	372.51	29.3900	604.72	19.1067
270.03	52.6649	375.05	38.3870	607.14	35.0813
271.23	62.3324	377.52	38.4753	609.32	23.4198
273.65	0.0000	356.01	38.7010	610.33	23.4341
276.40	50.6633	388.16	40.6604	614.28	14.4146
277.37	42.2685	388.63	0.0000	618.01	23.5442
277.60	42.2803	391.69	33.5388	620.36	24.6490
278.00	45.9263	264.66	43.8584	621.93	14.1598
279.20	58.0957	401.81	49.3912	630.19	0.0000
279.54	61.7516	402.40	43.9258	631.29	11.3271
279.70	61.7640	404.85	37.6009	633.25	18.3606
280.46	55.7593	410.95	40.5670	634.78	0.0000
283.69	55.9741	413.71	35.1186	635.95	12.9810
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	47.5527	423.72	0.0000	645.85	19.5850
285.90	0.0000	427.09	48.6051	657.76	23.0081
287.50	63.5591	427.87	40.2189	657.90	0.0000
290.67	45.8008	433.94	35.7216	661.66	27.4516
293.27	0.0000	439.40	31.1604	664.57	0.0000
351.93	25.8982	453.88	43.9448	666.33	0.0000
295.96	25.9200	463.37	35.6119	666.50	0.0000
879.38	25.9975	468.07	30.4291	667.71	0.0000
299.98	26.0385	473.00	0.0000	677.62	19.9446
300.09	26.0417	475.06	27.1939	685.70	0.0000
300.13	26.0430	476.78	32.0916	695.00	0.0000
301.36	26.0789	477.60	29.1925	696.49	19.0337
302.85	26.1225	482.18	33.6879	696.51	19.0344
256.23	26.1705	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	15.6822
306.78	26.2372	497.08	31.5951	697.49	15.6833
308.46	37.5513	505.52	28.3127	702.65	17.9746
311.90	46.0694	507.63	0.0000	706.68	21.3912
316.51	49.6672	511.00	27.9259	711.68	24.8359
319.41	0.0000	514.00	27.9852	720.70	0.0000
320.08	0.0000	514.00	27.9863	721.93	0.0000
321.04	42.2963	520.40	21.0846	722.78	23.8472
323.87	54.9809	520.69	0.0000	722.91	23.8489
325.23	42.0597	522.65	0.0000	723.31	18.7424
328.76	0.0000	527.90	0.0000	724.19	25.5698
333.37	50.1306	528.26	28.2689	727.33	13.6597
333.97	46.3030	529.59	27.2834	733.00	13.7007
334.37	43.7482	529.87	0.0000	735.93	13.7212
338.28	44.7859	531.02	0.0000	333.97	19.4543
338.32	44.7869	537.26	0.0000	739.50	0.0000
311.90	42.7274	546.56	0.0000	747.24	23.0029
340.48	42.7274	552.55	22.5819	748.06	20.7114
340.55	0.0000	563.25	22.7430	752.31	19.6037
344.28	45.7521	569.33	29.0618	753.82	0.0000
345.93	45.1329	946.00	21.7981	756.73	13.8691
351.06	34.8950	569.70	23.8778	756.80	13.8696
351.93	34.9251	583.19	31.4172	884.68	24.3599

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	26.7042	1274.44	10.6156	1620.50	2.8216
766.42	25.5512	1001.03	12.5695	1621.92	3.7635
766.84	29.0415	1002.74	9.6753	1678.03	0.0000
772.60	0.0000	1004.73	14.5244	1690.97	1.9146
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	1.9488
778.90	22.7889	1028.54	0.0000	1063.66	16.5883
783.70	0.0000	1037.84	11.7700	1771.35	6.8322
785.37	14.0688	1038.76	0.0000	1791.20	0.0000
792.07	12.7037	631.29	14.7620	1808.65	0.9846
794.95	16.9617	1048.07	0.0000	1810.72	0.0000
795.86	14.1411	1049.04	13.7906	1836.06	6.9354
810.06	14.2383	1050.41	14.7830		
810.29	12.4598	1063.66	12.8762		
344.28	12.4611	1077.00	0.0000		
810.76	10.6824	1077.34	15.9287		
815.77	0.0000	1085.87	4.9936		
1048.07	0.0000	1093.63	10.0153		
832.01	18.8826	1099.45	9.0330		
834.85	19.8079	1112.07	10.0830		
835.71	19.8160	1112.84	16.1367		
836.80	0.0000	1115.54	20.9980		
846.75	0.0000	1120.29	17.1909		
846.77	14.4854	1120.55	17.1930		
856.80	0.0000	1221.41	17.8041		
860.56	15.4882	1129.67	16.2344		
871.09	13.7311	1131.51	0.0000		
873.19	11.9114	1147.95	0.0000		
875.33	0.0000	1173.23	11.3323		
879.38	14.7007	1177.95	16.5098		
880.51	10.1118	1189.05	17.9533		
883.24	15.6465	1204.77	13.5364		
884.68	21.1821	1221.41	13.6118		
889.28	15.6880	1231.02	24.1595		
894.76	13.8757	1235.36	0.0000		
898.04	10.1903	1238.28	20.0054		
900.72	15.7668	1260.41	0.0000		
903.28	15.7845	1271.87	8.5151		
911.20	18.6334	1274.44	11.7177		
912.08	18.6407	1274.54	11.7184		
923.98	0.0000	1291.59	10.2820		
926.50	15.0049	1298.22	0.0000		
929.11	10.5150	1312.11	0.0000		
937.49	9.0448	1332.49	8.6777		
944.13	0.0000	1362.66	0.0000		
946.00	12.2918	1365.19	6.5731		
949.00	16.0937	1368.63	0.0000		
667.71	0.0000	1384.29	8.8140		
962.31	23.7976	1408.01	4.4377		
964.08	15.2417	1457.56	0.0000		
966.17	9.1529	1460.82	4.5054		
911.20	18.1355	1489.16	1.8164		
968.97	18.1355	1505.03	7.2977		
983.53	0.0000	1584.12	15.8387		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:09:40.98

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235010.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM28.CNF;265
Background date    : 2-OCT-2016 11:01:35.
Sample date       : 10-DEC-2015 10:35:00 Acquisition date : 3-OCT-2016 08:06:48.
Sample ID        : G405235010 Sample quantity   : 1.41695E+02 GRAM
Detector name    : GAM28 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.44 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 3.00000
Batch ID        : 1596247 Detector SN#       :
Matrix Spike ID  : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	74.87*	115	142	1.22	149.82	145	15	3.21E-02	20.5	2.90E+00
2	1	77.34	233	145	1.23	154.78	145	15	6.47E-02	11.1	
3	0	88.10	29	281	1.27	176.31	169	10	7.99E-03	111.2	
4	7	90.12	71	89	1.17	180.35	178	12	1.98E-02	22.9	1.05E+00
5	7	92.81*	86	163	1.45	185.73	178	12	2.39E-02	31.4	
6	0	186.51*	91	164	1.65	373.28	368	12	2.51E-02	31.2	
7	0	209.46	55	98	2.05	419.22	415	9	1.53E-02	35.2	
8	3	238.84*	415	101	1.41	478.01	473	16	1.15E-01	6.5	2.08E+00
9	3	241.88	91	87	1.80	484.11	473	16	2.52E-02	23.8	
10	0	270.52	68	98	1.57	541.41	534	14	1.88E-02	33.4	
11	0	281.98	26	149	3.65	564.35	552	17	7.25E-03	110.1	
12	0	295.46	172	108	1.52	591.33	584	14	4.77E-02	15.0	
13	0	328.59	25	46	1.14	657.65	654	7	6.97E-03	48.9	
14	0	338.71	102	61	1.70	677.90	672	11	2.82E-02	17.9	
15	0	352.30*	263	80	1.49	705.10	698	14	7.32E-02	9.6	
16	0	381.75	10	34	0.78	764.04	759	7	2.68E-03	106.2	
17	1	415.85	24	11	1.67	832.30	829	13	6.54E-03	31.0	1.76E+00
18	1	418.05	23	25	1.67	836.70	829	13	6.48E-03	46.0	
19	0	498.95	10	12	1.39	998.62	994	7	2.86E-03	64.0	
20	0	511.08*	39	53	1.24	1022.90	1016	14	1.08E-02	50.2	
21	0	537.63*	33	67	7.89	1076.05	1063	23	9.11E-03	68.2	
22	0	583.55*	167	20	1.75	1167.95	1160	16	4.65E-02	9.9	
23	0	609.92*	157	47	1.67	1220.72	1215	12	4.36E-02	12.0	
24	0	662.07*	109	35	1.71	1325.10	1318	13	3.04E-02	15.1	
25	0	690.92	10	32	0.91	1382.84	1371	13	2.82E-03	119.5	
26	0	728.43	39	58	1.37	1457.91	1450	16	1.09E-02	45.6	
27	0	777.17	22	18	1.40	1555.47	1549	14	6.12E-03	45.6	
28	0	862.69	35	26	1.64	1726.64	1718	18	9.81E-03	38.3	
29	0	880.77	17	9	0.82	1762.82	1756	12	4.72E-03	42.8	
30	0	889.35	7	15	0.72	1780.00	1771	10	1.94E-03	110.2	
31	0	911.66*	98	12	2.04	1824.66	1819	12	2.73E-02	12.5	
32	0	925.88	12	15	5.21	1853.11	1843	16	3.23E-03	82.0	
33	0	957.60	8	29	4.25	1916.61	1903	15	2.29E-03	148.6	
34	7	965.52	23	16	2.53	1932.45	1928	18	6.35E-03	39.3	2.09E+00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	7	969.75	30	25	2.06	1940.92	1928	18	8.40E-03	36.3	
36	0	1120.99*	47	6	2.03	2243.64	2237	11	1.30E-02	18.1	
37	0	1227.79	6	16	3.42	2457.39	2446	13	1.67E-03	143.6	
38	0	1331.39	15	0	1.06	2664.73	2659	12	4.17E-03	25.8	
39	0	1362.03	9	7	2.99	2726.06	2721	11	2.57E-03	60.3	
40	0	1461.82*	402	15	2.22	2925.80	2918	15	1.12E-01	5.4	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235010.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 10-DEC-2015 10:35:00 Acquisition date : 3-OCT-2016 08:06:48
Sample ID        : G405235010 Sample quantity : 141.70 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA28 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.44 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type  : Linear Efficiencies at : Peak Energy
Abundance limit  : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.237E+00	1.548E+01	1.548E+01	10.88	OK
SC-46	889.28	99.98*	1.841E+00	2.023E-02	2.379E-01	220.39	OK
	1120.55	99.99	1.539E+00	1.584E-01	1.862E+00	36.29	OK
BA-137M	661.66	89.90*	2.305E+00	2.882E-01	2.937E-01	30.20	OK
CS-137	661.66	85.10*	2.305E+00	3.045E-01	3.103E-01	30.20	OK
TL-208	277.37	6.60	4.566E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.540E+00	4.280E-01	4.280E-01	19.83	OK
	860.56	12.50	1.888E+00	----- Line	Not Found	-----	Absent
PB-212	74.82	10.28	4.348E+00	9.762E-01	9.762E-01	73.52	OK
	77.11	17.10	4.595E+00	1.922E+00	1.922E+00	22.12	OK
	238.63	43.60*	5.102E+00	1.110E+00	1.110E+00	13.00	OK
	300.09	3.30	4.295E+00	----- Line	Not Found	-----	Absent
BI-214	609.32	45.49*	2.455E+00	7.735E-01	7.738E-01	24.04	OK
	1120.29	14.92	1.539E+00	1.061E+00	1.062E+00	36.29	OK
	1764.49	15.30	1.045E+00	----- Line	Not Found	-----	Absent
PB-214	74.82	5.80	4.343E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	4.595E+00	3.388E+00	3.389E+00	22.12	OK
	87.09	3.41	5.480E+00	9.889E-01	9.893E-01	222.31	OK
	242.00	7.25	5.054E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.348E+00	1.253E+00	1.253E+00	29.93	OK
	351.93	35.60*	3.782E+00	1.127E+00	1.128E+00	19.25	OK
RN-222	609.32	45.49*	2.455E+00	7.735E-01	7.738E-01	24.04	OK
	1120.29	14.92	1.539E+00	1.061E+00	1.062E+00	36.29	OK
	1764.49	15.30	1.045E+00	----- Line	Not Found	-----	Absent
RA-224	240.99	4.10*	5.056E+00	3.884E-01	3.884E-01	361.47	OK
RA-226	609.32	45.49*	2.455E+00	7.735E-01	7.738E-01	24.04	OK
	1120.29	14.92	1.539E+00	1.061E+00	1.062E+00	36.29	OK
	1764.49	15.30	1.045E+00	----- Line	Not Found	-----	Absent
AC-228	105.21	1.10	6.315E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.903E+00	1.334E+00	1.334E+00	35.71	OK
	794.95	4.25	2.005E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.930E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.806E+00	1.118E+00	1.118E+00	25.05	OK
	968.97	15.80	1.723E+00	5.862E-01	5.862E-01	72.56	OK
RA-228	105.21	1.10	6.315E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.903E+00	1.334E+00	1.334E+00	35.71	OK
	794.95	4.25	2.005E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.930E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.806E+00	1.118E+00	1.118E+00	25.05	OK
	968.97	15.80	1.723E+00	5.862E-01	5.862E-01	72.56	OK
TH-228	74.82	10.28	4.348E+00	9.762E-01	9.762E-01	73.52	OK
	77.11	17.10	4.595E+00	1.922E+00	1.922E+00	22.12	OK
	238.63	43.60*	5.102E+00	1.110E+00	1.110E+00	13.00	OK
	300.09	3.30	4.295E+00	----- Line	Not Found	-----	Absent
TH-230	609.32	45.49*	2.455E+00	7.735E-01	7.735E-01	24.04	OK
	1120.29	14.92	1.539E+00	1.061E+00	1.061E+00	36.29	OK
	1764.49	15.30	1.045E+00	----- Line	Not Found	-----	Absent
TH-232	105.21	1.10	6.315E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.903E+00	1.334E+00	1.334E+00	35.71	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	835.71	1.61	1.930E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.806E+00	1.118E+00	1.118E+00	25.05	OK
	968.97	15.80	1.723E+00	5.862E-01	5.862E-01	72.56	OK
U-234	609.32	45.49*	2.455E+00	7.735E-01	7.735E-01	24.04	OK
	1120.29	14.92	1.539E+00	1.061E+00	1.061E+00	36.29	OK
	1764.49	15.30	1.045E+00	----- Line	Not Found	-----	Absent
U-235	89.96	3.47	5.613E+00	2.346E+00	2.346E+00	45.73	OK
	93.35	5.60	5.774E+00	1.699E+00	1.699E+00	62.79	OK
	143.76	10.96*	6.593E+00	----- Line	Not Found	-----	Absent
	163.33	5.08	6.352E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	5.972E+00	1.607E-01	1.607E-01	62.42	OK
	205.31	5.01	5.647E+00	----- Line	Not Found	-----	Absent
AM-243	43.53	5.90	4.883E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	4.348E+00	1.493E-01	1.493E-01	73.52	OK
ANH-511	511.00	100.00*	2.815E+00	7.735E-02	7.735E-02	100.37	OK

Flag: "*" = Keyline

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235010.CNF;1
* Acquisition date   : 3-OCT-2016 08:06:48 Sensitivity      : 3.000
* Detector ID        : GAM28 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.44 Half life ratio : *****
* Sample date        : 10-DEC-2015 10:35:00 Analyst initials: MXR1
* Sample ID          : G405235010 Sample Quantity : 1.4170E+02 GRAM
* Batch Number       : 1596247 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library     : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 1-AUG-2016 10:02:35 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM28 CAN.CNF;10
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.548E+01	1.651E+00	7.790E-01
SC-46	2.379E-01	5.138E-01	5.677E-01
BA-137M	2.937E-01	8.693E-02	6.608E-02
CS-137	3.103E-01	9.183E-02	6.981E-02
TL-208	4.280E-01	8.316E-02	5.872E-02
PB-212	1.110E+00	1.414E-01	9.957E-02
BI-214	7.738E-01	1.823E-01	1.343E-01
PB-214	1.128E+00	2.127E-01	1.199E-01
RN-222	7.738E-01	1.823E-01	1.343E-01
RA-224	3.884E-01	1.376E+00	1.067E+00
RA-226	7.738E-01	1.823E-01	1.343E-01
AC-228	1.118E+00	2.745E-01	1.944E-01
RA-228	1.118E+00	2.745E-01	1.944E-01
TH-228	1.110E+00	1.414E-01	9.957E-02
TH-230	7.735E-01	1.822E-01	1.343E-01
TH-232	1.118E+00	2.745E-01	1.944E-01
U-234	7.735E-01	1.822E-01	1.343E-01
U-235	5.665E-02	2.136E-01	3.889E-01
AM-243	1.493E-01	1.076E-01	1.007E-01
ANH-511	7.735E-02	7.608E-02	5.153E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	1.688E+00	1.184E+01	2.292E+01	NOT IDENT.
NA-22	2.246E-02	4.683E-02	9.887E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	-2.222E-02	2.865E-02	4.911E-02	NOT IDENT.
V-48	0.000E+00	1.431E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.367E+02	0.000E+00	SHORT HLIF
MN-54	5.688E-03	6.780E-02	1.345E-01	NOT IDENT.
CO-56	8.791E-02	4.665E-01	9.481E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	1.294E-02	5.206E-02	9.583E-02	NOT IDENT.

CO-58	-2.229E-01	6.006E-01	1.133E+00	NOT IDENT.
FE-59	-4.196E+00	7.282E+00	1.292E+01	NOT IDENT.
CO-60	6.396E-02	3.237E-02	8.164E-02	FAIL ABUN
ZN-65	5.230E-02	2.045E-01	3.667E-01	NOT IDENT.
GE-68	-4.752E-01	2.518E+00	4.891E+00	NOT IDENT.
AS-73	2.390E+00	9.590E+00	1.832E+01	NOT IDENT.
AS-74	0.000E+00	6.002E+03	0.000E+00	SHORT HLIF
SE-75	-8.366E-02	2.154E-01	3.575E-01	NOT IDENT.
BR-77	0.000E+00	1.448E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	1.191E+03	0.000E+00	SHORT HLIF
RB-83	-3.177E-02	6.447E-01	1.215E+00	NOT IDENT.
KR-85	8.201E+00	8.453E+00	1.599E+01	NOT IDENT.
SR-85	8.474E-01	8.751E-01	1.655E+00	NOT IDENT.
RB-86	0.000E+00	2.899E+04	0.000E+00	SHORT HLIF
Y-88	4.586E-02	2.072E-01	4.784E-01	NOT IDENT.
Y-91	-3.295E+01	5.892E+02	1.118E+03	NOT IDENT.
NB-94	2.235E-02	3.464E-02	6.927E-02	NOT IDENT.
NB-95	-2.932E-01	8.910E-01	1.686E+00	NOT IDENT.
NB-95M	2.382E+00	2.519E+00	4.765E+00	NOT IDENT.
ZR-95	1.093E+00	1.411E+00	3.071E+00	NOT IDENT.
NB-97	0.000E+00	1.511E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	8.353E+40	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.083E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-2.385E-02	3.724E-02	6.332E-02	NOT IDENT.
RH-102	-4.469E-02	6.196E-02	1.034E-01	NOT IDENT.
RU-103	3.193E+00	4.627E+00	9.254E+00	FAIL ABUN
RH-106	-4.160E-01	5.095E-01	8.365E-01	NOT IDENT.
RU-106	-4.160E-01	5.095E-01	8.365E-01	NOT IDENT.
AG-108M	6.887E-03	2.765E-02	5.420E-02	NOT IDENT.
CD-109	1.426E+00	3.106E+00	2.659E+00	FAIL ABUN
AG-110M	7.324E-03	1.277E-01	1.711E-01	NOT IDENT.
SN-113	-1.797E-01	2.263E-01	3.929E-01	NOT IDENT.
CD-115	0.000E+00	1.853E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.019E+05	0.000E+00	SHORT HLIF
TE-123M	3.932E-02	1.466E-01	2.659E-01	NOT IDENT.
SB-124	2.091E-01	1.723E+00	3.804E+00	NOT IDENT.
SB-125	7.877E-02	1.031E-01	2.129E-01	NOT IDENT.
TE-125M	4.114E+01	2.824E+02	5.199E+02	NOT IDENT.
I-126	0.000E+00	8.109E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	8.774E+05	0.000E+00	SHORT HLIF
SN-126	9.114E-02	1.986E-01	1.810E-01	FAIL ABUN
SB-127	0.000E+00	1.793E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.261E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.678E+26	0.000E+00	SHORT HLIF
BA-133	-2.253E-02	4.414E-02	7.019E-02	NOT IDENT.
I-133	0.000E+00	1.188E+41	0.000E+00	SHORT HLIF
CS-134	3.080E-02	5.427E-02	1.132E-01	NOT IDENT.
CS-135	6.612E-02	1.343E-01	2.702E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.768E+05	0.000E+00	SHORT HLIF
CE-139	-1.225E-01	1.030E-01	1.856E-01	NOT IDENT.
BA-140	0.000E+00	3.992E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.611E+05	0.000E+00	SHORT HLIF
CE-141	-2.890E+01	2.759E+01	4.480E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	-2.293E-01	4.016E-01	6.848E-01	NOT IDENT.
PM-144	1.911E-02	5.353E-02	1.055E-01	NOT IDENT.
PR-144	1.643E+00	4.643E+00	9.151E+00	NOT IDENT.
PM-146	7.738E-04	4.315E-02	8.231E-02	NOT IDENT.
ND-147	0.000E+00	3.238E+07	0.000E+00	SHORT HLIF
PM-147	1.114E+02	8.989E+02	1.640E+03	NOT IDENT.
PM-149	0.000E+00	2.644E+40	0.000E+00	SHORT HLIF
EU-150	1.735E-02	2.584E-02	4.861E-02	FAIL ABUN
EU-152	-1.553E-02	8.440E-02	1.597E-01	FAIL ABUN
GD-153	-1.236E-01	1.838E-01	3.185E-01	NOT IDENT.
EU-154	4.809E-02	1.135E-01	2.383E-01	NOT IDENT.
EU-155	9.599E-02	1.155E-01	2.241E-01	NOT IDENT.
TB-160	2.821E+00	2.367E+00	3.319E+00	FAIL ABUN
HO-166M	-1.197E-02	6.195E-02	1.114E-01	NOT IDENT.
TM-171	-1.198E+00	2.291E+01	4.280E+01	NOT IDENT.
HF-172	-1.589E-01	2.482E-01	4.226E-01	NOT IDENT.
LU-172	-4.140E-02	7.390E-02	1.322E-01	FAIL ABUN
LU-176	-2.567E-03	2.640E-02	4.999E-02	FAIL ABUN
HF-181	6.322E-01	4.423E+00	8.501E+00	NOT IDENT.
TA-182	-3.562E-01	1.000E+00	1.565E+00	FAIL ABUN
RE-183	-6.587E-01	3.101E+00	5.754E+00	NOT IDENT.

RE-184	1.787E+01	3.187E+01	6.685E+01	NOT IDENT.
W-188	4.322E+01	1.161E+02	2.112E+02	NOT IDENT.
IR-192	-2.023E-01	4.750E-01	8.734E-01	FAIL ABUN
HG-203	2.180E+00	2.401E+00	4.943E+00	NOT IDENT.
BI-207	3.199E-02	4.675E-02	1.016E-01	FAIL ABUN
PB-210	3.202E-01	3.896E+00	7.399E+00	NOT IDENT.
BI-211	0.000E+00	5.860E-01	8.039E-01	FAIL ABUN
PB-211	3.286E-01	6.805E-01	1.358E+00	NOT IDENT.
BI-212	1.489E+00	1.330E+00	1.516E+00	FAIL ABUN
RN-219	5.262E-02	3.531E-01	6.889E-01	FAIL ABUN
RA-223	5.300E-01	6.662E-01	1.304E+00	FAIL ABUN
AC-227	-8.847E-02	2.256E-01	4.217E-01	NOT IDENT.
TH-227	-8.847E-02	2.256E-01	4.217E-01	NOT IDENT.
TH-229	-2.527E-01	4.570E-01	8.562E-01	FAIL ABUN
PA-231	1.510E-02	5.457E-01	9.892E-01	NOT IDENT.
TH-231	5.300E-01	6.662E-01	1.304E+00	FAIL ABUN
PA-233	-2.707E-02	5.936E-02	1.091E-01	NOT IDENT.
PA-234	2.153E-02	3.000E-01	5.934E-01	FAIL ABUN
PA-234M	-1.253E+00	4.256E+00	8.510E+00	NOT IDENT.
TH-234	-2.636E-01	1.457E+00	2.692E+00	FAIL ABUN
NP-237	-2.707E-02	5.936E-02	1.091E-01	NOT IDENT.
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
U-238	-2.636E-01	1.457E+00	2.692E+00	FAIL ABUN
NP-239	-1.749E-01	2.651E-01	4.527E-01	NOT IDENT.
PU-239	2.404E+02	3.353E+02	6.365E+02	NOT IDENT.
AM-241	-9.236E-02	1.471E-01	2.629E-01	NOT IDENT.
CM-243	-1.132E-01	1.092E-01	1.817E-01	NOT IDENT.
BK-247	8.431E-03	7.088E-02	1.261E-01	NOT IDENT.
CM-247	-2.331E-02	3.432E-02	6.035E-02	NOT IDENT.
CF-249	1.601E-02	3.725E-02	7.428E-02	NOT IDENT.
CF-251	5.780E-02	1.161E-01	2.343E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	385	10.66*	1.237E+00	1.548E+01	1.548E+01	10.88
SC-46	889.28	7	99.98*	1.841E+00	2.023E-02	2.379E-01	220.39
	1120.55	46	99.99	1.539E+00	1.584E-01	1.862E+00	36.29
CD-109	88.03	35	3.70*	5.480E+00	9.114E-01	1.426E+00	222.31
SN-126	64.28	-----	9.60	3.124E+00	-----	Line Not Found	-----
	86.94	35	8.90	5.480E+00	3.789E-01	3.789E-01	222.31
	87.57	35	37.00*	5.480E+00	9.114E-02	9.114E-02	222.31
BA-137M	661.66	113	89.90*	2.305E+00	2.882E-01	2.937E-01	30.20
CS-137	661.66	113	85.10*	2.305E+00	3.045E-01	3.103E-01	30.20
TL-208	277.37	-----	6.60	4.566E+00	-----	Line Not Found	-----
	583.19	174	85.00*	2.540E+00	4.280E-01	4.280E-01	19.83
	860.56	-----	12.50	1.888E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	4.138E+00	-----	Line Not Found	-----
	351.06	287	12.92*	3.782E+00	3.107E+00	3.107E+00	19.25
PB-212	74.82	142	10.28	4.348E+00	1.679E+00	1.679E+00	40.90
	77.11	285	17.10	4.595E+00	1.922E+00	1.922E+00	22.12
	238.63	466	43.60*	5.102E+00	1.110E+00	1.110E+00	13.00
	300.09	-----	3.30	4.295E+00	-----	Line Not Found	-----
BI-214	609.32	163	45.49*	2.455E+00	7.735E-01	7.738E-01	24.04
	1120.29	46	14.92	1.539E+00	1.061E+00	1.062E+00	36.29
	1764.49	-----	15.30	1.045E+00	-----	Line Not Found	-----
PB-214	74.82	142	5.80	4.348E+00	2.976E+00	2.977E+00	40.90
	77.11	285	9.70	4.595E+00	3.388E+00	3.389E+00	22.12
	87.09	35	3.41	5.480E+00	9.889E-01	9.893E-01	222.31
	242.00	102	7.25	5.056E+00	1.472E+00	1.473E+00	47.53
	295.22	189	18.42	4.348E+00	1.253E+00	1.253E+00	29.93
RN-222	351.93	287	35.60*	3.782E+00	1.127E+00	1.128E+00	19.25
	609.32	163	45.49*	2.455E+00	7.735E-01	7.738E-01	24.04
	1120.29	46	14.92	1.539E+00	1.061E+00	1.062E+00	36.29
	1764.49	-----	15.30	1.045E+00	-----	Line Not Found	-----
RA-224	240.99	102	4.10*	5.056E+00	2.604E+00	2.604E+00	47.53
RA-226	609.32	163	45.49*	2.455E+00	7.735E-01	7.738E-01	24.04
	1120.29	46	14.92	1.539E+00	1.061E+00	1.062E+00	36.29
	1764.49	-----	15.30	1.045E+00	-----	Line Not Found	-----
AC-228	105.21	-----	1.10	6.315E+00	-----	Line Not Found	-----
	338.32	111	11.27	3.903E+00	1.334E+00	1.334E+00	35.71
	794.95	-----	4.25	2.005E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.930E+00	-----	Line Not Found	-----
	911.20	98	25.80*	1.806E+00	1.118E+00	1.118E+00	25.05
	968.97	30	15.80	1.723E+00	5.862E-01	5.862E-01	72.56
RA-228	105.21	-----	1.10	6.315E+00	-----	Line Not Found	-----
	338.32	111	11.27	3.903E+00	1.334E+00	1.334E+00	35.71
	794.95	-----	4.25	2.005E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.930E+00	-----	Line Not Found	-----
	911.20	98	25.80*	1.806E+00	1.118E+00	1.118E+00	25.05
	968.97	30	15.80	1.723E+00	5.862E-01	5.862E-01	72.56
TH-228	74.82	142	10.28	4.348E+00	1.679E+00	1.679E+00	40.90

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	285	17.10	4.595E+00	1.922E+00	1.922E+00	22.12
	238.63	466	43.60*	5.102E+00	1.110E+00	1.110E+00	13.00
	300.09	-----	3.30	4.295E+00	-----	Line Not Found	-----
TH-230	609.32	163	45.49*	2.455E+00	7.735E-01	7.735E-01	24.04
	1120.29	46	14.92	1.539E+00	1.061E+00	1.061E+00	36.29
	1764.49	-----	15.30	1.045E+00	-----	Line Not Found	-----
TH-232	105.21	-----	1.10	6.315E+00	-----	Line Not Found	-----
	338.32	111	11.27	3.903E+00	1.334E+00	1.334E+00	35.71
	835.71	-----	1.61	1.930E+00	-----	Line Not Found	-----
	911.20	98	25.80*	1.806E+00	1.118E+00	1.118E+00	25.05
	968.97	30	15.80	1.723E+00	5.862E-01	5.862E-01	72.56
U-234	609.32	163	45.49*	2.455E+00	7.735E-01	7.735E-01	24.04
	1120.29	46	14.92	1.539E+00	1.061E+00	1.061E+00	36.29
	1764.49	-----	15.30	1.045E+00	-----	Line Not Found	-----
U-235	89.96	86	3.47	5.613E+00	2.346E+00	2.346E+00	45.73
	93.35	104	5.60	5.774E+00	1.699E+00	1.699E+00	62.79
	143.76	-----	10.96*	6.593E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.352E+00	-----	Line Not Found	-----
	185.72	104	57.20	5.972E+00	1.607E-01	1.607E-01	62.42
	205.31	-----	5.01	5.647E+00	-----	Line Not Found	-----
AM-243	43.53	-----	5.90	4.883E-01	-----	Line Not Found	-----
	74.66	142	67.20*	4.348E+00	2.568E-01	2.568E-01	40.90
ANH-511	511.00	41	100.00*	2.815E+00	7.735E-02	7.735E-02	100.37

Flag: "*" = Keyline

Total number of lines in spectrum 40
Number of unidentified lines 8
Number of lines tentatively identified by NID 32 80.00%

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	1.548E+01	1.548E+01	0.169E+01	10.88	
SC-46	83.79D	11.8	2.023E-02	2.379E-01	5.243E-01	220.39	
CD-109	461.40D	1.56	9.114E-01	1.426E+00	3.170E+00	222.31	
SN-126	2.30E+05Y	1.00	9.114E-02	9.114E-02	20.26E-02	222.31	
BA-137M	30.08Y	1.02	2.882E-01	2.937E-01	0.887E-01	30.20	
CS-137	30.08Y	1.02	3.045E-01	3.103E-01	0.937E-01	30.20	
TL-208	1.41E+10Y	1.00	4.280E-01	4.280E-01	0.849E-01	19.83	
BI-211	7.04E+08Y	1.00	3.107E+00	3.107E+00	0.598E+00	19.25	
PB-212	1.41E+10Y	1.00	1.110E+00	1.110E+00	0.144E+00	13.00	
BI-214	1600.00Y	1.00	7.735E-01	7.738E-01	1.860E-01	24.04	
PB-214	1600.00Y	1.00	1.127E+00	1.128E+00	0.217E+00	19.25	
RN-222	1600.00Y	1.00	7.735E-01	7.738E-01	1.860E-01	24.04	
RA-224	1.41E+10Y	1.00	2.604E+00	2.604E+00	1.237E+00	47.53	
RA-226	1600.00Y	1.00	7.735E-01	7.738E-01	1.860E-01	24.04	
AC-228	1.41E+10Y	1.00	1.118E+00	1.118E+00	0.280E+00	25.05	
RA-228	1.41E+10Y	1.00	1.118E+00	1.118E+00	0.280E+00	25.05	
TH-228	1.41E+10Y	1.00	1.110E+00	1.110E+00	0.144E+00	13.00	
TH-230	7.54E+04Y	1.00	7.735E-01	7.735E-01	1.860E-01	24.04	
TH-232	1.41E+10Y	1.00	1.118E+00	1.118E+00	0.280E+00	25.05	
U-234	2.45E+05Y	1.00	7.735E-01	7.735E-01	1.860E-01	24.04	
U-235	7.04E+08Y	1.00	1.607E-01	1.607E-01	1.003E-01	62.42	K
AM-243	7370.00Y	1.00	2.568E-01	2.568E-01	1.051E-01	40.90	
ANH-511	1.00E+09Y	1.00	7.735E-02	7.735E-02	7.764E-02	100.37	
Total Activity :			3.430E+01	3.504E+01			

Grand Total Activity : 3.430E+01 3.504E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.46	62	111	2.05	419.22	415	9	1.53E-02	70.4	5.58E+00	T
0	270.52	75	109	1.57	541.41	534	14	1.88E-02	66.7	4.65E+00	T
0	281.98	29	165	3.65	564.35	552	17	7.25E-03	****	4.51E+00	
0	328.59	27	50	1.14	657.65	654	7	6.97E-03	97.8	4.00E+00	T
0	381.75	10	37	0.78	764.04	759	7	2.68E-03	****	3.55E+00	
1	415.85	25	12	1.67	832.30	829	13	6.54E-03	62.0	3.31E+00	T
1	418.05	25	27	1.67	836.70	829	13	6.48E-03	92.0	3.30E+00	
0	498.95	11	12	1.39	998.62	994	7	2.86E-03	****	2.87E+00	
0	537.63	34	70	7.89	1076.05	1063	23	9.11E-03	****	2.71E+00	T
0	690.92	10	33	0.91	1382.84	1371	13	2.82E-03	****	2.23E+00	
0	728.43	40	59	1.37	1457.91	1450	16	1.09E-02	91.2	2.14E+00	T
0	777.17	22	18	1.40	1555.47	1549	14	6.12E-03	91.3	2.04E+00	T
0	862.69	36	26	1.64	1726.64	1718	18	9.81E-03	76.5	1.88E+00	
0	880.77	17	9	0.82	1762.82	1756	12	4.72E-03	85.6	1.85E+00	T
0	925.88	12	15	5.21	1853.11	1843	16	3.23E-03	****	1.79E+00	T
0	957.60	8	29	4.25	1916.61	1903	15	2.29E-03	****	1.74E+00	
7	965.52	23	16	2.53	1932.45	1928	18	6.35E-03	78.6	1.73E+00	T
0	1227.79	6	16	3.42	2457.39	2446	13	1.67E-03	****	1.43E+00	
0	1331.39	15	0	1.06	2664.73	2659	12	4.17E-03	51.6	1.34E+00	T
0	1362.03	9	7	2.99	2726.06	2721	11	2.57E-03	****	1.31E+00	T

Flags: "T" = Tentatively associated


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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235010.CNF;1
* Acquisition date   : 3-OCT-2016 08:06:48 Sensitivity      : 3.000
* Detector ID        : GAM28 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.44 Half life ratio : *****
* Sample date        : 10-DEC-2015 10:35:00 Nuclide Library: SOLID
* Sample ID          : G405235010 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.4170E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000
*                               Dry Weight      : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 1-AUG-2016 10:02:35 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM28 CAN.CNF;10
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
K-40	3.350E-01
SC-46	2.374E-01
BA-137M	2.945E-02
CS-137	3.111E-02
TL-208	2.597E-02
PB-212	4.645E-02
BI-214	6.062E-02
PB-214	5.448E-02
RN-222	6.062E-02
RA-224	4.978E-01
RA-226	6.062E-02
AC-228	8.161E-02
RA-228	8.161E-02
TH-228	4.645E-02
TH-230	6.060E-02
TH-232	8.161E-02
U-234	6.060E-02
U-235	1.841E-01
AM-243	4.776E-02
ANH-511	2.316E-02

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

Nuclide	^{Lc} (pCi/GRAM)	
BE-7	1.031E+01	NOT IDENT.
NA-22	4.298E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.752E-02	NOT IDENT.
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.997E-02	NOT IDENT.
CO-56	4.189E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.508E-02	NOT IDENT.
CO-58	4.980E-01	NOT IDENT.

FE-59	5.610E+00	NOT IDENT.
CO-60	3.483E-02	FAIL ABUN
ZN-65	1.618E-01	NOT IDENT.
GE-68	2.142E+00	NOT IDENT.
AS-73	8.583E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.638E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.428E-01	NOT IDENT.
KR-85	7.361E+00	NOT IDENT.
SR-85	7.618E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.895E-01	NOT IDENT.
Y-91	4.940E+02	NOT IDENT.
NB-94	3.132E-02	NOT IDENT.
NB-95	7.544E-01	NOT IDENT.
NB-95M	2.236E+00	NOT IDENT.
ZR-95	1.374E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.969E-02	NOT IDENT.
RH-102	4.534E-02	NOT IDENT.
RU-103	4.087E+00	FAIL ABUN
RH-106	3.651E-01	NOT IDENT.
RU-106	3.651E-01	NOT IDENT.
AG-108M	2.456E-02	NOT IDENT.
CD-109	1.271E+00	FAIL ABUN
AG-110M	7.322E-02	NOT IDENT.
SN-113	1.768E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.251E-01	NOT IDENT.
SB-124	1.474E+00	NOT IDENT.
SB-125	9.710E-02	NOT IDENT.
TE-125M	2.441E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SN-126	8.675E-02	FAIL ABUN
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.175E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.102E-02	NOT IDENT.
CS-135	1.252E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	8.616E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.105E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.214E-01	NOT IDENT.
PM-144	4.693E-02	NOT IDENT.
PR-144	4.069E+00	NOT IDENT.
PM-146	3.710E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.706E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.232E-02	FAIL ABUN
EU-152	7.233E-02	FAIL ABUN
GD-153	1.490E-01	NOT IDENT.
EU-154	1.033E-01	NOT IDENT.
EU-155	1.057E-01	NOT IDENT.
TB-160	1.434E+00	FAIL ABUN
HO-166M	4.950E-02	NOT IDENT.
TM-171	1.998E+01	NOT IDENT.
HF-172	1.977E-01	NOT IDENT.
LU-172	5.621E-02	FAIL ABUN
LU-176	2.312E-02	FAIL ABUN
HF-181	3.846E+00	NOT IDENT.
TA-182	6.694E-01	FAIL ABUN
RE-183	2.692E+00	NOT IDENT.
RE-184	2.985E+01	NOT IDENT.

W-188	9.753E+01	NOT IDENT.
IR-192	4.011E-01	FAIL ABUN
HG-203	2.303E+00	NOT IDENT.
BI-207	4.464E-02	FAIL ABUN
PB-210	3.470E+00	NOT IDENT.
BI-211	3.870E-01	FAIL ABUN
PB-211	6.215E-01	NOT IDENT.
BI-212	7.072E-01	FAIL ABUN
RN-219	3.117E-01	FAIL ABUN
RA-223	6.062E-01	FAIL ABUN
AC-227	1.947E-01	NOT IDENT.
TH-227	1.947E-01	NOT IDENT.
TH-229	3.992E-01	FAIL ABUN
PA-231	4.623E-01	NOT IDENT.
TH-231	6.062E-01	FAIL ABUN
PA-233	4.992E-02	NOT IDENT.
PA-234	2.623E-01	FAIL ABUN
PA-234M	3.742E+00	NOT IDENT.
TH-234	1.277E+00	FAIL ABUN
NP-237	4.992E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
U-238	1.277E+00	FAIL ABUN
NP-239	2.119E-01	NOT IDENT.
PU-239	3.004E+02	NOT IDENT.
AM-241	1.229E-01	NOT IDENT.
CM-243	8.493E-02	NOT IDENT.
BK-247	5.780E-02	NOT IDENT.
CM-247	2.716E-02	NOT IDENT.
CF-249	3.394E-02	NOT IDENT.
CF-251	1.101E-01	NOT IDENT.

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*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                           *
*                               Charleston, SC 29407                       *
*                               *****                                   *
*                                     *
*                               DETECTOR AND SAMPLE DATA                   *
*                                     *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235010.CNF;1 *
* Acquisition date   : 3-OCT-2016 08:06:48 Sensitivity      : 3.000          *
* Detector ID        : GAM28 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.44 Half life ratio : *****      *
* Sample date        : 10-DEC-2015 10:35:00 Nuclide Library: SOLID      *
* Sample ID          : G405235010 Analyst initials: MXR1          *
* Batch Number       : 1596247 Sample Quantity : 1.4170E+02 GRAM      *
*                               Quantity Err(%) : 1.4115E-03 %        *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000            *
*                               Dry Weight  : 0.00000            *
*                               *****                                   *
*                                     *
*                               CALIBRATION INFORMATION                     *
*                                     *
* Eff. Cal. date     : 1-AUG-2016 10:02:35 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM28 CAN.CNF;10      *
*                               *****                                   *

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.548E+01	1.840E+00	1.840E+00
SC-46	2.379E-01	5.139E-01	5.139E-01
BA-137M	2.937E-01	8.786E-02	8.786E-02
CS-137	3.103E-01	9.281E-02	9.281E-02
TL-208	4.280E-01	8.516E-02	8.516E-02
PB-212	1.110E+00	1.533E-01	1.533E-01
BI-214	7.738E-01	1.854E-01	1.854E-01
PB-214	1.128E+00	2.179E-01	2.179E-01
RN-222	7.738E-01	1.854E-01	1.854E-01
RA-224	3.884E-01	1.384E+00	1.384E+00
RA-226	7.738E-01	1.854E-01	1.854E-01
AC-228	1.118E+00	2.804E-01	2.804E-01
RA-228	1.118E+00	2.804E-01	2.804E-01
TH-228	1.110E+00	1.533E-01	1.533E-01
TH-230	7.735E-01	1.853E-01	1.853E-01
TH-232	1.118E+00	2.804E-01	2.804E-01
U-234	7.735E-01	1.853E-01	1.853E-01
U-235	5.665E-02	2.136E-01	2.136E-01
AM-243	1.494E-01	1.088E-01	1.088E-01
ANH-511	7.735E-02	7.615E-02	7.615E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	1.688E+00	1.184E+01	1.186E+01	NOT IDENT.
NA-22	2.246E-02	4.684E-02	4.792E-02	NOT IDENT.
NA-24	-1.000E+41	3.866E+41	0.000E+00	SHORT HLIF
AL-26	-2.222E-02	2.868E-02	3.038E-02	NOT IDENT.
V-48	1.361E+03	1.431E+04	1.432E+04	SHORT HLIF
CR-51	2.139E+02	4.368E+02	4.473E+02	SHORT HLIF
MN-54	5.688E-03	6.780E-02	6.785E-02	NOT IDENT.
CO-56	8.791E-02	4.665E-01	4.682E-01	NOT IDENT.
MN-56	1.000E+41	5.403E+41	0.000E+00	SHORT HLIF
CO-57	1.294E-02	5.206E-02	5.239E-02	NOT IDENT.

CO-58	-2.229E-01	6.007E-01	6.091E-01	NOT IDENT.
FE-59	-4.196E+00	7.288E+00	7.530E+00	NOT IDENT.
CO-60	6.396E-02	3.246E-02	4.342E-02	FAIL ABUN
ZN-65	5.230E-02	2.045E-01	2.059E-01	NOT IDENT.
GE-68	-4.752E-01	2.518E+00	2.527E+00	NOT IDENT.
AS-73	2.390E+00	9.602E+00	9.662E+00	NOT IDENT.
AS-74	2.106E+03	6.005E+03	6.079E+03	SHORT HLIF
SE-75	-8.366E-02	2.154E-01	2.187E-01	NOT IDENT.
BR-77	1.137E+38	9.776E+38	0.000E+00	SHORT HLIF
SR-82	1.331E+03	1.192E+03	1.335E+03	SHORT HLIF
RB-83	-3.177E-02	6.447E-01	6.449E-01	NOT IDENT.
KR-85	8.201E+00	8.460E+00	9.233E+00	NOT IDENT.
SR-85	8.474E-01	8.758E-01	9.555E-01	NOT IDENT.
RB-86	-1.586E+04	2.900E+04	2.987E+04	SHORT HLIF
Y-88	4.586E-02	2.072E-01	2.082E-01	NOT IDENT.
Y-91	-3.295E+01	5.892E+02	5.894E+02	NOT IDENT.
NB-94	2.235E-02	3.465E-02	3.609E-02	NOT IDENT.
NB-95	-2.932E-01	8.910E-01	9.008E-01	NOT IDENT.
NB-95M	2.382E+00	2.526E+00	2.745E+00	NOT IDENT.
ZR-95	1.093E+00	1.412E+00	1.495E+00	NOT IDENT.
NB-97	1.000E+41	1.512E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	8.363E+40	0.000E+00	SHORT HLIF
MO-99	-3.736E+30	1.083E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.363E+42	0.000E+00	SHORT HLIF
RH-101	-2.385E-02	3.749E-02	3.900E-02	NOT IDENT.
RH-102	-4.469E-02	6.207E-02	6.525E-02	NOT IDENT.
RU-103	3.193E+00	4.630E+00	4.848E+00	FAIL ABUN
RH-106	-4.160E-01	5.102E-01	5.436E-01	NOT IDENT.
RU-106	-4.160E-01	5.102E-01	5.436E-01	NOT IDENT.
AG-108M	6.887E-03	2.765E-02	2.782E-02	NOT IDENT.
CD-109	1.426E+00	3.109E+00	3.174E+00	FAIL ABUN
AG-110M	7.324E-03	1.277E-01	1.278E-01	NOT IDENT.
SN-113	-1.797E-01	2.264E-01	2.404E-01	NOT IDENT.
CD-115	2.208E+38	1.854E+39	0.000E+00	SHORT HLIF
SN-117M	-6.889E+04	1.022E+05	1.068E+05	SHORT HLIF
TE-123M	3.932E-02	1.466E-01	1.477E-01	NOT IDENT.
SB-124	2.091E-01	1.723E+00	1.725E+00	NOT IDENT.
SB-125	7.877E-02	1.031E-01	1.090E-01	NOT IDENT.
TE-125M	4.114E+01	2.824E+02	2.830E+02	NOT IDENT.
I-126	9.719E+05	8.215E+05	9.310E+05	SHORT HLIF
SB-126	5.345E+05	8.831E+05	9.154E+05	SHORT HLIF
SN-126	9.114E-02	1.986E-01	2.028E-01	FAIL ABUN
SB-127	-4.249E+21	1.884E+22	0.000E+00	SHORT HLIF
I-131	-1.546E+09	4.262E+09	4.318E+09	SHORT HLIF
I-132	1.000E+41	1.921E+42	0.000E+00	SHORT HLIF
TE-132	1.165E+25	2.678E+26	0.000E+00	SHORT HLIF
BA-133	-2.253E-02	4.415E-02	4.530E-02	NOT IDENT.
I-133	-1.000E+41	2.154E+41	0.000E+00	SHORT HLIF
CS-134	3.080E-02	5.429E-02	5.603E-02	NOT IDENT.
CS-135	6.612E-02	1.344E-01	1.376E-01	NOT IDENT.
I-135	1.000E+41	7.113E+41	0.000E+00	SHORT HLIF
CS-136	4.311E+04	2.769E+05	2.775E+05	SHORT HLIF
CE-139	-1.225E-01	1.059E-01	1.195E-01	NOT IDENT.
BA-140	2.989E+06	3.994E+06	4.215E+06	SHORT HLIF
LA-140	-1.434E+05	4.611E+05	4.656E+05	SHORT HLIF
CE-141	-2.890E+01	2.762E+01	3.054E+01	NOT IDENT.
CE-143	1.000E+41	4.669E+41	0.000E+00	SHORT HLIF
CE-144	-2.293E-01	4.018E-01	4.149E-01	NOT IDENT.
PM-144	1.911E-02	5.354E-02	5.423E-02	NOT IDENT.
PR-144	1.643E+00	4.643E+00	4.702E+00	NOT IDENT.
PM-146	7.738E-04	4.315E-02	4.315E-02	NOT IDENT.
ND-147	-2.366E+06	3.238E+07	3.239E+07	SHORT HLIF
PM-147	1.114E+02	8.989E+02	9.003E+02	NOT IDENT.
PM-149	6.778E+39	2.648E+40	0.000E+00	SHORT HLIF
EU-150	1.735E-02	2.585E-02	2.701E-02	FAIL ABUN
EU-152	-1.553E-02	8.440E-02	8.469E-02	FAIL ABUN
GD-153	-1.236E-01	1.840E-01	1.922E-01	NOT IDENT.
EU-154	4.809E-02	1.136E-01	1.156E-01	NOT IDENT.
EU-155	9.599E-02	1.157E-01	1.235E-01	NOT IDENT.
TB-160	2.821E+00	2.373E+00	2.693E+00	FAIL ABUN
HO-166M	-1.197E-02	6.196E-02	6.219E-02	NOT IDENT.
TM-171	-1.198E+00	2.291E+01	2.292E+01	NOT IDENT.
HF-172	-1.589E-01	2.496E-01	2.597E-01	NOT IDENT.
LU-172	-4.140E-02	7.402E-02	7.633E-02	FAIL ABUN
LU-176	-2.567E-03	2.640E-02	2.643E-02	FAIL ABUN
HF-181	6.322E-01	4.424E+00	4.433E+00	NOT IDENT.
TA-182	-3.562E-01	1.000E+00	1.013E+00	FAIL ABUN
RE-183	-6.587E-01	3.103E+00	3.117E+00	NOT IDENT.

RE-184	1.787E+01	3.215E+01	3.315E+01	NOT IDENT.
W-188	4.322E+01	1.162E+02	1.178E+02	NOT IDENT.
IR-192	-2.023E-01	4.751E-01	4.838E-01	FAIL ABUN
HG-203	2.180E+00	2.403E+00	2.597E+00	NOT IDENT.
BI-207	3.199E-02	4.677E-02	4.894E-02	FAIL ABUN
PB-210	3.202E-01	3.896E+00	3.898E+00	NOT IDENT.
BI-211	3.107E+00	6.024E-01	1.525E+00	FAIL ABUN
PB-211	3.286E-01	6.807E-01	6.966E-01	NOT IDENT.
BI-212	1.489E+00	1.333E+00	1.492E+00	FAIL ABUN
RN-219	5.262E-02	3.532E-01	3.540E-01	FAIL ABUN
RA-223	5.300E-01	6.670E-01	7.085E-01	FAIL ABUN
AC-227	-8.847E-02	2.259E-01	2.294E-01	NOT IDENT.
TH-227	-8.847E-02	2.259E-01	2.294E-01	NOT IDENT.
TH-229	-2.527E-01	4.572E-01	4.712E-01	FAIL ABUN
PA-231	1.510E-02	5.457E-01	5.458E-01	NOT IDENT.
TH-231	5.300E-01	6.670E-01	7.085E-01	FAIL ABUN
PA-233	-2.707E-02	5.937E-02	6.062E-02	NOT IDENT.
PA-234	2.153E-02	3.010E-01	3.012E-01	FAIL ABUN
PA-234M	-1.253E+00	4.257E+00	4.294E+00	NOT IDENT.
TH-234	-2.636E-01	1.458E+00	1.463E+00	FAIL ABUN
NP-237	-2.707E-02	5.937E-02	6.062E-02	NOT IDENT.
NP-238	3.888E+40	2.708E+41	0.000E+00	SHORT HLIF
U-238	-2.636E-01	1.458E+00	1.463E+00	FAIL ABUN
NP-239	-1.749E-01	2.655E-01	2.769E-01	NOT IDENT.
PU-239	2.404E+02	3.355E+02	3.526E+02	NOT IDENT.
AM-241	-9.236E-02	1.473E-01	1.531E-01	NOT IDENT.
CM-243	-1.132E-01	1.097E-01	1.210E-01	NOT IDENT.
BK-247	8.431E-03	7.090E-02	7.100E-02	NOT IDENT.
CM-247	-2.331E-02	3.455E-02	3.611E-02	NOT IDENT.
CF-249	1.601E-02	3.727E-02	3.796E-02	NOT IDENT.
CF-251	5.780E-02	1.163E-01	1.192E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	54.1856	87.09	145.3838	136.47	79.0660
45.60	74.3617	87.57	145.4961	140.51	0.0000
46.54	69.2816	88.03	145.6035	143.76	89.5680
49.72	0.0000	88.34	68.2860	144.24	85.9352
51.35	67.9370	88.47	68.3002	145.44	110.6419
51.87	64.8281	89.96	112.5823	152.43	80.5468
52.39	63.8395	1093.63	91.3812	153.25	0.0000
52.97	73.5099	91.11	0.0000	323.87	74.4983
53.44	63.9880	92.59	91.6608	156.02	0.0000
54.07	61.9405	93.35	91.7688	158.56	0.0000
57.36	0.0000	94.56	81.2139	159.00	77.3884
57.53	62.4014	94.65	81.2247	162.33	82.6783
57.98	75.3828	94.67	81.2274	162.66	0.0000
59.27	77.7448	94.87	81.2522	163.33	71.8994
59.32	85.3120	97.43	83.1077	165.86	82.1522
59.54	85.3506	98.43	84.3884	176.31	71.1835
60.96	81.2642	98.44	84.3895	176.60	0.0000
61.17	96.4746	99.53	83.3692	177.52	69.5737
62.93	96.8158	100.11	81.1228	181.07	0.0000
63.29	106.6823	102.03	79.0276	181.52	74.1134
63.58	103.4757	103.18	97.7857	184.41	85.8591
64.28	93.8020	103.37	96.6488	143.76	72.7105
66.73	105.2073	105.21	70.0518	193.51	75.8461
67.24	116.2796	105.31	70.0616	197.03	74.3699
125.81	107.5942	106.12	79.4950	198.01	65.7826
67.75	107.6077	106.47	87.7224	201.83	89.4712
69.67	113.5081	109.28	75.1533	203.43	86.9934
70.83	92.7684	111.00	80.0413	205.31	67.9723
72.81	115.2734	111.76	0.0000	210.85	61.7463
72.87	124.1534	114.06	68.5577	215.65	65.9691
74.66	111.2091	116.30	0.0000	222.11	53.0750
74.82	111.2404	116.74	88.9727	227.09	55.0794
74.97	111.2701	119.76	89.3297	227.38	58.6476
77.11	111.6913	121.12	77.5574	228.16	0.0000
78.74	112.0079	121.22	77.5674	228.18	66.6901
79.69	92.7446	121.78	78.8186	116.74	66.6901
80.12	92.8127	122.06	77.6527	235.69	55.0331
80.19	0.0000	122.92	84.9149	235.96	64.4429
80.57	92.8839	123.07	78.9505	238.63	64.5857
81.00	92.9514	265.00	79.0125	238.98	0.0000
81.07	92.9628	125.81	87.6315	240.99	64.7109
81.75	123.0918	127.23	92.5992	242.00	64.7644
83.79	115.9809	127.91	91.4755	244.70	59.4983
84.00	116.0217	129.30	74.7546	252.40	0.0000
85.43	144.9912	131.20	100.3128	252.80	46.2753
86.55	145.2559	133.02	86.0026	254.15	0.0000
86.79	145.3125	133.52	93.3268	256.23	56.4086
86.94	145.3477	136.00	81.4518	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	48.0791	355.39	0.0000	584.27	19.7366
264.80	49.4583	356.01	39.4964	595.83	0.0000
265.00	38.4735	364.49	0.0000	427.87	28.7083
268.22	44.0771	366.42	0.0000	602.52	0.0000
269.46	44.1191	372.51	38.4192	604.72	23.2277
270.03	44.1377	375.05	41.4377	607.14	23.2507
271.23	44.1777	377.52	31.1245	609.32	28.8131
273.65	0.0000	356.01	44.6301	610.33	28.8258
276.40	59.1328	388.16	30.8228	614.28	18.3235
277.37	44.3818	388.63	0.0000	618.01	30.0300
277.60	44.3887	391.69	39.8535	620.36	14.4727
278.00	44.4023	264.66	29.0431	621.93	26.7363
279.20	44.4414	401.81	28.0598	630.19	0.0000
279.54	44.4531	402.40	38.0943	631.29	26.8389
279.70	44.4580	404.85	31.1198	633.25	16.7877
280.46	44.4834	410.95	27.8021	634.78	0.0000
283.69	43.1955	413.71	33.2927	635.95	29.1305
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	40.4591	423.72	0.0000	645.85	21.3727
285.90	0.0000	427.09	31.5064	657.76	11.8672
287.50	45.6434	427.87	24.4023	657.90	0.0000
290.67	36.4117	433.94	27.5427	661.66	22.6392
293.27	0.0000	439.40	27.6235	664.57	0.0000
351.93	59.0112	453.88	27.8350	666.33	0.0000
295.96	59.0420	463.37	31.0797	666.50	0.0000
879.38	77.4596	468.07	30.1163	667.71	0.0000
299.98	46.5221	473.00	0.0000	677.62	14.8070
300.09	46.5251	475.06	32.3074	685.70	0.0000
300.13	49.3459	476.78	23.9906	695.00	0.0000
301.36	67.7329	477.60	25.0439	696.49	17.2083
302.85	69.6866	482.18	28.2387	696.51	17.2083
256.23	49.9689	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	17.2137
306.78	52.8805	497.08	11.0627	697.49	18.3626
308.46	47.2697	505.52	14.2817	702.65	20.6982
311.90	47.3806	507.63	0.0000	706.68	26.4871
316.51	50.3819	511.00	26.5170	711.68	24.2291
319.41	0.0000	514.00	27.0854	720.70	0.0000
320.08	0.0000	514.00	27.0854	721.93	0.0000
321.04	48.6281	520.40	24.5039	722.78	10.4268
323.87	42.4154	520.69	0.0000	722.91	10.4271
325.23	48.7640	522.65	0.0000	723.31	10.4286
328.76	0.0000	527.90	0.0000	724.19	13.9092
333.37	49.0255	528.26	32.0801	727.33	10.4440
333.97	30.2926	529.59	30.4946	733.00	13.9541
334.37	34.6289	529.87	0.0000	735.93	20.9531
338.28	41.4673	531.02	0.0000	333.97	17.4707
338.32	41.4682	537.26	0.0000	739.50	0.0000
311.90	39.1116	546.56	0.0000	747.24	20.1622
340.48	39.1116	552.55	20.5439	748.06	21.0447
340.55	0.0000	563.25	19.5564	752.31	19.3205
344.28	33.8820	569.33	23.9658	753.82	0.0000
345.93	46.5156	946.00	25.0570	756.73	14.9528
351.06	33.0558	569.70	25.0599	756.80	14.9533
351.93	33.0738	583.19	19.7278	884.68	24.6914

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	26.4725	1274.44	12.3387	1620.50	4.3926
766.42	29.1258	1001.03	15.2065	1621.92	2.1969
766.84	28.2471	1002.74	10.4595	1678.03	0.0000
772.60	0.0000	1004.73	13.3198	1690.97	3.3391
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	5.4152
778.90	17.7289	1028.54	0.0000	1063.66	12.6485
783.70	0.0000	1037.84	15.3643	1771.35	7.2293
785.37	15.1033	1038.76	0.0000	1791.20	0.0000
792.07	25.8237	631.29	18.2903	1808.65	6.3680
794.95	22.2839	1048.07	0.0000	1810.72	0.0000
795.86	20.5075	1049.04	15.4121	1836.06	3.6564
810.06	25.0862	1050.41	10.5999		
810.29	25.0879	1063.66	10.6381		
344.28	22.4007	1077.00	0.0000		
810.76	22.4037	1077.34	15.5313		
815.77	0.0000	1085.87	12.6485		
1048.07	0.0000	1093.63	16.5746		
832.01	17.1474	1099.45	21.4817		
834.85	21.6797	1112.07	13.7163		
835.71	17.1683	1112.84	16.6586		
836.80	0.0000	1115.54	15.6895		
846.75	0.0000	1120.29	15.7090		
846.77	17.2303	1120.55	15.7100		
856.80	0.0000	1221.41	17.2842		
860.56	12.7529	1129.67	14.7629		
871.09	9.1397	1131.51	0.0000		
873.19	16.4625	1147.95	0.0000		
875.33	0.0000	1173.23	17.9143		
879.38	14.6621	1177.95	18.9316		
880.51	14.6675	1189.05	15.9863		
883.24	11.0098	1204.77	20.0610		
884.68	11.0149	1221.41	16.1143		
889.28	8.8245	1231.02	19.3828		
894.76	13.8121	1235.36	0.0000		
898.04	15.6698	1238.28	23.2597		
900.72	21.2179	1260.41	0.0000		
903.28	16.6185	1271.87	12.2329		
911.20	9.2551	1274.44	10.2002		
912.08	9.2575	1274.54	10.2008		
923.98	0.0000	1291.59	14.3375		
926.50	12.0875	1298.22	0.0000		
929.11	11.9109	1312.11	0.0000		
937.49	21.4572	1332.49	8.2705		
944.13	0.0000	1362.66	0.0000		
946.00	18.7054	1365.19	6.6652		
949.00	25.4626	1368.63	0.0000		
667.71	0.0000	1384.29	7.3213		
962.31	16.5408	1408.01	6.3080		
964.08	16.5494	1457.56	0.0000		
966.17	18.8177	1460.82	12.7595		
911.20	18.8330	1489.16	3.2087		
968.97	18.8330	1505.03	5.3656		
983.53	0.0000	1584.12	9.8135		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:10:36.59

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235011.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM33.CNF;235
Sample date       : 9-DEC-2015 10:13:00. Background date : 2-OCT-2016 11:02:02.
Sample ID        : G405235011. Acquisition date : 3-OCT-2016 08:07:11.
Detector name    : GAM33. Sample quantity : 1.46502E+02 GRAM
Elapsed live time: 0 01:00:00.00. Detector geometry: CAN
Energy tolerance : 1.50000 keV. Elapsed real time: 0 01:00:00.76 0.0%
Abundance limit  : 75.00000. Analyst Initials : MXR1
Batch ID        : 1596247. Sensitivity : 3.00000
Matrix Spike ID  : . Detector SN# :
LCS ID          : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.53*	7	123	0.83	127.17	124	6	1.85E-03	281.1	
2	0	76.04*	274	283	3.34	152.16	146	14	7.61E-02	14.4	
3	3	87.05	70	193	1.31	174.15	168	24	1.94E-02	34.5	1.69E+00
4	3	89.79	43	127	1.01	179.62	168	24	1.18E-02	44.1	
5	3	92.69*	61	148	1.37	185.41	168	24	1.70E-02	41.6	
6	0	163.14*	15	63	1.35	326.13	324	5	4.03E-03	90.4	
7	0	185.81*	95	125	1.27	371.42	367	11	2.63E-02	26.4	
8	0	209.23	33	73	1.11	418.20	415	7	9.11E-03	47.0	
9	2	238.67*	343	74	1.18	477.02	472	17	9.52E-02	6.9	1.29E+00
10	2	241.72	100	88	1.48	483.11	472	17	2.78E-02	20.4	
11	0	253.11	24	48	0.65	505.86	502	8	6.54E-03	55.0	
12	1	269.69	31	58	1.25	539.00	534	12	8.59E-03	44.7	2.12E+00
13	1	271.20	28	54	1.25	542.00	534	12	7.68E-03	51.3	
14	0	279.74	20	108	2.28	559.08	551	14	5.47E-03	115.7	
15	0	295.23	176	69	0.97	590.01	584	12	4.89E-02	12.1	
16	0	300.38	15	57	0.97	600.32	596	8	4.27E-03	88.1	
17	0	328.33*	48	48	1.22	656.16	653	9	1.34E-02	30.9	
18	0	338.46*	60	70	0.81	676.40	671	10	1.65E-02	29.7	
19	0	351.84*	263	51	1.05	703.14	697	12	7.30E-02	8.3	
20	0	405.09	27	28	1.67	809.54	805	9	7.43E-03	41.1	
21	0	410.63	18	44	1.27	820.61	815	11	5.00E-03	75.2	
22	0	462.59	48	33	4.52	924.45	917	15	1.32E-02	30.3	
23	0	510.76*	20	52	1.21	1020.71	1015	13	5.55E-03	92.7	
24	0	583.10*	114	41	1.20	1165.31	1158	14	3.16E-02	15.6	
25	0	609.29*	215	24	1.31	1217.67	1210	14	5.99E-02	8.5	
26	0	653.95	5	29	0.84	1306.93	1298	13	1.44E-03	219.5	
27	0	661.69	85	30	1.51	1322.41	1317	11	2.35E-02	16.7	
28	0	726.96	23	20	2.41	1452.90	1447	10	6.43E-03	41.7	
29	0	769.04	14	19	1.49	1537.04	1533	8	3.83E-03	63.6	
30	0	805.86	12	17	1.03	1610.67	1605	9	3.19E-03	72.0	
31	0	825.89	12	8	1.28	1650.71	1646	9	3.25E-03	54.2	
32	0	860.69	19	18	1.98	1720.32	1713	11	5.18E-03	50.8	
33	0	880.86	15	14	4.75	1760.64	1753	14	4.05E-03	60.5	
34	0	894.48	24	14	0.62	1787.88	1779	18	6.75E-03	40.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	911.34*	93	18	1.23	1821.60	1815	12	2.60E-02	14.0	
36	0	934.66	28	8	1.44	1868.25	1861	15	7.64E-03	28.9	
37	0	967.81	62	23	6.61	1934.54	1924	18	1.73E-02	21.9	
38	0	979.57	12	14	0.94	1958.08	1948	14	3.33E-03	72.2	
39	0	1120.52*	53	16	1.17	2240.03	2234	13	1.48E-02	21.0	
40	0	1166.35	10	4	0.71	2331.73	2328	8	2.67E-03	53.1	
41	0	1195.46	11	9	1.38	2389.97	2386	9	2.99E-03	62.5	
42	0	1238.94	17	12	2.42	2476.97	2472	10	4.69E-03	46.0	
43	0	1461.02*	355	9	1.87	2921.43	2913	17	9.85E-02	5.7	
44	0	1592.82*	10	2	1.63	3185.30	3182	7	2.80E-03	41.0	
45	0	1765.02*	30	0	1.72	3530.12	3524	12	8.28E-03	19.5	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235011.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 9-DEC-2015 10:13:00   Acquisition date : 3-OCT-2016 08:07:11
Sample ID        : G405235011             Sample quantity  : 146.50 GRAM
Sample type      : SOLID                   Sample geometry  :
Detector name    : GAMMA33                 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00           Elapsed real time: 0 01:00:00.76   0.0%
Energy tolerance : 1.50 keV                Half life ratio  : 10.00
Errors propagated: No                       Systematic Error : 0.00 %
Efficiency type  : Linear                   Efficiencies at  : Peak Energy
Abundance limit  : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	74.82	TH-228	77.11
PB-214	74.82	PB-212	77.11
PB-214	74.82	PB-214	77.11
PB-214	77.11	AM-243	74.66
PB-214	77.11	TH-228	74.82
PB-214	77.11	PB-212	74.82
PB-214	77.11	TH-228	77.11
PB-214	77.11	PB-212	77.11
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.133E+00	1.447E+01	1.447E+01	11.37	OK
CD-109	88.03	3.70*	4.889E+00	1.205E+00	1.888E+00	142.57	OK
SN-126	64.28	9.60	2.483E+00	1.819E-01	1.819E-01	562.28	OK
	86.94	8.90	4.889E+00	5.010E-01	5.010E-01	142.57	OK
	87.57	37.00*	4.889E+00	1.205E-01	1.205E-01	142.57	OK
CS-135	268.22	16.00*	4.353E+00	2.570E-01	2.570E-01	89.36	OK
BA-137M	661.66	89.90*	2.115E+00	2.371E-01	2.416E-01	33.30	OK
CS-137	661.66	85.10*	2.115E+00	2.505E-01	2.553E-01	33.30	OK
HG-203	70.83	3.69	3.364E+00	-----	Line Not Found	-----	Absent
	72.87	6.19	3.591E+00	-----	Line Not Found	-----	Absent
	279.20	81.56*	4.230E+00	3.294E-02	2.813E+00	231.47	OK
TL-208	277.37	6.60	4.258E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	2.334E+00	3.090E-01	3.090E-01	31.11	OK
	860.56	12.50	1.727E+00	4.495E-01	4.495E-01	101.63	OK
PB-212	74.82	10.28	3.925E+00	2.323E+00	2.323E+00	56.07	OK
	77.11	17.10	3.925E+00	1.397E+00	1.397E+00	56.07	OK
	238.63	43.60*	4.775E+00	9.622E-01	9.622E-01	13.75	OK
	300.09	3.30	3.996E+00	6.688E-01	6.688E-01	176.29	OK
BI-214	609.32	45.49*	2.255E+00	1.129E+00	1.129E+00	17.00	OK
	1120.29	14.92	1.407E+00	1.289E+00	1.290E+00	41.98	OK
	1764.49	15.30	9.589E-01	9.830E-01	9.833E-01	38.98	OK
PB-214	74.82	5.80	3.800E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	4.033E+00	-----	Line Not Found	-----	<<INT Reject
	87.09	3.41	4.892E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	4.727E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	4.052E+00	1.353E+00	1.353E+00	24.17	OK
	351.93	35.60*	3.513E+00	1.187E+00	1.187E+00	16.59	OK
RN-222	609.32	45.49*	2.255E+00	1.129E+00	1.129E+00	17.00	OK
	1120.29	14.92	1.407E+00	1.289E+00	1.290E+00	41.98	OK
	1764.49	15.30	9.589E-01	9.830E-01	9.833E-01	38.98	OK
RA-224	240.99	4.10*	4.731E+00	6.267E-01	6.267E-01	216.97	OK
RA-226	609.32	45.49*	2.255E+00	1.129E+00	1.129E+00	17.00	OK
	1120.29	14.92	1.407E+00	1.289E+00	1.290E+00	41.98	OK
	1764.49	15.30	9.589E-01	9.830E-01	9.833E-01	38.98	OK
AC-228	105.21	1.10	5.839E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.627E+00	8.265E-01	8.265E-01	59.37	OK
	794.95	4.25	1.835E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.766E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.653E+00	1.133E+00	1.133E+00	28.05	OK
	968.97	15.80	1.578E+00	1.282E+00	1.282E+00	43.90	OK
RA-228	105.21	1.10	5.839E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.627E+00	8.265E-01	8.265E-01	59.37	OK
	794.95	4.25	1.835E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.766E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.653E+00	1.133E+00	1.133E+00	28.05	OK
	968.97	15.80	1.578E+00	1.282E+00	1.282E+00	43.90	OK
TH-228	74.82	10.28	3.925E+00	2.323E+00	2.323E+00	56.07	OK
	77.11	17.10	3.925E+00	1.397E+00	1.397E+00	56.07	OK
	238.63	43.60*	4.775E+00	9.622E-01	9.622E-01	13.75	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	300.09	3.30	3.996E+00	6.688E-01	6.688E-01	176.29	OK
	609.32	45.49*	2.255E+00	1.129E+00	1.129E+00	17.00	OK
	1120.29	14.92	1.407E+00	1.289E+00	1.289E+00	41.98	OK
	1764.49	15.30	9.589E-01	9.830E-01	9.830E-01	38.98	OK
PA-231	283.69	1.70	4.183E+00	-----	Line Not Found	-----	Absent
	301.36	5.35*	3.996E+00	4.125E-01	4.125E-01	176.29	OK
TH-232	105.21	1.10	5.839E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.627E+00	8.265E-01	8.265E-01	59.37	OK
	835.71	1.61	1.766E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.653E+00	1.133E+00	1.133E+00	28.05	OK
	968.97	15.80	1.578E+00	1.282E+00	1.282E+00	43.90	OK
TH-234	63.29	3.70*	2.483E+00	4.719E-01	4.719E-01	562.28	OK
	92.59	4.23	5.263E+00	1.738E+00	1.738E+00	83.28	OK
U-234	609.32	45.49*	2.255E+00	1.129E+00	1.129E+00	17.00	OK
	1120.29	14.92	1.407E+00	1.289E+00	1.289E+00	41.98	OK
	1764.49	15.30	9.589E-01	9.830E-01	9.830E-01	38.98	OK
U-235	89.96	3.47	5.080E+00	1.535E+00	1.535E+00	88.12	OK
	93.35	5.60	5.263E+00	1.312E+00	1.312E+00	83.28	OK
	143.76	10.96*	6.181E+00	-----	Line Not Found	-----	Absent
	163.33	5.08	5.966E+00	2.895E-01	2.895E-01	180.74	OK
	185.72	57.20	5.616E+00	1.761E-01	1.761E-01	52.74	OK
	205.31	5.01	5.295E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	2.483E+00	4.719E-01	4.719E-01	562.28	OK
	92.59	4.23	5.263E+00	1.738E+00	1.738E+00	83.28	OK
AM-243	43.53	5.90	2.461E-01	-----	Line Not Found	-----	Absent
	74.66	67.20*	3.925E+00	3.554E-01	3.555E-01	56.07	OK
ANH-511	511.00	100.00*	2.593E+00	4.207E-02	4.207E-02	185.33	OK

Flag: "*" = Keyline

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235011.CNF;1    *
* Acquisition date   : 3-OCT-2016 08:07:11 Sensitivity      : 3.000              *
* Detector ID        : GAM33 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.76 Half life ratio : *****      *
* Sample date        : 9-DEC-2015 10:13:00 Analyst initials: MXR1      *
* Sample ID          : G405235011 Sample Quantity : 1.4650E+02 GRAM    *
* Batch Number       : 1596247 Wet Weight      : 0.00000        *
* Wet wt corr        : 1.00000 Dry Weight       : 0.00000        *
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 10-JUN-2016 07:00:49 Eff. Geometry   : CAN        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM33 CAN.CNF;8        *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.447E+01	1.613E+00	6.678E-01
CD-109	1.888E+00	2.638E+00	2.312E+00
SN-126	1.205E-01	1.684E-01	1.485E-01
CS-135	2.570E-01	2.250E-01	2.458E-01
BA-137M	2.416E-01	7.886E-02	7.398E-02
CS-137	2.553E-01	8.331E-02	7.816E-02
HG-203	2.813E+00	6.381E+00	4.499E+00
TL-208	3.090E-01	9.423E-02	6.624E-02
PB-212	9.622E-01	1.297E-01	8.860E-02
BI-214	1.129E+00	1.881E-01	1.126E-01
PB-214	1.187E+00	1.931E-01	9.264E-02
RN-222	1.129E+00	1.881E-01	1.126E-01
RA-224	6.267E-01	1.333E+00	9.496E-01
RA-226	1.129E+00	1.881E-01	1.126E-01
AC-228	1.133E+00	3.115E-01	1.924E-01
RA-228	1.133E+00	3.115E-01	1.924E-01
TH-228	9.622E-01	1.297E-01	8.860E-02
TH-230	1.129E+00	1.880E-01	1.125E-01
PA-231	4.125E-01	7.127E-01	6.999E-01
TH-232	1.133E+00	3.115E-01	1.924E-01
TH-234	4.719E-01	2.600E+00	2.657E+00
U-234	1.129E+00	1.880E-01	1.125E-01
U-235	6.013E-02	2.029E-01	3.875E-01
U-238	4.719E-01	2.600E+00	2.657E+00
AM-243	3.555E-01	1.953E-01	9.832E-02
ANH-511	4.207E-02	7.641E-02	5.558E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-5.945E-01	1.274E+01	2.471E+01	NOT IDENT.
NA-22	-4.517E-02	3.949E-02	6.094E-02	NOT IDENT.
NA-24	0.000E+00	1.335E+41	0.000E+00	SHORT HLIF
AL-26	-5.270E-03	2.490E-02	5.224E-02	NOT IDENT.

SC-46	-6.396E-02	3.082E-01	5.412E-01	FAIL ABUN
V-48	0.000E+00	1.507E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.031E+02	0.000E+00	SHORT HLIF
MN-54	3.719E-03	6.319E-02	1.223E-01	NOT IDENT.
CO-56	1.604E-02	4.266E-01	8.360E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	1.222E-02	4.696E-02	9.024E-02	NOT IDENT.
CO-58	-2.268E-01	4.725E-01	8.438E-01	NOT IDENT.
FE-59	-1.039E+00	5.646E+00	1.133E+01	NOT IDENT.
CO-60	-6.480E-03	3.547E-02	7.091E-02	NOT IDENT.
ZN-65	7.180E-02	1.755E-01	3.441E-01	NOT IDENT.
GE-68	1.522E+00	2.297E+00	5.111E+00	NOT IDENT.
AS-73	4.634E+00	1.069E+01	2.202E+01	NOT IDENT.
AS-74	0.000E+00	6.303E+03	0.000E+00	SHORT HLIF
SE-75	6.535E-02	1.891E-01	3.600E-01	FAIL ABUN
BR-77	0.000E+00	1.785E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	8.736E+02	0.000E+00	SHORT HLIF
RB-83	2.006E-01	5.353E-01	1.129E+00	NOT IDENT.
KR-85	1.450E+00	7.081E+00	1.285E+01	NOT IDENT.
SR-85	1.517E-01	7.411E-01	1.344E+00	NOT IDENT.
RB-86	0.000E+00	2.606E+04	0.000E+00	SHORT HLIF
Y-88	-8.954E-02	2.715E-01	5.115E-01	NOT IDENT.
Y-91	-7.957E+01	5.157E+02	1.010E+03	NOT IDENT.
NB-94	-3.468E-03	2.946E-02	5.606E-02	NOT IDENT.
NB-95	-2.194E-01	1.070E+00	1.748E+00	NOT IDENT.
NB-95M	-7.068E-01	2.544E+00	4.077E+00	NOT IDENT.
ZR-95	7.376E-01	1.301E+00	2.776E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.345E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.292E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.793E+41	0.000E+00	SHORT HLIF
RH-101	-3.358E-02	3.564E-02	6.130E-02	NOT IDENT.
RH-102	-1.877E-04	6.083E-02	1.178E-01	NOT IDENT.
RU-103	-2.149E+00	5.258E+00	9.805E+00	FAIL ABUN
RH-106	-1.854E-01	4.052E-01	7.438E-01	NOT IDENT.
RU-106	-1.854E-01	4.052E-01	7.438E-01	NOT IDENT.
AG-108M	6.948E-03	2.791E-02	5.626E-02	NOT IDENT.
AG-110M	4.396E-03	8.931E-02	1.606E-01	NOT IDENT.
SN-113	-1.097E-01	2.371E-01	4.431E-01	NOT IDENT.
CD-115	0.000E+00	2.202E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	9.117E+04	0.000E+00	SHORT HLIF
TE-123M	-1.092E-01	1.297E-01	2.210E-01	NOT IDENT.
SB-124	-9.972E-03	1.333E+00	3.141E+00	NOT IDENT.
SB-125	-8.818E-03	1.124E-01	2.172E-01	FAIL ABUN
TE-125M	2.608E+02	2.761E+02	5.574E+02	NOT IDENT.
I-126	0.000E+00	1.036E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.108E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.788E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.369E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.099E+26	0.000E+00	SHORT HLIF
BA-133	-1.680E-02	4.204E-02	7.083E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	5.235E-03	4.819E-02	9.439E-02	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.923E+05	0.000E+00	SHORT HLIF
CE-139	2.759E-02	1.227E-01	2.131E-01	NOT IDENT.
BA-140	0.000E+00	1.265E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	2.156E+05	0.000E+00	SHORT HLIF
CE-141	-2.715E+00	2.561E+01	4.689E+01	NOT IDENT.
CE-143	0.000E+00	1.121E+41	0.000E+00	SHORT HLIF
CE-144	-1.632E-01	3.535E-01	6.338E-01	NOT IDENT.
PM-144	9.472E-04	5.455E-02	1.054E-01	NOT IDENT.
PR-144	1.446E-01	4.746E+00	9.187E+00	NOT IDENT.
PM-146	-3.349E-02	4.771E-02	8.562E-02	NOT IDENT.
ND-147	0.000E+00	2.826E+07	0.000E+00	SHORT HLIF
PM-147	3.068E+02	8.045E+02	1.564E+03	NOT IDENT.
PM-149	0.000E+00	3.366E+40	0.000E+00	SHORT HLIF
EU-150	1.228E-02	2.552E-02	4.849E-02	FAIL ABUN
EU-152	2.065E-02	9.906E-02	1.979E-01	NOT IDENT.
GD-153	-3.455E-02	2.178E-01	3.728E-01	NOT IDENT.
EU-154	-1.059E-01	9.805E-02	1.551E-01	NOT IDENT.
EU-155	-3.636E-02	1.082E-01	1.993E-01	FAIL ABUN
TB-160	2.603E+00	3.089E+00	3.609E+00	FAIL ABUN
HO-166M	2.822E-02	5.407E-02	1.130E-01	FAIL ABUN
TM-171	-7.373E+00	2.694E+01	5.225E+01	NOT IDENT.
HF-172	7.132E-03	2.314E-01	4.345E-01	FAIL ABUN
LU-172	8.715E-03	6.365E-02	1.355E-01	FAIL ABUN

LU-176	4.116E-03	2.251E-02	4.560E-02	FAIL ABUN
HF-181	1.807E+00	3.986E+00	8.302E+00	NOT IDENT.
TA-182	-3.295E-01	9.705E-01	1.828E+00	FAIL ABUN
RE-183	1.712E+00	3.502E+00	7.147E+00	FAIL ABUN
RE-184	1.509E+01	2.852E+01	6.010E+01	FAIL ABUN
W-188	-8.038E-01	1.136E+02	2.040E+02	FAIL ABUN
IR-192	-1.862E-01	3.850E-01	7.339E-01	FAIL ABUN
BI-207	4.969E-02	5.131E-02	1.159E-01	FAIL ABUN
PB-210	3.479E+00	5.166E+00	1.090E+01	NOT IDENT.
BI-211	0.000E+00	5.318E-01	8.701E-01	FAIL ABUN
PB-211	1.262E+00	1.016E+00	1.464E+00	FAIL ABUN
BI-212	9.324E-01	7.616E-01	1.165E+00	FAIL ABUN
RN-219	1.905E-02	3.799E-01	6.826E-01	FAIL ABUN
RA-223	-2.012E-01	6.095E-01	1.112E+00	FAIL ABUN
AC-227	-1.880E-02	2.417E-01	3.986E-01	FAIL ABUN
TH-227	-1.880E-02	2.417E-01	3.986E-01	FAIL ABUN
TH-229	1.531E-01	4.706E-01	8.856E-01	FAIL ABUN
TH-231	-2.012E-01	6.095E-01	1.112E+00	FAIL ABUN
PA-233	1.608E-02	5.091E-02	1.053E-01	FAIL ABUN
PA-234	-1.947E-02	2.525E-01	4.826E-01	FAIL ABUN
PA-234M	-2.344E+00	4.564E+00	8.080E+00	NOT IDENT.
NP-237	1.608E-02	5.091E-02	1.053E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	1.453E-01	2.540E-01	4.982E-01	NOT IDENT.
PU-239	5.633E+01	3.310E+02	6.237E+02	NOT IDENT.
AM-241	-1.001E-01	1.674E-01	3.119E-01	NOT IDENT.
CM-243	6.895E-02	9.505E-02	1.917E-01	NOT IDENT.
BK-247	-2.901E-02	7.847E-02	1.234E-01	NOT IDENT.
CM-247	5.343E-03	3.533E-02	6.431E-02	NOT IDENT.
CF-249	2.814E-02	3.785E-02	7.964E-02	FAIL ABUN
CF-251	1.066E-01	1.181E-01	2.335E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	341	10.66*	1.133E+00	1.447E+01	1.447E+01	11.37
CD-109	88.03	87	3.70*	4.889E+00	2.452E+00	3.842E+00	68.99
SN-126	64.28	8	9.60	2.483E+00	1.819E-01	1.819E-01	562.28
	86.94	87	8.90	4.889E+00	1.019E+00	1.019E+00	68.99
	87.57	87	37.00*	4.889E+00	2.452E-01	2.452E-01	68.99
CS-135	268.22	35	16.00*	4.353E+00	2.570E-01	2.570E-01	89.36
BA-137M	661.66	88	89.90*	2.115E+00	2.371E-01	2.416E-01	33.30
CS-137	661.66	88	85.10*	2.115E+00	2.505E-01	2.553E-01	33.30
HG-203	70.83	-----	3.69	3.364E+00	-----	Line Not Found	-----
	72.87	-----	6.19	3.591E+00	-----	Line Not Found	-----
	279.20	22	81.56*	4.230E+00	3.294E-02	2.813E+00	231.47
TL-208	277.37	-----	6.60	4.258E+00	-----	Line Not Found	-----
	583.19	120	85.00*	2.334E+00	3.090E-01	3.090E-01	31.11
	860.56	19	12.50	1.727E+00	4.495E-01	4.495E-01	101.63
BI-211	72.87	-----	1.23	3.591E+00	-----	Line Not Found	-----
	351.06	290	12.92*	3.513E+00	3.270E+00	3.270E+00	16.59
PB-212	74.82	344	10.28	3.925E+00	4.363E+00	4.363E+00	28.70
	77.11	344	17.10	3.925E+00	2.623E+00	2.623E+00	28.70
	238.63	391	43.60*	4.775E+00	9.622E-01	9.622E-01	13.75
	300.09	17	3.30	3.996E+00	6.688E-01	6.688E-01	176.29
BI-214	609.32	226	45.49*	2.255E+00	1.129E+00	1.129E+00	17.00
	1120.29	53	14.92	1.407E+00	1.289E+00	1.290E+00	41.98
	1764.49	28	15.30	9.589E-01	9.830E-01	9.833E-01	38.98
PB-214	74.82	344	5.80	3.925E+00	7.733E+00	7.736E+00	28.70
	77.11	344	9.70	3.925E+00	4.624E+00	4.626E+00	28.70
	87.09	87	3.41	4.889E+00	2.660E+00	2.661E+00	68.99
	242.00	114	7.25	4.731E+00	1.707E+00	1.708E+00	40.77
	295.22	197	18.42	4.052E+00	1.353E+00	1.353E+00	24.17
	351.93	290	35.60*	3.513E+00	1.187E+00	1.187E+00	16.59
RN-222	609.32	226	45.49*	2.255E+00	1.129E+00	1.129E+00	17.00
	1120.29	53	14.92	1.407E+00	1.289E+00	1.290E+00	41.98
	1764.49	28	15.30	9.589E-01	9.830E-01	9.833E-01	38.98
RA-224	240.99	114	4.10*	4.731E+00	3.019E+00	3.019E+00	40.77
RA-226	609.32	226	45.49*	2.255E+00	1.129E+00	1.129E+00	17.00
	1120.29	53	14.92	1.407E+00	1.289E+00	1.290E+00	41.98
	1764.49	28	15.30	9.589E-01	9.830E-01	9.833E-01	38.98
AC-228	105.21	-----	1.10	5.839E+00	-----	Line Not Found	-----
	338.32	66	11.27	3.627E+00	8.265E-01	8.265E-01	59.37
	794.95	-----	4.25	1.835E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.766E+00	-----	Line Not Found	-----
	911.20	94	25.80*	1.653E+00	1.133E+00	1.133E+00	28.05
	968.97	62	15.80	1.578E+00	1.282E+00	1.282E+00	43.90
RA-228	105.21	-----	1.10	5.839E+00	-----	Line Not Found	-----
	338.32	66	11.27	3.627E+00	8.265E-01	8.265E-01	59.37
	794.95	-----	4.25	1.835E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.766E+00	-----	Line Not Found	-----
	911.20	94	25.80*	1.653E+00	1.133E+00	1.133E+00	28.05

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	968.97	62	15.80	1.578E+00	1.282E+00	1.282E+00	43.90
	74.82	344	10.28	3.925E+00	4.363E+00	4.363E+00	28.70
	77.11	344	17.10	3.925E+00	2.623E+00	2.623E+00	28.70
	238.63	391	43.60*	4.775E+00	9.622E-01	9.622E-01	13.75
TH-230	300.09	17	3.30	3.996E+00	6.688E-01	6.688E-01	176.29
	609.32	226	45.49*	2.255E+00	1.129E+00	1.129E+00	17.00
	1120.29	53	14.92	1.407E+00	1.289E+00	1.289E+00	41.98
	1764.49	28	15.30	9.589E-01	9.830E-01	9.830E-01	38.98
PA-231	283.69	-----	1.70	4.183E+00	-----	Line Not Found	-----
	301.36	17	5.35*	3.996E+00	4.125E-01	4.125E-01	176.29
TH-232	105.21	-----	1.10	5.839E+00	-----	Line Not Found	-----
	338.32	66	11.27	3.627E+00	8.265E-01	8.265E-01	59.37
	835.71	-----	1.61	1.766E+00	-----	Line Not Found	-----
	911.20	94	25.80*	1.653E+00	1.133E+00	1.133E+00	28.05
TH-234	968.97	62	15.80	1.578E+00	1.282E+00	1.282E+00	43.90
	63.29	8	3.70*	2.483E+00	4.719E-01	4.719E-01	562.28
	92.59	75	4.23	5.263E+00	1.738E+00	1.738E+00	83.28
U-234	609.32	226	45.49*	2.255E+00	1.129E+00	1.129E+00	17.00
	1120.29	53	14.92	1.407E+00	1.289E+00	1.289E+00	41.98
	1764.49	28	15.30	9.589E-01	9.830E-01	9.830E-01	38.98
U-235	89.96	53	3.47	5.080E+00	1.535E+00	1.535E+00	88.12
	93.35	75	5.60	5.263E+00	1.312E+00	1.312E+00	83.28
	143.76	-----	10.96*	6.181E+00	-----	Line Not Found	-----
	163.33	17	5.08	5.966E+00	2.895E-01	2.895E-01	180.74
	185.72	110	57.20	5.616E+00	1.761E-01	1.761E-01	52.74
U-238	205.31	-----	5.01	5.295E+00	-----	Line Not Found	-----
	63.29	8	3.70*	2.483E+00	4.719E-01	4.719E-01	562.28
	92.59	75	4.23	5.263E+00	1.738E+00	1.738E+00	83.28
AM-243	43.53	-----	5.90	2.461E-01	-----	Line Not Found	-----
ANH-511	74.66	344	67.20*	3.925E+00	6.675E-01	6.675E-01	28.70
	511.00	21	100.00*	2.593E+00	4.207E-02	4.207E-02	185.33

Flag: "*" = Keyline

Total number of lines in spectrum 45
Number of unidentified lines 10
Number of lines tentatively identified by NID 35 77.78%

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	1.447E+01	1.447E+01	0.165E+01	11.37	
CD-109	461.40D	1.57	2.452E+00	3.842E+00	2.650E+00	68.99	
SN-126	2.30E+05Y	1.00	2.452E-01	2.452E-01	1.691E-01	68.99	
CS-135	2.30E+06Y	1.00	2.570E-01	2.570E-01	2.296E-01	89.36	
BA-137M	30.08Y	1.02	2.371E-01	2.416E-01	0.805E-01	33.30	
CS-137	30.08Y	1.02	2.505E-01	2.553E-01	0.850E-01	33.30	
HG-203	46.59D	85.4	3.294E-02	2.813E+00	6.512E+00	231.47	
TL-208	1.41E+10Y	1.00	3.090E-01	3.090E-01	0.961E-01	31.11	
BI-211	7.04E+08Y	1.00	3.270E+00	3.270E+00	0.543E+00	16.59	
PB-212	1.41E+10Y	1.00	9.622E-01	9.622E-01	1.323E-01	13.75	
BI-214	1600.00Y	1.00	1.129E+00	1.129E+00	0.192E+00	17.00	
PB-214	1600.00Y	1.00	1.187E+00	1.187E+00	0.197E+00	16.59	
RN-222	1600.00Y	1.00	1.129E+00	1.129E+00	0.192E+00	17.00	
RA-224	1.41E+10Y	1.00	3.019E+00	3.019E+00	1.231E+00	40.77	
RA-226	1600.00Y	1.00	1.129E+00	1.129E+00	0.192E+00	17.00	
AC-228	1.41E+10Y	1.00	1.133E+00	1.133E+00	0.318E+00	28.05	
RA-228	1.41E+10Y	1.00	1.133E+00	1.133E+00	0.318E+00	28.05	
TH-228	1.41E+10Y	1.00	9.622E-01	9.622E-01	1.323E-01	13.75	
TH-230	7.54E+04Y	1.00	1.129E+00	1.129E+00	0.192E+00	17.00	
PA-231	7.04E+08Y	1.00	4.125E-01	4.125E-01	7.273E-01	176.29	
TH-232	1.41E+10Y	1.00	1.133E+00	1.133E+00	0.318E+00	28.05	
TH-234	4.47E+09Y	1.00	4.719E-01	4.719E-01	26.53E-01	562.28	
U-234	2.45E+05Y	1.00	1.129E+00	1.129E+00	0.192E+00	17.00	
U-235	7.04E+08Y	1.00	1.761E-01	1.761E-01	0.929E-01	52.74	K
U-238	4.47E+09Y	1.00	4.719E-01	4.719E-01	26.53E-01	562.28	
AM-243	7370.00Y	1.00	6.675E-01	6.675E-01	1.916E-01	28.70	
ANH-511	1.00E+09Y	1.00	4.207E-02	4.207E-02	7.797E-02	185.33	
Total Activity :			3.894E+01	4.312E+01			

Grand Total Activity : 3.894E+01 4.312E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.23	38	84	1.11	418.20	415	7	9.11E-03	94.0	5.23E+00	
0	253.11	27	55	0.65	505.86	502	8	6.54E-03	****	4.57E+00	T
1	271.20	31	60	1.25	542.00	534	12	7.68E-03	****	4.33E+00	T
0	328.33	53	53	1.22	656.16	653	9	1.34E-02	61.8	3.72E+00	T
0	405.09	29	31	1.67	809.54	805	9	7.43E-03	82.2	3.13E+00	T
0	410.63	20	48	1.27	820.61	815	11	5.00E-03	****	3.09E+00	T
0	462.59	51	36	4.52	924.45	917	15	1.32E-02	60.6	2.81E+00	T
0	653.95	5	30	0.84	1306.93	1298	13	1.44E-03	****	2.13E+00	
0	726.96	24	20	2.41	1452.90	1447	10	6.43E-03	83.4	1.97E+00	T
0	769.04	14	20	1.49	1537.04	1533	8	3.83E-03	****	1.88E+00	
0	805.86	12	17	1.03	1610.67	1605	9	3.19E-03	****	1.82E+00	
0	825.89	12	8	1.28	1650.71	1646	9	3.25E-03	****	1.78E+00	
0	880.86	15	15	4.75	1760.64	1753	14	4.05E-03	****	1.70E+00	T
0	894.48	25	14	0.62	1787.88	1779	18	6.75E-03	81.8	1.68E+00	T
0	934.66	28	8	1.44	1868.25	1861	15	7.64E-03	57.8	1.62E+00	
0	979.57	12	14	0.94	1958.08	1948	14	3.33E-03	****	1.56E+00	
0	1166.35	9	4	0.71	2331.73	2328	8	2.67E-03	****	1.36E+00	
0	1195.46	11	9	1.38	2389.97	2386	9	2.99E-03	****	1.34E+00	
0	1238.94	17	12	2.42	2476.97	2472	10	4.69E-03	92.0	1.30E+00	T
0	1592.82	10	1	1.63	3185.30	3182	7	2.80E-03	82.0	1.05E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235011.CNF;1
* Acquisition date   : 3-OCT-2016 08:07:11 Sensitivity      : 3.000
* Detector ID        : GAM33 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.76 Half life ratio : *****
* Sample date        : 9-DEC-2015 10:13:00 Nuclide Library : SOLID
* Sample ID          : G405235011 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.4650E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 10-JUN-2016 07:00:49 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM33 CAN.CNF;8
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

----,Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.762E-01
CD-109	1.093E+00
SN-126	7.021E-02
CS-135	1.126E-01
BA-137M	3.320E-02
CS-137	3.507E-02
HG-203	2.071E+00
TL-208	2.954E-02
PB-212	4.083E-02
BI-214	4.936E-02
PB-214	4.057E-02
RN-222	4.936E-02
RA-224	4.376E-01
RA-226	4.936E-02
AC-228	7.970E-02
RA-228	7.970E-02
TH-228	4.083E-02
TH-230	4.934E-02
PA-231	3.161E-01
TH-232	7.970E-02
TH-234	1.247E+00
U-234	4.934E-02
U-235	1.830E-01
U-238	1.247E+00
AM-243	4.625E-02
ANH-511	2.504E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.113E+01	NOT IDENT.
NA-22	2.361E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.870E-02	NOT IDENT.
SC-46	2.209E-01	FAIL ABUN

V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.340E-02	NOT IDENT.
CO-56	3.590E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	4.215E-02	NOT IDENT.
CO-58	3.487E-01	NOT IDENT.
FE-59	4.751E+00	NOT IDENT.
CO-60	2.910E-02	NOT IDENT.
ZN-65	1.492E-01	NOT IDENT.
GE-68	2.233E+00	NOT IDENT.
AS-73	1.022E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.643E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.960E-01	NOT IDENT.
KR-85	5.753E+00	NOT IDENT.
SR-85	6.020E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	2.030E-01	NOT IDENT.
Y-91	4.349E+02	NOT IDENT.
NB-94	2.452E-02	NOT IDENT.
NB-95	7.787E-01	NOT IDENT.
NB-95M	1.885E+00	NOT IDENT.
ZR-95	1.215E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.859E-02	NOT IDENT.
RH-102	5.217E-02	NOT IDENT.
RU-103	4.323E+00	FAIL ABUN
RH-106	3.156E-01	NOT IDENT.
RU-106	3.156E-01	NOT IDENT.
AG-108M	2.546E-02	NOT IDENT.
AG-110M	6.716E-02	NOT IDENT.
SN-113	2.008E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.023E-01	NOT IDENT.
SB-124	1.113E+00	NOT IDENT.
SB-125	9.876E-02	FAIL ABUN
TE-125M	2.618E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.190E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	4.127E-02	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.965E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.201E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.950E-01	NOT IDENT.
PM-144	4.651E-02	NOT IDENT.
PR-144	4.056E+00	NOT IDENT.
PM-146	3.854E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.304E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.217E-02	FAIL ABUN
EU-152	9.107E-02	NOT IDENT.
GD-153	1.755E-01	NOT IDENT.
EU-154	6.074E-02	NOT IDENT.
EU-155	9.292E-02	FAIL ABUN
TB-160	1.563E+00	FAIL ABUN
HO-166M	4.993E-02	FAIL ABUN
TM-171	2.415E+01	NOT IDENT.
HF-172	2.031E-01	FAIL ABUN
LU-172	5.724E-02	FAIL ABUN
LU-176	2.084E-02	FAIL ABUN

HF-181	3.718E+00	NOT IDENT.
TA-182	7.934E-01	FAIL ABUN
RE-183	3.338E+00	FAIL ABUN
RE-184	2.618E+01	FAIL ABUN
W-188	9.347E+01	FAIL ABUN
IR-192	3.293E-01	FAIL ABUN
BI-207	5.145E-02	FAIL ABUN
PB-210	5.068E+00	NOT IDENT.
BI-211	4.194E-01	FAIL ABUN
PB-211	6.713E-01	FAIL ABUN
BI-212	5.287E-01	FAIL ABUN
RN-219	3.068E-01	FAIL ABUN
RA-223	5.083E-01	FAIL ABUN
AC-227	1.825E-01	FAIL ABUN
TH-227	1.825E-01	FAIL ABUN
TH-229	4.128E-01	FAIL ABUN
TH-231	5.083E-01	FAIL ABUN
PA-233	4.783E-02	FAIL ABUN
PA-234	2.048E-01	FAIL ABUN
PA-234M	3.496E+00	NOT IDENT.
NP-237	4.783E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.340E-01	NOT IDENT.
PU-239	2.932E+02	NOT IDENT.
AM-241	1.454E-01	NOT IDENT.
CM-243	8.965E-02	NOT IDENT.
BK-247	5.623E-02	NOT IDENT.
CM-247	2.899E-02	NOT IDENT.
CF-249	3.647E-02	FAIL ABUN
CF-251	1.094E-01	NOT IDENT.


```

*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                          *
*                               Charleston, SC 29407                     *
*                               *****                                *
*                               *                                     *
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                     *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235011.CNF;1 *
* Acquisition date   : 3-OCT-2016 08:07:11 Sensitivity      : 3.000      *
* Detector ID        : GAM33 Energy tolerance: 1.500      *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.76 Half life ratio : *****      *
* Sample date       : 9-DEC-2015 10:13:00 Nuclide Library : SOLID      *
* Sample ID         : G405235011 Analyst initials: MXR1      *
* Batch Number      : 1596247 Sample Quantity : 1.4650E+02 GRAM      *
*                               Quantity Err(%) : 1.3652E-03 %      *
* Wet wt corr       : 1.00000 Wet Weight : 0.00000      *
*                               Dry Weight : 0.00000      *
*                               *****                                *
*                               *                                     *
*                               CALIBRATION INFORMATION                   *
*                               *                                     *
* Eff. Cal. date    : 10-JUN-2016 07:00:49 Eff. Geometry : CAN      *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM33 CAN.CNF;8      *
*                               *****                                *

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.447E+01	1.781E+00	1.781E+00
CD-109	1.888E+00	2.654E+00	2.654E+00
SN-126	1.205E-01	1.693E-01	1.693E-01
CS-135	2.570E-01	2.257E-01	2.257E-01
BA-137M	2.416E-01	7.954E-02	7.954E-02
CS-137	2.553E-01	8.403E-02	8.403E-02
HG-203	2.813E+00	6.383E+00	6.383E+00
TL-208	3.090E-01	9.513E-02	9.513E-02
PB-212	9.622E-01	1.392E-01	1.392E-01
BI-214	1.129E+00	1.942E-01	1.942E-01
PB-214	1.187E+00	1.992E-01	1.992E-01
RN-222	1.129E+00	1.942E-01	1.942E-01
RA-224	6.267E-01	1.342E+00	1.342E+00
RA-226	1.129E+00	1.942E-01	1.942E-01
AC-228	1.133E+00	3.168E-01	3.168E-01
RA-228	1.133E+00	3.168E-01	3.168E-01
TH-228	9.622E-01	1.392E-01	1.392E-01
TH-230	1.129E+00	1.941E-01	1.941E-01
PA-231	4.125E-01	7.181E-01	7.181E-01
TH-232	1.133E+00	3.168E-01	3.168E-01
TH-234	4.719E-01	2.602E+00	2.602E+00
U-234	1.129E+00	1.941E-01	1.941E-01
U-235	6.013E-02	2.029E-01	2.029E-01
U-238	4.719E-01	2.602E+00	2.602E+00
AM-243	3.555E-01	1.987E-01	1.987E-01
ANH-511	4.207E-02	7.643E-02	7.643E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-5.945E-01	1.274E+01	1.274E+01	NOT IDENT.
NA-22	-4.517E-02	3.952E-02	4.446E-02	NOT IDENT.
NA-24	-1.000E+41	1.404E+41	0.000E+00	SHORT HLIF
AL-26	-5.270E-03	2.491E-02	2.502E-02	NOT IDENT.

SC-46	-6.396E-02	3.083E-01	3.096E-01	FAIL ABUN
V-48	8.494E+03	1.508E+04	1.556E+04	SHORT HLIF
CR-51	-7.144E+01	4.031E+02	4.044E+02	SHORT HLIF
MN-54	3.719E-03	6.319E-02	6.321E-02	NOT IDENT.
CO-56	1.604E-02	4.266E-01	4.267E-01	FAIL ABUN
MN-56	1.000E+41	2.977E+42	0.000E+00	SHORT HLIF
CO-57	1.222E-02	4.696E-02	4.729E-02	NOT IDENT.
CO-58	-2.268E-01	4.726E-01	4.835E-01	NOT IDENT.
FE-59	-1.039E+00	5.647E+00	5.666E+00	NOT IDENT.
CO-60	-6.480E-03	3.547E-02	3.559E-02	NOT IDENT.
ZN-65	7.180E-02	1.756E-01	1.785E-01	NOT IDENT.
GE-68	1.522E+00	2.298E+00	2.398E+00	NOT IDENT.
AS-73	4.634E+00	1.073E+01	1.093E+01	NOT IDENT.
AS-74	7.799E+02	6.303E+03	6.313E+03	SHORT HLIF
SE-75	6.535E-02	1.892E-01	1.914E-01	FAIL ABUN
BR-77	1.325E+38	1.143E+39	0.000E+00	SHORT HLIF
SR-82	6.801E+01	8.736E+02	8.741E+02	SHORT HLIF
RB-83	2.006E-01	5.360E-01	5.435E-01	NOT IDENT.
KR-85	1.450E+00	7.082E+00	7.112E+00	NOT IDENT.
SR-85	1.517E-01	7.411E-01	7.442E-01	NOT IDENT.
RB-86	9.534E+03	2.607E+04	2.642E+04	SHORT HLIF
Y-88	-8.954E-02	2.716E-01	2.745E-01	NOT IDENT.
Y-91	-7.957E+01	5.157E+02	5.169E+02	NOT IDENT.
NB-94	-3.468E-03	2.946E-02	2.951E-02	NOT IDENT.
NB-95	-2.194E-01	1.070E+00	1.074E+00	NOT IDENT.
NB-95M	-7.068E-01	2.544E+00	2.564E+00	NOT IDENT.
ZR-95	7.376E-01	1.301E+00	1.343E+00	NOT IDENT.
NB-97	1.000E+41	2.701E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.345E+41	0.000E+00	SHORT HLIF
MO-99	3.932E+30	1.292E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.796E+41	0.000E+00	SHORT HLIF
RH-101	-3.358E-02	3.615E-02	3.919E-02	NOT IDENT.
RH-102	-1.877E-04	6.083E-02	6.083E-02	NOT IDENT.
RU-103	-2.149E+00	5.259E+00	5.348E+00	FAIL ABUN
RH-106	-1.854E-01	4.054E-01	4.139E-01	NOT IDENT.
RU-106	-1.854E-01	4.054E-01	4.139E-01	NOT IDENT.
AG-108M	6.948E-03	2.791E-02	2.809E-02	NOT IDENT.
AG-110M	4.396E-03	8.931E-02	8.933E-02	NOT IDENT.
SN-113	-1.097E-01	2.372E-01	2.423E-01	NOT IDENT.
CD-115	1.272E+38	2.202E+39	0.000E+00	SHORT HLIF
SN-117M	-3.348E+04	9.125E+04	9.249E+04	SHORT HLIF
TE-123M	-1.092E-01	1.298E-01	1.388E-01	NOT IDENT.
SB-124	-9.972E-03	1.333E+00	1.333E+00	NOT IDENT.
SB-125	-8.818E-03	1.124E-01	1.125E-01	FAIL ABUN
TE-125M	2.608E+02	2.765E+02	3.005E+02	NOT IDENT.
I-126	9.615E+05	1.045E+06	1.131E+06	SHORT HLIF
SB-126	5.093E+05	1.112E+06	1.135E+06	SHORT HLIF
SB-127	-1.559E+22	2.787E+22	0.000E+00	SHORT HLIF
I-131	-3.096E+09	4.371E+09	4.589E+09	SHORT HLIF
I-132	1.000E+41	2.179E+43	0.000E+00	SHORT HLIF
TE-132	6.791E+25	3.112E+26	0.000E+00	SHORT HLIF
BA-133	-1.680E-02	4.205E-02	4.273E-02	NOT IDENT.
I-133	-1.000E+41	4.789E+41	0.000E+00	SHORT HLIF
CS-134	5.235E-03	4.819E-02	4.825E-02	NOT IDENT.
I-135	-1.000E+41	7.403E+41	0.000E+00	SHORT HLIF
CS-136	1.611E+05	2.928E+05	3.017E+05	SHORT HLIF
CE-139	2.759E-02	1.228E-01	1.235E-01	NOT IDENT.
BA-140	8.039E+05	1.266E+06	1.317E+06	SHORT HLIF
LA-140	-3.472E+04	2.156E+05	2.162E+05	SHORT HLIF
CE-141	-2.715E+00	2.561E+01	2.564E+01	NOT IDENT.
CE-143	1.000E+41	1.126E+41	0.000E+00	SHORT HLIF
CE-144	-1.632E-01	3.536E-01	3.612E-01	NOT IDENT.
PM-144	9.472E-04	5.455E-02	5.455E-02	NOT IDENT.
PR-144	1.446E-01	4.746E+00	4.746E+00	NOT IDENT.
PM-146	-3.349E-02	4.777E-02	5.010E-02	NOT IDENT.
ND-147	-1.297E+07	2.827E+07	2.887E+07	SHORT HLIF
PM-147	3.068E+02	8.047E+02	8.165E+02	NOT IDENT.
PM-149	-9.900E+39	3.373E+40	0.000E+00	SHORT HLIF
EU-150	1.228E-02	2.552E-02	2.611E-02	FAIL ABUN
EU-152	2.065E-02	9.906E-02	9.950E-02	NOT IDENT.
GD-153	-3.455E-02	2.178E-01	2.184E-01	NOT IDENT.
EU-154	-1.059E-01	9.814E-02	1.091E-01	NOT IDENT.
EU-155	-3.636E-02	1.082E-01	1.095E-01	FAIL ABUN
TB-160	2.603E+00	3.093E+00	3.308E+00	FAIL ABUN
HO-166M	2.822E-02	5.409E-02	5.556E-02	FAIL ABUN
TM-171	-7.373E+00	2.695E+01	2.715E+01	NOT IDENT.
HF-172	7.132E-03	2.314E-01	2.315E-01	FAIL ABUN
LU-172	8.715E-03	6.365E-02	6.378E-02	FAIL ABUN

LU-176	4.116E-03	2.251E-02	2.258E-02	FAIL ABUN
HF-181	1.807E+00	3.986E+00	4.069E+00	NOT IDENT.
TA-182	-3.295E-01	9.706E-01	9.819E-01	FAIL ABUN
RE-183	1.712E+00	3.512E+00	3.596E+00	FAIL ABUN
RE-184	1.509E+01	2.875E+01	2.954E+01	FAIL ABUN
W-188	-8.038E-01	1.136E+02	1.136E+02	FAIL ABUN
IR-192	-1.862E-01	3.851E-01	3.941E-01	FAIL ABUN
BI-207	4.969E-02	5.135E-02	5.602E-02	FAIL ABUN
PB-210	3.479E+00	5.176E+00	5.408E+00	NOT IDENT.
BI-211	3.270E+00	5.514E-01	1.574E+00	FAIL ABUN
PB-211	1.262E+00	1.018E+00	1.166E+00	FAIL ABUN
BI-212	9.324E-01	7.631E-01	8.712E-01	FAIL ABUN
RN-219	1.905E-02	3.800E-01	3.801E-01	FAIL ABUN
RA-223	-2.012E-01	6.097E-01	6.164E-01	FAIL ABUN
AC-227	-1.880E-02	2.417E-01	2.419E-01	FAIL ABUN
TH-227	-1.880E-02	2.417E-01	2.419E-01	FAIL ABUN
TH-229	1.531E-01	4.707E-01	4.757E-01	FAIL ABUN
TH-231	-2.012E-01	6.097E-01	6.164E-01	FAIL ABUN
PA-233	1.608E-02	5.092E-02	5.143E-02	FAIL ABUN
PA-234	-1.947E-02	2.535E-01	2.537E-01	FAIL ABUN
PA-234M	-2.344E+00	4.566E+00	4.686E+00	NOT IDENT.
NP-237	1.608E-02	5.092E-02	5.143E-02	FAIL ABUN
NP-238	-1.000E+41	2.592E+41	0.000E+00	SHORT HLIF
NP-239	1.453E-01	2.543E-01	2.626E-01	NOT IDENT.
PU-239	5.633E+01	3.310E+02	3.320E+02	NOT IDENT.
AM-241	-1.001E-01	1.675E-01	1.735E-01	NOT IDENT.
CM-243	6.895E-02	9.527E-02	1.002E-01	NOT IDENT.
BK-247	-2.901E-02	7.869E-02	7.977E-02	NOT IDENT.
CM-247	5.343E-03	3.534E-02	3.542E-02	NOT IDENT.
CF-249	2.814E-02	3.792E-02	3.999E-02	FAIL ABUN
CF-251	1.066E-01	1.187E-01	1.281E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	55.1871	87.09	100.1593	136.47	54.8256
45.60	63.9396	87.57	100.2393	140.51	0.0000
46.54	45.2391	88.03	100.3156	143.76	73.0133
49.72	0.0000	88.34	100.3668	144.24	78.5901
51.35	54.3427	88.47	100.3881	145.44	80.9187
51.87	59.1808	89.96	100.6333	152.43	63.7006
52.39	55.4288	1093.63	100.7440	153.25	0.0000
52.97	47.8468	91.11	0.0000	323.87	82.8672
53.44	46.9400	92.59	101.0610	156.02	0.0000
54.07	47.9658	93.35	101.1829	158.56	0.0000
57.36	0.0000	94.56	101.3773	159.00	70.9317
57.53	58.9665	94.65	101.3915	162.33	61.7769
57.98	56.1207	94.67	101.3945	162.66	0.0000
59.27	77.6215	94.87	89.6970	163.33	78.0598
59.32	77.6297	97.43	88.6699	165.86	63.5281
59.54	77.6657	98.43	79.0934	176.31	68.8257
60.96	70.1079	98.44	79.0946	176.60	0.0000
61.17	70.1386	99.53	77.1419	177.52	53.9809
62.93	77.2373	100.11	64.6891	181.07	0.0000
63.29	77.2941	102.03	73.2481	181.52	49.2057
63.58	77.3397	103.18	64.9881	184.41	75.5676
64.28	94.1155	103.37	53.4731	143.76	56.7505
66.73	78.8135	105.21	68.3380	193.51	56.0229
67.24	89.7399	105.31	71.5024	197.03	64.4120
125.81	89.8170	106.12	65.2707	198.01	48.0619
67.75	93.7780	106.47	62.1442	201.83	57.6492
69.67	80.2560	109.28	53.9365	203.43	65.9847
70.83	84.7363	111.00	86.9342	205.31	51.9371
72.81	93.0257	111.76	0.0000	210.85	64.8599
72.87	93.0364	114.06	77.7262	215.65	57.2007
74.66	84.0096	116.30	0.0000	222.11	59.9297
74.82	84.0346	116.74	66.2596	227.09	49.3582
74.97	84.0577	119.76	70.8244	227.38	55.3915
77.11	84.3845	121.12	60.2037	228.16	0.0000
78.74	84.6300	121.22	58.0614	228.18	44.5851
79.69	88.8090	121.78	63.4847	116.74	44.5851
80.12	71.3702	122.06	61.3557	235.69	56.5984
80.19	0.0000	122.92	64.6587	235.96	56.6115
80.57	70.0787	123.07	64.6715	238.63	46.2023
81.00	86.3151	265.00	72.2748	238.98	0.0000
81.07	86.3255	125.81	68.1507	240.99	46.2939
81.75	95.8808	127.23	87.7839	242.00	46.3334
83.79	77.2449	127.91	71.5906	244.70	47.2519
84.00	77.2722	129.30	78.2380	252.40	0.0000
85.43	99.8819	131.20	87.1436	252.80	38.1355
86.55	100.0696	133.02	73.1504	254.15	0.0000
86.79	100.1092	133.52	71.0114	256.23	41.1194
86.94	100.1346	136.00	48.2183	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	31.0463	355.39	0.0000	584.27	22.8821
264.80	43.0562	356.01	34.4305	595.83	0.0000
265.00	43.0625	364.49	0.0000	427.87	26.0518
268.22	39.8496	366.42	0.0000	602.52	0.0000
269.46	39.8887	372.51	38.3546	604.72	19.5730
270.03	39.9063	375.05	30.3739	607.14	17.0816
271.23	39.9434	377.52	33.1037	609.32	17.0975
273.65	0.0000	356.01	24.2496	610.33	17.1045
276.40	38.8484	388.16	27.9140	614.28	24.1885
277.37	45.1472	388.63	0.0000	618.01	20.1888
277.60	45.1549	391.69	38.8008	620.36	7.0729
278.00	45.1692	264.66	19.0492	621.93	15.1666
279.20	45.2098	401.81	25.8693	630.19	0.0000
279.54	45.2219	402.40	25.8786	631.29	20.3011
279.70	45.2274	404.85	25.9151	633.25	24.3809
280.46	45.2527	410.95	24.6374	634.78	0.0000
283.69	45.3625	413.71	24.6758	635.95	21.3572
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	45.4208	423.72	0.0000	645.85	15.3168
285.90	0.0000	427.09	31.3078	657.76	12.3125
287.50	49.7032	427.87	35.0065	657.90	0.0000
290.67	40.5313	433.94	26.8052	661.66	25.6917
293.27	0.0000	439.40	20.3954	664.57	0.0000
351.93	33.0411	453.88	38.3065	666.33	0.0000
295.96	33.0586	463.37	21.5967	666.50	0.0000
879.38	30.5735	468.07	33.8862	667.71	0.0000
299.98	34.4298	473.00	0.0000	677.62	14.4785
300.09	34.4331	475.06	32.1192	685.70	0.0000
300.13	34.4339	476.78	21.7469	695.00	0.0000
301.36	29.3586	477.60	28.3777	696.49	18.7522
302.85	38.3340	482.18	18.9624	696.51	18.7522
256.23	40.9375	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	18.7581
306.78	35.0242	497.08	23.8810	697.49	19.8017
308.46	31.6448	505.52	17.2661	702.65	17.7519
311.90	28.2916	507.63	0.0000	706.68	20.9172
316.51	32.6825	511.00	27.8920	711.68	13.6215
319.41	0.0000	514.00	21.6714	720.70	0.0000
320.08	0.0000	514.00	21.6714	721.93	0.0000
321.04	37.0983	520.40	13.5260	722.78	17.3614
323.87	43.5668	520.69	0.0000	722.91	23.6755
325.23	41.5303	522.65	0.0000	723.31	23.6792
328.76	0.0000	527.90	0.0000	724.19	17.3708
333.37	33.0583	528.26	16.4867	727.33	15.8099
333.97	30.0254	529.59	19.4084	733.00	12.6743
334.37	36.5620	529.87	0.0000	735.93	15.8600
338.28	39.2752	531.02	0.0000	333.97	16.9271
338.32	39.2761	537.26	0.0000	739.50	0.0000
311.90	51.1316	546.56	0.0000	747.24	11.6790
340.48	51.1316	552.55	12.7509	748.06	13.8067
340.55	0.0000	563.25	17.7407	752.31	11.7005
344.28	41.1824	569.33	22.7314	753.82	0.0000
345.93	29.4725	946.00	22.7333	756.73	10.6539
351.06	16.7209	569.70	20.7582	756.80	10.6543
351.93	16.7301	583.19	22.8718	884.68	30.7629

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:11:59.40

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235012.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM36.CNF;52
Sample date       : 10-DEC-2015 11:25:00      Background date   : 2-OCT-2016 11:02:08.
Sample ID        : G405235012                Acquisition date  : 3-OCT-2016 08:07:40.
Detector name    : GAM36                     Sample quantity   : 1.54640E+02 GRAM
Elapsed live time: 0 01:00:00.00             Detector geometry: CAN
Energy tolerance : 1.50000 keV               Elapsed real time: 0 01:00:00.35 0.0%
Abundance limit  : 75.00000                  Analyst Initials  : MXR1
Batch ID         : 1596247                   Sensitivity       : 3.00000
Matrix Spike ID  :                          Detector SN#    :
LCS ID           :                          : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.37*	17	99	0.73	126.71	124	6	4.70E-03	98.4	
2	3	74.74*	107	127	0.99	149.46	146	19	2.98E-02	19.0	7.00E-01
3	3	77.05*	181	142	1.15	154.07	146	19	5.02E-02	13.5	
4	0	87.48	62	167	1.42	174.93	170	8	1.72E-02	38.4	
5	0	93.40*	67	162	1.53	186.78	182	10	1.85E-02	39.4	
6	0	129.39	47	86	1.16	258.76	255	8	1.31E-02	37.3	
7	0	186.31*	86	125	1.19	372.60	367	13	2.39E-02	29.8	
8	8	238.68*	371	31	1.20	477.34	474	15	1.03E-01	5.8	1.99E+00
9	8	241.61	107	37	2.19	483.20	474	15	2.98E-02	19.2	
10	0	258.46	52	41	2.58	516.90	511	11	1.44E-02	27.8	
11	0	277.51	34	38	0.73	555.00	552	8	9.35E-03	36.2	
12	0	291.35	11	42	2.01	582.69	577	8	3.10E-03	105.0	
13	0	295.32*	101	52	0.82	590.62	588	8	2.81E-02	16.1	
14	0	328.80*	7	37	0.65	657.57	653	6	1.82E-03	155.6	
15	0	338.53	51	35	1.22	677.04	673	9	1.41E-02	25.5	
16	0	352.01*	158	34	1.12	704.00	699	9	4.40E-02	10.5	
17	0	450.55	9	22	0.49	901.07	897	8	2.40E-03	100.2	
18	0	463.41	35	17	1.48	926.78	921	11	9.58E-03	28.5	
19	0	511.75*	54	46	2.88	1023.44	1014	24	1.51E-02	40.6	
20	0	533.47	17	9	2.38	1066.89	1062	10	4.67E-03	42.5	
21	0	537.32	11	11	1.20	1074.59	1072	8	2.94E-03	61.3	
22	0	545.07	18	23	3.44	1090.08	1081	16	5.00E-03	65.0	
23	0	554.96	7	11	0.72	1109.86	1108	6	1.96E-03	85.0	
24	0	563.51	10	16	0.57	1126.95	1119	10	2.69E-03	89.9	
25	0	583.39*	81	25	1.60	1166.71	1162	10	2.25E-02	16.4	
26	0	609.42*	107	17	1.02	1218.76	1214	11	2.97E-02	12.6	
27	0	623.55*	11	9	3.28	1247.01	1242	9	3.05E-03	59.1	
28	0	633.11	10	39	5.34	1266.13	1256	14	2.90E-03	130.0	
29	0	643.35	6	11	0.91	1286.60	1282	6	1.54E-03	107.0	
30	0	661.56	79	12	1.29	1323.02	1317	12	2.20E-02	14.3	
31	0	679.66	11	7	1.08	1359.22	1354	10	3.00E-03	56.1	
32	0	726.74	23	13	4.32	1453.35	1446	13	6.47E-03	38.0	
33	0	772.05	21	19	4.63	1543.94	1533	20	5.83E-03	56.3	
34	0	816.20	11	4	2.17	1632.23	1628	8	3.17E-03	42.1	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	905.10*	5	7	1.39	1809.98	1804	9	1.28E-03	116.1	
36	0	911.73*	53	3	1.67	1823.23	1817	14	1.46E-02	16.3	
37	0	934.67	14	10	0.67	1869.10	1861	14	3.78E-03	57.2	
38	0	951.55	10	1	0.91	1902.84	1900	6	2.69E-03	37.6	
39	0	970.47	9	24	0.68	1940.67	1933	12	2.50E-03	113.9	
40	0	1000.30*	16	4	3.42	2000.31	1993	15	4.55E-03	37.1	
41	0	1120.98*	22	6	2.21	2241.57	2235	11	5.99E-03	31.0	
42	0	1202.26	7	12	1.35	2404.06	2397	10	1.89E-03	104.0	
43	0	1208.67	13	9	1.04	2416.88	2409	12	3.59E-03	54.1	
44	0	1377.98	10	2	0.64	2755.32	2752	7	2.81E-03	38.3	
45	0	1461.19*	205	3	1.98	2921.64	2916	12	5.68E-02	7.3	
46	0	1588.72	11	0	1.50	3176.55	3171	10	3.06E-03	30.2	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235012.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 10-DEC-2015 11:25:00 Acquisition date : 3-OCT-2016 08:07:40
Sample ID        : G405235012 Sample quantity : 154.64 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA36 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.35 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type  : Linear Efficiencies at : Peak Energy
Abundance limit  : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	6.545E-01	1.377E+01	1.377E+01	14.53	OK
CD-109	88.03	3.70*	4.307E+00	1.439E+00	2.252E+00	131.26	OK
SN-126	64.28	9.60	2.480E+00	4.564E-01	4.564E-01	196.78	OK
	86.94	8.90	4.307E+00	5.984E-01	5.984E-01	131.26	OK
	87.57	37.00*	4.307E+00	1.439E-01	1.439E-01	131.26	OK
BA-137M	661.66	89.90*	1.335E+00	3.381E-01	3.445E-01	28.51	OK
CS-137	661.66	85.10*	1.335E+00	3.572E-01	3.639E-01	28.51	OK
TL-208	277.37	6.60	3.040E+00	9.409E-01	9.409E-01	72.30	OK
	583.19	85.00*	1.496E+00	3.313E-01	3.313E-01	32.72	OK
	860.56	12.50	1.058E+00	-----	Line Not Found	-----	Absent
PB-212	74.82	10.28	3.476E+00	1.297E+00	1.297E+00	57.70	OK
	77.11	17.10	3.651E+00	1.828E+00	1.828E+00	27.04	OK
	238.63	43.60*	3.499E+00	1.385E+00	1.385E+00	11.62	OK
	300.09	3.30	2.819E+00	-----	Line Not Found	-----	Absent
BI-214	609.32	45.49*	1.437E+00	8.468E-01	8.471E-01	25.22	OK
	1120.29	14.92	8.367E-01	8.359E-01	8.362E-01	62.02	OK
	1764.49	15.30	5.419E-01	-----	Line Not Found	-----	Absent
PB-214	74.82	5.80	3.482E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	3.651E+00	3.222E+00	3.224E+00	27.04	OK
	87.09	3.41	4.287E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	3.455E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	2.863E+00	1.068E+00	1.069E+00	32.17	OK
	351.93	35.60*	2.414E+00	1.010E+00	1.010E+00	21.06	OK
RN-222	609.32	45.49*	1.437E+00	8.468E-01	8.471E-01	25.22	OK
	1120.29	14.92	8.367E-01	8.359E-01	8.362E-01	62.02	OK
	1764.49	15.30	5.419E-01	-----	Line Not Found	-----	Absent
RA-224	240.99	4.10*	3.460E+00	2.410E+00	2.410E+00	73.01	OK
RA-226	609.32	45.49*	1.437E+00	8.468E-01	8.471E-01	25.22	OK
	1120.29	14.92	8.367E-01	8.359E-01	8.362E-01	62.02	OK
	1764.49	15.30	5.419E-01	-----	Line Not Found	-----	Absent
AC-228	105.21	1.10	4.933E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	2.507E+00	9.861E-01	9.861E-01	51.02	OK
	794.95	4.25	1.134E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.085E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.005E+00	1.007E+00	1.007E+00	32.55	OK
	968.97	15.80	9.513E-01	2.947E-01	2.947E-01	227.71	OK
RA-228	105.21	1.10	4.933E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	2.507E+00	9.861E-01	9.861E-01	51.02	OK
	794.95	4.25	1.134E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.085E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.005E+00	1.007E+00	1.007E+00	32.55	OK
	968.97	15.80	9.513E-01	2.947E-01	2.947E-01	227.71	OK
TH-228	74.82	10.28	3.476E+00	1.297E+00	1.297E+00	57.70	OK
	77.11	17.10	3.651E+00	1.828E+00	1.828E+00	27.04	OK
	238.63	43.60*	3.499E+00	1.385E+00	1.385E+00	11.62	OK
	300.09	3.30	2.819E+00	-----	Line Not Found	-----	Absent
TH-230	609.32	45.49*	1.437E+00	8.468E-01	8.469E-01	25.22	OK
	1120.29	14.92	8.367E-01	8.359E-01	8.359E-01	62.02	OK
	1764.49	15.30	5.419E-01	-----	Line Not Found	-----	Absent

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-232	105.21	1.10	4.933E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	2.507E+00	9.861E-01	9.861E-01	51.02	OK
	835.71	1.61	1.085E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.005E+00	1.007E+00	1.007E+00	32.55	OK
	968.97	15.80	9.513E-01	2.947E-01	2.947E-01	227.71	OK
TH-234	63.29	3.70*	2.480E+00	1.184E+00	1.184E+00	196.78	OK
	92.59	4.23	4.581E+00	2.132E+00	2.132E+00	78.87	OK
U-234	609.32	45.49*	1.437E+00	8.468E-01	8.469E-01	25.22	OK
	1120.29	14.92	8.367E-01	8.359E-01	8.359E-01	62.02	OK
	1764.49	15.30	5.419E-01	----- Line	Not Found	-----	Absent
U-238	63.29	3.70*	2.480E+00	1.184E+00	1.184E+00	196.78	OK
	92.59	4.23	4.581E+00	2.132E+00	2.132E+00	78.87	OK
AM-243	43.53	5.90	5.957E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.476E+00	1.984E-01	1.984E-01	57.70	OK
ANH-511	511.00	100.00*	1.688E+00	1.698E-01	1.698E-01	81.23	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235012.CNF;1
* Acquisition date   : 3-OCT-2016 08:07:40 Sensitivity      : 3.000
* Detector ID        : GAM36 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.35 Half life ratio : *****
* Sample date       : 10-DEC-2015 11:25:00 Analyst initials: MXR1
* Sample ID         : G405235012 Sample Quantity : 1.5464E+02 GRAM
* Batch Number      : 1596247 Wet Weight : 0.00000
* Wet wt corr       : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 1-JUN-2016 09:39:12 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM36 CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.377E+01	1.961E+00	9.078E-01
CD-109	2.252E+00	2.897E+00	2.471E+00
SN-126	1.439E-01	1.852E-01	1.636E-01
BA-137M	3.445E-01	9.625E-02	9.705E-02
CS-137	3.639E-01	1.017E-01	1.025E-01
TL-208	3.313E-01	1.063E-01	8.861E-02
PB-212	1.385E+00	1.577E-01	8.974E-02
BI-214	8.471E-01	2.094E-01	1.368E-01
PB-214	1.010E+00	2.084E-01	1.489E-01
RN-222	8.471E-01	2.094E-01	1.368E-01
RA-224	2.410E+00	1.725E+00	9.638E-01
RA-226	8.471E-01	2.094E-01	1.368E-01
AC-228	1.007E+00	3.212E-01	2.979E-01
RA-228	1.007E+00	3.212E-01	2.979E-01
TH-228	1.385E+00	1.577E-01	8.974E-02
TH-230	8.469E-01	2.093E-01	1.367E-01
TH-232	1.007E+00	3.212E-01	2.979E-01
TH-234	1.184E+00	2.284E+00	2.343E+00
U-234	8.469E-01	2.093E-01	1.367E-01
U-238	1.184E+00	2.284E+00	2.343E+00
AM-243	1.984E-01	1.122E-01	9.921E-02
ANH-511	1.698E-01	1.351E-01	5.931E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.388E+01	1.167E+01	1.922E+01	NOT IDENT.
NA-22	-4.322E-02	6.347E-02	1.137E-01	NOT IDENT.
NA-24	0.000E+00	1.309E+41	0.000E+00	SHORT HLIF
AL-26	-1.009E-02	3.228E-02	6.799E-02	NOT IDENT.
SC-46	-2.551E-01	4.008E-01	6.887E-01	FAIL ABUN
V-48	0.000E+00	1.782E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.461E+02	0.000E+00	SHORT HLIF
MN-54	5.323E-02	7.878E-02	1.761E-01	NOT IDENT.

CO-56	-1.022E-01	5.833E-01	1.126E+00	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	1.567E-02	4.796E-02	9.727E-02	NOT IDENT.
CO-58	-5.616E-03	5.973E-01	1.186E+00	NOT IDENT.
FE-59	-2.197E+00	8.186E+00	1.643E+01	NOT IDENT.
CO-60	-7.445E-03	4.669E-02	9.734E-02	NOT IDENT.
ZN-65	6.894E-02	2.498E-01	4.909E-01	NOT IDENT.
GE-68	-2.026E+00	3.020E+00	4.966E+00	NOT IDENT.
AS-73	8.629E+00	7.399E+00	1.691E+01	NOT IDENT.
AS-74	0.000E+00	5.435E+03	0.000E+00	SHORT HLIF
SE-75	1.056E-01	2.387E-01	4.740E-01	NOT IDENT.
BR-77	0.000E+00	1.599E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	7.092E+02	0.000E+00	SHORT HLIF
RB-83	8.669E-02	8.817E-01	1.657E+00	NOT IDENT.
KR-85	8.653E+00	8.540E+00	1.925E+01	NOT IDENT.
SR-85	8.904E-01	8.831E-01	1.990E+00	NOT IDENT.
RB-86	0.000E+00	3.260E+04	0.000E+00	SHORT HLIF
Y-88	-7.223E-02	2.296E-01	4.815E-01	NOT IDENT.
Y-91	-3.935E+02	1.253E+03	1.410E+03	NOT IDENT.
NB-94	1.658E-02	3.730E-02	8.045E-02	NOT IDENT.
NB-95	8.572E-02	1.014E+00	1.876E+00	NOT IDENT.
NB-95M	-1.658E-01	2.526E+00	4.394E+00	NOT IDENT.
ZR-95	3.502E-01	1.303E+00	2.921E+00	NOT IDENT.
NB-97	0.000E+00	1.282E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.705E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.134E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	2.476E-02	3.333E-02	6.615E-02	NOT IDENT.
RH-102	-1.754E-03	8.764E-02	1.725E-01	NOT IDENT.
RU-103	3.893E+00	6.051E+00	1.359E+01	FAIL ABUN
RH-106	-2.134E-01	6.580E-01	1.129E+00	NOT IDENT.
RU-106	-2.134E-01	6.580E-01	1.129E+00	NOT IDENT.
AG-108M	-1.346E-02	3.256E-02	6.309E-02	NOT IDENT.
AG-110M	-1.380E-02	1.418E-01	2.742E-01	NOT IDENT.
SN-113	-5.246E-02	2.639E-01	5.281E-01	NOT IDENT.
CD-115	0.000E+00	2.097E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	9.397E+04	0.000E+00	SHORT HLIF
TE-123M	-2.052E-02	1.345E-01	2.575E-01	NOT IDENT.
SB-124	1.113E+00	1.542E+00	5.188E+00	NOT IDENT.
SB-125	1.032E-02	1.210E-01	2.500E-01	FAIL ABUN
TE-125M	1.784E+02	2.554E+02	5.388E+02	NOT IDENT.
I-126	0.000E+00	9.810E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.519E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.962E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.892E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.348E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.982E+26	0.000E+00	SHORT HLIF
BA-133	1.368E-02	4.688E-02	9.169E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	1.758E-02	7.139E-02	1.451E-01	FAIL ABUN
CS-135	-1.049E-01	1.661E-01	2.880E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	4.804E+05	0.000E+00	SHORT HLIF
CE-139	-3.431E-02	1.090E-01	2.052E-01	NOT IDENT.
BA-140	0.000E+00	1.828E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	3.106E+05	0.000E+00	SHORT HLIF
CE-141	-1.837E+01	2.366E+01	4.177E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	2.411E-01	3.828E-01	7.848E-01	NOT IDENT.
PM-144	-1.160E-02	6.810E-02	1.324E-01	NOT IDENT.
PR-144	-1.054E+00	5.901E+00	1.146E+01	NOT IDENT.
PM-146	3.331E-02	5.304E-02	1.090E-01	FAIL ABUN
ND-147	0.000E+00	3.694E+07	0.000E+00	SHORT HLIF
PM-147	-1.006E+00	8.159E+02	1.615E+03	NOT IDENT.
PM-149	0.000E+00	2.955E+40	0.000E+00	SHORT HLIF
EU-150	2.220E-02	3.178E-02	6.420E-02	FAIL ABUN
EU-152	-5.809E-02	1.118E-01	1.922E-01	NOT IDENT.
GD-153	3.292E-02	1.939E-01	3.679E-01	NOT IDENT.
EU-154	-1.100E-01	1.548E-01	2.750E-01	NOT IDENT.
EU-155	-7.153E-03	1.101E-01	2.180E-01	FAIL ABUN
TB-160	4.382E-01	2.210E+00	4.647E+00	FAIL ABUN
HO-166M	-8.789E-03	6.146E-02	1.223E-01	NOT IDENT.
TM-171	-3.869E+00	1.748E+01	3.616E+01	NOT IDENT.
HF-172	2.282E-02	2.297E-01	4.271E-01	FAIL ABUN
LU-172	3.835E-03	9.394E-02	1.893E-01	FAIL ABUN
LU-176	-1.853E-03	2.811E-02	5.236E-02	FAIL ABUN
HF-181	1.758E-03	5.398E+00	1.091E+01	NOT IDENT.
TA-182	-7.022E-01	1.215E+00	2.238E+00	FAIL ABUN

RE-183	9.966E-01	2.722E+00	5.807E+00	NOT IDENT.
RE-184	-2.399E-01	4.279E+01	7.563E+01	NOT IDENT.
W-188	1.029E+02	2.117E+02	2.611E+02	FAIL ABUN
IR-192	1.705E-01	5.551E-01	1.079E+00	FAIL ABUN
HG-203	2.766E-01	2.749E+00	4.866E+00	NOT IDENT.
BI-207	5.891E-02	7.431E-02	1.631E-01	FAIL ABUN
PB-210	-1.426E+00	2.486E+00	5.002E+00	NOT IDENT.
BI-211	0.000E+00	5.741E-01	9.598E-01	FAIL ABUN
PB-211	-3.359E-01	8.036E-01	1.563E+00	NOT IDENT.
BI-212	1.444E+00	1.076E+00	1.556E+00	FAIL ABUN
RN-219	-9.572E-03	4.406E-01	8.983E-01	NOT IDENT.
RA-223	-1.789E-01	7.173E-01	1.292E+00	FAIL ABUN
AC-227	-6.853E-03	2.432E-01	4.280E-01	NOT IDENT.
TH-227	-6.853E-03	2.432E-01	4.280E-01	NOT IDENT.
TH-229	-1.759E-01	5.134E-01	9.485E-01	FAIL ABUN
PA-231	3.236E-01	5.254E-01	1.054E+00	NOT IDENT.
TH-231	-1.789E-01	7.173E-01	1.292E+00	FAIL ABUN
PA-233	4.224E-02	6.304E-02	1.309E-01	NOT IDENT.
PA-234	7.189E-02	4.086E-01	8.216E-01	FAIL ABUN
PA-234M	1.032E+01	7.498E+00	1.271E+01	FAIL ABUN
U-235	3.330E-02	1.935E-01	3.735E-01	FAIL ABUN
NP-237	4.224E-02	6.304E-02	1.309E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-5.313E-02	2.280E-01	4.446E-01	FAIL ABUN
PU-239	0.000E+00	6.481E+02	7.164E+02	FAIL ABUN
AM-241	1.825E-02	1.297E-01	2.712E-01	NOT IDENT.
CM-243	5.526E-02	9.585E-02	2.007E-01	FAIL ABUN
BK-247	7.357E-03	8.605E-02	1.636E-01	NOT IDENT.
CM-247	1.727E-02	3.941E-02	8.481E-02	FAIL ABUN
CF-249	2.069E-02	4.089E-02	8.909E-02	NOT IDENT.
CF-251	4.467E-02	1.232E-01	2.449E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	198	10.66*	6.545E-01	1.377E+01	1.377E+01	14.53
CD-109	88.03	80	3.70*	4.307E+00	2.424E+00	3.792E+00	76.83
SN-126	64.28	22	9.60	2.480E+00	4.564E-01	4.564E-01	196.78
	86.94	80	8.90	4.307E+00	1.008E+00	1.008E+00	76.83
	87.57	80	37.00*	4.307E+00	2.424E-01	2.424E-01	76.83
BA-137M	661.66	84	89.90*	1.335E+00	3.381E-01	3.445E-01	28.51
CS-137	661.66	84	85.10*	1.335E+00	3.572E-01	3.639E-01	28.51
TL-208	277.37	39	6.60	3.040E+00	9.409E-01	9.409E-01	72.30
	583.19	87	85.00*	1.496E+00	3.313E-01	3.313E-01	32.72
	860.56	-----	12.50	1.058E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.327E+00	-----	Line Not Found	-----
	351.06	179	12.92*	2.414E+00	2.782E+00	2.782E+00	21.06
PB-212	74.82	140	10.28	3.476E+00	1.899E+00	1.899E+00	38.04
	77.11	235	17.10	3.651E+00	1.828E+00	1.828E+00	27.04
	238.63	435	43.60*	3.499E+00	1.385E+00	1.385E+00	11.62
	300.09	-----	3.30	2.819E+00	-----	Line Not Found	-----
BI-214	609.32	114	45.49*	1.437E+00	8.468E-01	8.471E-01	25.22
	1120.29	21	14.92	8.367E-01	8.359E-01	8.362E-01	62.02
	1764.49	-----	15.30	5.419E-01	-----	Line Not Found	-----
PB-214	74.82	140	5.80	3.476E+00	3.367E+00	3.368E+00	38.04
	77.11	235	9.70	3.651E+00	3.222E+00	3.224E+00	27.04
	87.09	80	3.41	4.307E+00	2.630E+00	2.631E+00	76.83
	242.00	126	7.25	3.460E+00	2.432E+00	2.432E+00	38.41
	295.22	116	18.42	2.863E+00	1.068E+00	1.069E+00	32.17
	351.93	179	35.60*	2.414E+00	1.010E+00	1.010E+00	21.06
RN-222	609.32	114	45.49*	1.437E+00	8.468E-01	8.471E-01	25.22
	1120.29	21	14.92	8.367E-01	8.359E-01	8.362E-01	62.02
	1764.49	-----	15.30	5.419E-01	-----	Line Not Found	-----
RA-224	240.99	126	4.10*	3.460E+00	4.300E+00	4.300E+00	38.41
RA-226	609.32	114	45.49*	1.437E+00	8.468E-01	8.471E-01	25.22
	1120.29	21	14.92	8.367E-01	8.359E-01	8.362E-01	62.02
	1764.49	-----	15.30	5.419E-01	-----	Line Not Found	-----
AC-228	105.21	-----	1.10	4.933E+00	-----	Line Not Found	-----
	338.32	57	11.27	2.507E+00	9.861E-01	9.861E-01	51.02
	794.95	-----	4.25	1.134E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.085E+00	-----	Line Not Found	-----
	911.20	54	25.80*	1.005E+00	1.007E+00	1.007E+00	32.55
	968.97	9	15.80	9.513E-01	2.947E-01	2.947E-01	227.71
RA-228	105.21	-----	1.10	4.933E+00	-----	Line Not Found	-----
	338.32	57	11.27	2.507E+00	9.861E-01	9.861E-01	51.02
	794.95	-----	4.25	1.134E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.085E+00	-----	Line Not Found	-----
	911.20	54	25.80*	1.005E+00	1.007E+00	1.007E+00	32.55
	968.97	9	15.80	9.513E-01	2.947E-01	2.947E-01	227.71
TH-228	74.82	140	10.28	3.476E+00	1.899E+00	1.899E+00	38.04
	77.11	235	17.10	3.651E+00	1.828E+00	1.828E+00	27.04
	238.63	435	43.60*	3.499E+00	1.385E+00	1.385E+00	11.62

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	300.09	-----	3.30	2.819E+00	-----	Line Not Found	-----
TH-230	609.32	114	45.49*	1.437E+00	8.468E-01	8.469E-01	25.22
	1120.29	21	14.92	8.367E-01	8.359E-01	8.359E-01	62.02
	1764.49	-----	15.30	5.419E-01	-----	Line Not Found	-----
TH-232	105.21	-----	1.10	4.933E+00	-----	Line Not Found	-----
	338.32	57	11.27	2.507E+00	9.861E-01	9.861E-01	51.02
	835.71	-----	1.61	1.085E+00	-----	Line Not Found	-----
	911.20	54	25.80*	1.005E+00	1.007E+00	1.007E+00	32.55
	968.97	9	15.80	9.513E-01	2.947E-01	2.947E-01	227.71
TH-234	63.29	22	3.70*	2.480E+00	1.184E+00	1.184E+00	196.78
	92.59	85	4.23	4.581E+00	2.132E+00	2.132E+00	78.87
U-234	609.32	114	45.49*	1.437E+00	8.468E-01	8.469E-01	25.22
	1120.29	21	14.92	8.367E-01	8.359E-01	8.359E-01	62.02
	1764.49	-----	15.30	5.419E-01	-----	Line Not Found	-----
U-238	63.29	22	3.70*	2.480E+00	1.184E+00	1.184E+00	196.78
	92.59	85	4.23	4.581E+00	2.132E+00	2.132E+00	78.87
AM-243	43.53	-----	5.90	5.957E-01	-----	Line Not Found	-----
	74.66	140	67.20*	3.476E+00	2.906E-01	2.906E-01	38.04
ANH-511	511.00	59	100.00*	1.688E+00	1.698E-01	1.698E-01	81.23

Flag: "*" = Keyline

Total number of lines in spectrum 46
Number of unidentified lines 14
Number of lines tentatively identified by NID 32 69.57%

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	1.377E+01	1.377E+01	0.200E+01	14.53	
CD-109	461.40D	1.56	2.424E+00	3.792E+00	2.914E+00	76.83	
SN-126	2.30E+05Y	1.00	2.424E-01	2.424E-01	1.863E-01	76.83	
BA-137M	30.08Y	1.02	3.381E-01	3.445E-01	0.982E-01	28.51	
CS-137	30.08Y	1.02	3.572E-01	3.639E-01	1.037E-01	28.51	
TL-208	1.41E+10Y	1.00	3.313E-01	3.313E-01	1.084E-01	32.72	
BI-211	7.04E+08Y	1.00	2.782E+00	2.782E+00	0.586E+00	21.06	
PB-212	1.41E+10Y	1.00	1.385E+00	1.385E+00	0.161E+00	11.62	
BI-214	1600.00Y	1.00	8.468E-01	8.471E-01	2.136E-01	25.22	
PB-214	1600.00Y	1.00	1.010E+00	1.010E+00	0.213E+00	21.06	
RN-222	1600.00Y	1.00	8.468E-01	8.471E-01	2.136E-01	25.22	
RA-224	1.41E+10Y	1.00	4.300E+00	4.300E+00	1.651E+00	38.41	
RA-226	1600.00Y	1.00	8.468E-01	8.471E-01	2.136E-01	25.22	
AC-228	1.41E+10Y	1.00	1.007E+00	1.007E+00	0.328E+00	32.55	
RA-228	1.41E+10Y	1.00	1.007E+00	1.007E+00	0.328E+00	32.55	
TH-228	1.41E+10Y	1.00	1.385E+00	1.385E+00	0.161E+00	11.62	
TH-230	7.54E+04Y	1.00	8.468E-01	8.469E-01	2.136E-01	25.22	
TH-232	1.41E+10Y	1.00	1.007E+00	1.007E+00	0.328E+00	32.55	
TH-234	4.47E+09Y	1.00	1.184E+00	1.184E+00	2.330E+00	196.78	
U-234	2.45E+05Y	1.00	8.468E-01	8.469E-01	2.136E-01	25.22	
U-238	4.47E+09Y	1.00	1.184E+00	1.184E+00	2.330E+00	196.78	
AM-243	7370.00Y	1.00	2.906E-01	2.906E-01	1.105E-01	38.04	
ANH-511	1.00E+09Y	1.00	1.698E-01	1.698E-01	1.379E-01	81.23	
Total Activity :			3.841E+01	3.979E+01			

Grand Total Activity : 3.841E+01 3.979E+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	129.39	59	107	1.16	258.76	255	8	1.31E-02	74.5	5.08E+00	T
0	186.31	103	150	1.19	372.60	367	13	2.39E-02	59.5	4.29E+00	T
0	258.46	60	48	2.58	516.90	511	11	1.44E-02	55.6	3.25E+00	
0	291.35	13	48	2.01	582.69	577	8	3.10E-03	****	2.90E+00	T
0	328.80	7	42	0.65	657.57	653	6	1.82E-03	****	2.58E+00	T
0	450.55	10	25	0.49	901.07	897	8	2.40E-03	****	1.90E+00	
0	463.41	38	18	1.48	926.78	921	11	9.58E-03	56.9	1.85E+00	T
0	533.47	18	10	2.38	1066.89	1062	10	4.67E-03	85.0	1.62E+00	
0	537.32	11	12	1.20	1074.59	1072	8	2.94E-03	****	1.61E+00	T
0	545.07	19	25	3.44	1090.08	1081	16	5.00E-03	****	1.59E+00	T
0	554.96	8	12	0.72	1109.86	1108	6	1.96E-03	****	1.57E+00	
0	563.51	10	18	0.57	1126.95	1119	10	2.69E-03	****	1.54E+00	T
0	623.55	12	9	3.28	1247.01	1242	9	3.05E-03	****	1.41E+00	
0	633.11	11	41	5.34	1266.13	1256	14	2.90E-03	****	1.39E+00	T
0	643.35	6	12	0.91	1286.60	1282	6	1.54E-03	****	1.37E+00	
0	679.66	11	8	1.08	1359.22	1354	10	3.00E-03	****	1.30E+00	
0	726.74	24	13	4.32	1453.35	1446	13	6.47E-03	76.0	1.23E+00	T
0	772.05	22	20	4.63	1543.94	1533	20	5.83E-03	****	1.16E+00	T
0	816.20	12	4	2.17	1632.23	1628	8	3.17E-03	84.1	1.11E+00	T
0	905.10	5	7	1.39	1809.98	1804	9	1.28E-03	****	1.01E+00	
0	934.67	14	11	0.67	1869.10	1861	14	3.78E-03	****	9.83E-01	
0	951.55	10	1	0.91	1902.84	1900	6	2.69E-03	75.2	9.68E-01	
0	1000.30	17	4	3.42	2000.31	1993	15	4.55E-03	74.2	9.26E-01	T
0	1202.26	7	12	1.35	2404.06	2397	10	1.89E-03	****	7.85E-01	
0	1208.67	13	9	1.04	2416.88	2409	12	3.59E-03	****	7.82E-01	
0	1377.98	10	2	0.64	2755.32	2752	7	2.81E-03	76.7	6.92E-01	
0	1588.72	11	0	1.50	3176.55	3171	10	3.06E-03	60.3	6.03E-01	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235012.CNF;1
* Acquisition date   : 3-OCT-2016 08:07:40 Sensitivity      : 3.000
* Detector ID        : GAM36 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.35 Half life ratio : *****
* Sample date        : 10-DEC-2015 11:25:00 Nuclide Library : SOLID
* Sample ID          : G405235012 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.5464E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 1-JUN-2016 09:39:12 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM36 CAN.CNF;7
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	3.591E-01
CD-109	1.167E+00
SN-126	7.735E-02
BA-137M	4.279E-02
CS-137	4.521E-02
TL-208	3.898E-02
PB-212	4.033E-02
BI-214	5.802E-02
PB-214	6.647E-02
RN-222	5.802E-02
RA-224	4.332E-01
RA-226	5.802E-02
AC-228	1.231E-01
RA-228	1.231E-01
TH-228	4.033E-02
TH-230	5.800E-02
TH-232	1.231E-01
TH-234	1.093E+00
U-234	5.800E-02
U-238	1.093E+00
AM-243	4.656E-02
ANH-511	2.563E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	7.856E+00	NOT IDENT.
NA-22	4.574E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.149E-02	NOT IDENT.
SC-46	2.676E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	7.609E-02	NOT IDENT.
CO-56	4.723E-01	NOT IDENT.

MN-56	0.000E+00	SHORT HLIF
CO-57	4.519E-02	NOT IDENT.
CO-58	4.812E-01	NOT IDENT.
FE-59	6.780E+00	NOT IDENT.
CO-60	3.833E-02	NOT IDENT.
ZN-65	2.089E-01	NOT IDENT.
GE-68	1.971E+00	NOT IDENT.
AS-73	7.853E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	2.163E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	7.287E-01	NOT IDENT.
KR-85	8.642E+00	NOT IDENT.
SR-85	8.932E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.522E-01	NOT IDENT.
Y-91	5.940E+02	NOT IDENT.
NB-94	3.489E-02	NOT IDENT.
NB-95	7.931E-01	NOT IDENT.
NB-95M	1.999E+00	NOT IDENT.
ZR-95	1.198E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.067E-02	NOT IDENT.
RH-102	7.618E-02	NOT IDENT.
RU-103	5.965E+00	FAIL ABUN
RH-106	4.804E-01	NOT IDENT.
RU-106	4.804E-01	NOT IDENT.
AG-108M	2.772E-02	NOT IDENT.
AG-110M	1.167E-01	NOT IDENT.
SN-113	2.350E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.188E-01	NOT IDENT.
SB-124	1.838E+00	NOT IDENT.
SB-125	1.109E-01	FAIL ABUN
TE-125M	2.504E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	4.096E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	6.342E-02	FAIL ABUN
CS-135	1.302E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.416E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.920E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.666E-01	NOT IDENT.
PM-144	5.682E-02	NOT IDENT.
PR-144	4.914E+00	NOT IDENT.
PM-146	4.835E-02	FAIL ABUN
ND-147	0.000E+00	SHORT HLIF
PM-147	7.476E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.924E-02	FAIL ABUN
EU-152	8.517E-02	NOT IDENT.
GD-153	1.718E-01	NOT IDENT.
EU-154	1.103E-01	NOT IDENT.
EU-155	1.014E-01	FAIL ABUN
TB-160	1.950E+00	FAIL ABUN
HO-166M	5.117E-02	NOT IDENT.
TM-171	1.662E+01	NOT IDENT.
HF-172	1.970E-01	FAIL ABUN
LU-172	7.791E-02	FAIL ABUN
LU-176	2.352E-02	FAIL ABUN
HF-181	4.836E+00	NOT IDENT.
TA-182	9.259E-01	FAIL ABUN
RE-183	2.700E+00	NOT IDENT.

RE-184	3.189E+01	NOT IDENT.
W-188	1.192E+02	FAIL ABUN
IR-192	4.885E-01	FAIL ABUN
HG-203	2.198E+00	NOT IDENT.
BI-207	7.120E-02	FAIL ABUN
PB-210	2.298E+00	NOT IDENT.
BI-211	4.581E-01	FAIL ABUN
PB-211	6.957E-01	NOT IDENT.
BI-212	6.956E-01	FAIL ABUN
RN-219	4.004E-01	NOT IDENT.
RA-223	5.800E-01	FAIL ABUN
AC-227	1.918E-01	NOT IDENT.
TH-227	1.918E-01	NOT IDENT.
TH-229	4.365E-01	FAIL ABUN
PA-231	4.813E-01	NOT IDENT.
TH-231	5.800E-01	FAIL ABUN
PA-233	5.886E-02	NOT IDENT.
PA-234	3.535E-01	FAIL ABUN
PA-234M	5.496E+00	FAIL ABUN
U-235	1.739E-01	FAIL ABUN
NP-237	5.886E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.048E-01	FAIL ABUN
PU-239	3.363E+02	FAIL ABUN
AM-241	1.262E-01	NOT IDENT.
CM-243	9.330E-02	FAIL ABUN
BK-247	7.457E-02	NOT IDENT.
CM-247	3.793E-02	FAIL ABUN
CF-249	3.981E-02	NOT IDENT.
CF-251	1.134E-01	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.377E+01	2.089E+00	2.089E+00
CD-109	2.252E+00	2.909E+00	2.909E+00
SN-126	1.439E-01	1.858E-01	1.858E-01
BA-137M	3.445E-01	9.738E-02	9.738E-02
CS-137	3.639E-01	1.029E-01	1.029E-01
TL-208	3.313E-01	1.072E-01	1.072E-01
PB-212	1.385E+00	1.738E-01	1.738E-01
BI-214	8.471E-01	2.125E-01	2.125E-01
PB-214	1.010E+00	2.126E-01	2.126E-01
RN-222	8.471E-01	2.125E-01	2.125E-01
RA-224	2.410E+00	1.734E+00	1.734E+00
RA-226	8.471E-01	2.125E-01	2.125E-01
AC-228	1.007E+00	3.253E-01	3.253E-01
RA-228	1.007E+00	3.253E-01	3.253E-01
TH-228	1.385E+00	1.738E-01	1.738E-01
TH-230	8.469E-01	2.124E-01	2.124E-01
TH-232	1.007E+00	3.253E-01	3.253E-01
TH-234	1.184E+00	2.299E+00	2.299E+00
U-234	8.469E-01	2.124E-01	2.124E-01
U-238	1.184E+00	2.299E+00	2.299E+00
AM-243	1.984E-01	1.134E-01	1.134E-01
ANH-511	1.698E-01	1.353E-01	1.353E-01

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-1.388E+01	1.169E+01	1.326E+01	NOT IDENT.
NA-22	-4.322E-02	6.349E-02	6.641E-02	NOT IDENT.
NA-24	1.000E+41	1.379E+41	0.000E+00	SHORT HLIF
AL-26	-1.009E-02	3.229E-02	3.261E-02	NOT IDENT.
SC-46	-2.551E-01	4.010E-01	4.171E-01	FAIL ABUN
V-48	8.315E+03	1.782E+04	1.821E+04	SHORT HLIF
CR-51	-4.712E+02	4.466E+02	4.945E+02	SHORT HLIF
MN-54	5.323E-02	7.881E-02	8.238E-02	NOT IDENT.

CO-56	-1.022E-01	5.833E-01	5.852E-01	NOT IDENT.
MN-56	-1.000E+41	6.027E+41	0.000E+00	SHORT HLIF
CO-57	1.567E-02	4.796E-02	4.848E-02	NOT IDENT.
CO-58	-5.616E-03	5.973E-01	5.973E-01	NOT IDENT.
FE-59	-2.197E+00	8.187E+00	8.247E+00	NOT IDENT.
CO-60	-7.445E-03	4.669E-02	4.681E-02	NOT IDENT.
ZN-65	6.894E-02	2.498E-01	2.517E-01	NOT IDENT.
GE-68	-2.026E+00	3.021E+00	3.157E+00	NOT IDENT.
AS-73	8.629E+00	7.609E+00	8.546E+00	NOT IDENT.
AS-74	3.007E+03	5.441E+03	5.607E+03	SHORT HLIF
SE-75	1.056E-01	2.388E-01	2.435E-01	NOT IDENT.
BR-77	1.404E+38	1.207E+39	0.000E+00	SHORT HLIF
SR-82	2.194E+02	7.092E+02	7.161E+02	SHORT HLIF
RB-83	8.669E-02	8.818E-01	8.827E-01	NOT IDENT.
KR-85	8.653E+00	8.547E+00	9.395E+00	NOT IDENT.
SR-85	8.904E-01	8.838E-01	9.707E-01	NOT IDENT.
RB-86	-1.793E+04	3.261E+04	3.360E+04	SHORT HLIF
Y-88	-7.223E-02	2.297E-01	2.320E-01	NOT IDENT.
Y-91	-3.935E+02	1.253E+03	1.265E+03	NOT IDENT.
NB-94	1.658E-02	3.731E-02	3.805E-02	NOT IDENT.
NB-95	8.572E-02	1.014E+00	1.015E+00	NOT IDENT.
NB-95M	-1.658E-01	2.526E+00	2.527E+00	NOT IDENT.
ZR-95	3.502E-01	1.303E+00	1.313E+00	NOT IDENT.
NB-97	1.000E+41	1.283E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.705E+41	0.000E+00	SHORT HLIF
MO-99	-4.920E+30	1.134E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	2.885E+41	0.000E+00	SHORT HLIF
RH-101	2.476E-02	3.363E-02	3.543E-02	NOT IDENT.
RH-102	-1.754E-03	8.764E-02	8.765E-02	NOT IDENT.
RU-103	3.893E+00	6.053E+00	6.303E+00	FAIL ABUN
RH-106	-2.134E-01	6.581E-01	6.651E-01	NOT IDENT.
RU-106	-2.134E-01	6.581E-01	6.651E-01	NOT IDENT.
AG-108M	-1.346E-02	3.257E-02	3.313E-02	NOT IDENT.
AG-110M	-1.380E-02	1.418E-01	1.420E-01	NOT IDENT.
SN-113	-5.246E-02	2.639E-01	2.650E-01	NOT IDENT.
CD-115	1.366E+39	2.111E+39	0.000E+00	SHORT HLIF
SN-117M	-4.365E+04	9.411E+04	9.615E+04	SHORT HLIF
TE-123M	-2.052E-02	1.345E-01	1.348E-01	NOT IDENT.
SB-124	1.113E+00	1.543E+00	1.623E+00	NOT IDENT.
SB-125	1.032E-02	1.210E-01	1.211E-01	FAIL ABUN
TE-125M	1.784E+02	2.556E+02	2.680E+02	NOT IDENT.
I-126	1.202E+06	9.944E+05	1.132E+06	SHORT HLIF
SB-126	9.405E+05	1.529E+06	1.587E+06	SHORT HLIF
SB-127	-5.551E+21	2.103E+22	0.000E+00	SHORT HLIF
I-131	4.133E+09	4.896E+09	5.238E+09	SHORT HLIF
I-132	-1.000E+41	1.841E+42	0.000E+00	SHORT HLIF
TE-132	-1.162E+26	3.019E+26	0.000E+00	SHORT HLIF
BA-133	1.368E-02	4.689E-02	4.729E-02	FAIL ABUN
I-133	-1.000E+41	4.249E+41	0.000E+00	SHORT HLIF
CS-134	1.758E-02	7.139E-02	7.183E-02	FAIL ABUN
CS-135	-1.049E-01	1.662E-01	1.728E-01	NOT IDENT.
I-135	-1.000E+41	7.196E+41	0.000E+00	SHORT HLIF
CS-136	2.513E+05	4.812E+05	4.943E+05	SHORT HLIF
CE-139	-3.431E-02	1.092E-01	1.103E-01	NOT IDENT.
BA-140	1.521E+06	1.829E+06	1.953E+06	SHORT HLIF
LA-140	9.148E+04	3.107E+05	3.134E+05	SHORT HLIF
CE-141	-1.837E+01	2.367E+01	2.508E+01	NOT IDENT.
CE-143	1.000E+41	2.575E+41	0.000E+00	SHORT HLIF
CE-144	2.411E-01	3.830E-01	3.981E-01	NOT IDENT.
PM-144	-1.160E-02	6.811E-02	6.831E-02	NOT IDENT.
PR-144	-1.054E+00	5.901E+00	5.920E+00	NOT IDENT.
PM-146	3.331E-02	5.310E-02	5.518E-02	FAIL ABUN
ND-147	-3.489E+06	3.694E+07	3.697E+07	SHORT HLIF
PM-147	-1.006E+00	8.159E+02	8.159E+02	NOT IDENT.
PM-149	-2.189E+40	2.993E+40	0.000E+00	SHORT HLIF
EU-150	2.220E-02	3.179E-02	3.333E-02	FAIL ABUN
EU-152	-5.809E-02	1.118E-01	1.149E-01	NOT IDENT.
GD-153	3.292E-02	1.939E-01	1.945E-01	NOT IDENT.
EU-154	-1.100E-01	1.548E-01	1.626E-01	NOT IDENT.
EU-155	-7.153E-03	1.101E-01	1.101E-01	FAIL ABUN
TB-160	4.382E-01	2.211E+00	2.219E+00	FAIL ABUN
HO-166M	-8.789E-03	6.146E-02	6.159E-02	NOT IDENT.
TM-171	-3.869E+00	1.748E+01	1.757E+01	NOT IDENT.
HF-172	2.282E-02	2.298E-01	2.300E-01	FAIL ABUN
LU-172	3.835E-03	9.394E-02	9.396E-02	FAIL ABUN
LU-176	-1.853E-03	2.811E-02	2.812E-02	FAIL ABUN
HF-181	1.758E-03	5.398E+00	5.398E+00	NOT IDENT.
TA-182	-7.022E-01	1.216E+00	1.256E+00	FAIL ABUN

RE-183	9.966E-01	2.726E+00	2.763E+00	NOT IDENT.
RE-184	-2.399E-01	4.279E+01	4.279E+01	NOT IDENT.
W-188	1.029E+02	2.120E+02	2.171E+02	FAIL ABUN
IR-192	1.705E-01	5.552E-01	5.605E-01	FAIL ABUN
HG-203	2.766E-01	2.749E+00	2.751E+00	NOT IDENT.
BI-207	5.891E-02	7.435E-02	7.895E-02	FAIL ABUN
PB-210	-1.426E+00	2.489E+00	2.571E+00	NOT IDENT.
BI-211	2.782E+00	5.873E-01	1.385E+00	FAIL ABUN
PB-211	-3.359E-01	8.038E-01	8.179E-01	NOT IDENT.
BI-212	1.444E+00	1.078E+00	1.259E+00	FAIL ABUN
RN-219	-9.572E-03	4.406E-01	4.406E-01	NOT IDENT.
RA-223	-1.789E-01	7.173E-01	7.219E-01	FAIL ABUN
AC-227	-6.853E-03	2.432E-01	2.432E-01	NOT IDENT.
TH-227	-6.853E-03	2.432E-01	2.432E-01	NOT IDENT.
TH-229	-1.759E-01	5.135E-01	5.195E-01	FAIL ABUN
PA-231	3.236E-01	5.299E-01	5.496E-01	NOT IDENT.
TH-231	-1.789E-01	7.173E-01	7.219E-01	FAIL ABUN
PA-233	4.224E-02	6.307E-02	6.589E-02	NOT IDENT.
PA-234	7.189E-02	4.168E-01	4.181E-01	FAIL ABUN
PA-234M	1.032E+01	7.512E+00	8.835E+00	FAIL ABUN
U-235	3.330E-02	1.935E-01	1.941E-01	FAIL ABUN
NP-237	4.224E-02	6.307E-02	6.589E-02	FAIL ABUN
NP-238	1.000E+41	2.226E+41	0.000E+00	SHORT HLIF
NP-239	-5.313E-02	2.280E-01	2.293E-01	FAIL ABUN
PU-239	8.872E+02	6.493E+02	7.626E+02	FAIL ABUN
AM-241	1.825E-02	1.297E-01	1.299E-01	NOT IDENT.
CM-243	5.526E-02	9.599E-02	9.917E-02	FAIL ABUN
BK-247	7.357E-03	8.607E-02	8.613E-02	NOT IDENT.
CM-247	1.727E-02	3.952E-02	4.028E-02	FAIL ABUN
CF-249	2.069E-02	4.093E-02	4.198E-02	NOT IDENT.
CF-251	4.467E-02	1.233E-01	1.249E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	22.6668	87.09	101.3752	136.47	51.2710
45.60	47.2366	87.57	101.4831	140.51	0.0000
46.54	46.5986	88.03	95.4023	143.76	55.7815
49.72	0.0000	88.34	95.4673	144.24	49.9471
51.35	48.1423	88.47	96.6735	145.44	57.8900
51.87	47.4180	89.96	81.6125	152.43	64.4565
52.39	47.4955	1093.63	95.9473	153.25	0.0000
52.97	37.9040	91.11	0.0000	323.87	52.6959
53.44	35.5365	92.59	76.7224	156.02	0.0000
54.07	54.2174	93.35	76.8464	158.56	0.0000
57.36	0.0000	94.56	77.0425	159.00	51.0646
57.53	67.8678	94.65	77.0570	162.33	47.2847
57.98	51.5819	94.67	77.0603	162.66	0.0000
59.27	54.2413	94.87	50.1997	163.33	53.3971
59.32	54.2491	97.43	54.0715	165.86	47.5214
59.54	56.7511	98.43	51.4732	176.31	54.3619
60.96	67.1668	98.44	51.4745	176.60	0.0000
61.17	53.9858	99.53	56.1137	177.52	45.2038
62.93	65.6012	100.11	52.5550	181.07	0.0000
63.29	65.6664	102.03	57.3052	181.52	46.8206
63.58	65.7190	103.18	48.3192	184.41	37.3217
64.28	68.9016	103.37	47.4253	143.76	37.3848
66.73	62.9265	105.21	60.4107	193.51	51.3918
67.24	66.3724	105.31	60.4228	197.03	46.3499
125.81	63.0850	106.12	60.5175	198.01	36.9141
67.75	63.0964	106.47	61.4763	201.83	33.9077
69.67	50.7317	109.28	44.2800	203.43	53.0838
70.83	71.2358	111.00	48.1255	205.31	46.8192
72.81	60.2305	111.76	0.0000	210.85	51.4124
72.87	60.2396	114.06	49.3305	215.65	39.8522
74.66	77.9192	116.30	0.0000	222.11	41.2326
74.82	77.9497	116.74	50.5072	227.09	40.3722
74.97	77.9789	119.76	48.9004	227.38	46.9341
77.11	78.3864	121.12	45.2476	228.16	0.0000
78.74	78.6933	121.22	51.8554	228.18	41.5138
79.69	78.8710	121.78	48.1312	116.74	41.5138
80.12	78.9509	122.06	50.9875	235.69	35.2471
80.19	0.0000	122.92	50.1185	235.96	41.1335
80.57	79.0342	123.07	50.1315	238.63	26.5192
81.00	79.1140	265.00	51.1317	238.98	0.0000
81.07	79.1265	125.81	45.6176	240.99	26.5858
81.75	71.9946	127.23	39.3768	242.00	26.6144
83.79	70.0000	127.91	48.3243	244.70	31.1385
84.00	91.0436	129.30	58.3165	252.40	0.0000
85.43	93.6808	131.20	56.2649	252.80	25.7939
86.55	101.2532	133.02	50.0211	254.15	0.0000
86.79	101.3067	133.52	53.9133	256.23	25.5090
86.94	101.3409	136.00	54.1321	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	29.5087	355.39	0.0000	584.27	18.0336
264.80	29.5126	356.01	19.6787	595.83	0.0000
265.00	34.0594	364.49	0.0000	427.87	8.6158
268.22	41.0010	366.42	0.0000	602.52	0.0000
269.46	34.2096	372.51	22.4231	604.72	17.2683
270.03	33.0870	375.05	12.4814	607.14	8.6448
271.23	21.7032	377.52	24.1755	609.32	10.5779
273.65	0.0000	356.01	15.9141	610.33	10.5833
276.40	18.3677	388.16	17.6453	614.28	17.3533
277.37	26.4281	388.63	0.0000	618.01	15.0681
277.60	26.4337	391.69	24.4304	620.36	8.7034
278.00	26.4442	264.66	21.1980	621.93	13.0655
279.20	27.6255	401.81	22.9131	630.19	0.0000
279.54	27.6343	402.40	18.6775	631.29	19.4474
279.70	23.0322	404.85	25.5139	633.25	19.4661
280.46	24.5853	410.95	17.9371	634.78	0.0000
283.69	21.9630	413.71	23.9622	635.95	11.6953
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	32.4186	423.72	0.0000	645.85	8.8143
285.90	0.0000	427.09	15.5475	657.76	7.3880
287.50	20.1078	427.87	19.8770	657.90	0.0000
290.67	26.7601	433.94	22.5622	661.66	18.7511
293.27	0.0000	439.40	19.1609	664.57	0.0000
351.93	30.3767	453.88	13.1894	666.33	0.0000
295.96	30.3965	463.37	15.9243	666.50	0.0000
879.38	43.7500	468.07	22.6274	667.71	0.0000
299.98	37.5479	473.00	0.0000	677.62	13.4247
300.09	38.7253	475.06	12.4779	685.70	0.0000
300.13	38.7263	476.78	16.0602	695.00	0.0000
301.36	27.0205	477.60	17.8536	696.49	14.0450
302.85	30.5862	482.18	20.5901	696.51	14.0450
256.23	20.0277	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	14.0501
306.78	27.1518	497.08	10.8411	697.49	11.0403
308.46	20.0983	505.52	12.2583	702.65	10.0602
311.90	17.7873	507.63	0.0000	706.68	10.0789
316.51	26.1921	511.00	13.6647	711.68	10.1017
319.41	0.0000	514.00	13.6890	720.70	0.0000
320.08	0.0000	514.00	13.6890	721.93	0.0000
321.04	26.2942	520.40	15.1143	722.78	15.2283
323.87	29.9522	520.69	0.0000	722.91	18.2747
325.23	33.5850	522.65	0.0000	723.31	18.2783
328.76	0.0000	527.90	0.0000	724.19	18.2856
333.37	26.5681	528.26	12.1467	727.33	11.1902
333.97	24.1650	529.59	19.3389	733.00	10.1982
334.37	29.0076	529.87	0.0000	735.93	14.2962
338.28	21.8260	531.02	0.0000	333.97	6.1311
338.32	21.8265	537.26	0.0000	739.50	0.0000
311.90	29.1533	546.56	0.0000	747.24	14.3669
340.48	29.1533	552.55	8.3965	748.06	5.1329
340.55	0.0000	563.25	8.4459	752.31	9.2560
344.28	28.0249	569.33	12.2404	753.82	0.0000
345.93	17.0813	946.00	12.2415	756.73	5.1522
351.06	23.2774	569.70	16.0094	756.80	5.1522
351.93	23.2937	583.19	18.0236	884.68	10.8529

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	9.3098	1274.44	8.4689	1620.50	2.0114
766.42	12.4165	1001.03	6.7861	1621.92	2.0120
766.84	12.4185	1002.74	10.1851	1678.03	0.0000
772.60	0.0000	1004.73	5.0960	1690.97	0.0000
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	3.1130
778.90	8.7374	1028.54	0.0000	1063.66	3.1166
783.70	0.0000	1037.84	5.7255	1771.35	1.0391
785.37	7.3008	1038.76	0.0000	1791.20	0.0000
792.07	15.6885	631.29	8.0385	1808.65	2.0944
794.95	12.5654	1048.07	0.0000	1810.72	0.0000
795.86	13.6178	1049.04	9.1940	1836.06	2.1061
810.06	2.1073	1050.41	11.4982		
810.29	4.2148	1063.66	8.0835		
344.28	5.2690	1077.00	0.0000		
810.76	6.3235	1077.34	10.4385		
815.77	0.0000	1085.87	5.8150		
1048.07	0.0000	1093.63	6.9951		
832.01	9.5665	1099.45	9.6364		
834.85	7.4492	1112.07	8.7946		
835.71	7.4517	1112.84	4.3985		
836.80	0.0000	1115.54	8.4521		
846.75	0.0000	1120.29	9.6989		
846.77	10.6917	1120.55	9.6995		
856.80	0.0000	1221.41	9.8786		
860.56	8.5993	1129.67	7.9585		
871.09	10.7926	1131.51	0.0000		
873.19	7.5608	1147.95	0.0000		
875.33	0.0000	1173.23	8.9600		
879.38	7.5788	1177.95	6.2809		
880.51	9.7482	1189.05	10.8025		
883.24	10.8427	1204.77	14.4697		
884.68	11.9332	1221.41	12.7225		
889.28	8.6940	1231.02	13.6688		
894.76	8.7119	1235.36	0.0000		
898.04	7.6320	1238.28	10.9578		
900.72	4.9113	1260.41	0.0000		
903.28	9.8320	1271.87	6.4523		
911.20	7.6694	1274.44	11.0691		
912.08	7.6719	1274.54	11.0698		
923.98	0.0000	1291.59	5.5609		
926.50	8.8141	1298.22	0.0000		
929.11	8.2712	1312.11	0.0000		
937.49	9.9554	1332.49	5.6228		
944.13	0.0000	1362.66	0.0000		
946.00	11.0954	1365.19	8.5073		
949.00	11.6625	1368.63	0.0000		
667.71	0.0000	1384.29	2.8499		
962.31	11.1597	1408.01	5.7345		
964.08	5.0250	1457.56	0.0000		
966.17	6.7048	1460.82	4.8425		
911.20	11.1857	1489.16	1.9504		
968.97	11.1857	1505.03	2.9370		
983.53	0.0000	1584.12	4.7874		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:13:37.83

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235013.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM41.CNF;119
Background date    : Z-OCT-2016 11:02:18.
Sample date       : 8-DEC-2015 11:23:00. Acquisition date : 3-OCT-2016 08:10:29.
Sample ID        : G405235013 Sample quantity : 1.44574E+02 GRAM
Detector name    : GAM41 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:06.06 0.2%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596247 Detector SN# :
Matrix Spike ID  : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.50*	66	113	0.88	93.30	90	8	1.84E-02	32.5	
2	0	63.49*	96	276	0.96	127.26	122	11	2.66E-02	36.5	
3	3	74.86*	289	219	1.55	149.99	143	15	8.03E-02	10.8	8.32E+00
4	3	77.27*	372	110	0.90	154.81	143	15	1.03E-01	6.8	
5	3	84.07*	49	212	1.58	168.41	161	32	1.37E-02	53.8	1.02E+00
6	3	87.32	113	156	1.23	174.91	161	32	3.15E-02	20.1	
7	3	89.88	51	126	0.93	180.04	161	32	1.41E-02	37.5	
8	3	92.86*	101	135	1.13	185.98	161	32	2.80E-02	25.1	
9	0	129.25	46	122	0.60	258.74	255	9	1.26E-02	46.1	
10	0	135.60	38	121	2.98	271.43	267	10	1.06E-02	56.6	
11	0	185.77*	116	126	0.94	371.76	367	11	3.22E-02	21.7	
12	0	209.76	95	73	2.39	419.73	414	12	2.65E-02	20.8	
13	4	238.91*	384	42	1.03	478.00	470	18	1.07E-01	5.8	1.45E+00
14	4	241.66	97	55	1.67	483.51	470	18	2.70E-02	25.8	
15	5	270.18	49	61	2.10	540.52	535	16	1.35E-02	34.1	1.73E+00
16	5	273.53	19	44	1.62	547.23	535	16	5.36E-03	64.1	
17	0	295.59	134	66	0.99	591.35	585	11	3.72E-02	14.6	
18	0	300.37	43	79	1.34	600.90	596	12	1.21E-02	43.5	
19	0	338.80	67	95	0.96	677.74	672	12	1.87E-02	31.1	
20	0	352.16*	206	53	1.13	704.46	697	12	5.72E-02	10.1	
21	0	411.07	20	36	2.23	822.26	816	9	5.52E-03	60.0	
22	0	464.00	17	39	1.57	928.10	924	7	4.68E-03	67.5	
23	0	498.44	14	22	0.95	996.98	992	8	3.99E-03	62.2	
24	10	511.26*	84	24	4.01	1022.62	1014	27	2.34E-02	20.4	2.44E+00
25	10	516.70	16	6	1.53	1033.49	1014	27	4.40E-03	46.5	
26	10	519.03	10	3	1.21	1038.16	1014	27	2.88E-03	42.9	
27	1	521.78	16	3	1.51	1043.66	1041	12	4.40E-03	29.0	8.51E-01
28	1	524.48	16	4	1.81	1049.06	1041	12	4.36E-03	32.6	
29	0	583.87*	105	33	1.81	1167.83	1161	12	2.92E-02	14.9	
30	0	609.73*	142	23	1.24	1219.55	1213	13	3.94E-02	11.1	
31	0	636.18	7	16	0.49	1272.45	1267	7	1.93E-03	105.6	
32	0	662.05*	345	38	1.34	1324.18	1316	14	9.59E-02	6.6	
33	0	728.48*	32	20	1.91	1457.05	1452	12	8.77E-03	34.5	
34	0	782.60	12	2	1.12	1565.29	1560	9	3.34E-03	36.3	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	861.22	37	0	1.48	1722.54	1716	14	1.03E-02	16.4	
36	0	912.01*	61	17	1.76	1824.14	1815	14	1.69E-02	19.7	
37	0	935.83	34	7	4.86	1871.77	1864	16	9.41E-03	25.2	
38	0	952.71	11	10	0.69	1905.55	1899	10	3.06E-03	61.7	
39	0	969.98*	33	13	1.34	1940.09	1935	10	9.22E-03	28.1	
40	0	1104.14	13	21	4.41	2208.47	2198	17	3.55E-03	87.1	
41	0	1121.49	23	17	0.75	2243.17	2239	10	6.41E-03	39.6	
42	0	1208.19	13	10	1.54	2416.62	2411	10	3.61E-03	53.3	
43	0	1211.03	10	0	1.24	2422.30	2420	6	2.78E-03	31.6	
44	0	1238.66	30	13	1.50	2477.57	2470	13	8.33E-03	30.8	
45	0	1378.39	8	4	0.61	2757.12	2752	9	2.18E-03	60.0	
46	0	1461.77*	256	8	1.76	2923.94	2915	16	7.10E-02	6.8	
47	0	1765.03	28	0	1.05	3530.75	3524	12	7.78E-03	18.9	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235013.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 8-DEC-2015 11:23:00   Acquisition date : 3-OCT-2016 08:10:29
Sample ID        : G405235013             Sample quantity  : 144.57 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA41               Detector geometry: CAN
Elapsed live time: 0 01:00:00.00          Elapsed real time: 0 01:00:06.06   0.2%
Energy tolerance : 1.50 keV              Half life ratio   : 10.00
Errors propagated: No                    Systematic Error  : 0.00 %
Efficiency type  : Empirical              Efficiencies at   : Peak Energy
Abundance limit  : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	87.09	TH-229	88.47
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	8.926E-01	1.342E+01	1.342E+01	13.57	OK
RU-103	497.08	91.00*	2.367E+00	3.686E-02	7.344E+00	124.44	OK
	610.33	5.76	1.970E+00	6.774E+00	1.350E+03	22.14	OK
CD-109	88.03	3.70*	7.449E+00	1.582E+00	2.483E+00	69.50	OK
SN-126	64.28	9.60	7.794E+00	8.387E-01	8.387E-01	72.92	OK
	86.94	8.90	7.449E+00	6.579E-01	6.579E-01	69.50	OK
	87.57	37.00*	7.449E+00	1.582E-01	1.582E-01	69.50	OK
BA-137M	661.66	89.90*	1.826E+00	1.132E+00	1.154E+00	13.23	OK
CS-137	661.66	85.10*	1.826E+00	1.196E+00	1.219E+00	13.23	OK
TL-208	277.37	6.60	3.907E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	2.050E+00	3.288E-01	3.288E-01	29.74	OK
	860.56	12.50	1.433E+00	1.085E+00	1.085E+00	32.88	OK
PB-210	46.54	4.25*	7.552E+00	1.385E+00	1.421E+00	64.95	OK
PB-212	74.82	10.28	7.683E+00	1.726E+00	1.726E+00	31.59	OK
	77.11	17.10	7.644E+00	1.836E+00	1.836E+00	13.51	OK
	238.63	43.60*	4.382E+00	1.184E+00	1.184E+00	11.68	OK
	300.09	3.30	3.666E+00	2.071E+00	2.071E+00	86.98	OK
BI-214	609.32	45.49*	1.970E+00	8.578E-01	8.581E-01	22.14	OK
	1120.29	14.92	1.127E+00	7.033E-01	7.035E-01	79.28	OK
	1764.49	15.30	7.618E-01	1.177E+00	1.177E+00	37.80	OK
PB-214	74.82	5.80	7.683E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	7.644E+00	3.237E+00	3.238E+00	13.51	OK
	87.09	3.41	7.454E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	4.340E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	3.714E+00	1.133E+00	1.133E+00	29.15	OK
	351.93	35.60*	3.212E+00	1.026E+00	1.026E+00	20.15	OK
RN-222	609.32	45.49*	1.970E+00	8.578E-01	8.581E-01	22.14	OK
	1120.29	14.92	1.127E+00	7.033E-01	7.035E-01	79.28	OK
	1764.49	15.30	7.618E-01	1.177E+00	1.177E+00	37.80	OK
RA-224	240.99	4.10*	4.345E+00	1.202E+00	1.202E+00	146.05	OK
RA-226	609.32	45.49*	1.970E+00	8.578E-01	8.581E-01	22.14	OK
	1120.29	14.92	1.127E+00	7.033E-01	7.035E-01	79.28	OK
	1764.49	15.30	7.618E-01	1.177E+00	1.177E+00	37.80	OK
AC-228	105.21	1.10	7.028E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.319E+00	1.031E+00	1.031E+00	62.23	OK
	794.95	4.25	1.543E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.473E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.360E+00	9.074E-01	9.074E-01	39.40	OK
	968.97	15.80	1.285E+00	8.493E-01	8.493E-01	56.29	OK
RA-228	105.21	1.10	7.028E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.319E+00	1.031E+00	1.031E+00	62.23	OK
	794.95	4.25	1.543E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.473E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.360E+00	9.074E-01	9.074E-01	39.40	OK
	968.97	15.80	1.285E+00	8.493E-01	8.493E-01	56.29	OK
TH-228	74.82	10.28	7.683E+00	1.726E+00	1.726E+00	31.59	OK
	77.11	17.10	7.644E+00	1.836E+00	1.836E+00	13.51	OK
	238.63	43.60*	4.382E+00	1.184E+00	1.184E+00	11.68	OK
	300.09	3.30	3.666E+00	2.071E+00	2.071E+00	86.98	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-229	85.43	14.70	7.517E+00	2.864E-01	2.864E-01	107.55	OK
	88.47	24.00	7.449E+00	2.440E-01	2.440E-01	69.50	OK
	193.51	4.41*	5.088E+00	-----	Line Not Found	-----	Absent
	210.85	2.80	4.815E+00	4.207E+00	4.208E+00	41.60	OK
TH-230	609.32	45.49*	1.970E+00	8.578E-01	8.578E-01	22.14	OK
	1120.29	14.92	1.127E+00	7.033E-01	7.033E-01	79.28	OK
	1764.49	15.30	7.618E-01	1.177E+00	1.177E+00	37.80	OK
	283.69	1.70	3.838E+00	-----	Line Not Found	-----	Absent
PA-231	301.36	5.35*	3.666E+00	1.277E+00	1.277E+00	86.98	OK
	105.21	1.10	7.028E+00	-----	Line Not Found	-----	Absent
TH-232	338.32	11.27	3.319E+00	1.031E+00	1.031E+00	62.23	OK
	835.71	1.61	1.473E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.360E+00	9.074E-01	9.074E-01	39.40	OK
	968.97	15.80	1.285E+00	8.493E-01	8.493E-01	56.29	OK
TH-234	63.29	3.70*	7.794E+00	2.176E+00	2.176E+00	72.92	OK
	92.59	4.23	7.325E+00	2.067E+00	2.067E+00	50.15	OK
U-234	609.32	45.49*	1.970E+00	8.578E-01	8.578E-01	22.14	OK
	1120.29	14.92	1.127E+00	7.033E-01	7.033E-01	79.28	OK
	1764.49	15.30	7.618E-01	1.177E+00	1.177E+00	37.80	OK
U-235	89.96	3.47	7.393E+00	1.264E+00	1.264E+00	75.02	OK
	93.35	5.60	7.325E+00	1.562E+00	1.562E+00	50.15	OK
	143.76	10.96*	6.093E+00	-----	Line Not Found	-----	Absent
	163.33	5.08	5.667E+00	-----	Line Not Found	-----	Absent
U-238	185.72	57.20	5.227E+00	2.333E-01	2.333E-01	43.44	OK
	205.31	5.01	4.887E+00	-----	Line Not Found	-----	Absent
	63.29	3.70*	7.794E+00	2.176E+00	2.176E+00	72.92	OK
AM-243	92.59	4.23	7.325E+00	2.067E+00	2.067E+00	50.15	OK
	43.53	5.90	7.421E+00	-----	Line Not Found	-----	Absent
ANH-511	74.66	67.20*	7.683E+00	2.640E-01	2.641E-01	31.59	OK
	511.00	100.00*	2.313E+00	2.004E-01	2.004E-01	40.73	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235013.CNF;1
* Acquisition date   : 3-OCT-2016 08:10:29 Sensitivity      : 3.000
* Detector ID        : GAM41 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:06.06 Half life ratio : *****
* Sample date       : 8-DEC-2015 11:23:00 Analyst initials: MXR1
* Sample ID         : G405235013 Sample Quantity : 1.4457E+02 GRAM
* Batch Number      : 1596247 Wet Weight      : 0.00000
* Wet wt corr       : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 26-JAN-2016 06:01:47 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM41 CAN.CNF;3
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.342E+01	1.784E+00	7.420E-01
RU-103	7.344E+00	8.956E+00	1.390E+01
CD-109	2.483E+00	1.691E+00	1.662E+00
SN-126	1.582E-01	1.078E-01	1.058E-01
BA-137M	1.154E+00	1.497E-01	8.929E-02
CS-137	1.219E+00	1.581E-01	9.433E-02
TL-208	3.288E-01	9.584E-02	7.288E-02
PB-210	1.421E+00	9.045E-01	7.952E-01
PB-212	1.184E+00	1.355E-01	1.022E-01
BI-214	8.581E-01	1.862E-01	1.233E-01
PB-214	1.026E+00	2.026E-01	1.483E-01
RN-222	8.581E-01	1.862E-01	1.233E-01
RA-224	1.202E+00	1.720E+00	1.095E+00
RA-226	8.581E-01	1.862E-01	1.233E-01
AC-228	9.074E-01	3.503E-01	2.775E-01
RA-228	9.074E-01	3.503E-01	2.775E-01
TH-228	1.184E+00	1.355E-01	1.022E-01
TH-229	2.255E-01	5.388E-01	1.064E+00
TH-230	8.578E-01	1.861E-01	1.233E-01
PA-231	1.277E+00	1.089E+00	8.319E-01
TH-232	9.074E-01	3.503E-01	2.775E-01
TH-234	2.176E+00	1.555E+00	1.053E+00
U-234	8.578E-01	1.861E-01	1.233E-01
U-235	-2.341E-02	2.042E-01	3.984E-01
U-238	2.176E+00	1.555E+00	1.053E+00
AM-243	2.641E-01	8.175E-02	6.463E-02
ANH-511	2.004E-01	7.998E-02	5.635E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	5.147E+00	1.532E+01	2.985E+01	NOT IDENT.
NA-22	6.027E-03	5.947E-02	1.193E-01	NOT IDENT.
NA-24	0.000E+00	9.294E+40	0.000E+00	SHORT HLIF

AL-26	-3.212E-02	2.816E-02	1.889E-02	NOT IDENT.
SC-46	-3.272E-01	4.132E-01	7.148E-01	FAIL ABUN
V-48	0.000E+00	1.692E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.497E+02	0.000E+00	SHORT HLIF
MN-54	-5.825E-04	6.511E-02	1.318E-01	NOT IDENT.
CO-56	-1.375E-02	4.374E-01	8.986E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-1.237E-02	4.737E-02	9.132E-02	FAIL ABUN
CO-58	-7.185E-02	6.447E-01	1.278E+00	NOT IDENT.
FE-59	-6.747E-01	9.589E+00	1.633E+01	NOT IDENT.
CO-60	-3.631E-02	4.306E-02	6.830E-02	NOT IDENT.
ZN-65	-2.634E-01	2.362E-01	3.465E-01	NOT IDENT.
GE-68	-1.572E+00	3.117E+00	5.598E+00	NOT IDENT.
AS-73	1.478E+00	2.671E+00	5.057E+00	NOT IDENT.
AS-74	0.000E+00	7.205E+03	0.000E+00	SHORT HLIF
SE-75	1.799E-02	2.404E-01	4.421E-01	FAIL ABUN
BR-77	0.000E+00	2.465E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	7.950E+02	0.000E+00	SHORT HLIF
RB-83	6.204E-01	5.213E-01	1.469E+00	FAIL ABUN
KR-85	1.119E+01	9.534E+00	1.858E+01	NOT IDENT.
SR-85	1.178E+00	1.007E+00	1.963E+00	NOT IDENT.
RB-86	0.000E+00	3.688E+04	0.000E+00	SHORT HLIF
Y-88	-1.347E-01	2.056E-01	3.668E-01	NOT IDENT.
Y-91	-3.063E+02	8.498E+02	1.316E+03	NOT IDENT.
NB-94	8.340E-03	3.899E-02	7.890E-02	NOT IDENT.
NB-95	1.013E-01	9.653E-01	1.946E+00	NOT IDENT.
NB-95M	-7.221E-01	2.944E+00	4.891E+00	NOT IDENT.
ZR-95	-9.977E-02	1.746E+00	3.449E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.945E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-1.200E-02	3.861E-02	6.608E-02	NOT IDENT.
RH-102	-1.545E-02	7.933E-02	1.354E-01	NOT IDENT.
RH-106	1.730E-01	5.784E-01	1.138E+00	NOT IDENT.
RU-106	1.730E-01	5.784E-01	1.138E+00	NOT IDENT.
AG-108M	2.763E-03	3.302E-02	6.280E-02	NOT IDENT.
AG-110M	-7.668E-04	1.217E-01	2.488E-01	NOT IDENT.
SN-113	-3.029E-02	2.802E-01	5.205E-01	NOT IDENT.
CD-115	0.000E+00	4.226E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	9.991E+04	0.000E+00	SHORT HLIF
TE-123M	8.356E-02	1.358E-01	2.757E-01	NOT IDENT.
SB-124	2.379E+00	2.789E+00	6.999E+00	NOT IDENT.
SB-125	4.677E-02	1.340E-01	2.598E-01	FAIL ABUN
TE-125M	1.899E+02	2.766E+02	5.623E+02	NOT IDENT.
I-126	0.000E+00	1.277E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.384E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.687E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	5.620E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	4.346E+26	0.000E+00	SHORT HLIF
BA-133	4.340E-02	5.521E-02	1.024E-01	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	5.339E-02	6.894E-02	1.464E-01	NOT IDENT.
CS-135	-2.247E-02	1.666E-01	2.804E-01	NOT IDENT.
I-135	0.000E+00	1.753E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	4.130E+05	0.000E+00	SHORT HLIF
CE-139	-5.176E-02	1.197E-01	2.244E-01	NOT IDENT.
BA-140	0.000E+00	1.443E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	5.563E+05	0.000E+00	SHORT HLIF
CE-141	5.832E-01	2.697E+01	5.232E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	1.757E-01	5.043E-01	7.432E-01	NOT IDENT.
PM-144	2.327E-02	5.848E-02	1.240E-01	NOT IDENT.
PR-144	3.672E-01	5.332E+00	1.077E+01	NOT IDENT.
PM-146	-2.107E-02	6.287E-02	1.120E-01	NOT IDENT.
ND-147	0.000E+00	4.209E+07	0.000E+00	SHORT HLIF
PM-147	2.230E+02	8.008E+02	1.603E+03	NOT IDENT.
PM-149	0.000E+00	5.423E+40	0.000E+00	SHORT HLIF
EU-150	-8.134E-03	3.563E-02	5.804E-02	FAIL ABUN
EU-152	3.350E-03	1.131E-01	2.047E-01	NOT IDENT.
GD-153	-4.475E-03	1.671E-01	2.972E-01	NOT IDENT.
EU-154	1.715E-02	1.463E-01	2.940E-01	NOT IDENT.
EU-155	7.484E-02	1.040E-01	2.129E-01	FAIL ABUN
TB-160	2.176E+00	2.275E+00	5.141E+00	FAIL ABUN
HO-166M	6.081E-04	5.596E-02	1.142E-01	FAIL ABUN
TM-171	3.640E+00	5.817E+00	1.110E+01	NOT IDENT.
HF-172	1.196E-01	2.625E-01	4.800E-01	FAIL ABUN

LU-172	8.250E-03	1.091E-01	2.140E-01	FAIL ABUN
LU-176	1.038E-02	2.953E-02	5.763E-02	FAIL ABUN
HF-181	-1.063E+00	5.596E+00	1.019E+01	NOT IDENT.
TA-182	9.516E-02	1.177E+00	2.317E+00	FAIL ABUN
RE-183	7.378E-01	1.201E+00	2.274E+00	NOT IDENT.
RE-184	3.078E+01	3.738E+01	8.280E+01	NOT IDENT.
W-188	-7.409E+01	1.425E+02	2.257E+02	FAIL ABUN
IR-192	-4.557E-02	5.237E-01	9.865E-01	FAIL ABUN
HG-203	2.099E+00	2.455E+00	5.095E+00	NOT IDENT.
BI-207	4.081E-04	6.198E-02	1.220E-01	FAIL ABUN
BI-211	0.000E+00	5.582E-01	8.632E-01	FAIL ABUN
PB-211	7.339E-01	7.929E-01	1.593E+00	NOT IDENT.
BI-212	1.510E+00	1.021E+00	1.580E+00	FAIL ABUN
RN-219	-2.732E-01	4.461E-01	7.790E-01	FAIL ABUN
RA-223	1.967E-01	6.671E-01	1.302E+00	FAIL ABUN
AC-227	-2.352E-02	2.456E-01	4.663E-01	FAIL ABUN
TH-227	-2.352E-02	2.456E-01	4.663E-01	FAIL ABUN
TH-231	1.967E-01	6.671E-01	1.302E+00	FAIL ABUN
PA-233	2.532E-02	7.518E-02	1.459E-01	FAIL ABUN
PA-234	-2.915E-02	3.071E-01	5.673E-01	NOT IDENT.
PA-234M	-2.595E+00	4.341E+00	7.673E+00	NOT IDENT.
NP-237	2.532E-02	7.518E-02	1.459E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	3.233E-02	2.332E-01	4.625E-01	NOT IDENT.
PU-239	0.000E+00	6.271E+02	6.927E+02	FAIL ABUN
AM-241	-4.753E-02	6.929E-02	1.089E-01	NOT IDENT.
CM-243	-4.333E-02	9.516E-02	1.821E-01	NOT IDENT.
BK-247	5.619E-03	8.955E-02	1.544E-01	FAIL ABUN
CM-247	-1.790E-02	4.179E-02	7.468E-02	NOT IDENT.
CF-249	4.208E-04	4.683E-02	8.788E-02	NOT IDENT.
CF-251	6.306E-02	1.157E-01	2.341E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	246	10.66*	8.926E-01	1.342E+01	1.342E+01	13.57
RU-103	497.08	15	91.00*	2.367E+00	3.686E-02	7.344E+00	124.44
	610.33	148	5.76	1.970E+00	6.774E+00	1.350E+03	22.14
CD-109	88.03	139	3.70*	7.449E+00	2.626E+00	4.121E+00	40.24
SN-126	64.28	121	9.60	7.794E+00	8.387E-01	8.387E-01	72.92
	86.94	139	8.90	7.449E+00	1.092E+00	1.092E+00	40.24
	87.57	139	37.00*	7.449E+00	2.626E-01	2.626E-01	40.24
BA-137M	661.66	358	89.90*	1.826E+00	1.132E+00	1.154E+00	13.23
CS-137	661.66	358	85.10*	1.826E+00	1.196E+00	1.219E+00	13.23
TL-208	277.37	-----	6.60	3.907E+00	-----	Line Not Found	-----
	583.19	110	85.00*	2.050E+00	3.288E-01	3.288E-01	29.74
	860.56	37	12.50	1.433E+00	1.085E+00	1.085E+00	32.88
PB-210	46.54	86	4.25*	7.552E+00	1.385E+00	1.421E+00	64.95
BI-211	72.87	-----	1.23	7.711E+00	-----	Line Not Found	-----
	351.06	226	12.92*	3.212E+00	2.826E+00	2.826E+00	20.15
PB-212	74.82	360	10.28	7.683E+00	2.365E+00	2.365E+00	21.67
	77.11	462	17.10	7.644E+00	1.836E+00	1.836E+00	13.51
	238.63	435	43.60*	4.382E+00	1.184E+00	1.184E+00	11.68
	300.09	48	3.30	3.666E+00	2.071E+00	2.071E+00	86.98
BI-214	609.32	148	45.49*	1.970E+00	8.578E-01	8.581E-01	22.14
	1120.29	23	14.92	1.127E+00	7.033E-01	7.035E-01	79.28
	1764.49	26	15.30	7.618E-01	1.177E+00	1.177E+00	37.80
PB-214	74.82	360	5.80	7.683E+00	4.192E+00	4.193E+00	21.67
	77.11	462	9.70	7.644E+00	3.237E+00	3.238E+00	13.51
	87.09	139	3.41	7.449E+00	2.849E+00	2.851E+00	40.24
	242.00	110	7.25	4.345E+00	1.812E+00	1.813E+00	51.66
	295.22	149	18.42	3.714E+00	1.133E+00	1.133E+00	29.15
	351.93	226	35.60*	3.212E+00	1.026E+00	1.026E+00	20.15
RN-222	609.32	148	45.49*	1.970E+00	8.578E-01	8.581E-01	22.14
	1120.29	23	14.92	1.127E+00	7.033E-01	7.035E-01	79.28
	1764.49	26	15.30	7.618E-01	1.177E+00	1.177E+00	37.80
RA-224	240.99	110	4.10*	4.345E+00	3.205E+00	3.205E+00	51.66
RA-226	609.32	148	45.49*	1.970E+00	8.578E-01	8.581E-01	22.14
	1120.29	23	14.92	1.127E+00	7.033E-01	7.035E-01	79.28
	1764.49	26	15.30	7.618E-01	1.177E+00	1.177E+00	37.80
AC-228	105.21	-----	1.10	7.028E+00	-----	Line Not Found	-----
	338.32	74	11.27	3.319E+00	1.031E+00	1.031E+00	62.23
	794.95	-----	4.25	1.543E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.473E+00	-----	Line Not Found	-----
	911.20	61	25.80*	1.360E+00	9.074E-01	9.074E-01	39.40
	968.97	33	15.80	1.285E+00	8.493E-01	8.493E-01	56.29
RA-228	105.21	-----	1.10	7.028E+00	-----	Line Not Found	-----
	338.32	74	11.27	3.319E+00	1.031E+00	1.031E+00	62.23
	794.95	-----	4.25	1.543E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.473E+00	-----	Line Not Found	-----
	911.20	61	25.80*	1.360E+00	9.074E-01	9.074E-01	39.40
	968.97	33	15.80	1.285E+00	8.493E-01	8.493E-01	56.29

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	360	10.28	7.683E+00	2.365E+00	2.365E+00	21.67
	77.11	462	17.10	7.644E+00	1.836E+00	1.836E+00	13.51
	238.63	435	43.60*	4.382E+00	1.184E+00	1.184E+00	11.68
	300.09	48	3.30	3.666E+00	2.071E+00	2.071E+00	86.98
TH-229	85.43	61	14.70	7.517E+00	2.864E-01	2.864E-01	107.55
	88.47	139	24.00	7.449E+00	4.049E-01	4.049E-01	40.24
	193.51	-----	4.41*	5.088E+00	-----	Line Not Found	-----
	210.85	109	2.80	4.815E+00	4.207E+00	4.208E+00	41.60
TH-230	609.32	148	45.49*	1.970E+00	8.578E-01	8.578E-01	22.14
	1120.29	23	14.92	1.127E+00	7.033E-01	7.033E-01	79.28
	1764.49	26	15.30	7.618E-01	1.177E+00	1.177E+00	37.80
PA-231	283.69	-----	1.70	3.838E+00	-----	Line Not Found	-----
	301.36	48	5.35*	3.666E+00	1.277E+00	1.277E+00	86.98
TH-232	105.21	-----	1.10	7.028E+00	-----	Line Not Found	-----
	338.32	74	11.27	3.319E+00	1.031E+00	1.031E+00	62.23
	835.71	-----	1.61	1.473E+00	-----	Line Not Found	-----
	911.20	61	25.80*	1.360E+00	9.074E-01	9.074E-01	39.40
	968.97	33	15.80	1.285E+00	8.493E-01	8.493E-01	56.29
TH-234	63.29	121	3.70*	7.794E+00	2.176E+00	2.176E+00	72.92
	92.59	123	4.23	7.325E+00	2.067E+00	2.067E+00	50.15
U-234	609.32	148	45.49*	1.970E+00	8.578E-01	8.578E-01	22.14
	1120.29	23	14.92	1.127E+00	7.033E-01	7.033E-01	79.28
	1764.49	26	15.30	7.618E-01	1.177E+00	1.177E+00	37.80
U-235	89.96	62	3.47	7.393E+00	1.264E+00	1.264E+00	75.02
	93.35	123	5.60	7.325E+00	1.562E+00	1.562E+00	50.15
	143.76	-----	10.96*	6.093E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.667E+00	-----	Line Not Found	-----
	185.72	134	57.20	5.227E+00	2.333E-01	2.333E-01	43.44
	205.31	-----	5.01	4.887E+00	-----	Line Not Found	-----
U-238	63.29	121	3.70*	7.794E+00	2.176E+00	2.176E+00	72.92
	92.59	123	4.23	7.325E+00	2.067E+00	2.067E+00	50.15
AM-243	43.53	-----	5.90	7.421E+00	-----	Line Not Found	-----
	74.66	360	67.20*	7.683E+00	3.618E-01	3.618E-01	21.67
ANH-511	511.00	89	100.00*	2.313E+00	2.004E-01	2.004E-01	40.73

Flag: "*" = Keyline

Total number of lines in spectrum 47
Number of unidentified lines 8
Number of lines tentatively identified by NID 39 82.98%

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	1.342E+01	1.342E+01	0.182E+01	13.57	
RU-103	39.26D	199.	3.686E-02	7.344E+00	9.139E+00	124.44	
CD-109	461.40D	1.57	2.626E+00	4.121E+00	1.658E+00	40.24	
SN-126	2.30E+05Y	1.00	2.626E-01	2.626E-01	1.057E-01	40.24	
BA-137M	30.08Y	1.02	1.132E+00	1.154E+00	0.153E+00	13.23	
CS-137	30.08Y	1.02	1.196E+00	1.219E+00	0.161E+00	13.23	
TL-208	1.41E+10Y	1.00	3.288E-01	3.288E-01	0.978E-01	29.74	
PB-210	22.20Y	1.03	1.385E+00	1.421E+00	0.923E+00	64.95	
BI-211	7.04E+08Y	1.00	2.826E+00	2.826E+00	0.570E+00	20.15	
PB-212	1.41E+10Y	1.00	1.184E+00	1.184E+00	0.138E+00	11.68	
BI-214	1600.00Y	1.00	8.578E-01	8.581E-01	1.899E-01	22.14	
PB-214	1600.00Y	1.00	1.026E+00	1.026E+00	0.207E+00	20.15	
RN-222	1600.00Y	1.00	8.578E-01	8.581E-01	1.899E-01	22.14	
RA-224	1.41E+10Y	1.00	3.205E+00	3.205E+00	1.656E+00	51.66	
RA-226	1600.00Y	1.00	8.578E-01	8.581E-01	1.899E-01	22.14	
AC-228	1.41E+10Y	1.00	9.074E-01	9.074E-01	3.575E-01	39.40	
RA-228	1.41E+10Y	1.00	9.074E-01	9.074E-01	3.575E-01	39.40	
TH-228	1.41E+10Y	1.00	1.184E+00	1.184E+00	0.138E+00	11.68	
TH-229	7340.00Y	1.00	4.049E-01	4.049E-01	1.629E-01	40.24	K
TH-230	7.54E+04Y	1.00	8.578E-01	8.578E-01	1.899E-01	22.14	
PA-231	7.04E+08Y	1.00	1.277E+00	1.277E+00	1.111E+00	86.98	
TH-232	1.41E+10Y	1.00	9.074E-01	9.074E-01	3.575E-01	39.40	
TH-234	4.47E+09Y	1.00	2.176E+00	2.176E+00	1.587E+00	72.92	
U-234	2.45E+05Y	1.00	8.578E-01	8.578E-01	1.899E-01	22.14	
U-235	7.04E+08Y	1.00	2.333E-01	2.333E-01	1.014E-01	43.44	K
U-238	4.47E+09Y	1.00	2.176E+00	2.176E+00	1.587E+00	72.92	
AM-243	7370.00Y	1.00	3.618E-01	3.618E-01	0.784E-01	21.67	
ANH-511	1.00E+09Y	1.00	2.004E-01	2.004E-01	0.816E-01	40.73	

Total Activity : 4.365E+01 5.253E+01

Grand Total Activity : 4.365E+01 5.253E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.25	54	145	0.60	258.74	255	9	1.26E-02	92.2	6.43E+00	T
0	135.60	45	144	2.98	271.43	267	10	1.06E-02	****	6.28E+00	T
5	270.18	55	68	2.10	540.52	535	16	1.35E-02	68.2	3.99E+00	T
5	273.53	22	49	1.62	547.23	535	16	5.36E-03	****	3.95E+00	T
0	411.07	22	39	2.23	822.26	816	9	5.52E-03	****	2.81E+00	T
0	464.00	18	42	1.57	928.10	924	7	4.68E-03	****	2.52E+00	T
10	516.70	17	6	1.53	1033.49	1014	27	4.40E-03	93.1	2.29E+00	
10	519.03	11	3	1.21	1038.16	1014	27	2.88E-03	85.7	2.28E+00	T
1	521.78	17	3	1.51	1043.66	1041	12	4.40E-03	58.0	2.27E+00	T
1	524.48	17	4	1.81	1049.06	1041	12	4.36E-03	65.1	2.26E+00	
0	636.18	7	17	0.49	1272.45	1267	7	1.93E-03	****	1.89E+00	T
0	728.48	32	21	1.91	1457.05	1452	12	8.77E-03	69.0	1.67E+00	T
0	782.60	12	2	1.12	1565.29	1560	9	3.34E-03	72.6	1.57E+00	T
0	935.83	34	7	4.86	1871.77	1864	16	9.41E-03	50.4	1.33E+00	
0	952.71	11	10	0.69	1905.55	1899	10	3.06E-03	****	1.31E+00	
0	1104.14	13	21	4.41	2208.47	2198	17	3.55E-03	****	1.14E+00	
0	1208.19	13	10	1.54	2416.62	2411	10	3.61E-03	****	1.05E+00	
0	1211.03	10	0	1.24	2422.30	2420	6	2.78E-03	63.2	1.05E+00	
0	1238.66	29	13	1.50	2477.57	2470	13	8.33E-03	61.6	1.03E+00	T
0	1378.39	8	4	0.61	2757.12	2752	9	2.18E-03	****	9.39E-01	

Flags: "T" = Tentatively associated

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Lc (pCi/GRAM)
K-40	2.969E-01
RU-103	6.283E+00
CD-109	7.885E-01
SN-126	5.018E-02
BA-137M	4.020E-02
CS-137	4.247E-02
TL-208	3.232E-02
PB-210	3.735E-01
PB-212	4.727E-02
BI-214	5.365E-02
PB-214	6.782E-02
RN-222	5.365E-02
RA-224	5.067E-01
RA-226	5.365E-02
AC-228	1.185E-01
RA-228	1.185E-01
TH-228	4.727E-02
TH-229	4.992E-01
TH-230	5.364E-02
PA-231	3.787E-01
TH-232	1.185E-01
TH-234	5.007E-01
U-234	5.364E-02
U-235	1.882E-01
U-238	5.007E-01
AM-243	3.087E-02
ANH-511	2.506E-02

Nuclide	^{Lc} (pCi/GRAM)	
BE-7	1.353E+01	NOT IDENT.
NA-22	5.087E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	0.000E+00	NOT IDENT.

SC-46	2.961E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.646E-02	NOT IDENT.
CO-56	3.769E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	4.285E-02	FAIL ABUN
CO-58	5.500E-01	NOT IDENT.
FE-59	6.995E+00	NOT IDENT.
CO-60	2.600E-02	NOT IDENT.
ZN-65	1.442E-01	NOT IDENT.
GE-68	2.392E+00	NOT IDENT.
AS-73	2.403E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	2.037E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.561E-01	FAIL ABUN
KR-85	8.530E+00	NOT IDENT.
SR-85	9.009E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.159E-01	NOT IDENT.
Y-91	5.682E+02	NOT IDENT.
NB-94	3.530E-02	NOT IDENT.
NB-95	8.577E-01	NOT IDENT.
NB-95M	2.274E+00	NOT IDENT.
ZR-95	1.515E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.105E-02	NOT IDENT.
RH-102	5.988E-02	NOT IDENT.
RH-106	5.038E-01	NOT IDENT.
RU-106	5.038E-01	NOT IDENT.
AG-108M	2.841E-02	NOT IDENT.
AG-110M	1.083E-01	NOT IDENT.
SN-113	2.371E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.291E-01	NOT IDENT.
SB-124	2.908E+00	NOT IDENT.
SB-125	1.189E-01	FAIL ABUN
TE-125M	2.663E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	4.731E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	6.605E-02	NOT IDENT.
CS-135	1.288E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.048E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.465E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.498E-01	NOT IDENT.
PM-144	5.465E-02	NOT IDENT.
PR-144	4.747E+00	NOT IDENT.
PM-146	5.123E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.527E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.673E-02	FAIL ABUN
EU-152	9.364E-02	NOT IDENT.
GD-153	1.402E-01	NOT IDENT.
EU-154	1.255E-01	NOT IDENT.
EU-155	1.008E-01	FAIL ABUN
TB-160	2.272E+00	FAIL ABUN
HO-166M	4.932E-02	FAIL ABUN
TM-171	5.269E+00	NOT IDENT.
HF-172	2.264E-01	FAIL ABUN
LU-172	9.378E-02	FAIL ABUN

LU-176	2.666E-02	FAIL ABUN
HF-181	4.601E+00	NOT IDENT.
TA-182	1.004E+00	FAIL ABUN
RE-183	1.082E+00	NOT IDENT.
RE-184	3.656E+01	NOT IDENT.
W-188	1.034E+02	FAIL ABUN
IR-192	4.514E-01	FAIL ABUN
HG-203	2.348E+00	NOT IDENT.
BI-207	5.281E-02	FAIL ABUN
BI-211	4.143E-01	FAIL ABUN
PB-211	7.293E-01	NOT IDENT.
BI-212	7.262E-01	FAIL ABUN
RN-219	3.512E-01	FAIL ABUN
RA-223	5.983E-01	FAIL ABUN
AC-227	2.147E-01	FAIL ABUN
TH-227	2.147E-01	FAIL ABUN
TH-231	5.983E-01	FAIL ABUN
PA-233	6.763E-02	FAIL ABUN
PA-234	2.385E-01	NOT IDENT.
PA-234M	3.158E+00	NOT IDENT.
NP-237	6.763E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.174E-01	NOT IDENT.
PU-239	3.282E+02	FAIL ABUN
AM-241	5.175E-02	NOT IDENT.
CM-243	8.592E-02	NOT IDENT.
BK-247	7.120E-02	FAIL ABUN
CM-247	3.383E-02	NOT IDENT.
CF-249	4.022E-02	NOT IDENT.
CF-251	1.091E-01	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.342E+01	2.119E+00	2.119E+00
RU-103	7.344E+00	8.980E+00	8.980E+00
CD-109	2.483E+00	1.729E+00	1.729E+00
SN-126	1.582E-01	1.099E-01	1.099E-01
BA-137M	1.154E+00	1.769E-01	1.769E-01
CS-137	1.219E+00	1.868E-01	1.868E-01
TL-208	3.288E-01	9.987E-02	9.987E-02
PB-210	1.421E+00	9.219E-01	9.219E-01
PB-212	1.184E+00	1.759E-01	1.759E-01
BI-214	8.581E-01	1.998E-01	1.998E-01
PB-214	1.026E+00	2.207E-01	2.207E-01
RN-222	8.581E-01	1.998E-01	1.998E-01
RA-224	1.202E+00	1.743E+00	1.743E+00
RA-226	8.581E-01	1.998E-01	1.998E-01
AC-228	9.074E-01	3.666E-01	3.666E-01
RA-228	9.074E-01	3.666E-01	3.666E-01
TH-228	1.184E+00	1.759E-01	1.759E-01
TH-229	2.255E-01	5.392E-01	5.392E-01
TH-230	8.578E-01	1.997E-01	1.997E-01
PA-231	1.277E+00	1.126E+00	1.126E+00
TH-232	9.074E-01	3.666E-01	3.666E-01
TH-234	2.176E+00	1.645E+00	1.645E+00
U-234	8.578E-01	1.997E-01	1.997E-01
U-235	-2.341E-02	2.042E-01	2.042E-01
U-238	2.176E+00	1.645E+00	1.645E+00
AM-243	2.641E-01	8.817E-02	8.817E-02
ANH-511	2.004E-01	8.181E-02	8.181E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	5.147E+00	1.533E+01	1.550E+01	NOT IDENT.
NA-22	6.027E-03	5.948E-02	5.954E-02	NOT IDENT.
NA-24	-1.000E+41	1.029E+41	0.000E+00	SHORT HLIF

AL-26	-3.212E-02	2.826E-02	3.175E-02	NOT IDENT.
SC-46	-3.272E-01	4.148E-01	4.402E-01	FAIL ABUN
V-48	1.217E+04	1.700E+04	1.787E+04	SHORT HLIF
CR-51	2.275E+01	4.497E+02	4.499E+02	SHORT HLIF
MN-54	-5.825E-04	6.511E-02	6.511E-02	NOT IDENT.
CO-56	-1.375E-02	4.374E-01	4.375E-01	FAIL ABUN
MN-56	-1.000E+41	3.761E+42	0.000E+00	SHORT HLIF
CO-57	-1.237E-02	4.739E-02	4.772E-02	FAIL ABUN
CO-58	-7.185E-02	6.448E-01	6.456E-01	NOT IDENT.
FE-59	-6.747E-01	9.590E+00	9.595E+00	NOT IDENT.
CO-60	-3.631E-02	4.315E-02	4.615E-02	NOT IDENT.
ZN-65	-2.634E-01	2.409E-01	2.686E-01	NOT IDENT.
GE-68	-1.572E+00	3.128E+00	3.207E+00	NOT IDENT.
AS-73	1.478E+00	2.692E+00	2.773E+00	NOT IDENT.
AS-74	-3.064E+03	7.213E+03	7.344E+03	SHORT HLIF
SE-75	1.799E-02	2.404E-01	2.405E-01	FAIL ABUN
BR-77	2.152E+38	1.863E+39	0.000E+00	SHORT HLIF
SR-82	-1.024E+02	7.950E+02	7.964E+02	SHORT HLIF
RB-83	6.204E-01	5.302E-01	5.995E-01	FAIL ABUN
KR-85	1.119E+01	9.582E+00	1.083E+01	NOT IDENT.
SR-85	1.178E+00	1.012E+00	1.143E+00	NOT IDENT.
RB-86	-2.266E+04	3.708E+04	3.846E+04	SHORT HLIF
Y-88	-1.347E-01	2.058E-01	2.146E-01	NOT IDENT.
Y-91	-3.063E+02	8.502E+02	8.613E+02	NOT IDENT.
NB-94	8.340E-03	3.900E-02	3.918E-02	NOT IDENT.
NB-95	1.013E-01	9.653E-01	9.664E-01	NOT IDENT.
NB-95M	-7.221E-01	2.945E+00	2.963E+00	NOT IDENT.
ZR-95	-9.977E-02	1.746E+00	1.746E+00	NOT IDENT.
NB-97	1.000E+41	2.778E+41	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	2.499E+41	0.000E+00	SHORT HLIF
MO-99	4.076E+31	1.946E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	4.249E+41	0.000E+00	SHORT HLIF
RH-101	-1.200E-02	3.870E-02	3.907E-02	NOT IDENT.
RH-102	-1.545E-02	7.935E-02	7.966E-02	NOT IDENT.
RH-106	1.730E-01	5.786E-01	5.838E-01	NOT IDENT.
RU-106	1.730E-01	5.786E-01	5.838E-01	NOT IDENT.
AG-108M	2.763E-03	3.303E-02	3.305E-02	NOT IDENT.
AG-110M	-7.668E-04	1.217E-01	1.217E-01	NOT IDENT.
SN-113	-3.029E-02	2.802E-01	2.805E-01	NOT IDENT.
CD-115	-1.504E+39	4.236E+39	0.000E+00	SHORT HLIF
SN-117M	1.323E+04	9.993E+04	1.001E+05	SHORT HLIF
TE-123M	8.356E-02	1.360E-01	1.411E-01	NOT IDENT.
SB-124	2.379E+00	2.795E+00	2.994E+00	NOT IDENT.
SB-125	4.677E-02	1.341E-01	1.357E-01	FAIL ABUN
TE-125M	1.899E+02	2.774E+02	2.903E+02	NOT IDENT.
I-126	1.085E+06	1.288E+06	1.378E+06	SHORT HLIF
SB-126	-3.412E+05	1.385E+06	1.394E+06	SHORT HLIF
SB-127	4.426E+21	2.755E+22	0.000E+00	SHORT HLIF
I-131	4.091E+09	5.631E+09	5.925E+09	SHORT HLIF
I-132	1.000E+41	1.893E+42	0.000E+00	SHORT HLIF
TE-132	-1.311E+26	4.380E+26	0.000E+00	SHORT HLIF
BA-133	4.340E-02	5.534E-02	5.869E-02	NOT IDENT.
I-133	1.000E+41	4.882E+42	0.000E+00	SHORT HLIF
CS-134	5.339E-02	6.913E-02	7.321E-02	NOT IDENT.
CS-135	-2.247E-02	1.667E-01	1.670E-01	NOT IDENT.
I-135	1.000E+41	6.999E+41	0.000E+00	SHORT HLIF
CS-136	-3.018E+04	4.130E+05	4.132E+05	SHORT HLIF
CE-139	-5.176E-02	1.202E-01	1.224E-01	NOT IDENT.
BA-140	-5.974E+05	1.444E+06	1.469E+06	SHORT HLIF
LA-140	-4.657E+05	5.575E+05	5.957E+05	SHORT HLIF
CE-141	5.832E-01	2.697E+01	2.697E+01	NOT IDENT.
CE-143	1.000E+41	3.931E+41	0.000E+00	SHORT HLIF
CE-144	1.757E-01	5.048E-01	5.109E-01	NOT IDENT.
PM-144	2.327E-02	5.853E-02	5.946E-02	NOT IDENT.
PR-144	3.672E-01	5.333E+00	5.335E+00	NOT IDENT.
PM-146	-2.107E-02	6.291E-02	6.362E-02	NOT IDENT.
ND-147	7.793E+06	4.210E+07	4.224E+07	SHORT HLIF
PM-147	2.230E+02	8.012E+02	8.075E+02	NOT IDENT.
PM-149	1.902E+40	5.441E+40	0.000E+00	SHORT HLIF
EU-150	-8.134E-03	3.563E-02	3.582E-02	FAIL ABUN
EU-152	3.350E-03	1.131E-01	1.132E-01	NOT IDENT.
GD-153	-4.475E-03	1.671E-01	1.671E-01	NOT IDENT.
EU-154	1.715E-02	1.463E-01	1.465E-01	NOT IDENT.
EU-155	7.484E-02	1.043E-01	1.097E-01	FAIL ABUN
TB-160	2.176E+00	2.289E+00	2.491E+00	FAIL ABUN
HO-166M	6.081E-04	5.596E-02	5.596E-02	FAIL ABUN
TM-171	3.640E+00	5.838E+00	6.064E+00	NOT IDENT.
HF-172	1.196E-01	2.635E-01	2.690E-01	FAIL ABUN

LU-172	8.250E-03	1.091E-01	1.091E-01	FAIL ABUN
LU-176	1.038E-02	2.955E-02	2.991E-02	FAIL ABUN
HF-181	-1.063E+00	5.597E+00	5.618E+00	NOT IDENT.
TA-182	9.516E-02	1.177E+00	1.178E+00	FAIL ABUN
RE-183	7.378E-01	1.209E+00	1.254E+00	NOT IDENT.
RE-184	3.078E+01	3.824E+01	4.067E+01	NOT IDENT.
W-188	-7.409E+01	1.429E+02	1.467E+02	FAIL ABUN
IR-192	-4.557E-02	5.237E-01	5.241E-01	FAIL ABUN
HG-203	2.099E+00	2.461E+00	2.637E+00	NOT IDENT.
BI-207	4.081E-04	6.198E-02	6.198E-02	FAIL ABUN
BI-211	2.826E+00	6.098E-01	1.413E+00	FAIL ABUN
PB-211	7.339E-01	7.955E-01	8.616E-01	NOT IDENT.
BI-212	1.510E+00	1.031E+00	1.235E+00	FAIL ABUN
RN-219	-2.732E-01	4.478E-01	4.644E-01	FAIL ABUN
RA-223	1.967E-01	6.673E-01	6.732E-01	FAIL ABUN
AC-227	-2.352E-02	2.456E-01	2.458E-01	FAIL ABUN
TH-227	-2.352E-02	2.456E-01	2.458E-01	FAIL ABUN
TH-231	1.967E-01	6.673E-01	6.732E-01	FAIL ABUN
PA-233	2.532E-02	7.522E-02	7.608E-02	FAIL ABUN
PA-234	-2.915E-02	3.090E-01	3.092E-01	NOT IDENT.
PA-234M	-2.595E+00	4.356E+00	4.511E+00	NOT IDENT.
NP-237	2.532E-02	7.522E-02	7.608E-02	FAIL ABUN
NP-238	1.000E+41	2.895E+41	0.000E+00	SHORT HLIF
NP-239	3.233E-02	2.332E-01	2.337E-01	NOT IDENT.
PU-239	6.937E+02	6.321E+02	7.053E+02	FAIL ABUN
AM-241	-4.753E-02	6.959E-02	7.281E-02	NOT IDENT.
CM-243	-4.333E-02	9.531E-02	9.729E-02	NOT IDENT.
BK-247	5.619E-03	8.955E-02	8.959E-02	FAIL ABUN
CM-247	-1.790E-02	4.192E-02	4.269E-02	NOT IDENT.
CF-249	4.208E-04	4.683E-02	4.683E-02	NOT IDENT.
CF-251	6.306E-02	1.160E-01	1.194E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	60.6064	87.09	114.3639	136.47	83.1355
45.60	74.9070	87.57	114.4384	140.51	0.0000
46.54	79.7381	88.03	114.5095	143.76	83.7465
49.72	0.0000	88.34	114.5576	144.24	82.8953
51.35	130.1865	88.47	114.5771	145.44	88.3471
51.87	117.2815	89.96	114.8056	152.43	88.9463
52.39	93.6784	1093.63	114.9095	153.25	0.0000
52.97	94.9655	91.11	0.0000	323.87	65.6973
53.44	98.6113	92.59	115.2042	156.02	0.0000
54.07	101.1032	93.35	115.3178	158.56	0.0000
57.36	0.0000	94.56	115.4990	159.00	59.6648
57.53	112.4989	94.65	115.5122	162.33	68.0092
57.98	110.1909	94.67	115.5150	162.66	0.0000
59.27	105.6350	94.87	84.7611	163.33	73.5167
59.32	129.6541	97.43	92.6535	165.86	76.4147
59.54	148.9184	98.43	88.4496	176.31	70.6969
60.96	136.4368	98.44	88.4507	176.60	0.0000
61.17	136.4847	99.53	78.8997	177.52	52.3886
62.93	123.1975	100.11	90.8429	181.07	0.0000
63.29	123.2705	102.03	92.7610	181.52	52.5683
63.58	123.3296	103.18	98.8568	184.41	74.8853
64.28	123.4711	103.37	105.6991	143.76	65.7124
66.73	155.5576	105.21	87.1400	193.51	67.9994
67.24	136.2240	105.31	87.1509	197.03	73.7989
125.81	116.8447	106.12	96.6433	198.01	77.5964
67.75	116.8572	106.47	100.9621	201.83	71.2693
69.67	120.4660	109.28	84.1300	203.43	69.4819
70.83	159.8222	111.00	100.6433	205.31	81.8085
72.81	150.9000	111.76	0.0000	210.85	57.6076
72.87	150.9141	114.06	80.2818	215.65	48.3406
74.66	151.3204	116.30	0.0000	222.11	57.1484
74.82	151.3561	116.74	78.7951	227.09	60.2270
74.97	151.3899	119.76	79.0622	227.38	62.1521
77.11	151.8685	121.12	73.0903	228.16	0.0000
78.74	118.8120	121.22	73.0984	228.18	59.3183
79.69	133.8464	121.78	74.8852	116.74	59.3183
80.12	106.6470	122.06	83.6182	235.69	64.9319
80.19	0.0000	122.92	91.5439	235.96	64.9443
80.57	134.0145	123.07	101.1507	238.63	51.0904
81.00	142.3745	265.00	85.5117	238.98	0.0000
81.07	142.3885	125.81	76.0887	240.99	51.1755
81.75	115.5944	127.23	89.3429	242.00	51.2122
83.79	115.9250	127.91	95.9827	244.70	53.7295
84.00	115.9591	129.30	81.6389	252.40	0.0000
85.43	116.1876	131.20	73.8871	252.80	44.7820
86.55	114.2803	133.02	71.3834	254.15	0.0000
86.79	114.3172	133.52	74.0657	256.23	46.8379
86.94	114.3409	136.00	83.0953	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	44.7474	355.39	0.0000	584.27	20.6689
264.80	45.6353	356.01	34.1957	595.83	0.0000
265.00	45.6410	364.49	0.0000	427.87	28.8839
268.22	45.7375	366.42	0.0000	602.52	0.0000
269.46	37.4078	372.51	29.2703	604.72	17.3572
270.03	37.4217	375.05	34.5428	607.14	27.7959
271.23	37.4511	377.52	34.5872	609.32	15.0683
273.65	0.0000	356.01	36.8037	610.33	15.0741
276.40	41.5317	388.16	38.9918	614.28	29.6110
277.37	48.9783	388.63	0.0000	618.01	30.2328
277.60	48.9854	391.69	36.9504	620.36	23.2764
278.00	45.1380	264.66	29.6936	621.93	16.3026
279.20	31.6999	401.81	38.1995	630.19	0.0000
279.54	31.7070	402.40	38.2104	631.29	22.4336
279.70	34.6831	404.85	24.2296	633.25	25.2554
280.46	32.7167	410.95	27.1799	634.78	0.0000
283.69	45.6986	413.71	27.2167	635.95	21.0667
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	39.7811	423.72	0.0000	645.85	16.7369
285.90	0.0000	427.09	32.2266	657.76	15.5687
287.50	41.8248	427.87	33.3128	657.90	0.0000
290.67	50.8879	433.94	29.0978	661.66	27.4590
293.27	0.0000	439.40	22.6898	664.57	0.0000
351.93	46.5284	453.88	44.5960	666.33	0.0000
295.96	46.5492	463.37	46.9726	666.50	0.0000
879.38	36.0959	468.07	39.4087	667.71	0.0000
299.98	34.6214	473.00	0.0000	677.62	13.3598
300.09	34.6235	475.06	47.2176	685.70	0.0000
300.13	34.6249	476.78	26.3740	695.00	0.0000
301.36	34.6502	477.60	26.3833	696.49	14.3418
302.85	46.7450	482.18	31.9441	696.51	17.9272
256.23	52.8290	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	20.6219
306.78	44.3366	497.08	29.9331	697.49	22.4167
308.46	56.4853	505.52	21.6959	702.65	21.5574
311.90	47.5039	507.63	0.0000	706.68	17.9883
316.51	40.5387	511.00	21.7459	711.68	13.5136
319.41	0.0000	514.00	21.7733	720.70	0.0000
320.08	0.0000	514.00	21.7733	721.93	0.0000
321.04	39.6300	520.40	3.3586	722.78	16.8779
323.87	37.6594	520.69	0.0000	722.91	17.3613
325.23	45.8377	522.65	0.0000	723.31	18.8106
328.76	0.0000	527.90	0.0000	724.19	18.8157
333.37	35.3058	528.26	18.5323	727.33	21.7324
333.97	50.6732	529.59	21.3518	733.00	13.0636
334.37	43.0049	529.87	0.0000	735.93	17.2530
338.28	40.0212	531.02	0.0000	333.97	11.8106
338.32	40.0220	537.26	0.0000	739.50	0.0000
311.90	44.6939	546.56	0.0000	747.24	15.4929
340.48	44.6939	552.55	13.6108	748.06	14.5850
340.55	0.0000	563.25	22.7799	752.31	22.8203
344.28	38.3012	569.33	22.8337	753.82	0.0000
345.93	41.7376	946.00	15.9847	756.73	18.2819
351.06	38.2375	569.70	15.9858	756.80	18.2819
351.93	38.2556	583.19	20.6602	884.68	12.8259

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	17.4171	1274.44	14.6750	1620.50	4.4641
766.42	15.5868	1001.03	10.7747	1621.92	4.4653
766.84	14.6719	1002.74	11.7594	1678.03	0.0000
772.60	0.0000	1004.73	9.8044	1690.97	2.7114
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	0.9150
778.90	10.3086	1028.54	0.0000	1063.66	11.9063
783.70	0.0000	1037.84	12.8524	1771.35	3.6643
785.37	10.3291	1038.76	0.0000	1791.20	0.0000
792.07	26.7999	631.29	7.9263	1808.65	4.6082
794.95	10.1745	1048.07	0.0000	1810.72	0.0000
795.86	18.5040	1049.04	11.8967	1836.06	3.7029
810.06	14.8667	1050.41	15.8682		
810.29	13.9384	1063.66	13.9299		
344.28	14.8687	1077.00	0.0000		
810.76	13.9407	1077.34	16.9709		
815.77	0.0000	1085.87	12.0037		
1048.07	0.0000	1093.63	16.0352		
832.01	8.4172	1099.45	12.8461		
834.85	12.1685	1112.07	11.0725		
835.71	13.1075	1112.84	8.0542		
836.80	0.0000	1115.54	20.7246		
846.75	0.0000	1120.29	8.0684		
846.77	9.3927	1120.55	8.0688		
856.80	0.0000	1221.41	19.1670		
860.56	11.3163	1129.67	15.1611		
871.09	11.3503	1131.51	0.0000		
873.19	8.5177	1147.95	0.0000		
875.33	0.0000	1173.23	7.1465		
879.38	9.4809	1177.95	11.2424		
880.51	11.3804	1189.05	17.4182		
883.24	18.0328	1204.77	18.0963		
884.68	12.3434	1221.41	13.4158		
889.28	15.2114	1231.02	13.0003		
894.76	8.5696	1235.36	0.0000		
898.04	10.4834	1238.28	16.5723		
900.72	11.4448	1260.41	0.0000		
903.28	10.4985	1271.87	8.3462		
911.20	11.4781	1274.44	10.4382		
912.08	11.4807	1274.54	10.4388		
923.98	0.0000	1291.59	6.2860		
926.50	8.6446	1298.22	0.0000		
929.11	15.3789	1312.11	0.0000		
937.49	6.7434	1332.49	9.5092		
944.13	0.0000	1362.66	0.0000		
946.00	10.2992	1365.19	5.3183		
949.00	9.2766	1368.63	0.0000		
667.71	0.0000	1384.29	7.4742		
962.31	25.2129	1408.01	2.1455		
964.08	18.1101	1457.56	0.0000		
966.17	13.9781	1460.82	5.4190		
911.20	34.1945	1489.16	6.5380		
968.97	34.1945	1505.03	1.0929		
983.53	0.0000	1584.12	5.5441		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:14:26.62

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235014.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM43.CNF;151
Sample date       : 8-DEC-2015 10:49:00. Background date : 2-OCT-2016 11:02:23.
Sample ID        : G405235014. Acquisition date : 3-OCT-2016 08:11:15.
Detector name    : GAM43. Sample quantity : 1.53732E+02 GRAM
Elapsed live time: 0 01:00:00.00. Detector geometry: CAN
Energy tolerance : 1.50000 keV. Elapsed real time: 0 01:00:00.71 0.0%
Abundance limit  : 75.00000. Analyst Initials : MXR1
Batch ID         : 1596247. Sensitivity : 3.00000
Matrix Spike ID  : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	47.48	53	153	1.50	94.74	90	13	1.47E-02	50.3	
2	0	62.99*	25	69	0.84	125.76	124	5	6.82E-03	56.7	
3	2	74.87	99	168	1.36	149.53	145	13	2.74E-02	25.5	2.30E+00
4	2	76.92	173	176	1.29	153.64	145	13	4.81E-02	15.3	
5	4	90.01	50	61	0.94	179.82	178	16	1.39E-02	25.8	1.43E+00
6	4	92.96*	81	149	1.70	185.73	178	16	2.24E-02	31.9	
7	0	109.22	21	125	1.34	218.25	214	9	5.70E-03	101.0	
8	0	186.07*	84	169	1.09	372.01	366	12	2.34E-02	33.7	
9	0	210.28	35	153	0.58	420.44	412	12	9.81E-03	72.0	
10	3	238.55*	415	56	1.08	476.99	472	18	1.15E-01	5.7	1.71E+00
11	3	241.44	88	77	1.90	482.76	472	18	2.43E-02	31.5	
12	6	266.97	13	30	1.36	533.85	532	12	3.68E-03	62.7	2.44E+00
13	6	270.06	26	68	1.58	540.02	532	12	7.35E-03	58.9	
14	0	277.80	33	90	1.33	555.51	549	10	9.20E-03	56.8	
15	0	295.37*	158	77	1.26	590.66	584	13	4.40E-02	14.1	
16	0	301.50	36	76	4.72	602.93	596	13	9.97E-03	53.3	
17	0	337.91	105	47	1.16	675.76	670	10	2.91E-02	15.7	
18	0	352.00*	209	50	1.20	703.94	700	11	5.80E-02	9.6	
19	0	434.31	20	58	4.44	868.61	861	16	5.63E-03	88.1	
20	2	440.31	24	18	2.02	880.60	876	17	6.72E-03	42.2	1.57E+00
21	2	444.15	29	22	2.03	888.30	876	17	8.07E-03	36.7	
22	0	463.30	31	37	0.88	926.60	924	8	8.55E-03	39.5	
23	0	510.77*	62	41	2.24	1021.56	1014	15	1.72E-02	29.6	
24	0	583.13*	106	63	1.45	1166.31	1160	12	2.94E-02	18.1	
25	0	609.17*	136	46	1.43	1218.40	1212	13	3.78E-02	13.5	
26	0	661.58	208	36	1.65	1323.25	1318	12	5.79E-02	9.0	
27	0	665.90	19	5	0.61	1331.88	1329	7	5.28E-03	31.7	
28	0	695.65	17	23	0.86	1391.39	1386	12	4.72E-03	62.3	
29	0	704.04	21	27	0.89	1408.18	1397	18	5.95E-03	60.8	
30	0	727.74	19	27	1.03	1455.59	1448	12	5.27E-03	59.4	
31	0	754.99	54	20	8.83	1510.09	1497	27	1.51E-02	26.7	
32	0	768.76	18	18	1.41	1537.65	1532	11	4.98E-03	54.8	
33	0	773.28	8	11	1.41	1546.69	1543	8	2.35E-03	73.9	
34	0	794.87	28	6	1.00	1589.88	1585	10	7.64E-03	26.4	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	799.01	9	5	0.56	1598.16	1595	8	2.62E-03	49.7	
36	0	821.19	9	12	4.21	1642.52	1635	10	2.46E-03	86.4	
37	0	910.92	96	6	1.79	1822.01	1816	11	2.65E-02	11.3	
38	0	935.10	12	21	0.80	1870.38	1859	14	3.33E-03	86.0	
39	0	969.52	25	44	1.27	1939.21	1933	14	6.81E-03	61.6	
40	0	1031.64	13	11	0.88	2063.48	2052	15	3.52E-03	64.1	
41	0	1050.16	13	9	3.86	2100.52	2094	12	3.59E-03	54.1	
42	0	1093.61	31	5	4.87	2187.43	2177	20	8.69E-03	25.0	
43	0	1120.46	40	3	2.67	2241.12	2235	13	1.10E-02	18.5	
44	0	1155.98	16	16	0.84	2312.18	2305	13	4.49E-03	56.9	
45	0	1197.74	8	13	0.71	2395.70	2387	13	2.32E-03	95.2	
46	0	1376.00	20	0	3.21	2752.25	2744	16	5.56E-03	22.4	
47	0	1460.53*	335	4	2.38	2921.30	2913	15	9.30E-02	5.7	
48	0	1764.33*	28	0	3.32	3528.90	3522	14	7.82E-03	20.0	
49	0	1847.78	9	0	1.07	3695.78	3692	9	2.50E-03	33.3	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235014.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 8-DEC-2015 10:49:00 Acquisition date : 3-OCT-2016 08:11:15
Sample ID : G405235014 Sample quantity : 153.73 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA43 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.71 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
TL-208	277.37	HG-203	279.20
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.002E+00	1.481E+01	1.481E+01	11.33	OK
TE-125M	109.28	0.27*	5.555E+00	8.391E+00	3.138E+02	202.05	OK
CS-135	268.22	16.00*	4.339E+00	1.078E-01	1.078E-01	125.35	OK
BA-137M	661.66	89.90*	1.974E+00	6.050E-01	6.165E-01	18.01	OK
CS-137	661.66	85.10*	1.974E+00	6.391E-01	6.513E-01	18.01	OK
PR-144	696.51	1.34*	1.892E+00	3.437E+00	7.130E+00	124.51	OK
	1489.16	0.28	9.838E-01	-----	Line Not Found	-----	Absent
HG-203	70.83	3.69	2.720E+00	-----	Line Not Found	-----	Absent
	72.87	6.19	2.941E+00	-----	Line Not Found	-----	Absent
	279.20	81.56*	4.200E+00	3.048E-02	2.642E+00	204.81	OK
TL-208	277.37	6.60	4.205E+00	-----	Line Not Found	-----	<<INT Reject
	583.19	85.00*	2.199E+00	2.958E-01	2.958E-01	36.14	OK
	860.56	12.50	1.582E+00	-----	Line Not Found	-----	Absent
PB-210	46.54	4.25*	3.240E-01	2.540E+01	2.606E+01	100.60	OK
PB-212	74.82	10.28	3.152E+00	1.248E+00	1.248E+00	80.16	OK
	77.11	17.10	3.363E+00	1.907E+00	1.907E+00	30.68	OK
	238.63	43.60*	4.740E+00	1.147E+00	1.147E+00	11.44	OK
	300.09	3.30	3.919E+00	1.548E+00	1.548E+00	106.58	OK
BI-214	609.32	45.49*	2.118E+00	7.335E-01	7.337E-01	27.01	OK
	1120.29	14.92	1.266E+00	1.020E+00	1.020E+00	36.97	OK
	1764.49	15.30	8.364E-01	1.016E+00	1.017E+00	39.95	OK
PB-214	74.82	5.80	3.147E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	3.363E+00	3.361E+00	3.362E+00	30.68	OK
	87.09	3.41	4.287E+00	-----	Line Not Found	-----	Absent
	242.00	7.25	4.688E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	3.989E+00	1.205E+00	1.205E+00	28.11	OK
	351.93	35.60*	3.425E+00	9.411E-01	9.414E-01	19.18	OK
RN-222	609.32	45.49*	2.118E+00	7.335E-01	7.337E-01	27.01	OK
	1120.29	14.92	1.266E+00	1.020E+00	1.020E+00	36.97	OK
	1764.49	15.30	8.364E-01	1.016E+00	1.017E+00	39.95	OK
RA-224	240.99	4.10*	4.697E+00	4.607E-01	4.607E-01	377.38	OK
RA-226	609.32	45.49*	2.118E+00	7.335E-01	7.337E-01	27.01	OK
	1120.29	14.92	1.266E+00	1.020E+00	1.020E+00	36.97	OK
	1764.49	15.30	8.364E-01	1.016E+00	1.017E+00	39.95	OK
AC-228	105.21	1.10	5.396E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.550E+00	1.444E+00	1.444E+00	31.44	OK
	794.95	4.25	1.691E+00	1.935E+00	1.935E+00	52.79	OK
	835.71	1.61	1.621E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.508E+00	1.222E+00	1.222E+00	22.57	OK
	968.97	15.80	1.431E+00	5.358E-01	5.358E-01	123.29	OK
RA-228	105.21	1.10	5.396E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.550E+00	1.444E+00	1.444E+00	31.44	OK
	794.95	4.25	1.691E+00	1.935E+00	1.935E+00	52.79	OK
	835.71	1.61	1.621E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.508E+00	1.222E+00	1.222E+00	22.57	OK
	968.97	15.80	1.431E+00	5.358E-01	5.358E-01	123.29	OK
TH-228	74.82	10.28	3.152E+00	1.248E+00	1.248E+00	80.16	OK
	77.11	17.10	3.363E+00	1.907E+00	1.907E+00	30.68	OK
	238.63	43.60*	4.740E+00	1.147E+00	1.147E+00	11.44	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	300.09	3.30	3.919E+00	1.548E+00	1.548E+00	106.58	OK
	609.32	45.49*	2.118E+00	7.335E-01	7.335E-01	27.01	OK
	1120.29	14.92	1.266E+00	1.020E+00	1.020E+00	36.97	OK
	1764.49	15.30	8.364E-01	1.016E+00	1.016E+00	39.95	OK
PA-231	283.69	1.70	4.127E+00	-----	Line Not Found	-----	Absent
	301.36	5.35*	3.919E+00	9.549E-01	9.549E-01	106.58	OK
TH-232	105.21	1.10	5.396E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.550E+00	1.444E+00	1.444E+00	31.44	OK
	835.71	1.61	1.621E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.508E+00	1.222E+00	1.222E+00	22.57	OK
TH-234	968.97	15.80	1.431E+00	5.358E-01	5.358E-01	123.29	OK
	63.29	3.70*	1.836E+00	2.324E+00	2.324E+00	113.44	OK
	92.59	4.23	4.722E+00	2.512E+00	2.512E+00	63.86	OK
	609.32	45.49*	2.118E+00	7.335E-01	7.335E-01	27.01	OK
U-234	1120.29	14.92	1.266E+00	1.020E+00	1.020E+00	36.97	OK
	1764.49	15.30	8.364E-01	1.016E+00	1.016E+00	39.95	OK
	89.96	3.47	4.512E+00	1.994E+00	1.994E+00	51.66	OK
U-235	93.35	5.60	4.722E+00	1.897E+00	1.897E+00	63.86	OK
	143.76	10.96*	6.023E+00	-----	Line Not Found	-----	Absent
	163.33	5.08	5.876E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	5.564E+00	1.546E-01	1.546E-01	67.36	OK
	205.31	5.01	5.260E+00	-----	Line Not Found	-----	Absent
	63.29	3.70*	1.836E+00	2.324E+00	2.324E+00	113.44	OK
U-238	92.59	4.23	4.722E+00	2.512E+00	2.512E+00	63.86	OK
	43.53	5.90	1.216E-01	-----	Line Not Found	-----	Absent
AM-243	74.66	67.20*	3.152E+00	1.910E-01	1.910E-01	80.16	OK
ANH-511	511.00	100.00*	2.466E+00	1.326E-01	1.326E-01	59.16	OK

Flag: "*" = Keyline

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*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                           *
*                               Charleston, SC 29407                       *
*                               *****                                   *
*                               *                                           *
*                               DETECTOR AND SAMPLE DATA                   *
*                               *                                           *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235014.CNF;1 *
* Acquisition date   : 3-OCT-2016 08:11:15 Sensitivity      : 3.000          *
* Detector ID        : GAM43 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.71 Half life ratio : *****        *
* Sample date       : 8-DEC-2015 10:49:00 Analyst initials: MXR1      *
* Sample ID         : G405235014 Sample Quantity : 1.5373E+02 GRAM *
* Batch Number      : 1596247 Wet Weight      : 0.00000      *
* Wet wt corr       : 1.00000 Dry Weight      : 0.00000      *
* Nuclide Library    : SOLID.NLB;6                                           *
*****
*                               *                                           *
*                               CALIBRATION INFORMATION                     *
*                               *                                           *
* Eff. Cal. date    : 6-SEP-2016 07:25:20 Eff. Geometry   : CAN          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM43 CAN.CNF;7          *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.481E+01	1.644E+00	6.863E-01
TE-125M	3.138E+02	6.214E+02	5.267E+02
CS-135	1.078E-01	1.324E-01	2.716E-01
BA-137M	6.165E-01	1.088E-01	7.973E-02
CS-137	6.513E-01	1.150E-01	8.423E-02
PR-144	7.130E+00	8.700E+00	9.976E+00
HG-203	2.642E+00	5.302E+00	4.912E+00
TL-208	2.958E-01	1.048E-01	7.283E-02
PB-210	2.606E+01	2.569E+01	1.890E+01
PB-212	1.147E+00	1.286E-01	9.376E-02
BI-214	7.337E-01	1.942E-01	1.399E-01
PB-214	9.414E-01	1.770E-01	1.295E-01
RN-222	7.337E-01	1.942E-01	1.399E-01
RA-224	4.607E-01	1.704E+00	1.005E+00
RA-226	7.337E-01	1.942E-01	1.399E-01
AC-228	1.222E+00	2.702E-01	2.657E-01
RA-228	1.222E+00	2.702E-01	2.657E-01
TH-228	1.147E+00	1.286E-01	9.376E-02
TH-230	7.335E-01	1.942E-01	1.398E-01
PA-231	9.549E-01	9.974E-01	8.322E-01
TH-232	1.222E+00	2.702E-01	2.657E-01
TH-234	2.324E+00	2.583E+00	3.466E+00
U-234	7.335E-01	1.942E-01	1.398E-01
U-235	-2.352E-02	1.788E-01	3.515E-01
U-238	2.324E+00	2.583E+00	3.466E+00
AM-243	1.910E-01	1.500E-01	1.329E-01
ANH-511	1.326E-01	7.689E-02	5.390E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.129E+01		1.462E+01	2.444E+01	NOT IDENT.
NA-22	-8.378E-03		4.504E-02	8.932E-02	NOT IDENT.
NA-24	0.000E+00		1.960E+41	0.000E+00	SHORT HLIF

AL-26	-3.236E-02	3.683E-02	5.583E-02	NOT IDENT.
SC-46	7.289E-02	3.221E-01	6.806E-01	FAIL ABUN
V-48	0.000E+00	1.413E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.006E+02	0.000E+00	SHORT HLIF
MN-54	-1.942E-02	6.643E-02	1.240E-01	NOT IDENT.
CO-56	-9.078E-02	5.059E-01	9.614E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	3.139E-03	5.206E-02	9.550E-02	NOT IDENT.
CO-58	-1.237E-01	5.755E-01	1.101E+00	NOT IDENT.
FE-59	4.269E+00	8.949E+00	1.651E+01	NOT IDENT.
CO-60	2.219E-02	4.296E-02	9.516E-02	NOT IDENT.
ZN-65	-1.444E-01	2.380E-01	3.342E-01	NOT IDENT.
GE-68	5.698E-01	2.104E+00	4.417E+00	NOT IDENT.
AS-73	1.078E+00	1.785E+01	3.442E+01	NOT IDENT.
AS-74	0.000E+00	6.601E+03	0.000E+00	SHORT HLIF
SE-75	-1.310E-01	2.388E-01	3.840E-01	NOT IDENT.
BR-77	0.000E+00	2.356E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	7.819E+02	0.000E+00	SHORT HLIF
RB-83	-1.294E-01	7.147E-01	1.395E+00	NOT IDENT.
KR-85	-3.310E+00	9.208E+00	1.412E+01	NOT IDENT.
SR-85	-3.512E-01	9.735E-01	1.492E+00	NOT IDENT.
RB-86	0.000E+00	2.538E+04	0.000E+00	SHORT HLIF
Y-88	-1.760E-01	1.823E-01	1.968E-01	NOT IDENT.
Y-91	-2.612E+02	6.761E+02	1.259E+03	NOT IDENT.
NB-94	5.865E-02	6.989E-02	6.659E-02	FAIL ABUN
NB-95	7.046E-01	1.044E+00	1.992E+00	NOT IDENT.
NB-95M	-1.012E+00	2.615E+00	4.336E+00	NOT IDENT.
ZR-95	1.957E+00	1.629E+00	3.655E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.583E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.482E+41	0.000E+00	SHORT HLIF
RH-101	-3.795E-02	4.001E-02	6.654E-02	NOT IDENT.
RH-102	5.154E-02	5.776E-02	1.285E-01	NOT IDENT.
RU-103	1.514E+00	5.774E+00	1.128E+01	FAIL ABUN
RH-106	2.972E-01	4.719E-01	1.026E+00	FAIL ABUN
RU-106	2.972E-01	4.719E-01	1.026E+00	FAIL ABUN
AG-108M	4.241E-02	7.319E-02	6.090E-02	FAIL ABUN
CD-109	1.734E+00	1.563E+00	2.901E+00	NOT IDENT.
AG-110M	-1.342E-01	1.085E-01	1.641E-01	NOT IDENT.
SN-113	-2.478E-01	2.780E-01	4.697E-01	NOT IDENT.
CD-115	0.000E+00	3.293E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	9.876E+04	0.000E+00	SHORT HLIF
TE-123M	1.303E-01	1.351E-01	2.830E-01	NOT IDENT.
SB-124	-3.031E-01	2.005E+00	4.171E+00	NOT IDENT.
SB-125	2.322E-02	1.247E-01	2.148E-01	FAIL ABUN
I-126	0.000E+00	9.035E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.424E+06	0.000E+00	SHORT HLIF
SN-126	0.000E+00	9.931E-02	1.962E-01	FAIL ABUN
SB-127	0.000E+00	2.142E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.700E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.120E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.875E+26	0.000E+00	SHORT HLIF
BA-133	1.923E-03	4.564E-02	7.799E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.553E-02	1.245E-01	FAIL ABUN
I-135	0.000E+00	1.833E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	4.236E+05	0.000E+00	SHORT HLIF
CE-139	-1.909E-02	1.037E-01	2.027E-01	NOT IDENT.
BA-140	0.000E+00	1.438E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	5.120E+05	0.000E+00	SHORT HLIF
CE-141	-2.980E+00	2.395E+01	4.726E+01	NOT IDENT.
CE-143	0.000E+00	8.116E+40	0.000E+00	SHORT HLIF
CE-144	-8.042E-02	3.852E-01	7.583E-01	NOT IDENT.
PM-144	8.208E-02	1.002E-01	1.253E-01	FAIL ABUN
PM-146	1.728E-02	4.907E-02	9.645E-02	NOT IDENT.
ND-147	0.000E+00	3.358E+07	0.000E+00	SHORT HLIF
PM-147	1.955E+02	9.309E+02	1.727E+03	NOT IDENT.
PM-149	0.000E+00	5.276E+40	0.000E+00	SHORT HLIF
EU-150	2.285E-03	3.046E-02	5.200E-02	FAIL ABUN
EU-152	-6.069E-02	1.084E-01	1.931E-01	NOT IDENT.
GD-153	-8.930E-02	2.365E-01	3.882E-01	NOT IDENT.
EU-154	-2.756E-02	1.142E-01	2.231E-01	NOT IDENT.
EU-155	2.749E-02	1.236E-01	2.158E-01	NOT IDENT.
TB-160	1.175E-01	1.916E+00	3.810E+00	NOT IDENT.
HO-166M	-1.547E-02	6.203E-02	1.175E-01	NOT IDENT.
TM-171	-1.986E+01	4.678E+01	7.968E+01	NOT IDENT.
HF-172	2.189E-01	2.466E-01	4.829E-01	FAIL ABUN

LU-172	0.000E+00	1.244E-01	2.001E-01	FAIL ABUN
LU-176	-4.830E-03	2.643E-02	4.421E-02	NOT IDENT.
HF-181	-1.802E+00	4.908E+00	8.702E+00	NOT IDENT.
TA-182	9.192E-03	1.077E+00	2.130E+00	FAIL ABUN
RE-183	3.007E-01	5.700E+00	1.096E+01	NOT IDENT.
RE-184	-6.113E+00	3.426E+01	6.457E+01	NOT IDENT.
W-188	-3.102E+01	1.259E+02	2.089E+02	FAIL ABUN
IR-192	-2.127E-01	4.731E-01	8.620E-01	FAIL ABUN
BI-207	1.715E-02	5.288E-02	1.075E-01	FAIL ABUN
BI-211	0.000E+00	4.875E-01	8.259E-01	FAIL ABUN
PB-211	-4.174E-01	6.882E-01	1.202E+00	NOT IDENT.
BI-212	7.965E-01	9.276E-01	1.307E+00	FAIL ABUN
RN-219	1.993E-01	4.340E-01	8.510E-01	FAIL ABUN
RA-223	-2.664E-01	6.167E-01	1.122E+00	FAIL ABUN
AC-227	4.542E-02	2.299E-01	4.506E-01	NOT IDENT.
TH-227	4.542E-02	2.299E-01	4.506E-01	NOT IDENT.
TH-229	6.960E-02	4.526E-01	8.954E-01	FAIL ABUN
TH-231	-2.664E-01	6.167E-01	1.122E+00	FAIL ABUN
PA-233	2.563E-03	6.297E-02	1.204E-01	FAIL ABUN
PA-234	1.054E-01	2.756E-01	5.773E-01	NOT IDENT.
PA-234M	1.875E+00	5.187E+00	1.036E+01	NOT IDENT.
NP-237	2.563E-03	6.297E-02	1.204E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-1.186E-01	2.716E-01	4.776E-01	FAIL ABUN
PU-239	1.003E+02	3.584E+02	6.616E+02	NOT IDENT.
AM-241	8.840E-02	2.500E-01	4.899E-01	NOT IDENT.
CM-243	3.917E-02	1.137E-01	2.158E-01	FAIL ABUN
BK-247	-4.830E-02	8.371E-02	1.341E-01	NOT IDENT.
CM-247	1.053E-03	3.963E-02	7.438E-02	FAIL ABUN
CF-249	4.493E-02	4.237E-02	8.790E-02	NOT IDENT.
CF-251	5.042E-02	1.112E-01	2.257E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	324	10.66*	1.002E+00	1.481E+01	1.481E+01	11.33
TE-125M	109.28	26	0.27*	5.555E+00	8.391E+00	3.138E+02	202.05
CS-135	268.22	15	16.00*	4.339E+00	1.078E-01	1.078E-01	125.35
BA-137M	661.66	220	89.90*	1.974E+00	6.050E-01	6.165E-01	18.01
CS-137	661.66	220	85.10*	1.974E+00	6.391E-01	6.513E-01	18.01
PR-144	696.51	18	1.34*	1.892E+00	3.437E+00	7.130E+00	124.51
	1489.16	-----	0.28	9.838E-01	-----	Line Not Found	-----
HG-203	70.83	-----	3.69	2.720E+00	-----	Line Not Found	-----
	72.87	-----	6.19	2.941E+00	-----	Line Not Found	-----
	279.20	38	81.56*	4.200E+00	5.442E-02	4.716E+00	113.61
TL-208	277.37	38	6.60	4.200E+00	6.725E-01	6.725E-01	113.61
	583.19	113	85.00*	2.199E+00	2.958E-01	2.958E-01	36.14
	860.56	-----	12.50	1.582E+00	-----	Line Not Found	-----
PB-210	46.54	72	4.25*	3.240E-01	2.540E+01	2.606E+01	100.60
BI-211	72.87	-----	1.23	2.941E+00	-----	Line Not Found	-----
	351.06	235	12.92*	3.425E+00	2.593E+00	2.593E+00	19.18
PB-212	74.82	128	10.28	3.152E+00	1.928E+00	1.928E+00	50.94
	77.11	225	17.10	3.363E+00	1.907E+00	1.907E+00	30.68
	238.63	486	43.60*	4.740E+00	1.147E+00	1.147E+00	11.44
	300.09	41	3.30	3.919E+00	1.548E+00	1.548E+00	106.58
BI-214	609.32	145	45.49*	2.118E+00	7.335E-01	7.337E-01	27.01
	1120.29	39	14.92	1.266E+00	1.020E+00	1.020E+00	36.97
	1764.49	27	15.30	8.364E-01	1.016E+00	1.017E+00	39.95
PB-214	74.82	128	5.80	3.152E+00	3.418E+00	3.419E+00	50.94
	77.11	225	9.70	3.363E+00	3.361E+00	3.362E+00	30.68
	87.09	-----	3.41	4.287E+00	-----	Line Not Found	-----
	242.00	102	7.25	4.697E+00	1.465E+00	1.466E+00	62.99
	295.22	181	18.42	3.989E+00	1.205E+00	1.205E+00	28.11
	351.93	235	35.60*	3.425E+00	9.411E-01	9.414E-01	19.18
RN-222	609.32	145	45.49*	2.118E+00	7.335E-01	7.337E-01	27.01
	1120.29	39	14.92	1.266E+00	1.020E+00	1.020E+00	36.97
	1764.49	27	15.30	8.364E-01	1.016E+00	1.017E+00	39.95
RA-224	240.99	102	4.10*	4.697E+00	2.591E+00	2.591E+00	62.99
RA-226	609.32	145	45.49*	2.118E+00	7.335E-01	7.337E-01	27.01
	1120.29	39	14.92	1.266E+00	1.020E+00	1.020E+00	36.97
	1764.49	27	15.30	8.364E-01	1.016E+00	1.017E+00	39.95
AC-228	105.21	-----	1.10	5.396E+00	-----	Line Not Found	-----
	338.32	118	11.27	3.550E+00	1.444E+00	1.444E+00	31.44
	794.95	28	4.25	1.691E+00	1.935E+00	1.935E+00	52.79
	835.71	-----	1.61	1.621E+00	-----	Line Not Found	-----
	911.20	97	25.80*	1.508E+00	1.222E+00	1.222E+00	22.57
	968.97	25	15.80	1.431E+00	5.358E-01	5.358E-01	123.29
RA-228	105.21	-----	1.10	5.396E+00	-----	Line Not Found	-----
	338.32	118	11.27	3.550E+00	1.444E+00	1.444E+00	31.44
	794.95	28	4.25	1.691E+00	1.935E+00	1.935E+00	52.79
	835.71	-----	1.61	1.621E+00	-----	Line Not Found	-----
	911.20	97	25.80*	1.508E+00	1.222E+00	1.222E+00	22.57

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	968.97	25	15.80	1.431E+00	5.358E-01	5.358E-01	123.29
	74.82	128	10.28	3.152E+00	1.928E+00	1.928E+00	50.94
	77.11	225	17.10	3.363E+00	1.907E+00	1.907E+00	30.68
	238.63	486	43.60*	4.740E+00	1.147E+00	1.147E+00	11.44
TH-230	300.09	41	3.30	3.919E+00	1.548E+00	1.548E+00	106.58
	609.32	145	45.49*	2.118E+00	7.335E-01	7.335E-01	27.01
	1120.29	39	14.92	1.266E+00	1.020E+00	1.020E+00	36.97
	1764.49	27	15.30	8.364E-01	1.016E+00	1.016E+00	39.95
PA-231	283.69	-----	1.70	4.127E+00	-----	Line Not Found	-----
	301.36	41	5.35*	3.919E+00	9.549E-01	9.549E-01	106.58
TH-232	105.21	-----	1.10	5.396E+00	-----	Line Not Found	-----
	338.32	118	11.27	3.550E+00	1.444E+00	1.444E+00	31.44
	835.71	-----	1.61	1.621E+00	-----	Line Not Found	-----
	911.20	97	25.80*	1.508E+00	1.222E+00	1.222E+00	22.57
TH-234	968.97	25	15.80	1.431E+00	5.358E-01	5.358E-01	123.29
	63.29	32	3.70*	1.836E+00	2.324E+00	2.324E+00	113.44
U-234	92.59	103	4.23	4.722E+00	2.512E+00	2.512E+00	63.86
	609.32	145	45.49*	2.118E+00	7.335E-01	7.335E-01	27.01
	1120.29	39	14.92	1.266E+00	1.020E+00	1.020E+00	36.97
	1764.49	27	15.30	8.364E-01	1.016E+00	1.016E+00	39.95
U-235	89.96	64	3.47	4.512E+00	1.994E+00	1.994E+00	51.66
	93.35	103	5.60	4.722E+00	1.897E+00	1.897E+00	63.86
	143.76	-----	10.96*	6.023E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.876E+00	-----	Line Not Found	-----
	185.72	101	57.20	5.564E+00	1.546E-01	1.546E-01	67.36
	205.31	-----	5.01	5.260E+00	-----	Line Not Found	-----
U-238	63.29	32	3.70*	1.836E+00	2.324E+00	2.324E+00	113.44
	92.59	103	4.23	4.722E+00	2.512E+00	2.512E+00	63.86
AM-243	43.53	-----	5.90	1.216E-01	-----	Line Not Found	-----
ANH-511	74.66	128	67.20*	3.152E+00	2.950E-01	2.950E-01	50.94
	511.00	67	100.00*	2.466E+00	1.326E-01	1.326E-01	59.16

Flag: "*" = Keyline

Total number of lines in spectrum 49
Number of unidentified lines 10
Number of lines tentatively identified by NID 39 79.59%

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	1.481E+01	1.481E+01	0.168E+01	11.33	
TE-125M	57.40D	37.4	8.391E+00	3.138E+02	6.341E+02	202.05	
CS-135	2.30E+06Y	1.00	1.078E-01	1.078E-01	1.351E-01	125.35	
BA-137M	30.08Y	1.02	6.050E-01	6.165E-01	1.110E-01	18.01	
CS-137	30.08Y	1.02	6.391E-01	6.513E-01	1.173E-01	18.01	
PR-144	284.91D	2.07	3.437E+00	7.130E+00	8.877E+00	124.51	
HG-203	46.59D	86.7	5.442E-02	4.716E+00	5.358E+00	113.61	
TL-208	1.41E+10Y	1.00	2.958E-01	2.958E-01	1.069E-01	36.14	
PB-210	22.20Y	1.03	2.540E+01	2.606E+01	2.621E+01	100.60	
BI-211	7.04E+08Y	1.00	2.593E+00	2.593E+00	0.497E+00	19.18	
PB-212	1.41E+10Y	1.00	1.147E+00	1.147E+00	0.131E+00	11.44	
BI-214	1600.00Y	1.00	7.335E-01	7.337E-01	1.982E-01	27.01	
PB-214	1600.00Y	1.00	9.411E-01	9.414E-01	1.806E-01	19.18	
RN-222	1600.00Y	1.00	7.335E-01	7.337E-01	1.982E-01	27.01	
RA-224	1.41E+10Y	1.00	2.591E+00	2.591E+00	1.632E+00	62.99	
RA-226	1600.00Y	1.00	7.335E-01	7.337E-01	1.982E-01	27.01	
AC-228	1.41E+10Y	1.00	1.222E+00	1.222E+00	0.276E+00	22.57	
RA-228	1.41E+10Y	1.00	1.222E+00	1.222E+00	0.276E+00	22.57	
TH-228	1.41E+10Y	1.00	1.147E+00	1.147E+00	0.131E+00	11.44	
TH-230	7.54E+04Y	1.00	7.335E-01	7.335E-01	1.981E-01	27.01	
PA-231	7.04E+08Y	1.00	9.549E-01	9.549E-01	10.18E-01	106.58	
TH-232	1.41E+10Y	1.00	1.222E+00	1.222E+00	0.276E+00	22.57	
TH-234	4.47E+09Y	1.00	2.324E+00	2.324E+00	2.636E+00	113.44	
U-234	2.45E+05Y	1.00	7.335E-01	7.335E-01	1.981E-01	27.01	
U-235	7.04E+08Y	1.00	1.546E-01	1.546E-01	1.041E-01	67.36	K
U-238	4.47E+09Y	1.00	2.324E+00	2.324E+00	2.636E+00	113.44	
AM-243	7370.00Y	1.00	2.950E-01	2.950E-01	1.503E-01	50.94	
ANH-511	1.00E+09Y	1.00	1.326E-01	1.326E-01	0.785E-01	59.16	

Total Activity : 7.567E+01 3.901E+02

Grand Total Activity : 7.567E+01 3.901E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	210.28	42	181	0.58	420.44	412	12	9.81E-03	****	5.18E+00	T
6	270.06	31	78	1.58	540.02	532	12	7.35E-03	****	4.30E+00	T
0	434.31	22	64	4.44	868.61	861	16	5.63E-03	****	2.84E+00	T
2	440.31	27	20	2.02	880.60	876	17	6.72E-03	84.4	2.81E+00	T
2	444.15	32	24	2.03	888.30	876	17	8.07E-03	73.5	2.79E+00	
0	463.30	34	41	0.88	926.60	924	8	8.55E-03	79.1	2.69E+00	T
0	665.90	20	5	0.61	1331.88	1329	7	5.28E-03	63.4	1.96E+00	T
0	704.04	22	28	0.89	1408.18	1397	18	5.95E-03	****	1.87E+00	T
0	727.74	20	28	1.03	1455.59	1448	12	5.27E-03	****	1.82E+00	T
0	754.99	56	21	8.83	1510.09	1497	27	1.51E-02	53.5	1.77E+00	T
0	768.76	19	19	1.41	1537.65	1532	11	4.98E-03	****	1.74E+00	
0	773.28	9	11	1.41	1546.69	1543	8	2.35E-03	****	1.73E+00	T
0	799.01	10	5	0.56	1598.16	1595	8	2.62E-03	99.5	1.68E+00	
0	821.19	9	13	4.21	1642.52	1635	10	2.46E-03	****	1.65E+00	
0	935.10	12	21	0.80	1870.38	1859	14	3.33E-03	****	1.48E+00	
0	1031.64	13	11	0.88	2063.48	2052	15	3.52E-03	****	1.36E+00	
0	1050.16	13	9	3.86	2100.52	2094	12	3.59E-03	****	1.34E+00	T
0	1093.61	31	5	4.87	2187.43	2177	20	8.69E-03	49.9	1.29E+00	T
0	1155.98	16	16	0.84	2312.18	2305	13	4.49E-03	****	1.23E+00	
0	1197.74	8	13	0.71	2395.70	2387	13	2.32E-03	****	1.20E+00	
0	1376.00	19	0	3.21	2752.25	2744	16	5.56E-03	44.7	1.06E+00	
0	1847.78	8	0	1.07	3695.78	3692	9	2.50E-03	66.7	7.98E-01	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235014.CNF;1    *
* Acquisition date   : 3-OCT-2016 08:11:15 Sensitivity      : 3.000             *
* Detector ID        : GAM43 Energy tolerance: 1.500       *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000       *
* Elapsed real time  : 0 01:00:00.71 Half life ratio : *****       *
* Sample date        : 8-DEC-2015 10:49:00 Nuclide Library : SOLID        *
* Sample ID          : G405235014 Analyst initials: MXR1          *
* Batch Number       : 1596247 Sample Quantity : 1.5373E+02 GRAM      *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000           *
*                               Dry Weight      : 0.00000           *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 6-SEP-2016 07:25:20 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM43 CAN.CNF;7          *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

----- Identified Nuclides -----

Nuclide	Lc (pCi/GRAM)
K-40	2.808E-01
TE-125M	2.457E+02
CS-135	1.258E-01
BA-137M	3.598E-02
CS-137	3.800E-02
PR-144	4.433E+00
HG-203	2.280E+00
TL-208	3.278E-02
PB-210	8.795E+00
PB-212	4.352E-02
BI-214	6.289E-02
PB-214	5.911E-02
RN-222	6.289E-02
RA-224	4.667E-01
RA-226	6.289E-02
AC-228	1.156E-01
RA-228	1.156E-01
TH-228	4.352E-02
TH-230	6.286E-02
PA-231	3.832E-01
TH-232	1.156E-01
TH-234	1.630E+00
U-234	6.286E-02
U-235	1.651E-01
U-238	1.630E+00
AM-243	6.306E-02
ANH-511	2.418E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.098E+01	NOT IDENT.
NA-22	3.732E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.978E-02	NOT IDENT.

SC-46	2.880E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.393E-02	NOT IDENT.
CO-56	4.186E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.475E-02	NOT IDENT.
CO-58	4.739E-01	NOT IDENT.
FE-59	7.273E+00	NOT IDENT.
CO-60	4.076E-02	NOT IDENT.
ZN-65	1.427E-01	NOT IDENT.
GE-68	1.866E+00	NOT IDENT.
AS-73	1.607E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.767E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.277E-01	NOT IDENT.
KR-85	6.384E+00	NOT IDENT.
SR-85	6.747E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	3.998E-02	NOT IDENT.
Y-91	5.540E+02	NOT IDENT.
NB-94	2.968E-02	FAIL ABUN
NB-95	8.962E-01	NOT IDENT.
NB-95M	2.017E+00	NOT IDENT.
ZR-95	1.646E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.121E-02	NOT IDENT.
RH-102	5.740E-02	NOT IDENT.
RU-103	5.046E+00	FAIL ABUN
RH-106	4.554E-01	FAIL ABUN
RU-106	4.554E-01	FAIL ABUN
AG-108M	2.779E-02	FAIL ABUN
CD-109	1.382E+00	NOT IDENT.
AG-110M	6.827E-02	NOT IDENT.
SN-113	2.142E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.335E-01	NOT IDENT.
SB-124	1.580E+00	NOT IDENT.
SB-125	9.758E-02	FAIL ABUN
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SN-126	9.368E-02	FAIL ABUN
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.554E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	5.611E-02	FAIL ABUN
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.455E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.218E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.573E-01	NOT IDENT.
PM-144	5.627E-02	FAIL ABUN
PM-146	4.396E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	8.112E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.397E-02	FAIL ABUN
EU-152	8.881E-02	NOT IDENT.
GD-153	1.825E-01	NOT IDENT.
EU-154	9.356E-02	NOT IDENT.
EU-155	1.009E-01	NOT IDENT.
TB-160	1.650E+00	NOT IDENT.
HO-166M	5.200E-02	NOT IDENT.
TM-171	3.695E+01	NOT IDENT.
HF-172	2.273E-01	FAIL ABUN
LU-172	8.890E-02	FAIL ABUN

LU-176	2.019E-02	NOT IDENT.
HF-181	3.910E+00	NOT IDENT.
TA-182	9.356E-01	FAIL ABUN
RE-183	5.161E+00	NOT IDENT.
RE-184	2.816E+01	NOT IDENT.
W-188	9.609E+01	FAIL ABUN
IR-192	3.939E-01	FAIL ABUN
BI-207	4.684E-02	FAIL ABUN
BI-211	3.976E-01	FAIL ABUN
PB-211	5.410E-01	NOT IDENT.
BI-212	5.979E-01	FAIL ABUN
RN-219	3.914E-01	FAIL ABUN
RA-223	5.141E-01	FAIL ABUN
AC-227	2.091E-01	NOT IDENT.
TH-227	2.091E-01	NOT IDENT.
TH-229	4.187E-01	FAIL ABUN
TH-231	5.141E-01	FAIL ABUN
PA-233	5.550E-02	FAIL ABUN
PA-234	2.503E-01	NOT IDENT.
PA-234M	4.606E+00	NOT IDENT.
NP-237	5.550E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.234E-01	FAIL ABUN
PU-239	3.122E+02	NOT IDENT.
AM-241	2.312E-01	NOT IDENT.
CM-243	1.014E-01	FAIL ABUN
BK-247	6.175E-02	NOT IDENT.
CM-247	3.406E-02	FAIL ABUN
CF-249	4.064E-02	NOT IDENT.
CF-251	1.058E-01	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235014.CNF;1
* Acquisition date   : 3-OCT-2016 08:11:15 Sensitivity      : 3.000
* Detector ID        : GAM43 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.71 Half life ratio : *****
* Sample date        : 8-DEC-2015 10:49:00 Nuclide Library : SOLID
* Sample ID          : G405235014 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.5373E+02 GRAM
* Wet wt corr        : 1.00000 Quantity Err(%) : 1.3010E-03 %
* Dry Weight         : 0.00000
* Dry Weight         : 0.00000
*****
*                                     CALIBRATION INFORMATION                  *
*
* Eff. Cal. date     : 6-SEP-2016 07:25:20 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM43 CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.481E+01	1.817E+00	1.817E+00
TE-125M	3.138E+02	6.217E+02	6.217E+02
CS-135	1.078E-01	1.326E-01	1.326E-01
BA-137M	6.165E-01	1.120E-01	1.120E-01
CS-137	6.513E-01	1.183E-01	1.183E-01
PR-144	7.130E+00	8.705E+00	8.705E+00
HG-203	2.642E+00	5.308E+00	5.308E+00
TL-208	2.958E-01	1.055E-01	1.055E-01
PB-210	2.606E+01	2.580E+01	2.580E+01
PB-212	1.147E+00	1.425E-01	1.425E-01
BI-214	7.337E-01	1.968E-01	1.968E-01
PB-214	9.414E-01	1.814E-01	1.814E-01
RN-222	7.337E-01	1.968E-01	1.968E-01
RA-224	4.607E-01	1.710E+00	1.710E+00
RA-226	7.337E-01	1.968E-01	1.968E-01
AC-228	1.222E+00	2.774E-01	2.774E-01
RA-228	1.222E+00	2.774E-01	2.774E-01
TH-228	1.147E+00	1.425E-01	1.425E-01
TH-230	7.335E-01	1.967E-01	1.967E-01
PA-231	9.549E-01	1.018E+00	1.018E+00
TH-232	1.222E+00	2.774E-01	2.774E-01
TH-234	2.324E+00	2.635E+00	2.635E+00
U-234	7.335E-01	1.967E-01	1.967E-01
U-235	-2.352E-02	1.788E-01	1.788E-01
U-238	2.324E+00	2.635E+00	2.635E+00
AM-243	1.910E-01	1.511E-01	1.511E-01
ANH-511	1.326E-01	7.708E-02	7.708E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-1.129E+01	1.463E+01	1.549E+01	NOT IDENT.
NA-22	-8.378E-03	4.504E-02	4.520E-02	NOT IDENT.
NA-24	1.000E+41	7.300E+41	0.000E+00	SHORT HLIF

AL-26	-3.236E-02	3.689E-02	3.967E-02	NOT IDENT.
SC-46	7.289E-02	3.221E-01	3.238E-01	FAIL ABUN
V-48	-9.700E+02	1.413E+04	1.414E+04	SHORT HLIF
CR-51	3.430E+02	4.009E+02	4.296E+02	SHORT HLIF
MN-54	-1.942E-02	6.643E-02	6.701E-02	NOT IDENT.
CO-56	-9.078E-02	5.059E-01	5.076E-01	NOT IDENT.
MN-56	-1.000E+41	5.573E+41	0.000E+00	SHORT HLIF
CO-57	3.139E-03	5.206E-02	5.208E-02	NOT IDENT.
CO-58	-1.237E-01	5.755E-01	5.782E-01	NOT IDENT.
FE-59	4.269E+00	8.955E+00	9.159E+00	NOT IDENT.
CO-60	2.219E-02	4.296E-02	4.411E-02	NOT IDENT.
ZN-65	-1.444E-01	2.381E-01	2.468E-01	NOT IDENT.
GE-68	5.698E-01	2.104E+00	2.120E+00	NOT IDENT.
AS-73	1.078E+00	1.786E+01	1.786E+01	NOT IDENT.
AS-74	4.392E+03	6.611E+03	6.902E+03	SHORT HLIF
SE-75	-1.310E-01	2.389E-01	2.460E-01	NOT IDENT.
BR-77	2.101E+38	1.819E+39	0.000E+00	SHORT HLIF
SR-82	4.516E+02	7.822E+02	8.082E+02	SHORT HLIF
RB-83	-1.294E-01	7.149E-01	7.173E-01	NOT IDENT.
KR-85	-3.310E+00	9.209E+00	9.329E+00	NOT IDENT.
SR-85	-3.512E-01	9.736E-01	9.864E-01	NOT IDENT.
RB-86	6.876E+03	2.538E+04	2.557E+04	SHORT HLIF
Y-88	-1.760E-01	1.827E-01	1.992E-01	NOT IDENT.
Y-91	-2.612E+02	6.762E+02	6.864E+02	NOT IDENT.
NB-94	5.865E-02	6.993E-02	7.476E-02	FAIL ABUN
NB-95	7.046E-01	1.044E+00	1.091E+00	NOT IDENT.
NB-95M	-1.012E+00	2.616E+00	2.656E+00	NOT IDENT.
ZR-95	1.957E+00	1.632E+00	1.855E+00	NOT IDENT.
NB-97	1.000E+41	5.763E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	3.376E+41	0.000E+00	SHORT HLIF
MO-99	-4.810E+30	1.583E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.485E+41	0.000E+00	SHORT HLIF
RH-101	-3.795E-02	4.059E-02	4.405E-02	NOT IDENT.
RH-102	5.154E-02	5.791E-02	6.240E-02	NOT IDENT.
RU-103	1.514E+00	5.775E+00	5.815E+00	FAIL ABUN
RH-106	2.972E-01	4.723E-01	4.909E-01	FAIL ABUN
RU-106	2.972E-01	4.723E-01	4.909E-01	FAIL ABUN
AG-108M	4.241E-02	7.321E-02	7.567E-02	FAIL ABUN
CD-109	1.734E+00	1.570E+00	1.754E+00	NOT IDENT.
AG-110M	-1.342E-01	1.087E-01	1.244E-01	NOT IDENT.
SN-113	-2.478E-01	2.782E-01	2.997E-01	NOT IDENT.
CD-115	3.730E+38	3.293E+39	0.000E+00	SHORT HLIF
SN-117M	9.717E+04	9.943E+04	1.087E+05	SHORT HLIF
TE-123M	1.303E-01	1.352E-01	1.474E-01	NOT IDENT.
SB-124	-3.031E-01	2.005E+00	2.009E+00	NOT IDENT.
SB-125	2.322E-02	1.247E-01	1.251E-01	FAIL ABUN
I-126	1.455E+06	9.248E+05	1.134E+06	SHORT HLIF
SB-126	-7.524E+05	1.431E+06	1.470E+06	SHORT HLIF
SN-126	1.998E-01	1.001E-01	1.347E-01	FAIL ABUN
SB-127	6.591E+21	2.326E+22	0.000E+00	SHORT HLIF
I-131	-3.823E+08	4.700E+09	4.703E+09	SHORT HLIF
I-132	1.000E+41	1.852E+42	0.000E+00	SHORT HLIF
TE-132	-1.155E+26	3.904E+26	0.000E+00	SHORT HLIF
BA-133	1.923E-03	4.564E-02	4.565E-02	FAIL ABUN
I-133	-1.000E+41	7.635E+41	0.000E+00	SHORT HLIF
CS-134	1.267E-01	6.575E-02	8.708E-02	FAIL ABUN
I-135	-1.000E+41	7.020E+41	0.000E+00	SHORT HLIF
CS-136	-1.299E+04	4.236E+05	4.236E+05	SHORT HLIF
CE-139	-1.909E-02	1.037E-01	1.041E-01	NOT IDENT.
BA-140	3.127E+05	1.438E+06	1.445E+06	SHORT HLIF
LA-140	-6.102E+05	5.128E+05	5.819E+05	SHORT HLIF
CE-141	-2.980E+00	2.395E+01	2.399E+01	NOT IDENT.
CE-143	1.000E+41	8.180E+40	0.000E+00	SHORT HLIF
CE-144	-8.042E-02	3.852E-01	3.870E-01	NOT IDENT.
PM-144	8.208E-02	1.003E-01	1.069E-01	FAIL ABUN
PM-146	1.728E-02	4.909E-02	4.970E-02	NOT IDENT.
ND-147	-4.681E+06	3.358E+07	3.364E+07	SHORT HLIF
PM-147	1.955E+02	9.309E+02	9.351E+02	NOT IDENT.
PM-149	-1.248E+40	5.284E+40	0.000E+00	SHORT HLIF
EU-150	2.285E-03	3.046E-02	3.048E-02	FAIL ABUN
EU-152	-6.069E-02	1.085E-01	1.119E-01	NOT IDENT.
GD-153	-8.930E-02	2.365E-01	2.399E-01	NOT IDENT.
EU-154	-2.756E-02	1.142E-01	1.149E-01	NOT IDENT.
EU-155	2.749E-02	1.236E-01	1.242E-01	NOT IDENT.
TB-160	1.175E-01	1.916E+00	1.916E+00	NOT IDENT.
HO-166M	-1.547E-02	6.204E-02	6.243E-02	NOT IDENT.
TM-171	-1.986E+01	4.682E+01	4.767E+01	NOT IDENT.
HF-172	2.189E-01	2.492E-01	2.680E-01	FAIL ABUN

LU-172	2.541E-01	1.270E-01	1.710E-01	FAIL ABUN
LU-176	-4.830E-03	2.643E-02	2.652E-02	NOT IDENT.
HF-181	-1.802E+00	4.908E+00	4.975E+00	NOT IDENT.
TA-182	9.192E-03	1.077E+00	1.077E+00	FAIL ABUN
RE-183	3.007E-01	5.700E+00	5.702E+00	NOT IDENT.
RE-184	-6.113E+00	3.429E+01	3.440E+01	NOT IDENT.
W-188	-3.102E+01	1.259E+02	1.267E+02	FAIL ABUN
IR-192	-2.127E-01	4.732E-01	4.828E-01	FAIL ABUN
BI-207	1.715E-02	5.288E-02	5.344E-02	FAIL ABUN
BI-211	2.593E+00	5.013E-01	1.272E+00	FAIL ABUN
PB-211	-4.174E-01	6.886E-01	7.138E-01	NOT IDENT.
BI-212	7.965E-01	9.284E-01	9.955E-01	FAIL ABUN
RN-219	1.993E-01	4.347E-01	4.439E-01	FAIL ABUN
RA-223	-2.664E-01	6.169E-01	6.285E-01	FAIL ABUN
AC-227	4.542E-02	2.300E-01	2.309E-01	NOT IDENT.
TH-227	4.542E-02	2.300E-01	2.309E-01	NOT IDENT.
TH-229	6.960E-02	4.527E-01	4.537E-01	FAIL ABUN
TH-231	-2.664E-01	6.169E-01	6.285E-01	FAIL ABUN
PA-233	2.563E-03	6.297E-02	6.298E-02	FAIL ABUN
PA-234	1.054E-01	3.009E-01	3.046E-01	NOT IDENT.
PA-234M	1.875E+00	5.188E+00	5.256E+00	NOT IDENT.
NP-237	2.563E-03	6.297E-02	6.298E-02	FAIL ABUN
NP-238	-1.000E+41	2.329E+41	0.000E+00	SHORT HLIF
NP-239	-1.186E-01	2.717E-01	2.770E-01	FAIL ABUN
PU-239	1.003E+02	3.585E+02	3.613E+02	NOT IDENT.
AM-241	8.840E-02	2.501E-01	2.533E-01	NOT IDENT.
CM-243	3.917E-02	1.137E-01	1.151E-01	FAIL ABUN
BK-247	-4.830E-02	8.428E-02	8.704E-02	NOT IDENT.
CM-247	1.053E-03	3.963E-02	3.963E-02	FAIL ABUN
CF-249	4.493E-02	4.253E-02	4.710E-02	NOT IDENT.
CF-251	5.042E-02	1.113E-01	1.136E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	64.4058	87.09	95.1059	136.47	89.5901
45.60	81.3972	87.57	82.9171	140.51	0.0000
46.54	60.1935	88.03	96.8296	143.76	79.5716
49.72	0.0000	88.34	96.8917	144.24	76.2396
51.35	58.9820	88.47	96.9174	145.44	81.4648
51.87	66.1055	89.96	106.4733	152.43	81.4309
52.39	61.9809	1093.63	82.2839	153.25	0.0000
52.97	64.9081	91.11	0.0000	323.87	77.3383
53.44	61.4644	92.59	82.6084	156.02	0.0000
54.07	64.7612	93.35	82.7340	158.56	0.0000
57.36	0.0000	94.56	82.9328	159.00	68.3382
57.53	80.4045	94.65	82.9474	162.33	67.7803
57.98	85.8707	94.67	82.9507	162.66	0.0000
59.27	90.4818	94.87	82.9837	163.33	65.2611
59.32	82.9528	97.43	90.8392	165.86	68.9747
59.54	84.0801	98.43	73.7531	176.31	58.4133
60.96	83.6789	98.44	73.7545	176.60	0.0000
61.17	83.7255	99.53	90.8130	177.52	63.8218
62.93	90.2769	100.11	81.4679	181.07	0.0000
63.29	82.7403	102.03	91.2436	181.52	74.8339
63.58	81.3498	103.18	72.4389	184.41	79.5725
64.28	94.5941	103.37	72.4650	143.76	79.7011
66.73	91.1561	105.21	63.5730	193.51	65.9907
67.24	86.8734	105.31	63.5844	197.03	70.8041
125.81	92.4729	106.12	90.7423	198.01	78.1562
67.75	92.4883	106.47	90.8003	201.83	73.0265
69.67	113.9450	109.28	64.8439	203.43	92.1826
70.83	90.2279	111.00	77.0874	205.31	83.8582
72.81	98.0849	111.76	0.0000	210.85	58.0999
72.87	98.0990	114.06	79.9234	215.65	64.9001
74.66	115.3021	116.30	0.0000	222.11	72.8267
74.82	115.3446	116.74	81.5095	227.09	70.3987
74.97	115.3846	119.76	61.1397	227.38	69.4811
77.11	115.9520	121.12	74.7598	228.16	0.0000
78.74	100.9369	121.22	74.7724	228.18	62.0220
79.69	87.5635	121.78	72.3879	116.74	62.0220
80.12	84.6249	122.06	72.4217	235.69	69.6121
80.19	0.0000	122.92	83.5878	235.96	73.8947
80.57	114.9618	123.07	71.3128	238.63	56.0477
81.00	122.6412	265.00	78.7690	238.98	0.0000
81.07	122.6602	125.81	62.9874	240.99	56.1822
81.75	108.0564	127.23	102.7431	242.00	56.2398
83.79	93.6820	127.91	86.7462	244.70	40.1436
84.00	99.4395	129.30	85.6962	252.40	0.0000
85.43	173.1168	131.20	108.3770	252.80	52.0285
86.55	90.7850	133.02	93.6951	254.15	0.0000
86.79	98.1120	133.52	94.1851	256.23	51.2351
86.94	98.1432	136.00	92.0359	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	57.0087	355.39	0.0000	584.27	26.1571
264.80	58.4790	356.01	34.7261	595.83	0.0000
265.00	58.4900	364.49	0.0000	427.87	30.2205
268.22	52.8003	366.42	0.0000	602.52	0.0000
269.46	52.8607	372.51	38.3489	604.72	33.7700
270.03	52.8893	375.05	42.6880	607.14	32.3404
271.23	61.7734	377.52	37.4189	609.32	26.6724
273.65	0.0000	356.01	35.4405	610.33	26.6857
276.40	60.0965	388.16	31.2403	614.28	29.5039
277.37	60.1499	388.63	0.0000	618.01	25.8629
277.60	60.1623	391.69	52.9159	620.36	24.9681
278.00	62.1579	264.66	40.2068	621.93	13.8817
279.20	56.2996	401.81	35.8883	630.19	0.0000
279.54	54.8349	402.40	39.1663	631.29	13.0152
279.70	54.8428	404.85	37.0526	633.25	26.9848
280.46	68.2293	410.95	32.8290	634.78	0.0000
283.69	56.5280	413.71	51.5277	635.95	13.0443
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	59.5947	423.72	0.0000	645.85	18.7219
285.90	0.0000	427.09	24.3342	657.76	18.0738
287.50	52.7391	427.87	29.8801	657.90	0.0000
290.67	49.3953	433.94	28.3316	661.66	28.6688
293.27	0.0000	439.40	6.6897	664.57	0.0000
351.93	36.0667	453.88	27.0049	666.33	0.0000
295.96	36.0901	463.37	28.8618	666.50	0.0000
879.38	24.1143	468.07	25.5396	667.71	0.0000
299.98	45.2692	473.00	0.0000	677.62	14.2497
300.09	45.2737	475.06	28.4973	685.70	0.0000
300.13	45.2747	476.78	29.6679	695.00	0.0000
301.36	45.3223	477.60	38.8158	696.49	21.4601
302.85	34.7913	482.18	32.0537	696.51	21.4601
256.23	36.3552	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	15.3340
306.78	40.9787	497.08	20.7872	697.49	15.3354
308.46	45.5960	505.52	26.1108	702.65	16.9077
311.90	45.7278	507.63	0.0000	706.68	13.8582
316.51	45.9027	511.00	25.6105	711.68	23.1475
319.41	0.0000	514.00	36.7321	720.70	0.0000
320.08	0.0000	514.00	36.7321	721.93	0.0000
321.04	34.8114	520.40	29.8434	722.78	12.4047
323.87	48.2326	520.69	0.0000	722.91	12.4055
325.23	48.2852	522.65	0.0000	723.31	13.9583
328.76	0.0000	527.90	0.0000	724.19	15.5151
333.37	40.3282	528.26	24.6846	727.33	24.2752
333.97	45.0027	529.59	23.8203	733.00	18.1694
334.37	40.3600	529.87	0.0000	735.93	17.5424
338.28	52.9413	531.02	0.0000	333.97	17.5540
338.32	52.9434	537.26	0.0000	739.50	0.0000
311.90	43.6740	546.56	0.0000	747.24	15.6680
340.48	43.6740	552.55	23.2261	748.06	25.0773
340.55	0.0000	563.25	26.9522	752.31	12.7572
344.28	55.2752	569.33	28.8403	753.82	0.0000
345.93	45.9470	946.00	28.8428	756.73	12.7806
351.06	44.0311	569.70	27.0428	756.80	12.7810
351.93	36.7168	583.19	27.2324	884.68	15.7769

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	17.3680	1274.44	17.1860	1620.50	5.0767
766.42	22.1102	1001.03	17.2129	1621.92	4.0625
766.84	20.5347	1002.74	17.2227	1678.03	0.0000
772.60	0.0000	1004.73	20.4652	1690.97	4.1234
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	3.1403
778.90	14.7397	1028.54	0.0000	1063.66	3.4933
783.70	0.0000	1037.84	11.9762	1771.35	1.4975
785.37	14.9203	1038.76	0.0000	1791.20	0.0000
792.07	15.9580	631.29	17.4688	1808.65	7.3931
794.95	11.1836	1048.07	0.0000	1810.72	0.0000
795.86	0.0000	1049.04	17.4824	1836.06	4.2477
810.06	18.0813	1050.41	17.4902		
810.29	18.0829	1063.66	12.0742		
344.28	18.0840	1077.00	0.0000		
810.76	15.0719	1077.34	7.7165		
815.77	0.0000	1085.87	21.2215		
1048.07	0.0000	1093.63	15.5107		
832.01	13.1702	1099.45	12.4312		
834.85	18.2554	1112.07	13.3696		
835.71	18.2615	1112.84	11.1444		
836.80	0.0000	1115.54	19.6292		
846.75	0.0000	1120.29	14.5203		
846.77	17.3201	1120.55	14.5211		
856.80	0.0000	1221.41	14.5242		
860.56	19.4581	1129.67	16.8008		
871.09	18.5065	1131.51	0.0000		
873.19	15.4340	1147.95	0.0000		
875.33	0.0000	1173.23	9.9833		
879.38	13.4066	1177.95	19.0846		
880.51	13.4122	1189.05	12.5361		
883.24	14.4584	1204.77	22.8943		
884.68	21.6985	1221.41	17.4813		
889.28	8.2800	1231.02	17.5277		
894.76	13.4820	1235.36	0.0000		
898.04	16.6128	1238.28	11.0924		
900.72	18.7075	1260.41	0.0000		
903.28	17.6843	1271.87	6.5304		
911.20	15.0223	1274.44	11.2025		
912.08	16.6963	1274.54	10.2690		
923.98	0.0000	1291.59	11.2541		
926.50	10.0690	1298.22	0.0000		
929.11	10.0784	1312.11	0.0000		
937.49	18.5313	1332.49	7.5836		
944.13	0.0000	1362.66	0.0000		
946.00	10.5603	1365.19	8.6036		
949.00	19.0278	1368.63	0.0000		
667.71	0.0000	1384.29	5.3366		
962.31	24.2732	1408.01	9.6631		
964.08	20.4018	1457.56	0.0000		
966.17	11.9092	1460.82	6.8517		
911.20	22.3516	1489.16	4.9272		
968.97	22.3516	1505.03	10.8802		
983.53	0.0000	1584.12	4.0287		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:15:15.21

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235015.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM44.CNF;111
Background date    : 2-OCT-2016 11:02:28.
Sample date       : 8-DEC-2015 10:56:00. Acquisition date : 3-OCT-2016 08:11:39.
Sample ID        : G405235015 Sample quantity : 1.45075E+02 GRAM
Detector name    : GAM44 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.75 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596247 Detector SN# :
Matrix Spike ID  : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.79*	60	131	1.00	126.04	122	9	1.68E-02	37.0	
2	3	74.99	79	138	1.07	150.43	147	13	2.18E-02	25.3	1.29E+00
3	3	77.15*	140	118	1.07	154.76	147	13	3.89E-02	15.4	
4	0	87.17	38	144	1.06	174.81	172	7	1.06E-02	54.1	
5	0	93.06*	58	181	1.03	186.60	183	10	1.60E-02	46.7	
6	0	99.51*	31	187	3.33	199.50	193	12	8.49E-03	92.2	
7	0	185.90*	102	114	0.96	372.34	366	12	2.83E-02	23.7	
8	0	209.20	26	70	0.93	418.96	416	7	7.09E-03	57.9	
9	4	238.73*	365	63	1.15	478.06	472	19	1.01E-01	6.5	1.12E+00
10	4	241.60	113	88	1.78	483.80	472	19	3.14E-02	24.2	
11	0	271.00	23	74	1.46	542.61	536	9	6.29E-03	71.7	
12	0	284.47	43	79	3.86	569.57	562	15	1.20E-02	47.4	
13	2	295.41	91	56	1.42	591.47	587	18	2.53E-02	17.9	1.56E+00
14	2	299.91	21	56	1.56	600.46	587	18	5.84E-03	69.0	
15	0	321.84	37	40	0.98	644.35	640	10	1.03E-02	36.0	
16	0	338.37	70	82	1.05	677.42	673	11	1.95E-02	27.4	
17	0	351.83*	241	48	1.19	704.35	698	11	6.71E-02	8.6	
18	0	414.86	15	37	2.38	830.48	823	10	4.05E-03	82.7	
19	0	482.23	12	21	1.49	965.28	959	10	3.27E-03	80.2	
20	0	511.09*	64	23	2.12	1023.03	1015	16	1.76E-02	25.5	
21	2	516.88	21	4	1.80	1034.63	1031	25	5.80E-03	29.6	1.60E+00
22	2	525.75	19	7	1.81	1052.37	1031	25	5.21E-03	30.7	
23	0	583.28*	120	33	1.30	1167.51	1162	10	3.33E-02	13.0	
24	0	609.36*	155	35	1.35	1219.70	1213	15	4.31E-02	11.6	
25	0	661.95	78	40	1.17	1324.93	1319	12	2.18E-02	19.2	
26	0	669.81	10	26	4.82	1340.67	1330	12	2.80E-03	107.3	
27	0	727.83	17	25	1.36	1456.78	1451	10	4.66E-03	60.9	
28	0	738.40	5	10	0.89	1477.92	1474	6	1.25E-03	116.5	
29	0	768.61	27	23	1.71	1538.38	1529	13	7.49E-03	41.3	
30	0	772.60	8	13	1.38	1546.37	1543	7	2.35E-03	76.9	
31	0	794.46	35	7	1.26	1590.12	1584	13	9.79E-03	22.5	
32	0	861.16	37	15	0.64	1723.62	1714	20	1.03E-02	30.5	
33	0	871.28	26	13	6.59	1743.86	1734	18	7.15E-03	38.8	
34	0	911.36*	73	24	1.06	1824.08	1819	11	2.02E-02	18.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	923.46	11	5	0.59	1848.31	1845	7	3.07E-03	45.4	
36	5	964.70	22	5	2.91	1930.84	1926	18	6.07E-03	27.5	1.67E+00
37	5	968.96*	44	5	1.74	1939.36	1926	18	1.23E-02	20.0	
38	0	1005.15	8	12	0.92	2011.81	2008	8	2.22E-03	82.9	
39	0	1039.30	7	14	0.97	2080.16	2071	11	2.02E-03	105.3	
40	0	1041.21	13	1	1.51	2083.97	2081	6	3.50E-03	32.0	
41	0	1084.19	13	14	0.73	2170.00	2162	14	3.61E-03	67.1	
42	0	1095.28	7	7	0.98	2192.21	2188	6	1.84E-03	76.1	
43	0	1098.49	16	4	3.22	2198.64	2194	10	4.44E-03	35.6	
44	0	1120.70	34	30	1.56	2243.09	2237	15	9.44E-03	39.1	
45	0	1154.44	16	8	2.34	2310.63	2305	11	4.45E-03	42.6	
46	0	1223.88	9	11	0.65	2449.62	2444	9	2.51E-03	74.6	
47	0	1333.06	9	6	2.33	2668.18	2661	11	2.36E-03	63.5	
48	0	1460.73*	384	4	2.05	2923.76	2915	16	1.07E-01	5.3	
49	0	1764.90	24	2	2.03	3532.71	3528	11	6.61E-03	24.4	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235015.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 8-DEC-2015 10:56:00   Acquisition date : 3-OCT-2016 08:11:39
Sample ID        : G405235015             Sample quantity  : 145.07 GRAM
Sample type       : SOLID                  Sample geometry   :
Detector name     : GAMMA44               Detector geometry: CAN
Elapsed live time : 0 01:00:00.00         Elapsed real time: 0 01:00:00.75   0.0%
Energy tolerance  : 1.50 keV              Half life ratio  : 10.00
Errors propagated: No                     Systematic Error : 0.00 %
Efficiency type   : Linear                 Efficiencies at  : Peak Energy
Abundance limit   : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.030E+00	1.738E+01	1.738E+01	10.57	OK
CD-109	88.03	3.70*	4.453E+00	8.036E-01	1.261E+00	202.07	OK
SN-126	64.28	9.60	1.986E+00	2.070E+00	2.070E+00	73.96	OK
	86.94	8.90	4.453E+00	3.341E-01	3.341E-01	202.07	OK
	87.57	37.00*	4.453E+00	8.036E-02	8.036E-02	202.07	OK
BA-137M	661.66	89.90*	1.965E+00	2.384E-01	2.430E-01	38.33	OK
CS-137	661.66	85.10*	1.965E+00	2.519E-01	2.567E-01	38.33	OK
TL-208	277.37	6.60	4.074E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	2.178E+00	3.520E-01	3.520E-01	26.04	OK
	860.56	12.50	1.591E+00	9.740E-01	9.740E-01	60.95	OK
BI-211	72.87	1.23	3.135E+00	-----	Line Not Found	-----	Absent
	351.06	12.92*	3.337E+00	1.150E+00	1.150E+00	79.27	OK
PB-212	74.82	10.28	3.357E+00	1.054E+00	1.054E+00	71.86	OK
	77.11	17.10	3.576E+00	1.473E+00	1.473E+00	30.75	OK
	238.63	43.60*	4.584E+00	1.073E+00	1.073E+00	12.92	OK
	300.09	3.30	3.820E+00	9.620E-01	9.620E-01	137.97	OK
BI-214	609.32	45.49*	2.102E+00	8.785E-01	8.789E-01	23.19	OK
	1120.29	14.92	1.287E+00	9.041E-01	9.044E-01	78.15	OK
	1764.49	15.30	8.672E-01	8.753E-01	8.756E-01	48.71	OK
PB-214	74.82	5.80	3.340E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	3.576E+00	2.597E+00	2.598E+00	30.75	OK
	87.09	3.41	4.447E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	4.538E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	3.868E+00	7.375E-01	7.378E-01	35.88	OK
	351.93	35.60*	3.336E+00	-----	Line Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	2.102E+00	8.785E-01	8.789E-01	23.19	OK
	1120.29	14.92	1.287E+00	9.041E-01	9.044E-01	78.15	OK
	1764.49	15.30	8.672E-01	8.753E-01	8.756E-01	48.71	OK
RA-224	240.99	4.10*	4.543E+00	2.256E+00	2.256E+00	79.02	OK
RA-226	609.32	45.49*	2.102E+00	8.785E-01	8.789E-01	23.19	OK
	1120.29	14.92	1.287E+00	9.041E-01	9.044E-01	78.15	OK
	1764.49	15.30	8.672E-01	8.753E-01	8.756E-01	48.71	OK
AC-228	105.21	1.10	5.460E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.450E+00	1.031E+00	1.031E+00	54.85	OK
	794.95	4.25	1.697E+00	2.579E+00	2.579E+00	45.09	OK
	835.71	1.61	1.630E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.521E+00	9.637E-01	9.637E-01	35.95	OK
	968.97	15.80	1.448E+00	9.995E-01	9.995E-01	39.93	OK
RA-228	105.21	1.10	5.460E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.450E+00	1.031E+00	1.031E+00	54.85	OK
	794.95	4.25	1.697E+00	2.579E+00	2.579E+00	45.09	OK
	835.71	1.61	1.630E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.521E+00	9.637E-01	9.637E-01	35.95	OK
	968.97	15.80	1.448E+00	9.995E-01	9.995E-01	39.93	OK
TH-228	74.82	10.28	3.357E+00	1.054E+00	1.054E+00	71.86	OK
	77.11	17.10	3.576E+00	1.473E+00	1.473E+00	30.75	OK
	238.63	43.60*	4.584E+00	1.073E+00	1.073E+00	12.92	OK
	300.09	3.30	3.820E+00	9.620E-01	9.620E-01	137.97	OK
TH-230	609.32	45.49*	2.102E+00	8.785E-01	8.785E-01	23.19	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	1120.29	14.92	1.287E+00	9.041E-01	9.041E-01	78.15	OK
	1764.49	15.30	8.672E-01	8.753E-01	8.753E-01	48.71	OK
PA-231	283.69	1.70	3.991E+00	3.676E+00	3.676E+00	94.84	OK
	301.36	5.35*	3.820E+00	5.934E-01	5.934E-01	137.97	OK
TH-232	105.21	1.10	5.460E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.450E+00	1.031E+00	1.031E+00	54.85	OK
	835.71	1.61	1.630E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.521E+00	9.637E-01	9.637E-01	35.95	OK
	968.97	15.80	1.448E+00	9.995E-01	9.995E-01	39.93	OK
TH-234	63.29	3.70*	1.986E+00	5.371E+00	5.371E+00	73.96	OK
	92.59	4.23	4.860E+00	1.783E+00	1.783E+00	93.49	OK
U-234	609.32	45.49*	2.102E+00	8.785E-01	8.785E-01	23.19	OK
	1120.29	14.92	1.287E+00	9.041E-01	9.041E-01	78.15	OK
	1764.49	15.30	8.672E-01	8.753E-01	8.753E-01	48.71	OK
U-238	63.29	3.70*	1.986E+00	5.371E+00	5.371E+00	73.96	OK
	92.59	4.23	4.860E+00	1.783E+00	1.783E+00	93.49	OK
AM-243	43.53	5.90	1.573E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.357E+00	1.612E-01	1.612E-01	71.86	OK
ANH-511	511.00	100.00*	2.430E+00	1.437E-01	1.437E-01	51.05	OK

Flag: "*" = Keyline

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235015.CNF;1
* Acquisition date   : 3-OCT-2016 08:11:39 Sensitivity      : 3.000
* Detector ID        : GAM44 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.75 Half life ratio : *****
* Sample date        : 8-DEC-2015 10:56:00 Analyst initials: MXR1
* Sample ID          : G405235015 Sample Quantity : 1.4507E+02 GRAM
* Batch Number       : 1596247 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 6-SEP-2016 04:59:25 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM44 CAN.CNF;3
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.738E+01	1.800E+00	6.783E-01
CD-109	1.261E+00	2.497E+00	2.713E+00
SN-126	8.036E-02	1.591E-01	1.577E-01
BA-137M	2.430E-01	9.127E-02	7.562E-02
CS-137	2.567E-01	9.642E-02	7.989E-02
TL-208	3.520E-01	8.982E-02	6.522E-02
BI-211	1.150E+00	8.936E-01	3.333E-01
PB-212	1.073E+00	1.359E-01	9.191E-02
BI-214	8.789E-01	1.997E-01	1.300E-01
PB-214	1.155E+00	1.947E-01	3.487E-01
RN-222	8.789E-01	1.997E-01	1.300E-01
RA-224	2.256E+00	1.747E+00	9.855E-01
RA-226	8.789E-01	1.997E-01	1.300E-01
AC-228	9.637E-01	3.395E-01	2.921E-01
RA-228	9.637E-01	3.395E-01	2.921E-01
TH-228	1.073E+00	1.359E-01	9.191E-02
TH-230	8.785E-01	1.997E-01	1.300E-01
PA-231	5.934E-01	8.023E-01	8.249E-01
TH-232	9.637E-01	3.395E-01	2.921E-01
TH-234	5.371E+00	3.893E+00	2.910E+00
U-234	8.785E-01	1.996E-01	1.300E-01
U-238	5.371E+00	3.893E+00	2.910E+00
AM-243	1.612E-01	1.135E-01	1.148E-01
ANH-511	1.437E-01	7.188E-02	4.525E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.215E+00	1.313E+01	2.278E+01	NOT IDENT.
NA-22	-2.426E-02	5.689E-02	1.037E-01	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	1.487E-02	3.214E-02	7.812E-02	NOT IDENT.
SC-46	-2.499E-01	3.789E-01	6.934E-01	FAIL ABUN
V-48	0.000E+00	1.677E+04	0.000E+00	SHORT HLIF

CR-51	0.000E+00	4.430E+02	0.000E+00	SHORT HLIF
MN-54	-1.210E-02	8.120E-02	1.475E-01	NOT IDENT.
CO-56	-1.101E-01	4.646E-01	8.533E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	5.235E-02	4.850E-02	9.989E-02	NOT IDENT.
CO-58	1.616E-01	5.703E-01	1.163E+00	NOT IDENT.
FE-59	1.183E+01	8.264E+00	1.373E+01	FAIL ABUN
CO-60	4.267E-02	5.311E-02	9.449E-02	FAIL ABUN
ZN-65	1.012E-01	2.061E-01	4.006E-01	NOT IDENT.
GE-68	2.101E+00	2.449E+00	5.311E+00	NOT IDENT.
AS-73	2.130E+00	1.516E+01	3.040E+01	NOT IDENT.
AS-74	0.000E+00	6.059E+03	0.000E+00	SHORT HLIF
SE-75	-3.892E-03	2.215E-01	3.990E-01	NOT IDENT.
BR-77	0.000E+00	2.486E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	9.496E+02	0.000E+00	SHORT HLIF
RB-83	3.473E-01	6.642E-01	1.294E+00	NOT IDENT.
KR-85	6.488E+00	5.028E+00	1.124E+01	NOT IDENT.
SR-85	6.846E-01	5.313E-01	1.188E+00	NOT IDENT.
RB-86	0.000E+00	3.075E+04	0.000E+00	SHORT HLIF
Y-88	-2.598E-02	2.676E-01	5.665E-01	NOT IDENT.
Y-91	2.110E+02	6.393E+02	1.306E+03	NOT IDENT.
NB-94	2.033E-02	3.945E-02	7.873E-02	FAIL ABUN
NB-95	1.164E-01	1.067E+00	1.829E+00	NOT IDENT.
NB-95M	-1.639E+00	2.828E+00	4.342E+00	NOT IDENT.
ZR-95	-9.700E-01	1.819E+00	3.138E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.810E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	1.974E-02	3.565E-02	6.993E-02	NOT IDENT.
RH-102	7.340E-03	5.816E-02	1.156E-01	NOT IDENT.
RU-103	-2.265E+00	6.652E+00	1.230E+01	FAIL ABUN
RH-106	2.279E-02	5.336E-01	1.037E+00	NOT IDENT.
RU-106	2.279E-02	5.336E-01	1.037E+00	NOT IDENT.
AG-108M	1.552E-02	3.093E-02	6.332E-02	NOT IDENT.
AG-110M	-1.230E-01	1.150E-01	1.947E-01	NOT IDENT.
SN-113	-1.381E-01	2.528E-01	4.650E-01	NOT IDENT.
CD-115	0.000E+00	2.914E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	9.547E+04	0.000E+00	SHORT HLIF
TE-123M	2.414E-02	1.261E-01	2.394E-01	NOT IDENT.
SB-124	-9.028E-01	1.943E+00	3.543E+00	NOT IDENT.
SB-125	2.405E-02	1.017E-01	2.058E-01	FAIL ABUN
TE-125M	-4.543E+01	2.972E+02	5.574E+02	NOT IDENT.
I-126	0.000E+00	1.066E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	9.128E+05	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.299E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.605E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	4.228E+26	0.000E+00	SHORT HLIF
BA-133	5.431E-02	3.986E-02	8.526E-02	NOT IDENT.
I-133	0.000E+00	1.388E+41	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.462E-02	1.326E-01	FAIL ABUN
CS-135	-2.155E-02	1.460E-01	2.585E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.293E+05	0.000E+00	SHORT HLIF
CE-139	7.823E-02	1.206E-01	2.342E-01	NOT IDENT.
BA-140	0.000E+00	1.205E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.009E+05	0.000E+00	SHORT HLIF
CE-141	1.041E+00	2.691E+01	5.004E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	-2.331E-01	3.726E-01	6.609E-01	NOT IDENT.
PM-144	-7.840E-03	6.171E-02	1.150E-01	NOT IDENT.
PR-144	-6.812E-01	5.361E+00	9.992E+00	NOT IDENT.
PM-146	2.362E-02	4.484E-02	9.309E-02	NOT IDENT.
ND-147	0.000E+00	3.052E+07	0.000E+00	SHORT HLIF
PM-147	-5.403E+01	8.382E+02	1.579E+03	NOT IDENT.
PM-149	0.000E+00	9.295E+40	0.000E+00	SHORT HLIF
EU-150	5.076E-06	2.641E-02	4.717E-02	FAIL ABUN
EU-152	2.974E-02	8.964E-02	1.835E-01	FAIL ABUN
GD-153	1.756E-01	1.968E-01	3.800E-01	NOT IDENT.
EU-154	-6.221E-02	1.389E-01	2.524E-01	FAIL ABUN
EU-155	-1.454E-02	1.127E-01	2.128E-01	FAIL ABUN
TB-160	7.227E-01	1.782E+00	3.904E+00	FAIL ABUN
HO-166M	-4.340E-03	5.857E-02	1.111E-01	FAIL ABUN
TM-171	1.593E+00	3.750E+01	7.477E+01	NOT IDENT.
HF-172	-6.872E-02	2.293E-01	4.218E-01	FAIL ABUN
LU-172	2.874E-02	1.066E-01	1.947E-01	FAIL ABUN
LU-176	7.255E-03	2.377E-02	4.854E-02	FAIL ABUN

HF-181	4.271E+00	6.717E+00	8.497E+00	FAIL ABUN
TA-182	-1.841E-01	1.190E+00	1.980E+00	FAIL ABUN
RE-183	-2.181E-01	4.547E+00	8.974E+00	NOT IDENT.
RE-184	-8.667E+00	2.909E+01	5.692E+01	NOT IDENT.
W-188	9.675E+00	1.339E+02	2.221E+02	FAIL ABUN
IR-192	1.295E-01	4.625E-01	9.399E-01	FAIL ABUN
HG-203	-1.257E+00	2.412E+00	4.061E+00	NOT IDENT.
BI-207	6.760E-02	5.011E-02	1.207E-01	FAIL ABUN
PB-210	-1.268E-01	7.562E+00	1.525E+01	NOT IDENT.
PB-211	1.792E-01	7.193E-01	1.438E+00	NOT IDENT.
BI-212	7.358E-01	8.783E-01	1.335E+00	FAIL ABUN
RN-219	-2.098E-01	3.617E-01	6.640E-01	FAIL ABUN
RA-223	-4.391E-01	6.307E-01	1.017E+00	FAIL ABUN
AC-227	-3.762E-01	2.657E-01	3.996E-01	FAIL ABUN
TH-227	-3.762E-01	2.657E-01	3.996E-01	FAIL ABUN
TH-229	-7.744E-02	4.848E-01	8.736E-01	FAIL ABUN
TH-231	-4.391E-01	6.307E-01	1.017E+00	FAIL ABUN
PA-233	5.431E-02	6.613E-02	1.385E-01	FAIL ABUN
PA-234	1.529E-02	2.725E-01	5.620E-01	FAIL ABUN
PA-234M	3.369E+00	4.340E+00	9.184E+00	NOT IDENT.
U-235	1.771E-02	1.940E-01	3.630E-01	FAIL ABUN
NP-237	5.431E-02	6.613E-02	1.385E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-1.136E-01	2.437E-01	4.440E-01	FAIL ABUN
PU-239	-4.243E+01	3.300E+02	6.121E+02	FAIL ABUN
AM-241	6.568E-02	2.020E-01	3.839E-01	NOT IDENT.
CM-243	2.062E-02	1.056E-01	1.915E-01	FAIL ABUN
BK-247	1.557E-03	7.712E-02	1.394E-01	NOT IDENT.
CM-247	1.930E-02	3.194E-02	6.773E-02	NOT IDENT.
CF-249	1.140E-02	3.678E-02	7.492E-02	NOT IDENT.
CF-251	-6.705E-02	1.119E-01	1.944E-01	FAIL ABUN

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	369	10.66*	1.030E+00	1.738E+01	1.738E+01	10.57
CD-109	88.03	47	3.70*	4.453E+00	1.483E+00	2.328E+00	108.23
SN-126	64.28	76	9.60	1.986E+00	2.070E+00	2.070E+00	73.96
	86.94	47	8.90	4.453E+00	6.167E-01	6.167E-01	108.23
	87.57	47	37.00*	4.453E+00	1.483E-01	1.483E-01	108.23
BA-137M	661.66	81	89.90*	1.965E+00	2.384E-01	2.430E-01	38.33
CS-137	661.66	81	85.10*	1.965E+00	2.519E-01	2.567E-01	38.33
TL-208	277.37	-----	6.60	4.074E+00	-----	Line Not Found	-----
	583.19	126	85.00*	2.178E+00	3.520E-01	3.520E-01	26.04
	860.56	37	12.50	1.591E+00	9.740E-01	9.740E-01	60.95
BI-211	72.87	-----	1.23	3.135E+00	-----	Line Not Found	-----
	351.06	265	12.92*	3.337E+00	3.182E+00	3.182E+00	17.20
PB-212	74.82	98	10.28	3.357E+00	1.470E+00	1.470E+00	50.50
	77.11	174	17.10	3.576E+00	1.473E+00	1.473E+00	30.75
	238.63	415	43.60*	4.584E+00	1.073E+00	1.073E+00	12.92
	300.09	23	3.30	3.820E+00	9.620E-01	9.620E-01	137.97
BI-214	609.32	162	45.49*	2.102E+00	8.785E-01	8.789E-01	23.19
	1120.29	34	14.92	1.287E+00	9.041E-01	9.044E-01	78.15
	1764.49	22	15.30	8.672E-01	8.753E-01	8.756E-01	48.71
PB-214	74.82	98	5.80	3.357E+00	2.605E+00	2.606E+00	50.50
	77.11	174	9.70	3.576E+00	2.597E+00	2.598E+00	30.75
	87.09	47	3.41	4.453E+00	1.609E+00	1.610E+00	108.23
	242.00	128	7.25	4.543E+00	2.013E+00	2.014E+00	48.32
	295.22	102	18.42	3.868E+00	7.375E-01	7.378E-01	35.88
	351.93	265	35.60*	3.337E+00	1.155E+00	1.155E+00	17.20
RN-222	609.32	162	45.49*	2.102E+00	8.785E-01	8.789E-01	23.19
	1120.29	34	14.92	1.287E+00	9.041E-01	9.044E-01	78.15
	1764.49	22	15.30	8.672E-01	8.753E-01	8.756E-01	48.71
RA-224	240.99	128	4.10*	4.543E+00	3.560E+00	3.560E+00	48.32
RA-226	609.32	162	45.49*	2.102E+00	8.785E-01	8.789E-01	23.19
	1120.29	34	14.92	1.287E+00	9.041E-01	9.044E-01	78.15
	1764.49	22	15.30	8.672E-01	8.753E-01	8.756E-01	48.71
AC-228	105.21	-----	1.10	5.460E+00	-----	Line Not Found	-----
	338.32	77	11.27	3.450E+00	1.031E+00	1.031E+00	54.85
	794.95	36	4.25	1.697E+00	2.579E+00	2.579E+00	45.09
	835.71	-----	1.61	1.630E+00	-----	Line Not Found	-----
	911.20	73	25.80*	1.521E+00	9.637E-01	9.637E-01	35.95
	968.97	44	15.80	1.448E+00	9.995E-01	9.995E-01	39.93
RA-228	105.21	-----	1.10	5.460E+00	-----	Line Not Found	-----
	338.32	77	11.27	3.450E+00	1.031E+00	1.031E+00	54.85
	794.95	36	4.25	1.697E+00	2.579E+00	2.579E+00	45.09
	835.71	-----	1.61	1.630E+00	-----	Line Not Found	-----
	911.20	73	25.80*	1.521E+00	9.637E-01	9.637E-01	35.95
	968.97	44	15.80	1.448E+00	9.995E-01	9.995E-01	39.93
TH-228	74.82	98	10.28	3.357E+00	1.470E+00	1.470E+00	50.50
	77.11	174	17.10	3.576E+00	1.473E+00	1.473E+00	30.75
	238.63	415	43.60*	4.584E+00	1.073E+00	1.073E+00	12.92

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-230	300.09	23	3.30	3.820E+00	9.620E-01	9.620E-01	137.97
	609.32	162	45.49*	2.102E+00	8.785E-01	8.785E-01	23.19
	1120.29	34	14.92	1.287E+00	9.041E-01	9.041E-01	78.15
	1764.49	22	15.30	8.672E-01	8.753E-01	8.753E-01	48.71
PA-231	283.69	48	1.70	3.991E+00	3.676E+00	3.676E+00	94.84
	301.36	23	5.35*	3.820E+00	5.934E-01	5.934E-01	137.97
TH-232	105.21	-----	1.10	5.460E+00	-----	Line Not Found	-----
	338.32	77	11.27	3.450E+00	1.031E+00	1.031E+00	54.85
	835.71	-----	1.61	1.630E+00	-----	Line Not Found	-----
	911.20	73	25.80*	1.521E+00	9.637E-01	9.637E-01	35.95
	968.97	44	15.80	1.448E+00	9.995E-01	9.995E-01	39.93
TH-234	63.29	76	3.70*	1.986E+00	5.371E+00	5.371E+00	73.96
	92.59	71	4.23	4.860E+00	1.783E+00	1.783E+00	93.49
U-234	609.32	162	45.49*	2.102E+00	8.785E-01	8.785E-01	23.19
	1120.29	34	14.92	1.287E+00	9.041E-01	9.041E-01	78.15
	1764.49	22	15.30	8.672E-01	8.753E-01	8.753E-01	48.71
U-238	63.29	76	3.70*	1.986E+00	5.371E+00	5.371E+00	73.96
	92.59	71	4.23	4.860E+00	1.783E+00	1.783E+00	93.49
AM-243	43.53	-----	5.90	1.573E-01	-----	Line Not Found	-----
	74.66	98	67.20*	3.357E+00	2.248E-01	2.248E-01	50.50
ANH-511	511.00	67	100.00*	2.430E+00	1.437E-01	1.437E-01	51.05

Flag: "*" = Keyline

Total number of lines in spectrum 49
Number of unidentified lines 10
Number of lines tentatively identified by NID 39 79.59%

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	1.738E+01	1.738E+01	0.184E+01	10.57	
CD-109	461.40D	1.57	1.483E+00	2.328E+00	2.519E+00	108.23	
SN-126	2.30E+05Y	1.00	1.483E-01	1.483E-01	1.605E-01	108.23	
BA-137M	30.08Y	1.02	2.384E-01	2.430E-01	0.931E-01	38.33	
CS-137	30.08Y	1.02	2.519E-01	2.567E-01	0.984E-01	38.33	
TL-208	1.41E+10Y	1.00	3.520E-01	3.520E-01	0.917E-01	26.04	
BI-211	7.04E+08Y	1.00	3.182E+00	3.182E+00	0.547E+00	17.20	
PB-212	1.41E+10Y	1.00	1.073E+00	1.073E+00	0.139E+00	12.92	
BI-214	1600.00Y	1.00	8.785E-01	8.789E-01	2.038E-01	23.19	
PB-214	1600.00Y	1.00	1.155E+00	1.155E+00	0.199E+00	17.20	
RN-222	1600.00Y	1.00	8.785E-01	8.789E-01	2.038E-01	23.19	
RA-224	1.41E+10Y	1.00	3.560E+00	3.560E+00	1.720E+00	48.32	
RA-226	1600.00Y	1.00	8.785E-01	8.789E-01	2.038E-01	23.19	
AC-228	1.41E+10Y	1.00	9.637E-01	9.637E-01	3.464E-01	35.95	
RA-228	1.41E+10Y	1.00	9.637E-01	9.637E-01	3.464E-01	35.95	
TH-228	1.41E+10Y	1.00	1.073E+00	1.073E+00	0.139E+00	12.92	
TH-230	7.54E+04Y	1.00	8.785E-01	8.785E-01	2.037E-01	23.19	
PA-231	7.04E+08Y	1.00	5.934E-01	5.934E-01	8.186E-01	137.97	
TH-232	1.41E+10Y	1.00	9.637E-01	9.637E-01	3.464E-01	35.95	
TH-234	4.47E+09Y	1.00	5.371E+00	5.371E+00	3.973E+00	73.96	
U-234	2.45E+05Y	1.00	8.785E-01	8.785E-01	2.037E-01	23.19	
U-238	4.47E+09Y	1.00	5.371E+00	5.371E+00	3.973E+00	73.96	
AM-243	7370.00Y	1.00	2.248E-01	2.248E-01	1.135E-01	50.50	
ANH-511	1.00E+09Y	1.00	1.437E-01	1.437E-01	0.733E-01	51.05	

Total Activity : 4.889E+01 4.975E+01

Grand Total Activity : 4.889E+01 4.975E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	99.51	37	228	3.33	199.50	193	12	8.49E-03	****	5.22E+00	T
0	185.90	118	132	0.96	372.34	366	12	2.83E-02	47.5	5.40E+00	T
0	209.20	29	81	0.93	418.96	416	7	7.09E-03	****	5.03E+00	
0	271.00	25	84	1.46	542.61	536	9	6.29E-03	****	4.15E+00	T
0	321.84	41	44	0.98	644.35	640	10	1.03E-02	71.9	3.60E+00	T
0	414.86	16	40	2.38	830.48	823	10	4.05E-03	****	2.90E+00	T
0	482.23	13	23	1.49	965.28	959	10	3.27E-03	****	2.55E+00	T
2	516.88	22	4	1.80	1034.63	1031	25	5.80E-03	59.2	2.41E+00	
2	525.75	20	7	1.81	1052.37	1031	25	5.21E-03	61.4	2.37E+00	
0	669.81	10	27	4.82	1340.67	1330	12	2.80E-03	****	1.95E+00	
0	727.83	17	26	1.36	1456.78	1451	10	4.66E-03	****	1.82E+00	T
0	738.40	5	10	0.89	1477.92	1474	6	1.25E-03	****	1.80E+00	T
0	768.61	28	24	1.71	1538.38	1529	13	7.49E-03	82.6	1.74E+00	
0	772.60	9	13	1.38	1546.37	1543	7	2.35E-03	****	1.74E+00	T
0	871.28	26	13	6.59	1743.86	1734	18	7.15E-03	77.6	1.58E+00	T
0	923.46	11	5	0.59	1848.31	1845	7	3.07E-03	90.7	1.50E+00	T
5	964.70	22	5	2.91	1930.84	1926	18	6.07E-03	55.0	1.45E+00	T
0	1005.15	8	12	0.92	2011.81	2008	8	2.22E-03	****	1.41E+00	T
0	1039.30	7	14	0.97	2080.16	2071	11	2.02E-03	****	1.37E+00	T
0	1041.21	13	1	1.51	2083.97	2081	6	3.50E-03	63.9	1.37E+00	
0	1084.19	13	14	0.73	2170.00	2162	14	3.61E-03	****	1.32E+00	
0	1095.28	7	7	0.98	2192.21	2188	6	1.84E-03	****	1.31E+00	
0	1098.49	16	4	3.22	2198.64	2194	10	4.44E-03	71.3	1.31E+00	T
0	1154.44	16	8	2.34	2310.63	2305	11	4.45E-03	85.3	1.26E+00	
0	1223.88	9	11	0.65	2449.62	2444	9	2.51E-03	****	1.20E+00	
0	1333.06	8	5	2.33	2668.18	2661	11	2.36E-03	****	1.11E+00	T

Flags: "T" = Tentatively associated


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*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                          *
*                               Charleston, SC 29407                     *
*                               *****                                  *
*                               *                                         *
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235015.CNF;1 *
* Acquisition date   : 3-OCT-2016 08:11:39 Sensitivity      : 3.000        *
* Detector ID        : GAM44 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 01:00:00.75 Half life ratio : *****        *
* Sample date        : 8-DEC-2015 10:56:00 Nuclide Library : SOLID        *
* Sample ID          : G405235015 Analyst initials: MXR1        *
* Batch Number       : 1596247 Sample Quantity : 1.4507E+02 GRAM        *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000        *
*                               Dry Weight : 0.00000        *
*                               *****                                  *
*                               *                                         *
*                               CALIBRATION INFORMATION                   *
*                               *                                         *
* Eff. Cal. date     : 6-SEP-2016 04:59:25 Eff. Geometry   : CAN        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM44 CAN.CNF;3        *
*                               *****                                  *

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.751E-01
CD-109	1.287E+00
SN-126	7.438E-02
BA-137M	3.369E-02
CS-137	3.559E-02
TL-208	2.874E-02
BI-211	1.499E-01
PB-212	4.231E-02
BI-214	5.753E-02
PB-214	1.683E-01
RN-222	5.753E-02
RA-224	4.537E-01
RA-226	5.753E-02
AC-228	1.280E-01
RA-228	1.280E-01
TH-228	4.231E-02
TH-230	5.751E-02
PA-231	3.768E-01
TH-232	1.280E-01
TH-234	1.356E+00
U-234	5.751E-02
U-238	1.356E+00
AM-243	5.407E-02
ANH-511	1.967E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.006E+01	NOT IDENT.
NA-22	4.428E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	3.078E-02	NOT IDENT.
SC-46	2.919E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF

MN-54	6.526E-02	NOT IDENT.
CO-56	3.615E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	4.678E-02	NOT IDENT.
CO-58	5.009E-01	NOT IDENT.
FE-59	5.845E+00	FAIL ABUN
CO-60	4.021E-02	FAIL ABUN
ZN-65	1.750E-01	NOT IDENT.
GE-68	2.300E+00	NOT IDENT.
AS-73	1.415E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.829E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.728E-01	NOT IDENT.
KR-85	4.899E+00	NOT IDENT.
SR-85	5.175E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	2.239E-01	NOT IDENT.
Y-91	5.751E+02	NOT IDENT.
NB-94	3.555E-02	FAIL ABUN
NB-95	8.093E-01	NOT IDENT.
NB-95M	2.008E+00	NOT IDENT.
ZR-95	1.378E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.278E-02	NOT IDENT.
RH-102	5.050E-02	NOT IDENT.
RU-103	5.518E+00	FAIL ABUN
RH-106	4.573E-01	NOT IDENT.
RU-106	4.573E-01	NOT IDENT.
AG-108M	2.880E-02	NOT IDENT.
AG-110M	8.291E-02	NOT IDENT.
SN-113	2.103E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.110E-01	NOT IDENT.
SB-124	1.255E+00	NOT IDENT.
SB-125	9.237E-02	FAIL ABUN
TE-125M	2.604E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.890E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.983E-02	FAIL ABUN
CS-135	1.184E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.098E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.348E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.072E-01	NOT IDENT.
PM-144	5.076E-02	NOT IDENT.
PR-144	4.410E+00	NOT IDENT.
PM-146	4.197E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.344E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.139E-02	FAIL ABUN
EU-152	8.342E-02	FAIL ABUN
GD-153	1.781E-01	NOT IDENT.
EU-154	1.076E-01	FAIL ABUN
EU-155	9.915E-02	FAIL ABUN
TB-160	1.684E+00	FAIL ABUN
HO-166M	4.844E-02	FAIL ABUN
TM-171	3.475E+01	NOT IDENT.
HF-172	1.959E-01	FAIL ABUN
LU-172	8.575E-02	FAIL ABUN
LU-176	2.220E-02	FAIL ABUN
HF-181	3.776E+00	FAIL ABUN

TA-182	8.560E-01	FAIL ABUN
RE-183	4.187E+00	NOT IDENT.
RE-184	2.414E+01	NOT IDENT.
W-188	1.020E+02	FAIL ABUN
IR-192	4.299E-01	FAIL ABUN
HG-203	1.840E+00	NOT IDENT.
BI-207	5.319E-02	FAIL ABUN
PB-210	7.066E+00	NOT IDENT.
PB-211	6.545E-01	NOT IDENT.
BI-212	6.091E-01	FAIL ABUN
RN-219	2.952E-01	FAIL ABUN
RA-223	4.577E-01	FAIL ABUN
AC-227	1.821E-01	FAIL ABUN
TH-227	1.821E-01	FAIL ABUN
TH-229	4.054E-01	FAIL ABUN
TH-231	4.577E-01	FAIL ABUN
PA-233	6.417E-02	FAIL ABUN
PA-234	2.410E-01	FAIL ABUN
PA-234M	3.994E+00	NOT IDENT.
U-235	1.702E-01	FAIL ABUN
NP-237	6.417E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.059E-01	FAIL ABUN
PU-239	2.863E+02	FAIL ABUN
AM-241	1.789E-01	NOT IDENT.
CM-243	8.901E-02	FAIL ABUN
BK-247	6.398E-02	NOT IDENT.
CM-247	3.049E-02	NOT IDENT.
CF-249	3.389E-02	NOT IDENT.
CF-251	8.954E-02	FAIL ABUN

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235015.CNF;1
* Acquisition date   : 3-OCT-2016 08:11:39 Sensitivity      : 3.000
* Detector ID        : GAM44 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.75 Half life ratio : *****
* Sample date        : 8-DEC-2015 10:56:00 Nuclide Library : SOLID
* Sample ID          : G405235015 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.4507E+02 GRAM
*                               Quantity Err(%) : 1.3786E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 6-SEP-2016 04:59:25 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM44 CAN.CNF;3
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
              (pCi/GRAM )   (1.96-sigma)   (1.96-sigma)
K-40         1.738E+01      2.015E+00      2.015E+00
CD-109       1.261E+00      2.503E+00      2.503E+00
SN-126       8.036E-02      1.594E-01      1.594E-01
BA-137M      2.430E-01      9.187E-02      9.187E-02
CS-137       2.567E-01      9.705E-02      9.705E-02
TL-208       3.520E-01      9.105E-02      9.105E-02
BI-211       1.150E+00      9.036E-01      9.036E-01
PB-212       1.073E+00      1.473E-01      1.473E-01
BI-214       8.789E-01      2.032E-01      2.032E-01
PB-214       1.155E+00      2.006E-01      2.006E-01
RN-222       8.789E-01      2.032E-01      2.032E-01
RA-224       2.256E+00      1.753E+00      1.753E+00
RA-226       8.789E-01      2.032E-01      2.032E-01
AC-228       9.637E-01      3.430E-01      3.430E-01
RA-228       9.637E-01      3.430E-01      3.430E-01
TH-228       1.073E+00      1.473E-01      1.473E-01
TH-230       8.785E-01      2.032E-01      2.032E-01
PA-231       5.934E-01      8.122E-01      8.122E-01
TH-232       9.637E-01      3.430E-01      3.430E-01
TH-234       5.371E+00      4.071E+00      4.071E+00
U-234        8.785E-01      2.032E-01      2.032E-01
U-238        5.371E+00      4.071E+00      4.071E+00
AM-243       1.612E-01      1.142E-01      1.142E-01
ANH-511      1.437E-01      7.212E-02      7.212E-02

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

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Nuclide      Key-Line Activity      K.L Act error      TPU
              (pCi/GRAM )   (1.96-sigma)   (1.96-sigma)
BE-7         -1.215E+00      1.313E+01      1.314E+01 NOT IDENT.
NA-22        -2.426E-02      5.690E-02      5.794E-02 NOT IDENT.
NA-24        -1.000E+41      4.956E+41      0.000E+00 SHORT HLIF
AL-26        1.487E-02      3.216E-02      3.285E-02 NOT IDENT.
SC-46        -2.499E-01      3.790E-01      3.954E-01 FAIL ABUN
V-48         1.113E+04      1.678E+04      1.751E+04 SHORT HLIF

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CR-51	-1.114E+02	4.431E+02	4.459E+02	SHORT HLIF
MN-54	-1.210E-02	8.120E-02	8.138E-02	NOT IDENT.
CO-56	-1.101E-01	4.647E-01	4.673E-01	FAIL ABUN
MN-56	-1.000E+41	4.458E+41	0.000E+00	SHORT HLIF
CO-57	5.235E-02	4.856E-02	5.399E-02	NOT IDENT.
CO-58	1.616E-01	5.704E-01	5.750E-01	NOT IDENT.
FE-59	1.183E+01	8.309E+00	9.874E+00	FAIL ABUN
CO-60	4.267E-02	5.313E-02	5.650E-02	FAIL ABUN
ZN-65	1.012E-01	2.061E-01	2.111E-01	NOT IDENT.
GE-68	2.101E+00	2.450E+00	2.627E+00	NOT IDENT.
AS-73	2.130E+00	1.516E+01	1.519E+01	NOT IDENT.
AS-74	-3.971E+02	6.059E+03	6.062E+03	SHORT HLIF
SE-75	-3.892E-03	2.215E-01	2.215E-01	NOT IDENT.
BR-77	1.963E+38	1.700E+39	0.000E+00	SHORT HLIF
SR-82	-2.631E+01	9.496E+02	9.497E+02	SHORT HLIF
RB-83	3.473E-01	6.659E-01	6.841E-01	NOT IDENT.
KR-85	6.488E+00	5.035E+00	5.823E+00	NOT IDENT.
SR-85	6.846E-01	5.321E-01	6.151E-01	NOT IDENT.
RB-86	7.865E+03	3.075E+04	3.095E+04	SHORT HLIF
Y-88	-2.598E-02	2.676E-01	2.678E-01	NOT IDENT.
Y-91	2.110E+02	6.394E+02	6.464E+02	NOT IDENT.
NB-94	2.033E-02	3.946E-02	4.051E-02	FAIL ABUN
NB-95	1.164E-01	1.067E+00	1.068E+00	NOT IDENT.
NB-95M	-1.639E+00	2.831E+00	2.926E+00	NOT IDENT.
ZR-95	-9.700E-01	1.820E+00	1.872E+00	NOT IDENT.
NB-97	-1.000E+41	1.940E+42	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	3.690E+41	0.000E+00	SHORT HLIF
MO-99	7.926E+31	1.811E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	5.547E+41	0.000E+00	SHORT HLIF
RH-101	1.974E-02	3.582E-02	3.691E-02	NOT IDENT.
RH-102	7.340E-03	5.817E-02	5.826E-02	NOT IDENT.
RU-103	-2.265E+00	6.653E+00	6.730E+00	FAIL ABUN
RH-106	2.279E-02	5.336E-01	5.337E-01	NOT IDENT.
RU-106	2.279E-02	5.336E-01	5.337E-01	NOT IDENT.
AG-108M	1.552E-02	3.094E-02	3.172E-02	NOT IDENT.
AG-110M	-1.230E-01	1.151E-01	1.278E-01	NOT IDENT.
SN-113	-1.381E-01	2.529E-01	2.604E-01	NOT IDENT.
CD-115	1.119E+39	2.921E+39	0.000E+00	SHORT HLIF
SN-117M	-8.680E+03	9.548E+04	9.556E+04	SHORT HLIF
TE-123M	2.414E-02	1.261E-01	1.266E-01	NOT IDENT.
SB-124	-9.028E-01	1.944E+00	1.986E+00	NOT IDENT.
SB-125	2.405E-02	1.017E-01	1.023E-01	FAIL ABUN
TE-125M	-4.543E+01	2.972E+02	2.979E+02	NOT IDENT.
I-126	2.633E+05	1.066E+06	1.073E+06	SHORT HLIF
SB-126	-1.938E+05	9.135E+05	9.177E+05	SHORT HLIF
SB-127	1.037E+22	2.705E+22	0.000E+00	SHORT HLIF
I-131	7.678E+08	4.605E+09	4.618E+09	SHORT HLIF
I-132	1.000E+41	1.933E+42	0.000E+00	SHORT HLIF
TE-132	3.654E+26	4.481E+26	0.000E+00	SHORT HLIF
BA-133	5.431E-02	3.992E-02	4.683E-02	NOT IDENT.
I-133	-1.000E+41	2.280E+41	0.000E+00	SHORT HLIF
CS-134	1.689E-01	7.497E-02	1.068E-01	FAIL ABUN
CS-135	-2.155E-02	1.460E-01	1.463E-01	NOT IDENT.
I-135	1.000E+41	1.052E+42	0.000E+00	SHORT HLIF
CS-136	-4.493E+04	3.294E+05	3.300E+05	SHORT HLIF
CE-139	7.823E-02	1.216E-01	1.266E-01	NOT IDENT.
BA-140	-3.078E+05	1.205E+06	1.213E+06	SHORT HLIF
LA-140	-3.037E+05	4.012E+05	4.239E+05	SHORT HLIF
CE-141	1.041E+00	2.691E+01	2.692E+01	NOT IDENT.
CE-143	-1.000E+41	6.679E+41	0.000E+00	SHORT HLIF
CE-144	-2.331E-01	3.728E-01	3.873E-01	NOT IDENT.
PM-144	-7.840E-03	6.171E-02	6.181E-02	NOT IDENT.
PR-144	-6.812E-01	5.361E+00	5.369E+00	NOT IDENT.
PM-146	2.362E-02	4.487E-02	4.612E-02	NOT IDENT.
ND-147	-8.845E+06	3.053E+07	3.079E+07	SHORT HLIF
PM-147	-5.403E+01	8.382E+02	8.386E+02	NOT IDENT.
PM-149	1.000E+41	9.550E+40	0.000E+00	SHORT HLIF
EU-150	5.076E-06	2.641E-02	2.641E-02	FAIL ABUN
EU-152	2.974E-02	8.966E-02	9.065E-02	FAIL ABUN
GD-153	1.756E-01	1.971E-01	2.124E-01	NOT IDENT.
EU-154	-6.221E-02	1.390E-01	1.418E-01	FAIL ABUN
EU-155	-1.454E-02	1.127E-01	1.129E-01	FAIL ABUN
TB-160	7.227E-01	1.783E+00	1.812E+00	FAIL ABUN
HO-166M	-4.340E-03	5.857E-02	5.860E-02	FAIL ABUN
TM-171	1.593E+00	3.750E+01	3.750E+01	NOT IDENT.
HF-172	-6.872E-02	2.296E-01	2.317E-01	FAIL ABUN
LU-172	2.874E-02	1.066E-01	1.074E-01	FAIL ABUN
LU-176	7.255E-03	2.377E-02	2.400E-02	FAIL ABUN

HF-181	4.271E+00	6.720E+00	6.990E+00	FAIL ABUN
TA-182	-1.841E-01	1.190E+00	1.193E+00	FAIL ABUN
RE-183	-2.181E-01	4.547E+00	4.549E+00	NOT IDENT.
RE-184	-8.667E+00	2.917E+01	2.943E+01	NOT IDENT.
W-188	9.675E+00	1.339E+02	1.340E+02	FAIL ABUN
IR-192	1.295E-01	4.625E-01	4.662E-01	FAIL ABUN
HG-203	-1.257E+00	2.413E+00	2.478E+00	NOT IDENT.
BI-207	6.760E-02	5.018E-02	5.870E-02	FAIL ABUN
PB-210	-1.268E-01	7.562E+00	7.562E+00	NOT IDENT.
PB-211	1.792E-01	7.194E-01	7.239E-01	NOT IDENT.
BI-212	7.358E-01	8.791E-01	9.396E-01	FAIL ABUN
RN-219	-2.098E-01	3.626E-01	3.747E-01	FAIL ABUN
RA-223	-4.391E-01	6.312E-01	6.616E-01	FAIL ABUN
AC-227	-3.762E-01	2.703E-01	3.191E-01	FAIL ABUN
TH-227	-3.762E-01	2.703E-01	3.191E-01	FAIL ABUN
TH-229	-7.744E-02	4.848E-01	4.860E-01	FAIL ABUN
TH-231	-4.391E-01	6.312E-01	6.616E-01	FAIL ABUN
PA-233	5.431E-02	6.618E-02	7.056E-02	FAIL ABUN
PA-234	1.529E-02	2.731E-01	2.732E-01	FAIL ABUN
PA-234M	3.369E+00	4.343E+00	4.601E+00	NOT IDENT.
U-235	1.771E-02	1.940E-01	1.942E-01	FAIL ABUN
NP-237	5.431E-02	6.618E-02	7.056E-02	FAIL ABUN
NP-238	4.718E+40	5.971E+41	0.000E+00	SHORT HLIF
NP-239	-1.136E-01	2.439E-01	2.492E-01	FAIL ABUN
PU-239	-4.243E+01	3.300E+02	3.306E+02	FAIL ABUN
AM-241	6.568E-02	2.020E-01	2.042E-01	NOT IDENT.
CM-243	2.062E-02	1.056E-01	1.060E-01	FAIL ABUN
BK-247	1.557E-03	7.712E-02	7.713E-02	NOT IDENT.
CM-247	1.930E-02	3.210E-02	3.326E-02	NOT IDENT.
CF-249	1.140E-02	3.679E-02	3.715E-02	NOT IDENT.
CF-251	-6.705E-02	1.121E-01	1.161E-01	FAIL ABUN

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	53.8048	87.09	91.6306	136.47	51.5515
45.60	55.0496	87.57	91.7214	140.51	0.0000
46.54	53.4309	88.03	113.1961	143.76	72.7363
49.72	0.0000	88.34	113.2678	144.24	64.0964
51.35	61.4377	88.47	113.2975	145.44	76.1780
51.87	57.9111	89.96	85.2290	152.43	79.1334
52.39	54.3732	1093.63	85.3452	153.25	0.0000
52.97	49.0174	91.11	0.0000	323.87	60.5977
53.44	54.5368	92.59	92.9816	156.02	0.0000
54.07	56.4552	93.35	93.1204	158.56	0.0000
57.36	0.0000	94.56	93.3405	159.00	51.0144
57.53	57.9169	94.65	93.3568	162.33	57.9263
57.98	66.2709	94.67	93.3604	162.66	0.0000
59.27	65.2685	94.87	93.3967	163.33	69.1578
59.32	65.2771	97.43	53.6324	165.86	60.4352
59.54	55.4562	98.43	53.7341	176.31	52.1754
60.96	63.0852	98.44	53.7351	176.60	0.0000
61.17	63.1197	99.53	53.8456	177.52	57.9345
62.93	62.4742	100.11	53.9038	181.07	0.0000
63.29	62.5314	102.03	51.3915	181.52	63.9297
63.58	62.5775	103.18	54.2102	184.41	46.9708
64.28	72.3566	103.37	54.2293	143.76	47.0459
66.73	56.4816	105.21	65.2930	193.51	59.0645
67.24	59.3797	105.31	65.3047	197.03	59.3073
125.81	76.4276	106.12	57.2249	198.01	76.8372
67.75	76.4399	106.47	57.2608	201.83	60.8042
69.67	71.1061	109.28	70.9057	203.43	59.7431
70.83	75.1046	111.00	63.9044	205.31	64.1734
72.81	95.5101	111.76	0.0000	210.85	59.8451
72.87	95.5238	114.06	56.9886	215.65	65.3049
74.66	87.2842	116.30	0.0000	222.11	66.9537
74.82	87.3162	116.74	64.5340	227.09	57.6899
74.97	87.3460	119.76	65.9051	227.38	43.2806
77.11	87.7675	121.12	60.8099	228.16	0.0000
78.74	80.0184	121.22	60.8201	228.18	48.1299
79.69	60.7853	121.78	52.4788	116.74	48.1299
80.12	55.6641	122.06	49.3527	235.69	64.6696
80.19	0.0000	122.92	52.5761	235.96	64.6867
80.57	59.6057	123.07	56.7962	238.63	44.9978
81.00	53.1765	265.00	56.8522	238.98	0.0000
81.07	59.6703	125.81	63.3852	240.99	45.1039
81.75	78.9186	127.23	62.4687	242.00	45.1496
83.79	61.3217	127.91	71.0157	244.70	44.0469
84.00	58.7384	129.30	73.2946	252.40	0.0000
85.43	79.8615	131.20	68.1855	252.80	48.0954
86.55	91.5291	133.02	65.1709	254.15	0.0000
86.79	91.5738	133.52	72.7055	256.23	65.5755
86.94	91.6029	136.00	62.2472	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	41.1553	355.39	0.0000	584.27	20.0919
264.80	41.1614	356.01	16.1433	595.83	0.0000
265.00	41.1684	364.49	0.0000	427.87	28.0470
268.22	42.5425	366.42	0.0000	602.52	0.0000
269.46	45.0967	372.51	32.6785	604.72	15.6134
270.03	45.1198	375.05	22.7351	607.14	25.0107
271.23	42.6608	377.52	26.4187	609.32	19.8218
273.65	0.0000	356.01	35.6881	610.33	19.8311
276.40	34.4570	388.16	25.6997	614.28	26.6673
277.37	37.0104	388.63	0.0000	618.01	19.9053
277.60	37.0176	391.69	38.6436	620.36	22.0254
278.00	35.3478	264.66	36.1047	621.93	16.7943
279.20	40.4414	401.81	29.6471	630.19	0.0000
279.54	50.5664	402.40	19.4641	631.29	14.7611
279.70	50.5737	404.85	30.6367	633.25	18.9961
280.46	44.2819	410.95	32.1606	634.78	0.0000
283.69	29.6060	413.71	36.4221	635.95	16.9069
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	29.6509	423.72	0.0000	645.85	14.8625
285.90	0.0000	427.09	30.1478	657.76	17.6132
287.50	30.5544	427.87	22.6221	657.90	0.0000
290.67	40.8516	433.94	26.4955	661.66	22.4569
293.27	0.0000	439.40	28.4863	664.57	0.0000
351.93	38.4485	453.88	21.0798	666.33	0.0000
295.96	38.4732	463.37	26.0211	666.50	0.0000
879.38	38.5593	468.07	23.1958	667.71	0.0000
299.98	38.6050	473.00	0.0000	677.62	14.0029
300.09	38.6087	475.06	21.3519	685.70	0.0000
300.13	38.6096	476.78	26.2315	695.00	0.0000
301.36	37.3616	477.60	20.4121	696.49	20.6375
302.85	39.9884	482.18	15.5944	696.51	20.6382
256.23	38.2357	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	22.8184
306.78	33.6497	497.08	30.4765	697.49	21.7334
308.46	42.3367	505.52	25.1903	702.65	21.7822
311.90	38.1249	507.63	0.0000	706.68	17.4564
316.51	33.9203	511.00	14.8639	711.68	16.4008
319.41	0.0000	514.00	2.9778	720.70	0.0000
320.08	0.0000	514.00	2.9778	721.93	0.0000
321.04	30.5524	520.40	13.4478	722.78	6.5918
323.87	39.3713	520.69	0.0000	722.91	8.2401
325.23	44.6696	522.65	0.0000	723.31	8.2416
328.76	0.0000	527.90	0.0000	724.19	6.5957
333.37	27.5031	528.26	10.5047	727.33	12.1082
333.97	31.7490	529.59	18.0212	733.00	15.4475
334.37	33.0826	529.87	0.0000	735.93	9.9426
338.28	30.0862	531.02	0.0000	333.97	15.4766
338.32	30.0869	537.26	0.0000	739.50	0.0000
311.90	31.9102	546.56	0.0000	747.24	12.2098
340.48	31.9102	552.55	21.2854	748.06	16.6553
340.55	0.0000	563.25	23.4436	752.31	23.3584
344.28	28.4473	569.33	20.4500	753.82	0.0000
345.93	29.9072	946.00	20.4517	756.73	24.5155
351.06	26.8066	569.70	20.4541	756.80	24.5164
351.93	26.8237	583.19	18.5361	884.68	13.4116

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	18.4551	1274.44	13.6844	1620.50	2.1527
766.42	18.4591	1001.03	7.3098	1621.92	7.5370
766.84	18.4625	1002.74	13.1647	1678.03	0.0000
772.60	0.0000	1004.73	17.3817	1690.97	4.3708
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	8.8750
778.90	11.2439	1028.54	0.0000	1063.66	7.7750
783.70	0.0000	1037.84	16.2733	1771.35	2.2219
785.37	16.9098	1038.76	0.0000	1791.20	0.0000
792.07	8.4775	631.29	9.2712	1808.65	2.2385
794.95	7.9211	1048.07	0.0000	1810.72	0.0000
795.86	7.9240	1049.04	15.7736	1836.06	5.4015
810.06	15.9363	1050.41	10.2111		
810.29	15.9380	1063.66	5.5928		
344.28	10.2462	1077.00	0.0000		
810.76	10.2477	1077.34	5.9906		
815.77	0.0000	1085.87	13.5141		
1048.07	0.0000	1093.63	15.0518		
832.01	19.5151	1099.45	7.5391		
834.85	21.8342	1112.07	13.2438		
835.71	18.3932	1112.84	18.9233		
836.80	0.0000	1115.54	10.6060		
846.75	0.0000	1120.29	17.0695		
846.77	12.6982	1120.55	17.0706		
856.80	0.0000	1221.41	17.0739		
860.56	10.4429	1129.67	11.4111		
871.09	10.4832	1131.51	0.0000		
873.19	10.4912	1147.95	0.0000		
875.33	0.0000	1173.23	13.4830		
879.38	9.6388	1177.95	13.5010		
880.51	4.3831	1189.05	11.6089		
883.24	18.4269	1204.77	14.5752		
884.68	22.8262	1221.41	15.6191		
889.28	15.8291	1231.02	18.5964		
894.76	14.0981	1235.36	0.0000		
898.04	11.4678	1238.28	19.6143		
900.72	14.1279	1260.41	0.0000		
903.28	13.2568	1271.87	13.8556		
911.20	16.8395	1274.44	15.8457		
912.08	16.8448	1274.54	15.8457		
923.98	0.0000	1291.59	8.9539		
926.50	12.8312	1298.22	0.0000		
929.11	8.0266	1312.11	0.0000		
937.49	9.8388	1332.49	8.0444		
944.13	0.0000	1362.66	0.0000		
946.00	11.6618	1365.19	5.0696		
949.00	14.3677	1368.63	0.0000		
667.71	0.0000	1384.29	9.1692		
962.31	11.5461	1408.01	6.1487		
964.08	9.0259	1457.56	0.0000		
966.17	9.0323	1460.82	6.2278		
911.20	9.0408	1489.16	5.2246		
968.97	9.0408	1505.03	6.2926		
983.53	0.0000	1584.12	7.4747		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:16:33.43

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29407                     *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235016.CNF;1
Background file : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM12.CNF;467
Background date : 2-OCT-2016 11:00:40.
Sample date     : 8-DEC-2015 11:29:00. Acquisition date : 3-OCT-2016 08:15:34.
Sample ID      : G405235016. Sample quantity : 1.63118E+02 GRAM
Detector name   : GAM12. Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.56 0.0%
Energy tolerance: 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID       : 1596247 Detector SN# :
Matrix Spike ID : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	9	35.91*	31	8	1.15	71.66	68	25	8.49E-03	43.5	2.41E+00
2	9	37.68*	50	40	1.86	75.20	68	25	1.39E-02	41.4	
3	9	40.14	72	77	1.78	80.11	68	25	2.00E-02	28.2	
4	9	42.83	27	145	2.60	85.49	68	25	7.47E-03	90.1	
5	9	45.08	17	86	1.17	90.00	68	25	4.85E-03	81.1	
6	0	64.52*	14	166	0.62	128.86	124	8	3.90E-03	163.9	
7	3	75.00	120	192	1.69	149.83	143	17	3.33E-02	24.8	1.17E+00
8	3	77.26*	148	135	1.23	154.36	143	17	4.10E-02	16.1	
9	0	87.10	30	170	1.23	174.04	171	8	8.20E-03	78.4	
10	4	90.06	53	68	1.04	179.95	178	16	1.48E-02	24.7	1.47E+00
11	4	93.09*	108	169	1.90	186.01	178	16	3.01E-02	26.9	
12	0	154.32	31	65	1.34	308.48	306	6	8.54E-03	45.7	
13	0	157.46	23	92	1.37	314.75	312	8	6.48E-03	73.6	
14	0	185.62*	61	137	1.24	371.06	367	10	1.70E-02	39.1	
15	0	209.26	29	90	0.89	418.35	415	8	7.98E-03	60.2	
16	3	238.62*	399	86	1.28	477.07	472	19	1.11E-01	6.5	1.02E+00
17	3	241.60	122	90	1.92	483.04	472	19	3.40E-02	23.9	
18	0	258.15	13	62	1.41	516.13	512	9	3.62E-03	112.8	
19	0	271.20	32	112	0.80	542.23	536	14	8.80E-03	73.9	
20	0	295.06	171	58	1.30	589.98	586	10	4.75E-02	11.3	
21	0	338.33*	76	57	1.10	676.52	672	10	2.11E-02	22.3	
22	0	351.65*	232	75	1.38	703.18	697	12	6.46E-02	10.0	
23	0	408.91	26	97	5.41	817.70	805	19	7.34E-03	92.5	
24	0	432.57	10	31	1.27	865.05	861	8	2.74E-03	100.0	
25	2	443.52	20	7	1.28	886.95	885	17	5.51E-03	28.1	3.17E+00
26	2	446.21	24	26	1.74	892.32	885	17	6.65E-03	45.9	
27	0	462.58	29	45	3.05	925.07	918	14	8.03E-03	52.9	
28	0	491.73	14	17	1.73	983.40	979	7	3.94E-03	55.4	
29	0	510.37*	58	36	1.35	1020.67	1013	16	1.61E-02	31.0	
30	0	569.42	39	60	0.81	1138.82	1132	16	1.10E-02	46.6	
31	0	583.20*	122	26	1.31	1166.38	1160	14	3.40E-02	13.0	
32	0	609.25*	146	44	1.55	1218.51	1213	15	4.04E-02	12.9	
33	0	662.19	28	58	1.02	1324.44	1320	11	7.65E-03	56.8	
34	0	727.24	46	35	1.52	1454.59	1448	16	1.27E-02	32.8	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	795.02	25	11	1.10	1590.21	1584	11	7.01E-03	32.3	
36	0	862.42	39	30	4.43	1725.08	1717	19	1.08E-02	36.7	
37	0	889.39	12	14	3.27	1779.06	1774	11	3.26E-03	68.0	
38	0	911.23*	78	20	1.10	1822.78	1817	13	2.15E-02	16.7	
39	0	969.14	66	24	1.25	1938.66	1932	14	1.83E-02	20.1	
40	0	996.16	11	2	1.63	1992.73	1989	7	3.14E-03	35.4	
41	0	1104.74	15	20	0.53	2210.06	2202	16	4.07E-03	73.2	
42	0	1120.60	50	11	1.39	2241.80	2236	14	1.39E-02	19.8	
43	0	1161.46	12	0	1.60	2323.58	2320	7	3.33E-03	28.9	
44	0	1181.87	11	27	3.93	2364.44	2352	19	2.97E-03	123.2	
45	0	1187.67	16	5	2.39	2376.05	2372	9	4.46E-03	34.8	
46	0	1194.48	20	2	3.89	2389.67	2385	11	5.49E-03	27.5	
47	0	1239.76	31	7	3.90	2480.31	2473	14	8.73E-03	25.2	
48	0	1247.01	21	7	2.11	2494.83	2488	13	5.69E-03	33.8	
49	0	1460.74	336	0	1.85	2922.71	2915	14	9.33E-02	5.5	
50	0	1764.60	35	7	1.38	3531.13	3523	13	9.58E-03	22.8	
51	0	2042.49	5	5	0.51	4087.70	4081	10	1.39E-03	94.9	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235016.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 8-DEC-2015 11:29:00 Acquisition date : 3-OCT-2016 08:15:34
Sample ID : G405235016 Sample quantity : 163.12 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA12 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.56 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.082E+00	1.303E+01	1.303E+01	10.91	OK
SC-46	889.28	99.98*	1.620E+00	3.460E-02	4.135E-01	135.97	OK
	1120.55	99.99	1.350E+00	1.715E-01	2.049E+00	39.59	OK
BA-137M	661.66	89.90*	2.040E+00	7.427E-02	7.569E-02	113.58	OK
CS-137	661.66	85.10*	2.040E+00	7.846E-02	7.996E-02	113.58	OK
TL-208	277.37	6.60	4.142E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	2.256E+00	3.205E-01	3.205E-01	26.05	OK
	860.56	12.50	1.662E+00	-----	Line Not Found	-----	Absent
PB-210	46.54	4.25*	3.130E-01	8.579E+00	8.802E+00	162.16	OK
PB-212	74.82	10.28	3.186E+00	1.562E+00	1.562E+00	73.17	OK
	77.11	17.10	3.414E+00	1.571E+00	1.571E+00	32.23	OK
	238.63	43.60*	4.646E+00	1.093E+00	1.093E+00	12.91	OK
	300.09	3.30	3.888E+00	-----	Line Not Found	-----	Absent
BI-214	609.32	45.49*	2.179E+00	7.334E-01	7.336E-01	25.80	OK
	1120.29	14.92	1.350E+00	1.149E+00	1.149E+00	39.59	OK
	1764.49	15.30	9.121E-01	1.079E+00	1.079E+00	45.69	OK
PB-214	74.82	5.80	3.167E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	3.414E+00	2.769E+00	2.770E+00	32.23	OK
	87.09	3.41	4.297E+00	1.237E+00	1.238E+00	156.88	OK
	242.00	7.25	4.599E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	3.942E+00	1.277E+00	1.278E+00	22.57	OK
	351.93	35.60*	3.413E+00	1.017E+00	1.018E+00	20.10	OK
RN-222	609.32	45.49*	2.179E+00	7.334E-01	7.336E-01	25.80	OK
	1120.29	14.92	1.350E+00	1.149E+00	1.149E+00	39.59	OK
	1764.49	15.30	9.121E-01	1.079E+00	1.079E+00	45.69	OK
RA-224	240.99	4.10*	4.604E+00	1.332E+00	1.332E+00	134.55	OK
RA-226	609.32	45.49*	2.179E+00	7.334E-01	7.336E-01	25.80	OK
	1120.29	14.92	1.350E+00	1.149E+00	1.149E+00	39.59	OK
	1764.49	15.30	9.121E-01	1.079E+00	1.079E+00	45.69	OK
AC-228	105.21	1.10	5.379E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.524E+00	1.021E+00	1.021E+00	44.67	OK
	794.95	4.25	1.768E+00	1.623E+00	1.623E+00	64.54	OK
	835.71	1.61	1.701E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.589E+00	8.986E-01	8.986E-01	33.41	OK
	968.97	15.80	1.514E+00	1.298E+00	1.298E+00	40.27	OK
RA-228	105.21	1.10	5.379E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.524E+00	1.021E+00	1.021E+00	44.67	OK
	794.95	4.25	1.768E+00	1.623E+00	1.623E+00	64.54	OK
	835.71	1.61	1.701E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.589E+00	8.986E-01	8.986E-01	33.41	OK
	968.97	15.80	1.514E+00	1.298E+00	1.298E+00	40.27	OK
TH-228	74.82	10.28	3.186E+00	1.562E+00	1.562E+00	73.17	OK
	77.11	17.10	3.414E+00	1.571E+00	1.571E+00	32.23	OK
	238.63	43.60*	4.646E+00	1.093E+00	1.093E+00	12.91	OK
	300.09	3.30	3.888E+00	-----	Line Not Found	-----	Absent
TH-230	609.32	45.49*	2.179E+00	7.334E-01	7.334E-01	25.80	OK
	1120.29	14.92	1.350E+00	1.149E+00	1.149E+00	39.59	OK
	1764.49	15.30	9.121E-01	1.079E+00	1.079E+00	45.69	OK
TH-232	105.21	1.10	5.379E+00	-----	Line Not Found	-----	Absent

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	338.32	11.27	3.524E+00	1.021E+00	1.021E+00	44.67	OK
	835.71	1.61	1.701E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.589E+00	8.986E-01	8.986E-01	33.41	OK
	968.97	15.80	1.514E+00	1.298E+00	1.298E+00	40.27	OK
TH-234	63.29	3.70*	2.058E+00	1.166E+00	1.166E+00	327.90	OK
	92.59	4.23	4.733E+00	3.299E+00	3.299E+00	53.76	OK
U-234	609.32	45.49*	2.179E+00	7.334E-01	7.334E-01	25.80	OK
	1120.29	14.92	1.350E+00	1.149E+00	1.149E+00	39.59	OK
	1764.49	15.30	9.121E-01	1.079E+00	1.079E+00	45.69	OK
U-235	89.96	3.47	4.522E+00	2.083E+00	2.083E+00	49.42	OK
	93.35	5.60	4.733E+00	2.492E+00	2.492E+00	53.76	OK
	143.76	10.96*	5.929E+00	-----	Line Not Found	-----	Absent
	163.33	5.08	5.762E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	5.452E+00	1.120E-01	1.120E-01	78.16	OK
	205.31	5.01	5.147E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	2.058E+00	1.166E+00	1.166E+00	327.90	OK
	92.59	4.23	4.733E+00	3.299E+00	3.299E+00	53.76	OK
AM-243	43.53	5.90	2.032E-01	1.471E+01	1.471E+01	180.12	OK
	74.66	67.20*	3.186E+00	2.389E-01	2.390E-01	73.17	OK
ANH-511	511.00	100.00*	2.511E+00	1.177E-01	1.177E-01	62.00	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235016.CNF;1
* Acquisition date   : 3-OCT-2016 08:15:34 Sensitivity      : 3.000
* Detector ID        : GAM12 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.56 Half life ratio : *****
* Sample date        : 8-DEC-2015 11:29:00 Analyst initials: MXR1
* Sample ID          : G405235016 Sample Quantity : 1.6312E+02 GRAM
* Batch Number       : 1596247 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 22-SEP-2016 11:41:01 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM12 CAN.CNF;13
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.303E+01	1.394E+00	3.757E-01
SC-46	4.135E-01	5.510E-01	7.481E-01
BA-137M	7.569E-02	8.424E-02	8.137E-02
CS-137	7.996E-02	8.900E-02	8.596E-02
TL-208	3.205E-01	8.181E-02	5.564E-02
PB-210	8.802E+00	1.399E+01	1.482E+01
PB-212	1.093E+00	1.382E-01	9.363E-02
BI-214	7.336E-01	1.855E-01	1.137E-01
PB-214	1.018E+00	2.004E-01	1.354E-01
RN-222	7.336E-01	1.855E-01	1.137E-01
RA-224	1.332E+00	1.756E+00	1.003E+00
RA-226	7.336E-01	1.855E-01	1.137E-01
AC-228	8.986E-01	2.943E-01	1.842E-01
RA-228	8.986E-01	2.943E-01	1.842E-01
TH-228	1.093E+00	1.382E-01	9.363E-02
TH-230	7.334E-01	1.855E-01	1.136E-01
TH-232	8.986E-01	2.943E-01	1.842E-01
TH-234	1.166E+00	3.747E+00	3.551E+00
U-234	7.334E-01	1.855E-01	1.136E-01
U-235	4.023E-02	1.760E-01	3.561E-01
U-238	1.166E+00	3.747E+00	3.551E+00
AM-243	2.390E-01	1.713E-01	1.220E-01
ANH-511	1.177E-01	7.154E-02	4.450E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-5.074E-01	1.269E+01	2.412E+01	NOT IDENT.
NA-22	3.326E-02	4.387E-02	9.885E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	-1.662E-02	2.829E-02	4.921E-02	NOT IDENT.
V-48	0.000E+00	1.393E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.755E+02	0.000E+00	SHORT HLIF
MN-54	1.791E-02	5.843E-02	1.232E-01	NOT IDENT.

CO-56	1.676E-01	4.422E-01	9.416E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-2.561E-02	4.717E-02	9.092E-02	NOT IDENT.
CO-58	-1.599E-01	4.577E-01	8.989E-01	NOT IDENT.
FE-59	3.785E+00	5.186E+00	1.151E+01	NOT IDENT.
CO-60	1.572E-02	3.574E-02	7.896E-02	NOT IDENT.
ZN-65	-3.473E-02	1.851E-01	3.122E-01	NOT IDENT.
GE-68	1.709E-01	2.145E+00	4.394E+00	NOT IDENT.
AS-73	-9.140E+00	1.748E+01	3.136E+01	NOT IDENT.
AS-74	0.000E+00	6.114E+03	0.000E+00	SHORT HLIF
SE-75	-1.278E-02	1.970E-01	3.815E-01	NOT IDENT.
BR-77	0.000E+00	2.513E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.420E+02	0.000E+00	SHORT HLIF
RB-83	2.473E-01	7.246E-01	1.428E+00	NOT IDENT.
KR-85	7.898E+00	6.575E+00	1.362E+01	NOT IDENT.
SR-85	8.337E-01	6.948E-01	1.439E+00	NOT IDENT.
RB-86	0.000E+00	2.513E+04	0.000E+00	SHORT HLIF
Y-88	-1.189E-01	1.346E-01	1.009E-01	NOT IDENT.
Y-91	1.635E+02	5.205E+02	1.077E+03	NOT IDENT.
NB-94	1.764E-02	3.342E-02	6.702E-02	NOT IDENT.
NB-95	-2.185E-03	8.650E-01	1.727E+00	NOT IDENT.
NB-95M	-1.185E+00	2.737E+00	4.532E+00	NOT IDENT.
ZR-95	-4.010E-01	1.203E+00	2.179E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.034E+40	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.711E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.426E+41	0.000E+00	SHORT HLIF
RH-101	-2.472E-02	3.403E-02	6.454E-02	NOT IDENT.
RH-102	4.147E-03	6.179E-02	1.181E-01	NOT IDENT.
RU-103	7.210E-01	5.736E+00	1.115E+01	FAIL ABUN
RH-106	-4.231E-04	5.113E-01	9.706E-01	NOT IDENT.
RU-106	-4.231E-04	5.113E-01	9.706E-01	NOT IDENT.
AG-108M	1.970E-02	3.860E-02	5.205E-02	FAIL ABUN
CD-109	1.789E+00	2.751E+00	2.923E+00	FAIL ABUN
AG-110M	6.783E-03	1.103E-01	1.991E-01	NOT IDENT.
SN-113	-9.909E-02	2.278E-01	4.167E-01	NOT IDENT.
CD-115	0.000E+00	3.111E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.682E+05	0.000E+00	SHORT HLIF
TE-123M	-3.086E-02	1.478E-01	2.567E-01	NOT IDENT.
SB-124	-8.270E-01	2.224E+00	4.163E+00	NOT IDENT.
SB-125	5.811E-02	1.160E-01	2.134E-01	FAIL ABUN
TE-125M	1.391E+02	2.888E+02	5.969E+02	NOT IDENT.
I-126	0.000E+00	1.205E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.273E+06	0.000E+00	SHORT HLIF
SN-126	1.140E-01	1.753E-01	1.916E-01	FAIL ABUN
SB-127	0.000E+00	2.169E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.777E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.871E+26	0.000E+00	SHORT HLIF
BA-133	1.772E-02	4.090E-02	7.551E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	1.063E-01	6.721E-02	1.082E-01	FAIL ABUN
CS-135	8.011E-02	1.432E-01	2.662E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.416E+05	0.000E+00	SHORT HLIF
CE-139	8.136E-03	1.051E-01	2.085E-01	NOT IDENT.
BA-140	0.000E+00	1.186E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.593E+05	0.000E+00	SHORT HLIF
CE-141	-1.706E+01	2.422E+01	4.565E+01	NOT IDENT.
CE-143	0.000E+00	5.559E+40	0.000E+00	SHORT HLIF
CE-144	8.743E-02	3.465E-01	7.021E-01	NOT IDENT.
PM-144	2.444E-03	4.852E-02	9.377E-02	NOT IDENT.
PR-144	-6.480E-01	4.365E+00	8.130E+00	NOT IDENT.
PM-146	-9.711E-03	3.995E-02	7.109E-02	NOT IDENT.
ND-147	0.000E+00	3.585E+07	0.000E+00	SHORT HLIF
PM-147	-2.014E+02	8.307E+02	1.635E+03	NOT IDENT.
PM-149	0.000E+00	4.587E+40	0.000E+00	SHORT HLIF
EU-150	2.263E-02	2.525E-02	4.915E-02	FAIL ABUN
EU-152	-4.763E-03	9.819E-02	1.874E-01	NOT IDENT.
GD-153	3.764E-02	1.940E-01	3.607E-01	NOT IDENT.
EU-154	7.458E-02	1.061E-01	2.380E-01	FAIL ABUN
EU-155	1.808E-02	1.089E-01	2.221E-01	FAIL ABUN
TB-160	-1.413E+00	1.475E+00	2.526E+00	FAIL ABUN
HO-166M	2.079E-02	5.761E-02	1.144E-01	FAIL ABUN
TM-171	-3.003E+01	4.271E+01	7.545E+01	NOT IDENT.
HF-172	-9.750E-02	2.359E-01	4.575E-01	NOT IDENT.
LU-172	7.676E-02	5.341E-02	1.409E-01	FAIL ABUN
LU-176	-6.849E-03	2.260E-02	4.256E-02	FAIL ABUN

HF-181	-2.950E+00	4.400E+00	7.685E+00	NOT IDENT.
TA-182	3.397E-02	8.497E-01	1.701E+00	FAIL ABUN
RE-183	-3.033E+00	5.074E+00	8.999E+00	NOT IDENT.
RE-184	-9.960E+00	2.832E+01	5.441E+01	NOT IDENT.
W-188	1.869E+01	1.254E+02	2.204E+02	FAIL ABUN
IR-192	-2.217E-01	4.445E-01	7.900E-01	FAIL ABUN
HG-203	-5.593E-01	2.547E+00	4.813E+00	NOT IDENT.
BI-207	-1.147E-02	4.946E-02	9.508E-02	FAIL ABUN
BI-211	0.000E+00	5.521E-01	8.615E-01	FAIL ABUN
PB-211	7.166E-01	6.909E-01	1.458E+00	NOT IDENT.
BI-212	0.000E+00	1.137E+00	1.394E+00	FAIL ABUN
RN-219	-2.873E-01	4.540E-01	7.021E-01	FAIL ABUN
RA-223	1.044E-01	5.387E-01	1.066E+00	FAIL ABUN
AC-227	1.571E-01	2.269E-01	4.306E-01	NOT IDENT.
TH-227	1.571E-01	2.269E-01	4.306E-01	NOT IDENT.
TH-229	4.188E-01	4.920E-01	1.011E+00	FAIL ABUN
PA-231	-2.591E-01	4.113E-01	7.474E-01	NOT IDENT.
TH-231	1.044E-01	5.387E-01	1.066E+00	FAIL ABUN
PA-233	-2.076E-02	5.396E-02	1.008E-01	NOT IDENT.
PA-234	-4.241E-03	1.812E-01	3.856E-01	FAIL ABUN
PA-234M	-6.112E-01	3.785E+00	7.418E+00	NOT IDENT.
NP-237	-2.076E-02	5.396E-02	1.008E-01	NOT IDENT.
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	3.730E-02	2.438E-01	4.938E-01	NOT IDENT.
PU-239	1.282E+02	3.112E+02	6.352E+02	NOT IDENT.
AM-241	-8.076E-02	2.236E-01	4.049E-01	NOT IDENT.
CM-243	-6.819E-02	9.733E-02	1.873E-01	NOT IDENT.
BK-247	1.640E-02	6.957E-02	1.328E-01	NOT IDENT.
CM-247	1.891E-02	3.598E-02	6.701E-02	NOT IDENT.
CF-249	4.479E-02	3.711E-02	8.006E-02	NOT IDENT.
CF-251	7.996E-02	1.141E-01	2.346E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	327	10.66*	1.082E+00	1.303E+01	1.303E+01	10.91
SC-46	889.28	12	99.98*	1.620E+00	3.460E-02	4.135E-01	135.97
	1120.55	50	99.99	1.350E+00	1.715E-01	2.049E+00	39.59
CD-109	88.03	39	3.70*	4.297E+00	1.140E+00	1.789E+00	156.88
SN-126	64.28	19	9.60	2.058E+00	4.494E-01	4.494E-01	327.90
	86.94	39	8.90	4.297E+00	4.741E-01	4.741E-01	156.88
	87.57	39	37.00*	4.297E+00	1.140E-01	1.140E-01	156.88
BA-137M	661.66	30	89.90*	2.040E+00	7.427E-02	7.569E-02	113.58
CS-137	661.66	30	85.10*	2.040E+00	7.846E-02	7.996E-02	113.58
TL-208	277.37	-----	6.60	4.142E+00	-----	Line Not Found	-----
	583.19	134	85.00*	2.256E+00	3.205E-01	3.205E-01	26.05
	860.56	-----	12.50	1.662E+00	-----	Line Not Found	-----
PB-210	46.54	25	4.25*	3.130E-01	8.579E+00	8.802E+00	162.16
BI-211	72.87	-----	1.23	2.964E+00	-----	Line Not Found	-----
	351.06	269	12.92*	3.413E+00	2.803E+00	2.803E+00	20.10
PB-212	74.82	162	10.28	3.186E+00	2.282E+00	2.282E+00	49.58
	77.11	199	17.10	3.414E+00	1.571E+00	1.571E+00	32.23
	238.63	481	43.60*	4.646E+00	1.093E+00	1.093E+00	12.91
	300.09	-----	3.30	3.888E+00	-----	Line Not Found	-----
BI-214	609.32	158	45.49*	2.179E+00	7.334E-01	7.336E-01	25.80
	1120.29	50	14.92	1.350E+00	1.149E+00	1.149E+00	39.59
	1764.49	33	15.30	9.121E-01	1.079E+00	1.079E+00	45.69
PB-214	74.82	162	5.80	3.186E+00	4.045E+00	4.046E+00	49.58
	77.11	199	9.70	3.414E+00	2.769E+00	2.770E+00	32.23
	87.09	39	3.41	4.297E+00	1.237E+00	1.238E+00	156.88
	242.00	147	7.25	4.604E+00	2.031E+00	2.031E+00	47.85
	295.22	201	18.42	3.942E+00	1.277E+00	1.278E+00	22.57
	351.93	269	35.60*	3.413E+00	1.017E+00	1.018E+00	20.10
RN-222	609.32	158	45.49*	2.179E+00	7.334E-01	7.336E-01	25.80
	1120.29	50	14.92	1.350E+00	1.149E+00	1.149E+00	39.59
	1764.49	33	15.30	9.121E-01	1.079E+00	1.079E+00	45.69
RA-224	240.99	147	4.10*	4.604E+00	3.591E+00	3.591E+00	47.85
RA-226	609.32	158	45.49*	2.179E+00	7.334E-01	7.336E-01	25.80
	1120.29	50	14.92	1.350E+00	1.149E+00	1.149E+00	39.59
	1764.49	33	15.30	9.121E-01	1.079E+00	1.079E+00	45.69
AC-228	105.21	-----	1.10	5.379E+00	-----	Line Not Found	-----
	338.32	88	11.27	3.524E+00	1.021E+00	1.021E+00	44.67
	794.95	26	4.25	1.768E+00	1.623E+00	1.623E+00	64.54
	835.71	-----	1.61	1.701E+00	-----	Line Not Found	-----
	911.20	80	25.80*	1.589E+00	8.986E-01	8.986E-01	33.41
	968.97	67	15.80	1.514E+00	1.298E+00	1.298E+00	40.27
RA-228	105.21	-----	1.10	5.379E+00	-----	Line Not Found	-----
	338.32	88	11.27	3.524E+00	1.021E+00	1.021E+00	44.67
	794.95	26	4.25	1.768E+00	1.623E+00	1.623E+00	64.54
	835.71	-----	1.61	1.701E+00	-----	Line Not Found	-----
	911.20	80	25.80*	1.589E+00	8.986E-01	8.986E-01	33.41
	968.97	67	15.80	1.514E+00	1.298E+00	1.298E+00	40.27

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	162	10.28	3.186E+00	2.282E+00	2.282E+00	49.58
	77.11	199	17.10	3.414E+00	1.571E+00	1.571E+00	32.23
	238.63	481	43.60*	4.646E+00	1.093E+00	1.093E+00	12.91
	300.09	-----	3.30	3.888E+00	-----	Line Not Found	-----
TH-230	609.32	158	45.49*	2.179E+00	7.334E-01	7.334E-01	25.80
	1120.29	50	14.92	1.350E+00	1.149E+00	1.149E+00	39.59
	1764.49	33	15.30	9.121E-01	1.079E+00	1.079E+00	45.69
TH-232	105.21	-----	1.10	5.379E+00	-----	Line Not Found	-----
	338.32	88	11.27	3.524E+00	1.021E+00	1.021E+00	44.67
	835.71	-----	1.61	1.701E+00	-----	Line Not Found	-----
	911.20	80	25.80*	1.589E+00	8.986E-01	8.986E-01	33.41
	968.97	67	15.80	1.514E+00	1.298E+00	1.298E+00	40.27
TH-234	63.29	19	3.70*	2.058E+00	1.166E+00	1.166E+00	327.90
	92.59	144	4.23	4.733E+00	3.299E+00	3.299E+00	53.76
U-234	609.32	158	45.49*	2.179E+00	7.334E-01	7.334E-01	25.80
	1120.29	50	14.92	1.350E+00	1.149E+00	1.149E+00	39.59
	1764.49	33	15.30	9.121E-01	1.079E+00	1.079E+00	45.69
U-235	89.96	71	3.47	4.522E+00	2.083E+00	2.083E+00	49.42
	93.35	144	5.60	4.733E+00	2.492E+00	2.492E+00	53.76
	143.76	-----	10.96*	5.929E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.762E+00	-----	Line Not Found	-----
	185.72	76	57.20	5.452E+00	1.120E-01	1.120E-01	78.16
	205.31	-----	5.01	5.147E+00	-----	Line Not Found	-----
U-238	63.29	19	3.70*	2.058E+00	1.166E+00	1.166E+00	327.90
	92.59	144	4.23	4.733E+00	3.299E+00	3.299E+00	53.76
AM-243	43.53	38	5.90	2.032E-01	1.471E+01	1.471E+01	180.12
	74.66	162	67.20*	3.186E+00	3.491E-01	3.491E-01	49.58
ANH-511	511.00	64	100.00*	2.511E+00	1.177E-01	1.177E-01	62.00

Flag: "*" = Keyline

Total number of lines in spectrum 51
Number of unidentified lines 15
Number of lines tentatively identified by NID 36 70.59%

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	1.303E+01	1.303E+01	0.142E+01	10.91	
SC-46	83.79D	12.0	3.460E-02	4.135E-01	5.622E-01	135.97	
CD-109	461.40D	1.57	1.140E+00	1.789E+00	2.807E+00	156.88	
SN-126	2.30E+05Y	1.00	1.140E-01	1.140E-01	1.789E-01	156.88	
BA-137M	30.08Y	1.02	7.427E-02	7.569E-02	8.596E-02	113.58	
CS-137	30.08Y	1.02	7.846E-02	7.996E-02	9.081E-02	113.58	
TL-208	1.41E+10Y	1.00	3.205E-01	3.205E-01	0.835E-01	26.05	
PB-210	22.20Y	1.03	8.579E+00	8.802E+00	14.27E+00	162.16	
BI-211	7.04E+08Y	1.00	2.803E+00	2.803E+00	0.563E+00	20.10	
PB-212	1.41E+10Y	1.00	1.093E+00	1.093E+00	0.141E+00	12.91	
BI-214	1600.00Y	1.00	7.334E-01	7.336E-01	1.893E-01	25.80	
PB-214	1600.00Y	1.00	1.017E+00	1.018E+00	0.205E+00	20.10	
RN-222	1600.00Y	1.00	7.334E-01	7.336E-01	1.893E-01	25.80	
RA-224	1.41E+10Y	1.00	3.591E+00	3.591E+00	1.718E+00	47.85	
RA-226	1600.00Y	1.00	7.334E-01	7.336E-01	1.893E-01	25.80	
AC-228	1.41E+10Y	1.00	8.986E-01	8.986E-01	3.003E-01	33.41	
RA-228	1.41E+10Y	1.00	8.986E-01	8.986E-01	3.003E-01	33.41	
TH-228	1.41E+10Y	1.00	1.093E+00	1.093E+00	0.141E+00	12.91	
TH-230	7.54E+04Y	1.00	7.334E-01	7.334E-01	1.892E-01	25.80	
TH-232	1.41E+10Y	1.00	8.986E-01	8.986E-01	3.003E-01	33.41	
TH-234	4.47E+09Y	1.00	1.166E+00	1.166E+00	3.824E+00	327.90	
U-234	2.45E+05Y	1.00	7.334E-01	7.334E-01	1.892E-01	25.80	
U-235	7.04E+08Y	1.00	1.120E-01	1.120E-01	0.876E-01	78.16	K
U-238	4.47E+09Y	1.00	1.166E+00	1.166E+00	3.824E+00	327.90	
AM-243	7370.00Y	1.00	3.491E-01	3.491E-01	1.731E-01	49.58	
ANH-511	1.00E+09Y	1.00	1.177E-01	1.177E-01	0.730E-01	62.00	

Total Activity : 4.225E+01 4.350E+01

Grand Total Activity : 4.225E+01 4.350E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
9	35.91	44	11	1.15	71.66	68	25	8.49E-03	87.0	2.40E-02	
9	37.68	72	58	1.86	75.20	68	25	1.39E-02	82.7	4.91E-02	
9	40.14	103	111	1.78	80.11	68	25	2.00E-02	56.4	1.06E-01	
0	154.32	39	82	1.34	308.48	306	6	8.54E-03	91.3	5.86E+00	T
0	157.46	29	115	1.37	314.75	312	8	6.48E-03	****	5.83E+00	T
0	209.26	35	110	0.89	418.35	415	8	7.98E-03	****	5.09E+00	
0	258.15	16	74	1.41	516.13	512	9	3.62E-03	****	4.38E+00	
0	271.20	38	133	0.80	542.23	536	14	8.80E-03	****	4.22E+00	T
0	408.91	30	110	5.41	817.70	805	19	7.34E-03	****	3.01E+00	
0	432.57	11	35	1.27	865.05	861	8	2.74E-03	****	2.87E+00	T
2	443.52	22	8	1.28	886.95	885	17	5.51E-03	56.2	2.82E+00	
2	446.21	27	30	1.74	892.32	885	17	6.65E-03	91.8	2.80E+00	
0	462.58	32	51	3.05	925.07	918	14	8.03E-03	****	2.72E+00	T
0	491.73	16	19	1.73	983.40	979	7	3.94E-03	****	2.59E+00	T
0	569.42	43	65	0.81	1138.82	1132	16	1.10E-02	93.2	2.30E+00	T
0	727.24	49	38	1.52	1454.59	1448	16	1.27E-02	65.7	1.90E+00	T
0	862.42	41	31	4.43	1725.08	1717	19	1.08E-02	73.4	1.66E+00	
0	996.16	12	2	1.63	1992.73	1989	7	3.14E-03	70.9	1.48E+00	T
0	1104.74	15	21	0.53	2210.06	2202	16	4.07E-03	****	1.37E+00	
0	1161.46	12	0	1.60	2323.58	2320	7	3.33E-03	57.7	1.31E+00	
0	1181.87	11	27	3.93	2364.44	2352	19	2.97E-03	****	1.29E+00	
0	1187.67	16	5	2.39	2376.05	2372	9	4.46E-03	69.5	1.29E+00	T
0	1194.48	20	2	3.89	2389.67	2385	11	5.49E-03	55.0	1.28E+00	
0	1239.76	31	7	3.90	2480.31	2473	14	8.73E-03	50.3	1.24E+00	T
0	1247.01	20	6	2.11	2494.83	2488	13	5.69E-03	67.7	1.24E+00	
0	2042.49	5	5	0.51	4087.70	4081	10	1.39E-03	****	7.90E-01	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235016.CNF;1
* Acquisition date   : 3-OCT-2016 08:15:34 Sensitivity      : 3.000
* Detector ID        : GAM12 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.56 Half life ratio : *****
* Sample date       : 8-DEC-2015 11:29:00 Nuclide Library : SOLID
* Sample ID         : G405235016 Analyst initials: MXR1
* Batch Number      : 1596247 Sample Quantity : 1.6312E+02 GRAM
* Wet wt corr       : 1.00000 Wet Weight : 0.00000
*                   : Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 22-SEP-2016 11:41:01 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM12 CAN.CNF;13
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.333E-01
SC-46	3.270E-01
BA-137M	3.712E-02
CS-137	3.921E-02
TL-208	2.445E-02
PB-210	6.990E+00
PB-212	4.355E-02
BI-214	5.033E-02
PB-214	6.229E-02
RN-222	5.033E-02
RA-224	4.667E-01
RA-226	5.033E-02
AC-228	7.656E-02
RA-228	7.656E-02
TH-228	4.355E-02
TH-230	5.032E-02
TH-232	7.656E-02
TH-234	1.679E+00
U-234	5.032E-02
U-235	1.678E-01
U-238	1.679E+00
AM-243	5.778E-02
ANH-511	1.967E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.089E+01	NOT IDENT.
NA-22	4.296E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.757E-02	NOT IDENT.
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.428E-02	NOT IDENT.
CO-56	4.148E-01	FAIL ABUN

MN-56	0.000E+00	SHORT HLIF
CO-57	4.257E-02	NOT IDENT.
CO-58	3.800E-01	NOT IDENT.
FE-59	4.882E+00	NOT IDENT.
CO-60	3.348E-02	NOT IDENT.
ZN-65	1.344E-01	NOT IDENT.
GE-68	1.893E+00	NOT IDENT.
AS-73	1.472E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.760E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.490E-01	NOT IDENT.
KR-85	6.181E+00	NOT IDENT.
SR-85	6.531E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	0.000E+00	NOT IDENT.
Y-91	4.719E+02	NOT IDENT.
NB-94	3.021E-02	NOT IDENT.
NB-95	7.729E-01	NOT IDENT.
NB-95M	2.120E+00	NOT IDENT.
ZR-95	9.246E-01	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.028E-02	NOT IDENT.
RH-102	5.275E-02	NOT IDENT.
RU-103	5.023E+00	FAIL ABUN
RH-106	4.324E-01	NOT IDENT.
RU-106	4.324E-01	NOT IDENT.
AG-108M	2.352E-02	FAIL ABUN
CD-109	1.396E+00	FAIL ABUN
AG-110M	8.716E-02	NOT IDENT.
SN-113	1.887E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.205E-01	NOT IDENT.
SB-124	1.644E+00	NOT IDENT.
SB-125	9.747E-02	FAIL ABUN
TE-125M	2.816E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SN-126	9.158E-02	FAIL ABUN
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.446E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	4.854E-02	FAIL ABUN
CS-135	1.234E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.768E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.143E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.299E-01	NOT IDENT.
PM-144	4.105E-02	NOT IDENT.
PR-144	3.558E+00	NOT IDENT.
PM-146	3.153E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.674E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.263E-02	FAIL ABUN
EU-152	8.631E-02	NOT IDENT.
GD-153	1.693E-01	NOT IDENT.
EU-154	1.032E-01	FAIL ABUN
EU-155	1.043E-01	FAIL ABUN
TB-160	1.033E+00	FAIL ABUN
HO-166M	5.106E-02	FAIL ABUN
TM-171	3.537E+01	NOT IDENT.
HF-172	2.150E-01	NOT IDENT.
LU-172	6.052E-02	FAIL ABUN
LU-176	1.944E-02	FAIL ABUN
HF-181	3.429E+00	NOT IDENT.

TA-182	7.361E-01	FAIL ABUN
RE-183	4.214E+00	NOT IDENT.
RE-184	2.349E+01	NOT IDENT.
W-188	1.021E+02	FAIL ABUN
IR-192	3.594E-01	FAIL ABUN
HG-203	2.237E+00	NOT IDENT.
BI-207	4.139E-02	FAIL ABUN
BI-211	4.161E-01	FAIL ABUN
PB-211	6.722E-01	NOT IDENT.
BI-212	6.466E-01	FAIL ABUN
RN-219	3.187E-01	FAIL ABUN
RA-223	4.883E-01	FAIL ABUN
AC-227	1.995E-01	NOT IDENT.
TH-227	1.995E-01	NOT IDENT.
TH-229	4.774E-01	FAIL ABUN
PA-231	3.420E-01	NOT IDENT.
TH-231	4.883E-01	FAIL ABUN
PA-233	4.586E-02	NOT IDENT.
PA-234	1.584E-01	FAIL ABUN
PA-234M	3.196E+00	NOT IDENT.
NP-237	4.586E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
NP-239	2.321E-01	NOT IDENT.
PU-239	2.996E+02	NOT IDENT.
AM-241	1.899E-01	NOT IDENT.
CM-243	8.741E-02	NOT IDENT.
BK-247	6.126E-02	NOT IDENT.
CM-247	3.054E-02	NOT IDENT.
CF-249	3.689E-02	NOT IDENT.
CF-251	1.104E-01	NOT IDENT.


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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235016.CNF;1 *
* Acquisition date   : 3-OCT-2016 08:15:34 Sensitivity      : 3.000          *
* Detector ID        : GAM12 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.56 Half life ratio : *****          *
* Sample date        : 8-DEC-2015 11:29:00 Nuclide Library : SOLID        *
* Sample ID          : G405235016 Analyst initials: MXR1         *
* Batch Number       : 1596247 Sample Quantity : 1.6312E+02 GRAM      *
*                               Quantity Err(%) : 1.2261E-03 %          *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000            *
*                               Dry Weight  : 0.00000            *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date     : 22-SEP-2016 11:41:01 Eff. Geometry  : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM12 CAN.CNF;13        *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.303E+01	1.552E+00	1.552E+00
SC-46	4.135E-01	5.513E-01	5.513E-01
BA-137M	7.569E-02	8.431E-02	8.431E-02
CS-137	7.996E-02	8.906E-02	8.906E-02
TL-208	3.205E-01	8.295E-02	8.295E-02
PB-210	8.802E+00	1.404E+01	1.404E+01
PB-212	1.093E+00	1.503E-01	1.503E-01
BI-214	7.336E-01	1.882E-01	1.882E-01
PB-214	1.018E+00	2.050E-01	2.050E-01
RN-222	7.336E-01	1.882E-01	1.882E-01
RA-224	1.332E+00	1.764E+00	1.764E+00
RA-226	7.336E-01	1.882E-01	1.882E-01
AC-228	8.986E-01	2.979E-01	2.979E-01
RA-228	8.986E-01	2.979E-01	2.979E-01
TH-228	1.093E+00	1.503E-01	1.503E-01
TH-230	7.334E-01	1.881E-01	1.881E-01
TH-232	8.986E-01	2.979E-01	2.979E-01
TH-234	1.166E+00	3.756E+00	3.756E+00
U-234	7.334E-01	1.881E-01	1.881E-01
U-235	4.023E-02	1.760E-01	1.760E-01
U-238	1.166E+00	3.756E+00	3.756E+00
AM-243	2.390E-01	1.726E-01	1.726E-01
ANH-511	1.177E-01	7.170E-02	7.170E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-5.074E-01	1.269E+01	1.269E+01	NOT IDENT.
NA-22	3.326E-02	4.388E-02	4.637E-02	NOT IDENT.
NA-24	1.000E+41	4.275E+41	0.000E+00	SHORT HLIF
AL-26	-1.662E-02	2.831E-02	2.929E-02	NOT IDENT.
V-48	-7.597E+03	1.393E+04	1.435E+04	SHORT HLIF
CR-51	4.549E+01	3.755E+02	3.761E+02	SHORT HLIF
MN-54	1.791E-02	5.844E-02	5.899E-02	NOT IDENT.

CO-56	1.676E-01	4.423E-01	4.487E-01	FAIL ABUN
MN-56	1.000E+41	2.640E+41	0.000E+00	SHORT HLIF
CO-57	-2.561E-02	4.718E-02	4.857E-02	NOT IDENT.
CO-58	-1.599E-01	4.578E-01	4.634E-01	NOT IDENT.
FE-59	3.785E+00	5.193E+00	5.466E+00	NOT IDENT.
CO-60	1.572E-02	3.575E-02	3.644E-02	NOT IDENT.
ZN-65	-3.473E-02	1.851E-01	1.857E-01	NOT IDENT.
GE-68	1.709E-01	2.145E+00	2.146E+00	NOT IDENT.
AS-73	-9.140E+00	1.758E+01	1.806E+01	NOT IDENT.
AS-74	-8.607E+02	6.115E+03	6.127E+03	SHORT HLIF
SE-75	-1.278E-02	1.971E-01	1.971E-01	NOT IDENT.
BR-77	1.987E+38	1.720E+39	0.000E+00	SHORT HLIF
SR-82	1.105E+02	6.420E+02	6.439E+02	SHORT HLIF
RB-83	2.473E-01	7.254E-01	7.339E-01	NOT IDENT.
KR-85	7.898E+00	6.583E+00	7.484E+00	NOT IDENT.
SR-85	8.337E-01	6.957E-01	7.907E-01	NOT IDENT.
RB-86	3.294E+03	2.513E+04	2.517E+04	SHORT HLIF
Y-88	-1.189E-01	1.348E-01	1.451E-01	NOT IDENT.
Y-91	1.635E+02	5.205E+02	5.257E+02	NOT IDENT.
NB-94	1.764E-02	3.343E-02	3.436E-02	NOT IDENT.
NB-95	-2.185E-03	8.650E-01	8.650E-01	NOT IDENT.
NB-95M	-1.185E+00	2.739E+00	2.791E+00	NOT IDENT.
ZR-95	-4.010E-01	1.203E+00	1.216E+00	NOT IDENT.
NB-97	1.000E+41	3.541E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	6.048E+40	0.000E+00	SHORT HLIF
MO-99	8.346E+31	1.712E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.430E+41	0.000E+00	SHORT HLIF
RH-101	-2.472E-02	3.432E-02	3.609E-02	NOT IDENT.
RH-102	4.147E-03	6.179E-02	6.182E-02	NOT IDENT.
RU-103	7.210E-01	5.736E+00	5.745E+00	FAIL ABUN
RH-106	-4.231E-04	5.113E-01	5.113E-01	NOT IDENT.
RU-106	-4.231E-04	5.113E-01	5.113E-01	NOT IDENT.
AG-108M	1.970E-02	3.860E-02	3.961E-02	FAIL ABUN
CD-109	1.789E+00	2.755E+00	2.870E+00	FAIL ABUN
AG-110M	6.783E-03	1.103E-01	1.103E-01	NOT IDENT.
SN-113	-9.909E-02	2.279E-01	2.322E-01	NOT IDENT.
CD-115	2.004E+39	3.132E+39	0.000E+00	SHORT HLIF
SN-117M	1.166E+05	1.688E+05	1.768E+05	SHORT HLIF
TE-123M	-3.086E-02	1.478E-01	1.485E-01	NOT IDENT.
SB-124	-8.270E-01	2.224E+00	2.255E+00	NOT IDENT.
SB-125	5.811E-02	1.160E-01	1.190E-01	FAIL ABUN
TE-125M	1.391E+02	2.889E+02	2.956E+02	NOT IDENT.
I-126	2.344E+05	1.205E+06	1.210E+06	SHORT HLIF
SB-126	-2.180E+05	1.273E+06	1.277E+06	SHORT HLIF
SN-126	1.140E-01	1.755E-01	1.828E-01	FAIL ABUN
SB-127	4.336E+21	2.249E+22	0.000E+00	SHORT HLIF
I-131	-3.454E+09	4.780E+09	5.027E+09	SHORT HLIF
I-132	1.000E+41	1.911E+42	0.000E+00	SHORT HLIF
TE-132	-1.587E+25	3.871E+26	0.000E+00	SHORT HLIF
BA-133	1.772E-02	4.091E-02	4.168E-02	NOT IDENT.
I-133	1.000E+41	4.029E+41	0.000E+00	SHORT HLIF
CS-134	1.063E-01	6.737E-02	8.266E-02	FAIL ABUN
CS-135	8.011E-02	1.433E-01	1.478E-01	NOT IDENT.
I-135	1.000E+41	1.016E+42	0.000E+00	SHORT HLIF
CS-136	-1.033E+04	2.416E+05	2.417E+05	SHORT HLIF
CE-139	8.136E-03	1.051E-01	1.051E-01	NOT IDENT.
BA-140	8.733E+05	1.187E+06	1.250E+06	SHORT HLIF
LA-140	-2.688E+05	4.595E+05	4.752E+05	SHORT HLIF
CE-141	-1.706E+01	2.423E+01	2.542E+01	NOT IDENT.
CE-143	1.000E+41	5.652E+40	0.000E+00	SHORT HLIF
CE-144	8.743E-02	3.466E-01	3.488E-01	NOT IDENT.
PM-144	2.444E-03	4.852E-02	4.853E-02	NOT IDENT.
PR-144	-6.480E-01	4.365E+00	4.375E+00	NOT IDENT.
PM-146	-9.711E-03	3.995E-02	4.019E-02	NOT IDENT.
ND-147	7.457E+06	3.585E+07	3.601E+07	SHORT HLIF
PM-147	-2.014E+02	8.307E+02	8.357E+02	NOT IDENT.
PM-149	2.545E+38	4.587E+40	0.000E+00	SHORT HLIF
EU-150	2.263E-02	2.527E-02	2.725E-02	FAIL ABUN
EU-152	-4.763E-03	9.819E-02	9.822E-02	NOT IDENT.
GD-153	3.764E-02	1.941E-01	1.948E-01	NOT IDENT.
EU-154	7.458E-02	1.061E-01	1.113E-01	FAIL ABUN
EU-155	1.808E-02	1.089E-01	1.092E-01	FAIL ABUN
TB-160	-1.413E+00	1.477E+00	1.609E+00	FAIL ABUN
HO-166M	2.079E-02	5.762E-02	5.838E-02	FAIL ABUN
TM-171	-3.003E+01	4.280E+01	4.489E+01	NOT IDENT.
HF-172	-9.750E-02	2.365E-01	2.405E-01	NOT IDENT.
LU-172	7.676E-02	5.397E-02	6.411E-02	FAIL ABUN
LU-176	-6.849E-03	2.260E-02	2.281E-02	FAIL ABUN

HF-181	-2.950E+00	4.402E+00	4.599E+00	NOT IDENT.
TA-182	3.397E-02	8.497E-01	8.498E-01	FAIL ABUN
RE-183	-3.033E+00	5.097E+00	5.277E+00	NOT IDENT.
RE-184	-9.960E+00	2.842E+01	2.877E+01	NOT IDENT.
W-188	1.869E+01	1.254E+02	1.257E+02	FAIL ABUN
IR-192	-2.217E-01	4.446E-01	4.557E-01	FAIL ABUN
HG-203	-5.593E-01	2.547E+00	2.560E+00	NOT IDENT.
BI-207	-1.147E-02	4.946E-02	4.973E-02	FAIL ABUN
BI-211	2.803E+00	5.666E-01	1.385E+00	FAIL ABUN
PB-211	7.166E-01	6.919E-01	7.636E-01	NOT IDENT.
BI-212	1.766E+00	1.140E+00	1.391E+00	FAIL ABUN
RN-219	-2.873E-01	4.555E-01	4.735E-01	FAIL ABUN
RA-223	1.044E-01	5.388E-01	5.408E-01	FAIL ABUN
AC-227	1.571E-01	2.279E-01	2.386E-01	NOT IDENT.
TH-227	1.571E-01	2.279E-01	2.386E-01	NOT IDENT.
TH-229	4.188E-01	4.924E-01	5.274E-01	FAIL ABUN
PA-231	-2.591E-01	4.150E-01	4.312E-01	NOT IDENT.
TH-231	1.044E-01	5.388E-01	5.408E-01	FAIL ABUN
PA-233	-2.076E-02	5.397E-02	5.478E-02	NOT IDENT.
PA-234	-4.241E-03	1.813E-01	1.813E-01	FAIL ABUN
PA-234M	-6.112E-01	3.785E+00	3.795E+00	NOT IDENT.
NP-237	-2.076E-02	5.397E-02	5.478E-02	NOT IDENT.
NP-238	-1.000E+41	2.160E+41	0.000E+00	SHORT HLIF
NP-239	3.730E-02	2.439E-01	2.444E-01	NOT IDENT.
PU-239	1.282E+02	3.113E+02	3.166E+02	NOT IDENT.
AM-241	-8.076E-02	2.237E-01	2.267E-01	NOT IDENT.
CM-243	-6.819E-02	9.754E-02	1.023E-01	NOT IDENT.
BK-247	1.640E-02	6.965E-02	7.004E-02	NOT IDENT.
CM-247	1.891E-02	3.612E-02	3.712E-02	NOT IDENT.
CF-249	4.479E-02	3.730E-02	4.241E-02	NOT IDENT.
CF-251	7.996E-02	1.145E-01	1.200E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	43.8354	87.09	136.4134	136.47	78.0933
45.60	91.2111	87.57	136.4821	140.51	0.0000
46.54	92.9732	88.03	136.5484	143.76	74.0322
49.72	0.0000	88.34	82.4707	144.24	82.1883
51.35	92.4033	88.47	82.4819	145.44	95.8253
51.87	88.7731	89.96	82.6099	152.43	64.0735
52.39	91.3065	1093.63	83.9597	153.25	0.0000
52.97	95.0859	91.11	0.0000	323.87	87.3652
53.44	90.2060	92.59	84.1273	156.02	0.0000
54.07	76.6810	93.35	84.1922	158.56	0.0000
57.36	0.0000	94.56	84.2949	159.00	84.9359
57.53	83.2581	94.65	84.3028	162.33	71.4095
57.98	88.2817	94.67	84.3043	162.66	0.0000
59.27	85.9423	94.87	84.3212	163.33	84.2875
59.32	85.9478	97.43	72.8314	165.86	71.5912
59.54	85.9728	98.43	68.9972	176.31	69.3436
60.96	74.8979	98.44	68.9980	176.60	0.0000
61.17	83.2428	99.53	72.9813	177.52	68.4762
62.93	88.8544	100.11	78.2382	181.07	0.0000
63.29	101.8330	102.03	67.9322	181.52	86.2916
63.58	101.8704	103.18	81.9574	184.41	65.5423
64.28	101.9606	103.37	81.9722	143.76	71.6478
66.73	100.5957	105.21	76.8738	193.51	73.8857
67.24	98.1427	105.31	76.8809	197.03	96.5510
125.81	100.7135	106.12	69.9451	198.01	76.9142
67.75	100.7220	106.47	71.7171	201.83	84.6231
69.67	94.6472	109.28	80.6731	203.43	63.0613
70.83	102.3605	111.00	82.5569	205.31	72.0876
72.81	107.2447	111.76	0.0000	210.85	73.7542
72.87	107.2525	114.06	79.2632	215.65	76.8159
74.66	107.4760	116.30	0.0000	222.11	65.6898
74.82	107.4954	116.74	78.5703	227.09	64.9287
74.97	107.5141	119.76	83.2048	227.38	65.8948
77.11	107.7770	121.12	84.1890	228.16	0.0000
78.74	109.6757	121.22	83.3100	228.18	64.0148
79.69	112.3452	121.78	84.2373	116.74	64.0148
80.12	109.8443	122.06	85.1445	235.69	82.0462
80.19	0.0000	122.92	85.2075	235.96	71.9818
80.57	108.6209	123.07	88.7690	238.63	59.5958
81.00	108.6728	265.00	73.7167	238.98	0.0000
81.07	121.4672	125.81	92.5356	240.99	59.6753
81.75	125.3965	127.23	95.3186	242.00	59.7093
83.79	107.7211	127.91	90.9166	244.70	44.8501
84.00	107.7455	129.30	82.0982	252.40	0.0000
85.43	107.9108	131.20	98.3156	252.80	56.1934
86.55	124.7601	133.02	69.8195	254.15	0.0000
86.79	136.3697	133.52	75.2209	256.23	39.3118
86.94	136.3915	136.00	85.2424	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	48.7539	355.39	0.0000	584.27	17.7370
264.80	47.7828	356.01	29.0410	595.83	0.0000
265.00	43.3016	364.49	0.0000	427.87	22.2843
268.22	42.4964	366.42	0.0000	602.52	0.0000
269.46	49.8555	372.51	25.6571	604.72	31.7958
270.03	49.8701	375.05	33.9037	607.14	26.7949
271.23	49.9022	377.52	28.7970	609.32	20.1094
273.65	0.0000	356.01	36.0923	610.33	20.1160
276.40	54.4510	388.16	25.8265	614.28	30.2102
277.37	49.4720	388.63	0.0000	618.01	19.0427
277.60	49.4782	391.69	38.2789	620.36	20.1775
278.00	51.0595	264.66	46.7267	621.93	22.4300
279.20	62.8815	401.81	45.1904	630.19	0.0000
279.54	69.7707	402.40	26.4971	631.29	22.4927
279.70	69.7765	404.85	29.1239	633.25	20.2559
280.46	62.9219	410.95	34.4086	634.78	0.0000
283.69	46.2848	413.71	31.3153	635.95	28.1555
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	54.2100	423.72	0.0000	645.85	15.8132
285.90	0.0000	427.09	39.8748	657.76	22.1025
287.50	50.3214	427.87	28.3409	657.90	0.0000
290.67	50.4013	433.94	37.8765	661.66	36.3112
293.27	0.0000	439.40	30.3650	664.57	0.0000
351.93	53.4869	453.88	24.1707	666.33	0.0000
295.96	53.5067	463.37	31.9159	666.50	0.0000
879.38	35.7173	468.07	33.5694	667.71	0.0000
299.98	29.7852	473.00	0.0000	677.62	21.6587
300.09	29.7864	475.06	25.6421	685.70	0.0000
300.13	29.7870	476.78	34.2109	695.00	0.0000
301.36	50.6690	477.60	29.9431	696.49	16.0445
302.85	54.6822	482.18	33.2062	696.51	18.3366
256.23	30.8461	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	17.1942
306.78	42.8338	497.08	25.8447	697.49	17.1954
308.46	35.8901	505.52	19.4407	702.65	20.6638
311.90	40.9424	507.63	0.0000	706.68	26.4328
316.51	41.0325	511.00	19.4777	711.68	18.4134
319.41	0.0000	514.00	14.6234	720.70	0.0000
320.08	0.0000	514.00	14.6234	721.93	0.0000
321.04	44.1289	520.40	28.2249	722.78	24.2411
323.87	36.1531	520.69	0.0000	722.91	24.2419
325.23	43.2108	522.65	0.0000	723.31	22.5135
328.76	0.0000	527.90	0.0000	724.19	22.5183
333.37	36.3127	528.26	21.7700	727.33	17.3370
333.97	28.7551	529.59	26.1357	733.00	17.3633
334.37	40.8708	529.87	0.0000	735.93	18.5352
338.28	50.5473	531.02	0.0000	333.97	18.5430
338.32	50.5483	537.26	0.0000	739.50	0.0000
311.90	51.6101	546.56	0.0000	747.24	16.2678
340.48	51.6101	552.55	15.3621	748.06	18.5957
340.55	0.0000	563.25	26.4268	752.31	10.4718
344.28	46.6298	569.33	27.5818	753.82	0.0000
345.93	45.6500	946.00	27.5838	756.73	13.9785
351.06	44.7376	569.70	27.5859	756.80	13.9790
351.93	44.7546	583.19	17.7305	884.68	12.2547

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	24.5214	1274.44	7.4001	1620.50	3.1053
766.42	28.0283	1001.03	11.6411	1621.92	1.0353
766.84	27.1553	1002.74	12.0423	1678.03	0.0000
772.60	0.0000	1004.73	13.9009	1690.97	7.3226
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	2.1146
778.90	19.3326	1028.54	0.0000	1063.66	5.6436
783.70	0.0000	1037.84	9.3329	1771.35	4.2332
785.37	14.9637	1038.76	0.0000	1791.20	0.0000
792.07	11.2859	631.29	13.0900	1808.65	5.3195
794.95	12.3530	1048.07	0.0000	1810.72	0.0000
795.86	8.4727	1049.04	8.4194	1836.06	3.2040
810.06	11.5146	1050.41	11.2288		
810.29	11.5154	1063.66	17.8287		
344.28	13.2875	1077.00	0.0000		
810.76	13.2884	1077.34	12.2327		
815.77	0.0000	1085.87	12.2542		
1048.07	0.0000	1093.63	1.8882		
832.01	11.5777	1099.45	4.5372		
834.85	15.1505	1112.07	15.1621		
835.71	16.9364	1112.84	15.1641		
836.80	0.0000	1115.54	15.1729		
846.75	0.0000	1120.29	17.0848		
846.77	14.3013	1120.55	17.0859		
856.80	0.0000	1221.41	17.0892		
860.56	17.9364	1129.67	17.1167		
871.09	15.4128	1131.51	0.0000		
873.19	12.5935	1147.95	0.0000		
875.33	0.0000	1173.23	7.6729		
879.38	15.3144	1177.95	16.8953		
880.51	11.7142	1189.05	7.6958		
883.24	10.3048	1204.77	13.5087		
884.68	15.8748	1221.41	13.5505		
889.28	16.2532	1231.02	12.6057		
894.76	23.1453	1235.36	0.0000		
898.04	11.7626	1238.28	6.2141		
900.72	19.0127	1260.41	0.0000		
903.28	17.2124	1271.87	15.6309		
911.20	8.1683	1274.44	7.8193		
912.08	8.1700	1274.54	7.8193		
923.98	0.0000	1291.59	8.8242		
926.50	10.9292	1298.22	0.0000		
929.11	12.7584	1312.11	0.0000		
937.49	21.9133	1332.49	6.9133		
944.13	0.0000	1362.66	0.0000		
946.00	7.3186	1365.19	8.9390		
949.00	10.9852	1368.63	0.0000		
667.71	0.0000	1384.29	3.9861		
962.31	22.0356	1408.01	6.0029		
964.08	16.1659	1457.56	0.0000		
966.17	23.5250	1460.82	2.0187		
911.20	22.9881	1489.16	4.0562		
968.97	22.9881	1505.03	11.1826		
983.53	0.0000	1584.12	8.2349		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:17:28.73

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29407                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235017.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM16.CNF;440
Background date    : 2-OCT-2016 11:00:50.
Sample date       : 2-DEC-2015 10:02:00. Acquisition date : 3-OCT-2016 08:16:00.
Sample ID        : G405235017 Sample quantity : 1.48561E+02 GRAM
Detector name    : GAM16 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.55 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596247 Detector SN# :
Matrix Spike ID  : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	43.60	27	145	0.86	87.27	84	7	7.36E-03	78.4	
2	3	70.29	31	189	1.22	140.62	137	28	8.56E-03	71.5	2.06E+00
3	3	74.95	142	189	1.32	149.93	137	28	3.95E-02	19.5	
4	3	77.16	234	170	1.32	154.35	137	28	6.49E-02	12.7	
5	3	81.32	43	71	1.34	162.66	137	28	1.18E-02	33.8	
6	1	87.09	78	205	1.12	174.19	170	22	2.18E-02	31.6	2.52E+00
7	1	90.10	40	194	1.12	180.20	170	22	1.10E-02	59.7	
8	1	92.57*	75	183	1.13	185.16	170	22	2.09E-02	34.8	
9	0	115.21	31	183	1.66	230.41	225	9	8.50E-03	82.3	
10	0	144.07*	29	133	1.56	288.09	285	7	8.01E-03	70.3	
11	0	154.89	28	180	1.75	309.72	305	9	7.66E-03	90.1	
12	0	186.01*	91	207	1.19	371.93	367	10	2.51E-02	32.3	
13	0	209.13	44	129	1.18	418.16	415	7	1.21E-02	46.1	
14	0	228.05	26	123	1.48	455.98	453	8	7.16E-03	77.0	
15	6	238.69*	468	91	1.11	477.25	472	19	1.30E-01	5.9	1.15E+00
16	6	241.61	154	150	2.23	483.08	472	19	4.27E-02	23.7	
17	0	270.50	32	155	1.06	540.83	536	10	8.89E-03	74.9	
18	0	295.27*	173	117	1.10	590.35	585	12	4.81E-02	14.7	
19	0	300.49	54	113	3.35	600.78	596	11	1.49E-02	40.8	
20	0	328.07	47	89	1.60	655.93	652	9	1.32E-02	38.8	
21	0	338.67	88	118	1.00	677.11	671	10	2.44E-02	25.6	
22	0	351.96*	277	133	1.25	703.68	698	13	7.68E-02	10.6	
23	0	467.98	99	201	9.84	935.63	921	26	2.76E-02	40.4	
24	0	511.26*	14	104	1.12	1022.15	1016	13	3.87E-03	167.9	
25	1	546.79	22	12	1.71	1093.19	1090	16	6.23E-03	33.0	2.19E+00
26	1	551.54	17	21	1.72	1102.69	1090	16	4.85E-03	46.5	
27	0	562.64	30	30	1.29	1124.88	1119	12	8.33E-03	40.8	
28	0	583.38*	139	68	1.74	1166.34	1161	15	3.85E-02	15.6	
29	0	609.48*	238	38	1.32	1218.54	1213	13	6.60E-02	8.5	
30	0	616.03	24	37	3.46	1231.63	1226	12	6.72E-03	53.8	
31	0	646.12	28	13	1.47	1291.80	1286	11	7.79E-03	31.7	
32	0	661.74	1437	68	1.64	1323.02	1316	16	3.99E-01	2.9	
33	0	685.39	17	23	4.96	1370.30	1363	15	4.80E-03	64.6	
34	0	728.12*	45	25	1.21	1455.74	1449	14	1.25E-02	28.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	1	742.92	18	22	1.88	1485.34	1478	19	4.90E-03	60.0	4.56E+00
36	1	745.25	23	24	1.71	1490.00	1478	19	6.48E-03	42.3	
37	0	768.89	15	32	1.42	1537.26	1533	11	4.28E-03	74.1	
38	0	782.30	8	10	1.50	1564.08	1560	7	2.28E-03	73.4	
39	0	785.92	14	14	0.68	1571.31	1567	9	3.93E-03	54.0	
40	0	911.42*	75	33	1.34	1822.26	1816	14	2.08E-02	20.7	
41	0	969.24*	63	13	1.42	1937.87	1932	12	1.75E-02	17.8	
42	0	1002.46	13	20	0.66	2004.30	1996	17	3.49E-03	88.4	
43	0	1008.37	17	6	2.90	2016.12	2012	9	4.62E-03	37.2	
44	0	1072.24	12	8	2.30	2143.83	2139	8	3.39E-03	49.2	
45	0	1110.46	10	17	1.09	2220.28	2209	14	2.67E-03	97.7	
46	0	1120.27	50	5	1.62	2239.89	2235	10	1.40E-02	16.3	
47	0	1221.91	13	9	2.28	2443.16	2438	9	3.47E-03	51.4	
48	0	1411.82	10	7	3.55	2822.96	2816	11	2.69E-03	65.1	
49	0	1460.83*	424	7	2.42	2920.98	2914	14	1.18E-01	5.1	
50	0	1588.32	9	2	1.11	3175.98	3172	8	2.56E-03	42.0	
51	0	1593.67*	3	0	0.73	3186.67	3183	8	7.84E-04	99.9	
52	0	1764.55	26	9	1.64	3528.46	3522	12	7.24E-03	30.2	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235017.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 2-DEC-2015 10:02:00 Acquisition date : 3-OCT-2016 08:16:00
Sample ID : G405235017 Sample quantity : 148.56 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA16 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.55 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
U-235	143.76	CE-141	145.44
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.215E+00	1.595E+01	1.595E+01	10.13	OK
CD-109	88.03	3.70*	5.400E+00	1.377E+00	2.181E+00	116.66	OK
SN-126	64.28	9.60	3.017E+00	----- Line	Not Found	-----	Absent
	86.94	8.90	5.400E+00	5.725E-01	5.725E-01	116.66	OK
	87.57	37.00*	5.400E+00	1.377E-01	1.377E-01	116.66	OK
BA-137M	661.66	89.90*	2.305E+00	3.661E+00	3.733E+00	5.89	OK
CS-137	661.66	85.10*	2.305E+00	3.868E+00	3.943E+00	5.89	OK
CE-141	145.44	48.29*	6.768E+00	1.517E-02	1.032E+01	517.35	OK
TL-208	277.37	6.60	4.683E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.549E+00	3.420E-01	3.420E-01	31.12	OK
	860.56	12.50	1.874E+00	----- Line	Not Found	-----	Absent
BI-212	727.33	6.67*	2.137E+00	1.646E+00	1.646E+00	56.05	OK
	785.37	1.10	2.013E+00	3.316E+00	3.316E+00	108.05	OK
	1620.50	1.47	1.107E+00	----- Line	Not Found	-----	Absent
PB-212	74.82	10.28	4.288E+00	1.388E+00	1.388E+00	59.83	OK
	77.11	17.10	4.519E+00	1.931E+00	1.931E+00	25.39	OK
	238.63	43.60*	5.251E+00	1.186E+00	1.186E+00	11.79	OK
	300.09	3.30	4.392E+00	2.101E+00	2.101E+00	81.58	OK
BI-214	609.32	45.49*	2.461E+00	1.129E+00	1.130E+00	17.06	OK
	1120.29	14.92	1.519E+00	1.112E+00	1.113E+00	32.64	OK
	1764.49	15.30	1.023E+00	7.948E-01	7.951E-01	60.44	OK
PB-214	74.82	5.80	4.274E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	4.519E+00	3.404E+00	3.406E+00	25.39	OK
	87.09	3.41	5.400E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	5.198E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.455E+00	1.203E+00	1.203E+00	29.37	OK
	351.93	35.60*	3.858E+00	1.129E+00	1.129E+00	21.10	OK
RN-222	609.32	45.49*	2.461E+00	1.129E+00	1.130E+00	17.06	OK
	1120.29	14.92	1.519E+00	1.112E+00	1.113E+00	32.64	OK
	1764.49	15.30	1.023E+00	7.948E-01	7.951E-01	60.44	OK
RA-224	240.99	4.10*	5.204E+00	2.048E+00	2.048E+00	101.21	OK
RA-226	609.32	45.49*	2.461E+00	1.129E+00	1.130E+00	17.06	OK
	1120.29	14.92	1.519E+00	1.112E+00	1.113E+00	32.64	OK
	1764.49	15.30	1.023E+00	7.948E-01	7.951E-01	60.44	OK
AC-228	105.21	1.10	6.393E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.983E+00	1.100E+00	1.100E+00	51.24	OK
	794.95	4.25	1.995E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.918E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.791E+00	8.287E-01	8.287E-01	41.38	OK
	968.97	15.80	1.706E+00	1.188E+00	1.188E+00	35.66	OK
RA-228	105.21	1.10	6.393E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.983E+00	1.100E+00	1.100E+00	51.24	OK
	794.95	4.25	1.995E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.918E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.791E+00	8.287E-01	8.287E-01	41.38	OK
	968.97	15.80	1.706E+00	1.188E+00	1.188E+00	35.66	OK
TH-228	74.82	10.28	4.288E+00	1.388E+00	1.388E+00	59.83	OK
	77.11	17.10	4.519E+00	1.931E+00	1.931E+00	25.39	OK
	238.63	43.60*	5.251E+00	1.186E+00	1.186E+00	11.79	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	300.09	3.30	4.392E+00	2.101E+00	2.101E+00	81.58	OK
	609.32	45.49*	2.461E+00	1.129E+00	1.129E+00	17.06	OK
	1120.29	14.92	1.519E+00	1.112E+00	1.112E+00	32.64	OK
	1764.49	15.30	1.023E+00	7.948E-01	7.948E-01	60.44	OK
PA-231	283.69	1.70	4.600E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	4.392E+00	1.296E+00	1.296E+00	81.58	OK
TH-232	105.21	1.10	6.393E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.983E+00	1.100E+00	1.100E+00	51.24	OK
	835.71	1.61	1.918E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.791E+00	8.287E-01	8.287E-01	41.38	OK
	968.97	15.80	1.706E+00	1.188E+00	1.188E+00	35.66	OK
U-234	609.32	45.49*	2.461E+00	1.129E+00	1.129E+00	17.06	OK
	1120.29	14.92	1.519E+00	1.112E+00	1.112E+00	32.64	OK
	1764.49	15.30	1.023E+00	7.948E-01	7.948E-01	60.44	OK
U-235	89.96	3.47	5.617E+00	1.286E+00	1.286E+00	119.50	OK
	93.35	5.60	5.779E+00	1.461E+00	1.461E+00	69.70	OK
	143.76	10.96*	6.770E+00	----- Line	Not Found	-----	<<INT Reject
	163.33	5.08	6.541E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	6.164E+00	1.524E-01	1.524E-01	64.51	OK
	205.31	5.01	5.819E+00	----- Line	Not Found	-----	Absent
AM-243	43.53	5.90	4.061E-01	7.398E+00	7.398E+00	156.85	OK
	74.66	67.20*	4.288E+00	2.124E-01	2.124E-01	59.83	OK
ANH-511	511.00	100.00*	2.836E+00	2.662E-02	2.662E-02	335.79	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235017.CNF;1
* Acquisition date   : 3-OCT-2016 08:16:00 Sensitivity      : 3.000
* Detector ID        : GAM16 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit: 75.000
* Elapsed real time  : 0 01:00:00.55 Half life ratio : *****
* Sample date        : 2-DEC-2015 10:02:00 Analyst initials: MXR1
* Sample ID          : G405235017 Sample Quantity : 1.4856E+02 GRAM
* Batch Number       : 1596247 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 23-SEP-2016 08:25:42 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM16 CAN.CNF;14
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.595E+01	1.583E+00	7.018E-01
CD-109	2.181E+00	2.493E+00	2.282E+00
SN-126	1.377E-01	1.575E-01	1.450E-01
BA-137M	3.733E+00	2.155E-01	6.780E-02
CS-137	3.943E+00	2.277E-01	7.163E-02
CE-141	1.032E+01	5.234E+01	5.673E+01
TL-208	3.420E-01	1.043E-01	7.041E-02
BI-212	1.646E+00	9.043E-01	8.373E-01
PB-212	1.186E+00	1.370E-01	9.442E-02
BI-214	1.130E+00	1.889E-01	1.319E-01
PB-214	1.129E+00	2.336E-01	1.450E-01
RN-222	1.130E+00	1.889E-01	1.319E-01
RA-224	2.048E+00	2.032E+00	1.012E+00
RA-226	1.130E+00	1.889E-01	1.319E-01
AC-228	8.287E-01	3.361E-01	2.509E-01
RA-228	8.287E-01	3.361E-01	2.509E-01
TH-228	1.186E+00	1.370E-01	9.442E-02
TH-230	1.129E+00	1.889E-01	1.318E-01
PA-231	1.296E+00	1.036E+00	9.476E-01
TH-232	8.287E-01	3.361E-01	2.509E-01
U-234	1.129E+00	1.888E-01	1.318E-01
U-235	2.358E-01	3.250E-01	3.932E-01
AM-243	2.124E-01	1.245E-01	9.680E-02
ANH-511	2.662E-02	8.759E-02	6.092E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.574E+01	1.907E+01	3.305E+01	NOT IDENT.
NA-22	1.795E-02	4.081E-02	8.794E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	-1.312E-02	2.477E-02	4.715E-02	NOT IDENT.
SC-46	-1.637E-01	3.600E-01	6.771E-01	FAIL ABUN
V-48	0.000E+00	1.669E+04	0.000E+00	SHORT HLIF

CR-51	0.000E+00	5.920E+02	0.000E+00	SHORT HLIF
MN-54	8.642E-03	5.258E-02	1.096E-01	NOT IDENT.
CO-56	-1.079E-01	4.273E-01	8.351E-01	NOT IDENT.
MN-56	0.000E+00	1.747E+41	0.000E+00	SHORT HLIF
CO-57	-3.425E-02	5.374E-02	9.531E-02	NOT IDENT.
CO-58	6.255E-02	5.612E-01	1.152E+00	NOT IDENT.
FE-59	2.294E-01	5.868E+00	1.202E+01	NOT IDENT.
CO-60	-1.098E-02	4.174E-02	7.797E-02	NOT IDENT.
ZN-65	3.965E-02	2.081E-01	3.690E-01	NOT IDENT.
GE-68	-3.464E-01	2.284E+00	4.278E+00	NOT IDENT.
AS-73	-5.475E+00	1.185E+01	2.252E+01	NOT IDENT.
AS-74	0.000E+00	8.525E+03	0.000E+00	SHORT HLIF
SE-75	5.271E-02	2.377E-01	4.707E-01	NOT IDENT.
BR-77	0.000E+00	1.459E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	8.459E+02	0.000E+00	SHORT HLIF
RB-83	8.200E-02	7.940E-01	1.515E+00	FAIL ABUN
KR-85	3.266E+00	9.035E+00	1.583E+01	NOT IDENT.
SR-85	3.647E-01	1.018E+00	1.782E+00	NOT IDENT.
RB-86	0.000E+00	3.267E+04	0.000E+00	SHORT HLIF
Y-88	2.707E-01	2.425E-01	6.305E-01	NOT IDENT.
Y-91	1.368E+02	6.350E+02	1.253E+03	NOT IDENT.
NB-94	1.327E-04	3.108E-02	5.836E-02	NOT IDENT.
NB-95	-7.649E-01	1.133E+00	1.614E+00	NOT IDENT.
NB-95M	-1.446E+00	3.106E+00	4.802E+00	NOT IDENT.
ZR-95	2.686E-01	1.355E+00	2.674E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	8.862E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-1.537E-02	3.813E-02	6.854E-02	NOT IDENT.
RH-102	3.642E-02	6.305E-02	1.274E-01	NOT IDENT.
RU-103	-1.921E+00	7.841E+00	1.440E+01	FAIL ABUN
RH-106	2.697E-01	5.389E-01	1.043E+00	NOT IDENT.
RU-106	2.697E-01	5.389E-01	1.043E+00	NOT IDENT.
AG-108M	-2.261E-02	3.506E-02	6.250E-02	NOT IDENT.
AG-110M	-2.589E-03	9.860E-02	1.967E-01	NOT IDENT.
SN-113	3.590E-02	3.082E-01	5.891E-01	NOT IDENT.
CD-115	0.000E+00	2.519E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.593E+05	0.000E+00	SHORT HLIF
TE-123M	1.244E-01	1.465E-01	2.843E-01	NOT IDENT.
SB-124	-4.188E-01	1.241E+00	2.495E+00	FAIL ABUN
SB-125	1.903E-02	1.310E-01	2.506E-01	NOT IDENT.
TE-125M	1.116E+02	3.124E+02	6.008E+02	NOT IDENT.
I-126	0.000E+00	1.154E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.556E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.164E+23	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.013E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.866E+27	0.000E+00	SHORT HLIF
BA-133	1.839E-02	4.905E-02	8.840E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	3.845E-02	5.577E-02	1.123E-01	FAIL ABUN
CS-135	-3.516E-02	1.742E-01	2.998E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.870E+05	0.000E+00	SHORT HLIF
CE-139	-8.036E-02	1.274E-01	2.203E-01	NOT IDENT.
BA-140	0.000E+00	1.994E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	2.766E+05	0.000E+00	SHORT HLIF
CE-143	0.000E+00	9.806E+40	0.000E+00	SHORT HLIF
CE-144	2.124E-02	4.147E-01	7.664E-01	FAIL ABUN
PM-144	5.082E-02	6.697E-02	1.341E-01	NOT IDENT.
PR-144	4.357E+00	5.828E+00	1.166E+01	NOT IDENT.
PM-146	-1.414E-02	6.025E-02	1.107E-01	NOT IDENT.
ND-147	0.000E+00	5.686E+07	0.000E+00	SHORT HLIF
PM-147	-5.660E+01	9.040E+02	1.675E+03	NOT IDENT.
PM-149	0.000E+00	1.497E+41	0.000E+00	SHORT HLIF
EU-150	-5.178E-03	3.255E-02	5.530E-02	FAIL ABUN
EU-152	4.729E-02	1.016E-01	2.032E-01	NOT IDENT.
GD-153	4.509E-03	2.296E-01	3.994E-01	FAIL ABUN
EU-154	4.386E-02	9.974E-02	2.149E-01	NOT IDENT.
EU-155	8.891E-02	1.167E-01	2.305E-01	FAIL ABUN
TB-160	-3.736E-01	1.738E+00	3.409E+00	FAIL ABUN
HO-166M	-5.948E-02	5.689E-02	8.902E-02	FAIL ABUN
TM-171	1.293E+01	2.676E+01	5.419E+01	NOT IDENT.
HF-172	-5.917E-02	2.532E-01	4.616E-01	FAIL ABUN
LU-172	3.339E-02	7.741E-02	1.616E-01	FAIL ABUN
LU-176	1.956E-03	2.670E-02	5.202E-02	FAIL ABUN
HF-181	7.667E+00	6.760E+00	1.374E+01	NOT IDENT.

TA-182	1.036E+00	1.043E+00	2.021E+00	FAIL ABUN
RE-183	-1.266E+00	3.408E+00	6.517E+00	NOT IDENT.
RE-184	2.583E+01	3.559E+01	7.658E+01	NOT IDENT.
W-188	2.142E+01	1.307E+02	2.337E+02	FAIL ABUN
IR-192	-2.060E-02	5.417E-01	1.045E+00	FAIL ABUN
HG-203	-1.178E-02	2.862E+00	5.563E+00	FAIL ABUN
BI-207	-4.538E-02	4.581E-02	7.574E-02	FAIL ABUN
PB-210	-3.189E+00	4.672E+00	8.184E+00	NOT IDENT.
BI-211	0.000E+00	6.434E-01	8.492E-01	FAIL ABUN
PB-211	1.331E-01	8.190E-01	1.573E+00	NOT IDENT.
RN-219	2.806E-01	4.653E-01	9.251E-01	FAIL ABUN
RA-223	-1.701E-01	7.430E-01	1.258E+00	FAIL ABUN
AC-227	1.004E-01	2.473E-01	4.962E-01	FAIL ABUN
TH-227	1.004E-01	2.473E-01	4.962E-01	FAIL ABUN
TH-229	-3.999E-01	5.417E-01	9.153E-01	FAIL ABUN
TH-231	-1.701E-01	7.430E-01	1.258E+00	FAIL ABUN
PA-233	-3.135E-02	6.316E-02	1.178E-01	FAIL ABUN
PA-234	-5.330E-02	2.582E-01	5.009E-01	NOT IDENT.
PA-234M	4.560E+00	7.901E+00	8.386E+00	FAIL ABUN
TH-234	-2.226E-01	1.357E+00	2.661E+00	FAIL ABUN
NP-237	-3.135E-02	6.316E-02	1.178E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
U-238	-2.226E-01	1.357E+00	2.661E+00	FAIL ABUN
NP-239	-1.084E-02	2.685E-01	4.624E-01	FAIL ABUN
PU-239	1.448E+02	3.547E+02	6.714E+02	NOT IDENT.
AM-241	-9.017E-02	1.586E-01	2.978E-01	NOT IDENT.
CM-243	-9.716E-02	1.023E-01	1.792E-01	FAIL ABUN
BK-247	2.001E-02	7.981E-02	1.583E-01	NOT IDENT.
CM-247	2.693E-04	4.349E-02	8.246E-02	NOT IDENT.
CF-249	-9.102E-03	4.912E-02	9.167E-02	NOT IDENT.
CF-251	4.402E-02	1.299E-01	2.407E-01	FAIL ABUN

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	409	10.66*	1.215E+00	1.595E+01	1.595E+01	10.13
CD-109	88.03	98	3.70*	5.400E+00	2.486E+00	3.936E+00	63.30
SN-126	64.28	-----	9.60	3.017E+00	-----	Line Not Found	-----
	86.94	98	8.90	5.400E+00	1.033E+00	1.033E+00	63.30
	87.57	98	37.00*	5.400E+00	2.486E-01	2.486E-01	63.30
BA-137M	661.66	1501	89.90*	2.305E+00	3.661E+00	3.733E+00	5.89
CS-137	661.66	1501	85.10*	2.305E+00	3.868E+00	3.943E+00	5.89
CE-141	145.44	35	48.29*	6.768E+00	5.351E-02	3.643E+01	140.66
TL-208	277.37	-----	6.60	4.683E+00	-----	Line Not Found	-----
	583.19	147	85.00*	2.549E+00	3.420E-01	3.420E-01	31.12
	860.56	-----	12.50	1.874E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	4.060E+00	-----	Line Not Found	-----
	351.06	307	12.92*	3.858E+00	3.111E+00	3.111E+00	21.10
BI-212	727.33	46	6.67*	2.137E+00	1.646E+00	1.646E+00	56.05
	785.37	15	1.10	2.013E+00	3.316E+00	3.316E+00	108.05
	1620.50	-----	1.47	1.107E+00	-----	Line Not Found	-----
PB-212	74.82	180	10.28	4.288E+00	2.067E+00	2.067E+00	39.02
	77.11	295	17.10	4.519E+00	1.931E+00	1.931E+00	25.39
	238.63	537	43.60*	5.251E+00	1.186E+00	1.186E+00	11.79
	300.09	60	3.30	4.392E+00	2.101E+00	2.101E+00	81.58
BI-214	609.32	250	45.49*	2.461E+00	1.129E+00	1.130E+00	17.06
	1120.29	50	14.92	1.519E+00	1.112E+00	1.113E+00	32.64
	1764.49	25	15.30	1.023E+00	7.948E-01	7.951E-01	60.44
PB-214	74.82	180	5.80	4.288E+00	3.663E+00	3.665E+00	39.02
	77.11	295	9.70	4.519E+00	3.404E+00	3.406E+00	25.39
	87.09	98	3.41	5.400E+00	2.697E+00	2.698E+00	63.30
	242.00	176	7.25	5.204E+00	2.361E+00	2.362E+00	47.35
	295.22	195	18.42	4.455E+00	1.203E+00	1.203E+00	29.37
	351.93	307	35.60*	3.858E+00	1.129E+00	1.129E+00	21.10
RN-222	609.32	250	45.49*	2.461E+00	1.129E+00	1.130E+00	17.06
	1120.29	50	14.92	1.519E+00	1.112E+00	1.113E+00	32.64
	1764.49	25	15.30	1.023E+00	7.948E-01	7.951E-01	60.44
RA-224	240.99	176	4.10*	5.204E+00	4.175E+00	4.175E+00	47.35
RA-226	609.32	250	45.49*	2.461E+00	1.129E+00	1.130E+00	17.06
	1120.29	50	14.92	1.519E+00	1.112E+00	1.113E+00	32.64
	1764.49	25	15.30	1.023E+00	7.948E-01	7.951E-01	60.44
AC-228	105.21	-----	1.10	6.393E+00	-----	Line Not Found	-----
	338.32	98	11.27	3.983E+00	1.100E+00	1.100E+00	51.24
	794.95	-----	4.25	1.995E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.918E+00	-----	Line Not Found	-----
	911.20	76	25.80*	1.791E+00	8.287E-01	8.287E-01	41.38
	968.97	63	15.80	1.706E+00	1.188E+00	1.188E+00	35.66
RA-228	105.21	-----	1.10	6.393E+00	-----	Line Not Found	-----
	338.32	98	11.27	3.983E+00	1.100E+00	1.100E+00	51.24
	794.95	-----	4.25	1.995E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.918E+00	-----	Line Not Found	-----
	911.20	76	25.80*	1.791E+00	8.287E-01	8.287E-01	41.38

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	968.97	63	15.80	1.706E+00	1.188E+00	1.188E+00	35.66
	74.82	180	10.28	4.288E+00	2.067E+00	2.067E+00	39.02
	77.11	295	17.10	4.519E+00	1.931E+00	1.931E+00	25.39
	238.63	537	43.60*	5.251E+00	1.186E+00	1.186E+00	11.79
TH-230	300.09	60	3.30	4.392E+00	2.101E+00	2.101E+00	81.58
	609.32	250	45.49*	2.461E+00	1.129E+00	1.129E+00	17.06
	1120.29	50	14.92	1.519E+00	1.112E+00	1.112E+00	32.64
	1764.49	25	15.30	1.023E+00	7.948E-01	7.948E-01	60.44
PA-231	283.69	-----	1.70	4.600E+00	-----	Line Not Found	-----
	301.36	60	5.35*	4.392E+00	1.296E+00	1.296E+00	81.58
TH-232	105.21	-----	1.10	6.393E+00	-----	Line Not Found	-----
	338.32	98	11.27	3.983E+00	1.100E+00	1.100E+00	51.24
	835.71	-----	1.61	1.918E+00	-----	Line Not Found	-----
	911.20	76	25.80*	1.791E+00	8.287E-01	8.287E-01	41.38
U-234	968.97	63	15.80	1.706E+00	1.188E+00	1.188E+00	35.66
	609.32	250	45.49*	2.461E+00	1.129E+00	1.129E+00	17.06
	1120.29	50	14.92	1.519E+00	1.112E+00	1.112E+00	32.64
	1764.49	25	15.30	1.023E+00	7.948E-01	7.948E-01	60.44
U-235	89.96	50	3.47	5.617E+00	1.286E+00	1.286E+00	119.50
	93.35	94	5.60	5.779E+00	1.461E+00	1.461E+00	69.70
	143.76	35	10.96*	6.768E+00	2.358E-01	2.358E-01	140.66
	163.33	-----	5.08	6.541E+00	-----	Line Not Found	-----
	185.72	106	57.20	6.164E+00	1.524E-01	1.524E-01	64.51
	205.31	-----	5.01	5.819E+00	-----	Line Not Found	-----
AM-243	43.53	35	5.90	4.061E-01	7.398E+00	7.398E+00	156.85
	74.66	180	67.20*	4.288E+00	3.162E-01	3.162E-01	39.02
ANH-511	511.00	15	100.00*	2.836E+00	2.662E-02	2.662E-02	335.79

Flag: "*" = Keyline

Total number of lines in spectrum 52
Number of unidentified lines 11
Number of lines tentatively identified by NID 41 78.85%

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	1.595E+01	1.595E+01	0.162E+01	10.13	
CD-109	461.40D	1.58	2.486E+00	3.936E+00	2.491E+00	63.30	
SN-126	2.30E+05Y	1.00	2.486E-01	2.486E-01	1.573E-01	63.30	
BA-137M	30.08Y	1.02	3.661E+00	3.733E+00	0.220E+00	5.89	
CS-137	30.08Y	1.02	3.868E+00	3.943E+00	0.232E+00	5.89	
CE-141	32.51D	681.	5.351E-02	3.643E+01	5.124E+01	140.66	
TL-208	1.41E+10Y	1.00	3.420E-01	3.420E-01	1.064E-01	31.12	
BI-211	7.04E+08Y	1.00	3.111E+00	3.111E+00	0.657E+00	21.10	
BI-212	1.41E+10Y	1.00	1.646E+00	1.646E+00	0.923E+00	56.05	
PB-212	1.41E+10Y	1.00	1.186E+00	1.186E+00	0.140E+00	11.79	
BI-214	1600.00Y	1.00	1.129E+00	1.130E+00	0.193E+00	17.06	
PB-214	1600.00Y	1.00	1.129E+00	1.129E+00	0.238E+00	21.10	
RN-222	1600.00Y	1.00	1.129E+00	1.130E+00	0.193E+00	17.06	
RA-224	1.41E+10Y	1.00	4.175E+00	4.175E+00	1.977E+00	47.35	
RA-226	1600.00Y	1.00	1.129E+00	1.130E+00	0.193E+00	17.06	
AC-228	1.41E+10Y	1.00	8.287E-01	8.287E-01	3.430E-01	41.38	
RA-228	1.41E+10Y	1.00	8.287E-01	8.287E-01	3.430E-01	41.38	
TH-228	1.41E+10Y	1.00	1.186E+00	1.186E+00	0.140E+00	11.79	
TH-230	7.54E+04Y	1.00	1.129E+00	1.129E+00	0.193E+00	17.06	
PA-231	7.04E+08Y	1.00	1.296E+00	1.296E+00	1.057E+00	81.58	
TH-232	1.41E+10Y	1.00	8.287E-01	8.287E-01	3.430E-01	41.38	
U-234	2.45E+05Y	1.00	1.129E+00	1.129E+00	0.193E+00	17.06	
U-235	7.04E+08Y	1.00	2.358E-01	2.358E-01	3.317E-01	140.66	
AM-243	7370.00Y	1.00	3.162E-01	3.162E-01	1.234E-01	39.02	
ANH-511	1.00E+09Y	1.00	2.662E-02	2.662E-02	8.938E-02	335.79	
Total Activity :			4.905E+01	8.702E+01			

Grand Total Activity : 4.905E+01 8.702E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	70.29	39	241	1.22	140.62	137	28	8.56E-03	****	3.76E+00	T
3	81.32	54	90	1.34	162.66	137	28	1.18E-02	67.7	4.92E+00	T
0	115.21	37	224	1.66	230.41	225	9	8.50E-03	****	6.66E+00	T
0	154.89	33	215	1.75	309.72	305	9	7.66E-03	****	6.66E+00	T
0	209.13	51	150	1.18	418.16	415	7	1.21E-02	92.3	5.75E+00	
0	228.05	30	142	1.48	455.98	453	8	7.16E-03	****	5.43E+00	T
0	270.50	36	176	1.06	540.83	536	10	8.89E-03	****	4.78E+00	T
0	328.07	53	99	1.60	655.93	652	9	1.32E-02	77.6	4.09E+00	T
0	467.98	107	217	9.84	935.63	921	26	2.76E-02	80.8	3.05E+00	T
1	546.79	24	13	1.71	1093.19	1090	16	6.23E-03	66.0	2.69E+00	T
1	551.54	19	22	1.72	1102.69	1090	16	4.85E-03	92.9	2.67E+00	T
0	562.64	32	32	1.29	1124.88	1119	12	8.33E-03	81.6	2.62E+00	T
0	616.03	25	39	3.46	1231.63	1226	12	6.72E-03	****	2.44E+00	
0	646.12	29	14	1.47	1291.80	1286	11	7.79E-03	63.3	2.35E+00	T
0	685.39	18	24	4.96	1370.30	1363	15	4.80E-03	****	2.24E+00	T
1	742.92	18	23	1.88	1485.34	1478	19	4.90E-03	****	2.10E+00	
1	745.25	24	25	1.71	1490.00	1478	19	6.48E-03	84.5	2.10E+00	
0	768.89	16	33	1.42	1537.26	1533	11	4.28E-03	****	2.05E+00	
0	782.30	8	10	1.50	1564.08	1560	7	2.28E-03	****	2.02E+00	T
0	1002.46	13	20	0.66	2004.30	1996	17	3.49E-03	****	1.66E+00	T
0	1008.37	17	6	2.90	2016.12	2012	9	4.62E-03	74.3	1.65E+00	
0	1072.24	12	8	2.30	2143.83	2139	8	3.39E-03	98.4	1.57E+00	
0	1110.46	10	17	1.09	2220.28	2209	14	2.67E-03	****	1.53E+00	
0	1221.91	12	8	2.28	2443.16	2438	9	3.47E-03	****	1.41E+00	T
0	1411.82	9	7	3.55	2822.96	2816	11	2.69E-03	****	1.25E+00	
0	1588.32	9	2	1.11	3175.98	3172	8	2.56E-03	83.9	1.13E+00	
0	1593.67	3	0	0.73	3186.67	3183	8	7.84E-04	****	1.12E+00	

Flags: "T" = Tentatively associated

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Lc (pCi/GRAM)
K-40	2.979E-01
CD-109	1.084E+00
SN-126	6.885E-02
BA-137M	3.046E-02
CS-137	3.218E-02
CE-141	2.686E+01
TL-208	3.197E-02
BI-212	3.697E-01
PB-212	4.409E-02
BI-214	5.967E-02
PB-214	6.734E-02
RN-222	5.967E-02
RA-224	4.727E-01
RA-226	5.967E-02
AC-228	1.105E-01
RA-228	1.105E-01
TH-228	4.409E-02
TH-230	5.965E-02
PA-231	4.435E-01
TH-232	1.105E-01
U-234	5.965E-02
U-235	1.869E-01
AM-243	4.585E-02
ANH-511	2.798E-02

Nuclide	Lc (pCi/GRAM)	
BE-7	1.532E+01	NOT IDENT.
NA-22	3.766E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.671E-02	NOT IDENT.
SC-46	2.907E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF

MN-54	4.766E-02	NOT IDENT.
CO-56	3.604E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.492E-02	NOT IDENT.
CO-58	5.051E-01	NOT IDENT.
FE-59	5.077E+00	NOT IDENT.
CO-60	3.314E-02	NOT IDENT.
ZN-65	1.631E-01	NOT IDENT.
GE-68	1.839E+00	NOT IDENT.
AS-73	1.062E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	2.207E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.922E-01	FAIL ABUN
KR-85	7.311E+00	NOT IDENT.
SR-85	8.230E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	2.641E-01	NOT IDENT.
Y-91	5.571E+02	NOT IDENT.
NB-94	2.600E-02	NOT IDENT.
NB-95	7.138E-01	NOT IDENT.
NB-95M	2.252E+00	NOT IDENT.
ZR-95	1.167E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.241E-02	NOT IDENT.
RH-102	5.758E-02	NOT IDENT.
RU-103	6.607E+00	FAIL ABUN
RH-106	4.699E-01	NOT IDENT.
RU-106	4.699E-01	NOT IDENT.
AG-108M	2.885E-02	NOT IDENT.
AG-110M	8.616E-02	NOT IDENT.
SN-113	2.751E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.345E-01	NOT IDENT.
SB-124	7.885E-01	FAIL ABUN
SB-125	1.164E-01	NOT IDENT.
TE-125M	2.838E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	4.104E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	5.074E-02	FAIL ABUN
CS-135	1.406E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.037E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-143	0.000E+00	SHORT HLIF
CE-144	3.631E-01	FAIL ABUN
PM-144	6.137E-02	NOT IDENT.
PR-144	5.334E+00	NOT IDENT.
PM-146	5.150E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.905E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.579E-02	FAIL ABUN
EU-152	9.452E-02	NOT IDENT.
GD-153	1.897E-01	FAIL ABUN
EU-154	9.204E-02	NOT IDENT.
EU-155	1.092E-01	FAIL ABUN
TB-160	1.469E+00	FAIL ABUN
HO-166M	3.857E-02	FAIL ABUN
TM-171	2.560E+01	NOT IDENT.
HF-172	2.180E-01	FAIL ABUN
LU-172	7.114E-02	FAIL ABUN
LU-176	2.425E-02	FAIL ABUN
HF-181	6.433E+00	NOT IDENT.
TA-182	8.954E-01	FAIL ABUN

RE-183	3.054E+00	NOT IDENT.
RE-184	3.426E+01	NOT IDENT.
W-188	1.087E+02	FAIL ABUN
IR-192	4.865E-01	FAIL ABUN
HG-203	2.604E+00	FAIL ABUN
BI-207	3.191E-02	FAIL ABUN
PB-210	3.836E+00	NOT IDENT.
BI-211	4.106E-01	FAIL ABUN
PB-211	7.323E-01	NOT IDENT.
RN-219	4.316E-01	FAIL ABUN
RA-223	5.858E-01	FAIL ABUN
AC-227	2.330E-01	FAIL ABUN
TH-227	2.330E-01	FAIL ABUN
TH-229	4.307E-01	FAIL ABUN
TH-231	5.858E-01	FAIL ABUN
PA-233	5.455E-02	FAIL ABUN
PA-234	2.172E-01	NOT IDENT.
PA-234M	3.697E+00	FAIL ABUN
TH-234	1.262E+00	FAIL ABUN
NP-237	5.455E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	1.262E+00	FAIL ABUN
NP-239	2.176E-01	FAIL ABUN
PU-239	3.189E+02	NOT IDENT.
AM-241	1.403E-01	NOT IDENT.
CM-243	8.400E-02	FAIL ABUN
BK-247	7.423E-02	NOT IDENT.
CM-247	3.839E-02	NOT IDENT.
CF-249	4.283E-02	NOT IDENT.
CF-251	1.138E-01	FAIL ABUN

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235017.CNF;1
* Acquisition date   : 3-OCT-2016 08:16:00 Sensitivity      : 3.000
* Detector ID        : GAM16 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.55 Half life ratio : *****
* Sample date        : 2-DEC-2015 10:02:00 Nuclide Library : SOLID
* Sample ID          : G405235017 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.4856E+02 GRAM
*                               Quantity Err(%) : 1.3462E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 23-SEP-2016 08:25:42 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM16 CAN.CNF;14
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.595E+01	1.789E+00	1.789E+00
CD-109	2.181E+00	2.509E+00	2.509E+00
SN-126	1.377E-01	1.583E-01	1.583E-01
BA-137M	3.733E+00	2.689E-01	2.689E-01
CS-137	3.943E+00	2.838E-01	2.838E-01
CE-141	1.033E+01	5.238E+01	5.238E+01
TL-208	3.420E-01	1.053E-01	1.053E-01
BI-212	1.646E+00	9.081E-01	9.081E-01
PB-212	1.186E+00	1.509E-01	1.509E-01
BI-214	1.130E+00	1.951E-01	1.951E-01
PB-214	1.129E+00	2.383E-01	2.383E-01
RN-222	1.130E+00	1.951E-01	1.951E-01
RA-224	2.048E+00	2.040E+00	2.040E+00
RA-226	1.130E+00	1.951E-01	1.951E-01
AC-228	8.287E-01	3.388E-01	3.388E-01
RA-228	8.287E-01	3.388E-01	3.388E-01
TH-228	1.186E+00	1.509E-01	1.509E-01
TH-230	1.129E+00	1.950E-01	1.950E-01
PA-231	1.296E+00	1.073E+00	1.073E+00
TH-232	8.287E-01	3.388E-01	3.388E-01
U-234	1.129E+00	1.950E-01	1.950E-01
U-235	2.358E-01	3.252E-01	3.252E-01
AM-243	2.124E-01	1.259E-01	1.259E-01
ANH-511	2.662E-02	8.760E-02	8.760E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-1.574E+01	1.908E+01	2.036E+01	NOT IDENT.
NA-22	1.795E-02	4.082E-02	4.161E-02	NOT IDENT.
NA-24	1.000E+41	3.054E+41	0.000E+00	SHORT HLIF
AL-26	-1.312E-02	2.478E-02	2.548E-02	NOT IDENT.
SC-46	-1.637E-01	3.601E-01	3.676E-01	FAIL ABUN
V-48	-5.949E+03	1.669E+04	1.691E+04	SHORT HLIF

CR-51	4.574E+02	5.924E+02	6.272E+02	SHORT HLIF
MN-54	8.642E-03	5.258E-02	5.273E-02	NOT IDENT.
CO-56	-1.079E-01	4.273E-01	4.301E-01	NOT IDENT.
MN-56	-1.000E+41	1.748E+41	0.000E+00	SHORT HLIF
CO-57	-3.425E-02	5.377E-02	5.594E-02	NOT IDENT.
CO-58	6.255E-02	5.612E-01	5.619E-01	NOT IDENT.
FE-59	2.294E-01	5.868E+00	5.869E+00	NOT IDENT.
CO-60	-1.098E-02	4.174E-02	4.203E-02	NOT IDENT.
ZN-65	3.965E-02	2.081E-01	2.089E-01	NOT IDENT.
GE-68	-3.464E-01	2.284E+00	2.289E+00	NOT IDENT.
AS-73	-5.475E+00	1.190E+01	1.215E+01	NOT IDENT.
AS-74	8.846E+02	8.526E+03	8.535E+03	SHORT HLIF
SE-75	5.271E-02	2.378E-01	2.389E-01	NOT IDENT.
BR-77	1.263E+39	1.116E+40	0.000E+00	SHORT HLIF
SR-82	-1.850E+02	8.459E+02	8.500E+02	SHORT HLIF
RB-83	8.200E-02	7.941E-01	7.950E-01	FAIL ABUN
KR-85	3.266E+00	9.036E+00	9.155E+00	NOT IDENT.
SR-85	3.647E-01	1.018E+00	1.031E+00	NOT IDENT.
RB-86	2.978E+03	3.267E+04	3.270E+04	SHORT HLIF
Y-88	2.707E-01	2.432E-01	2.721E-01	NOT IDENT.
Y-91	1.368E+02	6.350E+02	6.380E+02	NOT IDENT.
NB-94	1.327E-04	3.108E-02	3.108E-02	NOT IDENT.
NB-95	-7.649E-01	1.133E+00	1.185E+00	NOT IDENT.
NB-95M	-1.446E+00	3.108E+00	3.175E+00	NOT IDENT.
ZR-95	2.686E-01	1.355E+00	1.360E+00	NOT IDENT.
NB-97	-1.000E+41	6.378E+41	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	4.159E+41	0.000E+00	SHORT HLIF
MO-99	-4.977E+32	8.870E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	2.536E+41	0.000E+00	SHORT HLIF
RH-101	-1.537E-02	3.823E-02	3.886E-02	NOT IDENT.
RH-102	3.642E-02	6.312E-02	6.522E-02	NOT IDENT.
RU-103	-1.921E+00	7.842E+00	7.889E+00	FAIL ABUN
RH-106	2.697E-01	5.391E-01	5.527E-01	NOT IDENT.
RU-106	2.697E-01	5.391E-01	5.527E-01	NOT IDENT.
AG-108M	-2.261E-02	3.507E-02	3.652E-02	NOT IDENT.
AG-110M	-2.589E-03	9.860E-02	9.861E-02	NOT IDENT.
SN-113	3.590E-02	3.082E-01	3.086E-01	NOT IDENT.
CD-115	-2.042E+40	2.547E+40	0.000E+00	SHORT HLIF
SN-117M	1.632E+04	1.593E+05	1.595E+05	SHORT HLIF
TE-123M	1.244E-01	1.466E-01	1.570E-01	NOT IDENT.
SB-124	-4.188E-01	1.241E+00	1.255E+00	FAIL ABUN
SB-125	1.903E-02	1.310E-01	1.312E-01	NOT IDENT.
TE-125M	1.116E+02	3.124E+02	3.165E+02	NOT IDENT.
I-126	1.178E+06	1.166E+06	1.281E+06	SHORT HLIF
SB-126	-4.101E+05	1.558E+06	1.569E+06	SHORT HLIF
SB-127	9.203E+22	1.739E+23	0.000E+00	SHORT HLIF
I-131	-4.498E+09	1.013E+10	1.033E+10	SHORT HLIF
I-132	-1.000E+41	1.940E+42	0.000E+00	SHORT HLIF
TE-132	1.900E+27	2.972E+27	0.000E+00	SHORT HLIF
BA-133	1.839E-02	4.906E-02	4.975E-02	FAIL ABUN
I-133	1.000E+41	6.660E+41	0.000E+00	SHORT HLIF
CS-134	3.845E-02	5.579E-02	5.842E-02	FAIL ABUN
CS-135	-3.516E-02	1.742E-01	1.749E-01	NOT IDENT.
I-135	1.000E+41	8.045E+41	0.000E+00	SHORT HLIF
CS-136	1.181E+05	3.872E+05	3.908E+05	SHORT HLIF
CE-139	-8.036E-02	1.284E-01	1.334E-01	NOT IDENT.
BA-140	-9.431E+05	1.995E+06	2.040E+06	SHORT HLIF
LA-140	2.523E+05	2.769E+05	2.993E+05	SHORT HLIF
CE-143	1.000E+41	9.861E+40	0.000E+00	SHORT HLIF
CE-144	2.124E-02	4.147E-01	4.148E-01	FAIL ABUN
PM-144	5.082E-02	6.705E-02	7.085E-02	NOT IDENT.
PR-144	4.357E+00	5.831E+00	6.152E+00	NOT IDENT.
PM-146	-1.414E-02	6.026E-02	6.060E-02	NOT IDENT.
ND-147	3.804E+07	5.690E+07	5.943E+07	SHORT HLIF
PM-147	-5.660E+01	9.040E+02	9.044E+02	NOT IDENT.
PM-149	1.000E+41	1.514E+41	0.000E+00	SHORT HLIF
EU-150	-5.178E-03	3.255E-02	3.264E-02	FAIL ABUN
EU-152	4.729E-02	1.017E-01	1.039E-01	NOT IDENT.
GD-153	4.509E-03	2.296E-01	2.296E-01	FAIL ABUN
EU-154	4.386E-02	9.976E-02	1.017E-01	NOT IDENT.
EU-155	8.891E-02	1.168E-01	1.235E-01	FAIL ABUN
TB-160	-3.736E-01	1.738E+00	1.747E+00	FAIL ABUN
HO-166M	-5.948E-02	5.698E-02	6.297E-02	FAIL ABUN
TM-171	1.293E+01	2.678E+01	2.741E+01	NOT IDENT.
HF-172	-5.917E-02	2.534E-01	2.548E-01	FAIL ABUN
LU-172	3.339E-02	7.749E-02	7.894E-02	FAIL ABUN
LU-176	1.956E-03	2.670E-02	2.672E-02	FAIL ABUN
HF-181	7.667E+00	6.769E+00	7.600E+00	NOT IDENT.

TA-182	1.036E+00	1.044E+00	1.144E+00	FAIL ABUN
RE-183	-1.266E+00	3.414E+00	3.461E+00	NOT IDENT.
RE-184	2.583E+01	3.614E+01	3.797E+01	NOT IDENT.
W-188	2.142E+01	1.307E+02	1.310E+02	FAIL ABUN
IR-192	-2.060E-02	5.417E-01	5.418E-01	FAIL ABUN
HG-203	-1.178E-02	2.862E+00	2.862E+00	FAIL ABUN
BI-207	-4.538E-02	4.585E-02	5.020E-02	FAIL ABUN
PB-210	-3.189E+00	4.681E+00	4.896E+00	NOT IDENT.
BI-211	3.111E+00	6.584E-01	1.549E+00	FAIL ABUN
PB-211	1.331E-01	8.190E-01	8.212E-01	NOT IDENT.
RN-219	2.806E-01	4.667E-01	4.835E-01	FAIL ABUN
RA-223	-1.701E-01	7.431E-01	7.470E-01	FAIL ABUN
AC-227	1.004E-01	2.477E-01	2.518E-01	FAIL ABUN
TH-227	1.004E-01	2.477E-01	2.518E-01	FAIL ABUN
TH-229	-3.999E-01	5.421E-01	5.712E-01	FAIL ABUN
TH-231	-1.701E-01	7.431E-01	7.470E-01	FAIL ABUN
PA-233	-3.135E-02	6.318E-02	6.474E-02	FAIL ABUN
PA-234	-5.330E-02	2.653E-01	2.664E-01	NOT IDENT.
PA-234M	4.560E+00	7.904E+00	8.167E+00	FAIL ABUN
TH-234	-2.226E-01	1.358E+00	1.362E+00	FAIL ABUN
NP-237	-3.135E-02	6.318E-02	6.474E-02	FAIL ABUN
NP-238	-1.000E+41	4.680E+41	0.000E+00	SHORT HLIF
U-238	-2.226E-01	1.358E+00	1.362E+00	FAIL ABUN
NP-239	-1.084E-02	2.685E-01	2.685E-01	FAIL ABUN
PU-239	1.448E+02	3.548E+02	3.608E+02	NOT IDENT.
AM-241	-9.017E-02	1.588E-01	1.639E-01	NOT IDENT.
CM-243	-9.716E-02	1.027E-01	1.116E-01	FAIL ABUN
BK-247	2.001E-02	7.991E-02	8.042E-02	NOT IDENT.
CM-247	2.693E-04	4.349E-02	4.349E-02	NOT IDENT.
CF-249	-9.102E-03	4.912E-02	4.929E-02	NOT IDENT.
CF-251	4.402E-02	1.300E-01	1.315E-01	FAIL ABUN

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	79.2320	87.09	119.8780	136.47	102.8881
45.60	66.0009	87.57	119.9950	140.51	0.0000
46.54	83.3537	88.03	120.1066	143.76	95.0439
49.72	0.0000	88.34	120.1814	144.24	95.1101
51.35	76.4709	88.47	120.2129	145.44	106.1085
51.87	79.3869	89.96	120.5703	152.43	99.6056
52.39	80.4400	1093.63	120.7332	153.25	0.0000
52.97	83.3828	91.11	0.0000	323.87	77.1558
53.44	98.5032	92.59	121.1955	156.02	0.0000
54.07	86.4599	93.35	121.3742	158.56	0.0000
57.36	0.0000	94.56	121.6578	159.00	78.7979
57.53	88.2287	94.65	121.6785	162.33	88.3239
57.98	83.5850	94.67	121.6834	162.66	0.0000
59.27	99.1194	94.87	105.9118	163.33	76.9535
59.32	103.8985	97.43	118.8676	165.86	103.7123
59.54	103.9584	98.43	94.5103	176.31	110.9338
60.96	89.0256	98.44	94.5123	176.60	0.0000
61.17	89.0738	99.53	105.1110	177.52	90.0499
62.93	109.6769	100.11	95.8478	181.07	0.0000
63.29	99.1840	102.03	80.5030	181.52	89.3165
63.58	99.2559	103.18	78.5757	184.41	94.3469
64.28	104.2561	103.37	99.5633	143.76	116.9371
66.73	121.7188	105.21	86.2235	193.51	106.0936
67.24	106.3112	105.31	86.2385	197.03	106.5254
125.81	127.1895	106.12	76.8841	198.01	116.2310
67.75	129.8065	106.47	84.3091	201.83	108.3115
69.67	105.6253	109.28	87.9025	203.43	88.0097
70.83	105.9120	111.00	101.9729	205.31	86.9865
72.81	106.3974	111.76	0.0000	210.85	105.3460
72.87	106.4122	114.06	90.7600	215.65	86.7523
74.66	106.8456	116.30	0.0000	222.11	109.4927
74.82	106.8835	116.74	85.8051	227.09	82.4432
74.97	106.9198	119.76	93.7783	227.38	82.4677
77.11	107.4298	121.12	87.5036	228.16	0.0000
78.74	107.8130	121.22	96.1616	228.18	84.1865
79.69	108.0354	121.78	98.4114	116.74	84.1865
80.12	108.1351	122.06	108.1932	235.69	89.8220
80.19	0.0000	122.92	78.0068	235.96	89.8462
80.57	108.2390	123.07	78.0255	238.63	66.7301
81.00	108.3387	265.00	96.5418	238.98	0.0000
81.07	108.3551	125.81	102.3105	240.99	66.8872
81.75	101.8134	127.23	112.3561	242.00	66.9535
83.79	100.9048	127.91	97.1876	244.70	61.6769
84.00	100.9491	129.30	107.2458	252.40	0.0000
85.43	129.5977	131.20	113.0492	252.80	65.1207
86.55	119.7465	133.02	108.9595	254.15	0.0000
86.79	119.8050	133.52	106.8397	256.23	70.4243
86.94	119.8419	136.00	103.9212	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	70.9803	355.39	0.0000	584.27	32.7950
264.80	70.9887	356.01	48.3974	595.83	0.0000
265.00	71.0022	364.49	0.0000	427.87	26.6622
268.22	82.3652	366.42	0.0000	602.52	0.0000
269.46	75.5874	372.51	50.3789	604.72	22.4415
270.03	75.6268	375.05	65.4242	607.14	25.6777
271.23	75.7092	377.52	61.7944	609.32	30.5248
273.65	0.0000	356.01	63.9492	610.33	30.5399
276.40	66.5541	388.16	71.6860	614.28	16.1041
277.37	75.2630	388.63	0.0000	618.01	29.0391
277.60	74.4119	391.69	64.2965	620.36	38.7627
278.00	75.3037	264.66	57.0789	621.93	20.6891
279.20	71.9191	401.81	52.3626	630.19	0.0000
279.54	70.2076	402.40	60.9557	631.29	21.6471
279.70	67.6168	404.85	57.2400	633.25	19.5007
280.46	66.7938	410.95	64.1770	634.78	0.0000
283.69	68.7232	413.71	51.8192	635.95	26.0332
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	51.4029	423.72	0.0000	645.85	15.2567
285.90	0.0000	427.09	61.9505	657.76	37.8032
287.50	63.7161	427.87	54.2340	657.90	0.0000
290.67	55.1378	433.94	61.2491	661.66	26.3438
293.27	0.0000	439.40	53.6561	664.57	0.0000
351.93	61.9428	453.88	64.9674	666.33	0.0000
295.96	61.9815	463.37	60.3919	666.50	0.0000
879.38	31.7205	468.07	60.5619	667.71	0.0000
299.98	71.4551	473.00	0.0000	677.62	30.9565
300.09	71.4617	475.06	53.8352	685.70	0.0000
300.13	71.4633	476.78	56.8840	695.00	0.0000
301.36	71.5375	477.60	71.8887	696.49	26.7559
302.85	78.2585	482.18	48.0537	696.51	26.7559
256.23	65.0826	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	33.4558
306.78	62.1016	497.08	46.4492	697.49	31.2288
308.46	71.9594	505.52	47.1793	702.65	22.3560
311.90	63.2532	507.63	0.0000	706.68	22.3950
316.51	61.7016	511.00	42.7438	711.68	28.0538
319.41	0.0000	514.00	41.2861	720.70	0.0000
320.08	0.0000	514.00	41.2861	721.93	0.0000
321.04	60.1312	520.40	35.8061	722.78	15.2210
323.87	67.4622	520.69	0.0000	722.91	20.2954
325.23	55.3790	522.65	0.0000	723.31	18.6075
328.76	0.0000	527.90	0.0000	724.19	16.9220
333.37	70.6859	528.26	39.0422	727.33	19.2039
333.97	67.9977	529.59	32.9010	733.00	18.6833
334.37	63.9380	529.87	0.0000	735.93	13.6045
338.28	65.4961	531.02	0.0000	333.97	10.2100
338.32	65.4976	537.26	0.0000	739.50	0.0000
311.90	46.4709	546.56	0.0000	747.24	29.0455
340.48	46.4709	552.55	40.5917	748.06	20.5100
340.55	0.0000	563.25	34.5388	752.31	26.2526
344.28	50.2600	569.33	34.6476	753.82	0.0000
345.93	65.8770	946.00	34.6503	756.73	13.7217
351.06	56.9469	569.70	31.5039	756.80	11.4351
351.93	56.9834	583.19	32.7773	884.68	15.4825

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	30.9880	1274.44	13.4728	1620.50	3.3085
766.42	30.9957	1001.03	13.4938	1621.92	6.6189
766.84	24.1121	1002.74	13.5013	1678.03	0.0000
772.60	0.0000	1004.73	0.0000	1690.97	2.2389
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	4.5459
778.90	12.1141	1028.54	0.0000	1063.66	10.9230
783.70	0.0000	1037.84	13.2745	1771.35	3.6418
785.37	8.6752	1038.76	0.0000	1791.20	0.0000
792.07	19.7157	631.29	10.4582	1808.65	4.5862
794.95	15.0942	1048.07	0.0000	1810.72	0.0000
795.86	19.7455	1049.04	13.3207	1836.06	1.8443
810.06	14.8911	1050.41	11.4229		
810.29	15.7681	1063.66	20.0720		
344.28	15.7692	1077.00	0.0000		
810.76	15.7714	1077.34	14.2605		
815.77	0.0000	1085.87	16.3598		
1048.07	0.0000	1093.63	13.5044		
832.01	14.1328	1099.45	9.6631		
834.85	13.2637	1112.07	24.8297		
835.71	14.1528	1112.84	23.2837		
836.80	0.0000	1115.54	17.0887		
846.75	0.0000	1120.29	10.6952		
846.77	15.9879	1120.55	10.6959		
856.80	0.0000	1221.41	3.1123		
860.56	18.7480	1129.67	12.6747		
871.09	13.4427	1131.51	0.0000		
873.19	18.8345	1147.95	0.0000		
875.33	0.0000	1173.23	21.7220		
879.38	15.2812	1177.95	15.8184		
880.51	17.0860	1189.05	18.8434		
883.24	18.9031	1204.77	18.9269		
884.68	17.1115	1221.41	11.0081		
889.28	17.1399	1231.02	21.0705		
894.76	18.9806	1235.36	0.0000		
898.04	20.8129	1238.28	19.1021		
900.72	22.6440	1260.41	0.0000		
903.28	15.4120	1271.87	13.1880		
911.20	18.1824	1274.44	8.1216		
912.08	18.1879	1274.54	8.1216		
923.98	0.0000	1291.59	8.1582		
926.50	19.1934	1298.22	0.0000		
929.11	17.3811	1312.11	0.0000		
937.49	16.5135	1332.49	13.3983		
944.13	0.0000	1362.66	0.0000		
946.00	16.5619	1365.19	11.4310		
949.00	17.5000	1368.63	0.0000		
667.71	0.0000	1384.29	9.3972		
962.31	19.0321	1408.01	3.3607		
964.08	23.6984	1457.56	0.0000		
966.17	16.3040	1460.82	10.6366		
911.20	21.3267	1489.16	7.4952		
968.97	21.3267	1505.03	6.4482		
983.53	0.0000	1584.12	3.5010		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:18:22.92

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235018.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM27.CNF;330
Background date    : 2-OCT-2016 11:01:30.
Sample date       : 2-DEC-2015 10:19:00. Acquisition date : 3-OCT-2016 08:16:22.
Sample ID        : G405235018 Sample quantity : 1.55815E+02 GRAM
Detector name    : GAM27 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.98 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596247 Detector SN# :
Matrix Spike ID : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.29*	67	266	0.82	125.90	122	9	1.86E-02	46.5	
2	3	74.84*	201	278	1.31	149.00	144	15	5.58E-02	16.0	1.14E+00
3	3	77.20	260	172	0.84	153.73	144	15	7.21E-02	9.8	
4	0	83.74*	26	199	1.52	166.81	165	7	7.29E-03	92.1	
5	0	87.27	108	183	1.53	173.88	171	7	2.99E-02	23.0	
6	3	93.05*	63	168	1.21	185.43	182	13	1.75E-02	39.1	1.75E+00
7	3	95.46	48	152	1.41	190.27	182	13	1.35E-02	52.2	
8	0	105.45	40	97	0.96	210.25	208	6	1.11E-02	42.3	
9	0	136.89	52	137	0.90	273.15	270	8	1.45E-02	40.8	
10	0	186.02*	66	204	1.01	371.45	366	11	1.84E-02	44.9	
11	5	238.71*	469	86	1.11	476.86	469	21	1.30E-01	5.8	1.03E+00
12	5	241.58	129	131	2.06	482.61	469	21	3.58E-02	26.3	
13	0	270.35	46	93	1.76	540.18	536	9	1.29E-02	40.3	
14	0	277.65	39	136	1.46	554.79	548	13	1.10E-02	63.0	
15	2	295.31*	178	71	1.28	590.12	585	19	4.95E-02	11.3	1.22E+00
16	2	300.02	40	68	1.63	599.53	585	19	1.12E-02	39.7	
17	0	328.39	55	75	2.34	656.30	651	10	1.52E-02	32.7	
18	0	338.51*	60	103	1.16	676.54	671	10	1.66E-02	35.0	
19	0	351.96*	297	84	1.34	703.47	697	11	8.26E-02	8.4	
20	0	394.83	21	61	0.72	789.24	786	8	5.71E-03	69.1	
21	0	408.86	47	52	1.14	817.32	813	9	1.30E-02	31.3	
22	0	510.67*	34	100	2.45	1021.02	1012	18	9.38E-03	77.7	
23	0	536.91	43	53	7.37	1073.53	1065	19	1.20E-02	42.8	
24	0	554.81	18	38	3.48	1109.35	1101	13	4.98E-03	75.4	
25	0	583.29*	124	54	1.44	1166.33	1160	12	3.45E-02	15.1	
26	0	609.62*	142	65	1.58	1219.03	1213	13	3.95E-02	14.6	
27	0	645.81	23	26	2.44	1291.43	1286	12	6.33E-03	51.7	
28	0	654.80	19	34	4.26	1309.43	1300	15	5.38E-03	69.2	
29	0	661.76*	951	64	1.43	1323.36	1316	15	2.64E-01	3.7	
30	0	722.27	16	17	3.38	1444.45	1439	10	4.40E-03	55.3	
31	0	726.97	50	23	1.90	1453.85	1449	11	1.37E-02	23.3	
32	0	755.46	20	18	1.54	1510.85	1507	9	5.56E-03	44.3	
33	0	811.35	12	19	1.24	1622.71	1616	9	3.20E-03	78.3	
34	0	816.68	40	15	4.54	1633.37	1625	19	1.12E-02	27.4	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	862.01	24	43	4.86	1724.08	1713	19	6.75E-03	67.7	
36	0	911.47*	105	28	2.30	1823.05	1815	14	2.92E-02	14.8	
37	0	953.31	11	9	1.71	1906.78	1900	9	3.11E-03	56.6	
38	2	964.74	34	16	2.24	1929.66	1923	22	9.46E-03	28.7	1.54E+00
39	2	968.79*	51	9	1.97	1937.77	1923	22	1.42E-02	20.1	
40	0	1120.06*	49	35	2.52	2240.50	2234	14	1.36E-02	29.8	
41	0	1150.90	14	12	3.15	2302.21	2296	12	3.89E-03	56.2	
42	0	1255.13	9	18	2.84	2510.82	2500	15	2.40E-03	114.3	
43	0	1301.45	7	21	2.68	2603.53	2591	14	2.04E-03	145.3	
44	0	1314.68	9	5	0.90	2629.99	2622	11	2.38E-03	63.0	
45	0	1318.32	12	5	2.18	2637.29	2632	10	3.33E-03	45.3	
46	0	1339.26	5	11	0.51	2679.20	2668	14	1.48E-03	136.7	
47	0	1377.72	17	7	1.08	2756.18	2750	13	4.58E-03	40.3	
48	0	1460.95*	423	11	1.70	2922.75	2915	15	1.17E-01	5.2	
49	0	1480.60	10	3	2.96	2962.08	2956	12	2.74E-03	47.6	
50	3	1588.20	13	1	2.90	3177.46	3174	16	3.53E-03	29.5	6.09E-01
51	3	1592.38	11	3	1.91	3185.83	3174	16	3.02E-03	39.1	
52	0	1764.60*	37	3	2.04	3530.55	3524	13	1.04E-02	20.4	
53	0	1847.52	15	0	1.98	3696.53	3690	11	4.17E-03	25.8	

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

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235018.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 2-DEC-2015 10:19:00   Acquisition date : 3-OCT-2016 08:16:22
Sample ID        : G405235018             Sample quantity  : 155.82 GRAM
Sample type      : SOLID                   Sample geometry   :
Detector name    : GAMMA27                 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00           Elapsed real time: 0 01:00:00.98   0.0%
Energy tolerance : 1.50 keV                Half life ratio  : 10.00
Errors propagated: No                       Systematic Error : 0.00 %
Efficiency type  : Linear                   Efficiencies at  : Peak Energy
Abundance limit  : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	87.09	EU-155	86.55
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	242.00	RA-224	240.99
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.403E+00	1.319E+01	1.319E+01	10.43	OK
CO-58	810.76	99.45*	2.251E+00	2.571E-02	5.127E-01	156.68	OK
CD-109	88.03	3.70*	7.568E+00	1.379E+00	2.183E+00	81.38	OK
SN-126	64.28	9.60	5.536E+00	8.091E-01	8.091E-01	93.09	OK
	86.94	8.90	7.568E+00	5.732E-01	5.732E-01	81.38	OK
	87.57	37.00*	7.568E+00	1.379E-01	1.379E-01	81.38	OK
BA-137M	661.66	89.90*	2.624E+00	2.058E+00	2.098E+00	7.49	OK
CS-137	661.66	85.10*	2.624E+00	2.174E+00	2.216E+00	7.49	OK
EU-155	86.55	30.70	7.568E+00	1.662E-01	1.878E-01	81.38	OK
	105.31	21.10*	8.063E+00	1.433E-01	1.619E-01	84.59	OK
TL-208	277.37	6.60	5.128E+00	6.519E-01	6.519E-01	125.97	OK
	583.19	85.00*	2.886E+00	2.619E-01	2.619E-01	30.18	OK
	860.56	12.50	2.150E+00	4.481E-01	4.481E-01	135.31	OK
PB-212	74.82	10.28	6.758E+00	1.207E+00	1.207E+00	49.92	OK
	77.11	17.10	6.949E+00	1.376E+00	1.376E+00	19.56	OK
	238.63	43.60*	5.747E+00	1.060E+00	1.060E+00	11.65	OK
	300.09	3.30	4.829E+00	1.402E+00	1.402E+00	79.42	OK
BI-214	609.32	45.49*	2.791E+00	5.775E-01	5.777E-01	29.30	OK
	1120.29	14.92	1.754E+00	9.007E-01	9.010E-01	59.54	OK
	1764.49	15.30	1.177E+00	9.458E-01	9.461E-01	40.84	OK
PB-214	74.82	5.80	6.757E+00	----- Line Not Found	-----	<<INT Reject	
	77.11	9.70	6.949E+00	2.425E+00	2.426E+00	19.56	OK
	87.09	3.41	7.559E+00	----- Line Not Found	-----	<<INT Reject	
	242.00	7.25	5.689E+00	----- Line Not Found	-----	<<INT Reject	
	295.22	18.42	4.889E+00	1.099E+00	1.100E+00	22.56	OK
	351.93	35.60*	4.262E+00	1.069E+00	1.070E+00	16.86	OK
RN-222	609.32	45.49*	2.791E+00	5.775E-01	5.777E-01	29.30	OK
	1120.29	14.92	1.754E+00	9.007E-01	9.010E-01	59.54	OK
	1764.49	15.30	1.177E+00	9.458E-01	9.461E-01	40.84	OK
RA-224	240.99	4.10*	5.697E+00	1.181E+00	1.181E+00	144.23	OK
RA-226	609.32	45.49*	2.791E+00	5.775E-01	5.777E-01	29.30	OK
	1120.29	14.92	1.754E+00	9.007E-01	9.010E-01	59.54	OK
	1764.49	15.30	1.177E+00	9.458E-01	9.461E-01	40.84	OK
AC-228	105.21	1.10	8.063E+00	2.748E+00	2.748E+00	84.59	OK
	338.32	11.27	4.394E+00	6.612E-01	6.612E-01	69.99	OK
	794.95	4.25	2.286E+00	----- Line Not Found	-----	Absent	
	835.71	1.61	2.201E+00	----- Line Not Found	-----	Absent	
	911.20	25.80*	2.060E+00	9.737E-01	9.737E-01	29.57	OK
	968.97	15.80	1.966E+00	8.046E-01	8.046E-01	40.21	OK
RA-228	105.21	1.10	8.063E+00	2.748E+00	2.748E+00	84.59	OK
	338.32	11.27	4.394E+00	6.612E-01	6.612E-01	69.99	OK
	794.95	4.25	2.286E+00	----- Line Not Found	-----	Absent	
	835.71	1.61	2.201E+00	----- Line Not Found	-----	Absent	
	911.20	25.80*	2.060E+00	9.737E-01	9.737E-01	29.57	OK
	968.97	15.80	1.966E+00	8.046E-01	8.046E-01	40.21	OK
TH-228	74.82	10.28	6.758E+00	1.207E+00	1.207E+00	49.92	OK
	77.11	17.10	6.949E+00	1.376E+00	1.376E+00	19.56	OK
	238.63	43.60*	5.747E+00	1.060E+00	1.060E+00	11.65	OK
	300.09	3.30	4.829E+00	1.402E+00	1.402E+00	79.42	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	609.32	45.49*	2.791E+00	5.775E-01	5.775E-01	29.30	OK
	1120.29	14.92	1.754E+00	9.007E-01	9.007E-01	59.54	OK
	1764.49	15.30	1.177E+00	9.458E-01	9.458E-01	40.84	OK
PA-231	283.69	1.70	5.044E+00	-----	Line Not Found	-----	Absent
	301.36	5.35*	4.829E+00	8.646E-01	8.646E-01	79.42	OK
TH-232	105.21	1.10	8.063E+00	2.748E+00	2.748E+00	84.59	OK
	338.32	11.27	4.394E+00	6.612E-01	6.612E-01	69.99	OK
	835.71	1.61	2.201E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	2.060E+00	9.737E-01	9.737E-01	29.57	OK
	968.97	15.80	1.966E+00	8.046E-01	8.046E-01	40.21	OK
TH-234	63.29	3.70*	5.536E+00	2.099E+00	2.099E+00	93.09	OK
	92.59	4.23	7.800E+00	1.184E+00	1.184E+00	78.13	OK
U-234	609.32	45.49*	2.791E+00	5.775E-01	5.775E-01	29.30	OK
	1120.29	14.92	1.754E+00	9.007E-01	9.007E-01	59.54	OK
	1764.49	15.30	1.177E+00	9.458E-01	9.458E-01	40.84	OK
U-238	63.29	3.70*	5.536E+00	2.099E+00	2.099E+00	93.09	OK
	92.59	4.23	7.800E+00	1.184E+00	1.184E+00	78.13	OK
AM-243	43.53	5.90	2.021E+00	-----	Line Not Found	-----	Absent
	74.66	67.20*	6.758E+00	1.846E-01	1.846E-01	49.92	OK
ANH-511	511.00	100.00*	3.192E+00	5.553E-02	5.553E-02	155.34	OK

Flag: "*" = Keyline


```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235018.CNF;1
* Acquisition date   : 3-OCT-2016 08:16:22 Sensitivity      : 3.000
* Detector ID        : GAM27 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.98 Half life ratio : *****
* Sample date        : 2-DEC-2015 10:19:00 Analyst initials: MXR1
* Sample ID          : G405235018 Sample Quantity : 1.5582E+02 GRAM
* Batch Number       : 1596247 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library     : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 3-OCT-2016 06:09:32 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM27 CAN.CNF;13
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.319E+01	1.348E+00	4.997E-01
CO-58	5.127E-01	7.873E-01	9.769E-01
CD-109	2.183E+00	1.741E+00	1.691E+00
SN-126	1.379E-01	1.100E-01	1.071E-01
BA-137M	2.098E+00	1.540E-01	5.879E-02
CS-137	2.216E+00	1.627E-01	6.211E-02
EU-155	1.619E-01	1.342E-01	1.553E-01
TL-208	2.619E-01	7.747E-02	5.981E-02
PB-212	1.060E+00	1.211E-01	8.503E-02
BI-214	5.777E-01	1.659E-01	1.211E-01
PB-214	1.070E+00	1.767E-01	1.179E-01
RN-222	5.777E-01	1.659E-01	1.211E-01
RA-224	1.181E+00	1.670E+00	9.115E-01
RA-226	5.777E-01	1.659E-01	1.211E-01
AC-228	9.737E-01	2.821E-01	2.043E-01
RA-228	9.737E-01	2.821E-01	2.043E-01
TH-228	1.060E+00	1.211E-01	8.503E-02
TH-230	5.775E-01	1.658E-01	1.210E-01
PA-231	8.646E-01	6.729E-01	7.896E-01
TH-232	9.737E-01	2.821E-01	2.043E-01
TH-234	2.099E+00	1.915E+00	1.443E+00
U-234	5.775E-01	1.658E-01	1.210E-01
U-238	2.099E+00	1.915E+00	1.443E+00
AM-243	1.846E-01	9.030E-02	6.479E-02
ANH-511	5.553E-02	8.454E-02	5.039E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	1.854E+00	1.400E+01	2.679E+01	NOT IDENT.
NA-22	-1.638E-02	3.530E-02	6.409E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	3.874E-02	2.728E-02	7.380E-02	NOT IDENT.
SC-46	9.603E-02	3.228E-01	6.731E-01	FAIL ABUN

V-48	0.000E+00	1.790E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.233E+02	0.000E+00	SHORT HLIF
MN-54	5.415E-02	5.306E-02	1.183E-01	NOT IDENT.
CO-56	-2.903E-01	4.017E-01	7.258E-01	NOT IDENT.
MN-56	0.000E+00	1.391E+41	0.000E+00	SHORT HLIF
CO-57	-3.318E-03	4.215E-02	7.817E-02	FAIL ABUN
FE-59	-3.865E+00	6.688E+00	1.197E+01	NOT IDENT.
CO-60	1.028E-02	2.364E-02	5.114E-02	NOT IDENT.
ZN-65	6.215E-02	1.965E-01	3.498E-01	NOT IDENT.
GE-68	-2.862E-01	2.015E+00	3.890E+00	NOT IDENT.
AS-73	-3.048E+00	4.557E+00	8.566E+00	NOT IDENT.
AS-74	0.000E+00	6.804E+03	0.000E+00	SHORT HLIF
SE-75	-2.039E-01	1.943E-01	3.517E-01	FAIL ABUN
BR-77	0.000E+00	1.285E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	7.184E+02	0.000E+00	SHORT HLIF
RB-83	-4.170E-01	6.969E-01	1.231E+00	NOT IDENT.
KR-85	-4.591E+00	8.086E+00	1.253E+01	NOT IDENT.
SR-85	-5.166E-01	9.109E-01	1.412E+00	NOT IDENT.
RB-86	0.000E+00	2.973E+04	0.000E+00	SHORT HLIF
Y-88	1.816E-02	2.207E-01	4.719E-01	NOT IDENT.
Y-91	3.156E+02	5.163E+02	1.075E+03	NOT IDENT.
NB-94	1.547E-02	2.817E-02	5.626E-02	NOT IDENT.
NB-95	-5.483E-01	8.881E-01	1.498E+00	NOT IDENT.
NB-95M	-4.289E-01	2.602E+00	4.544E+00	NOT IDENT.
ZR-95	2.137E+00	1.856E+00	2.864E+00	FAIL ABUN
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	6.460E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	8.920E+40	0.000E+00	SHORT HLIF
RH-101	-1.392E-02	3.173E-02	5.698E-02	NOT IDENT.
RH-102	3.331E-03	4.936E-02	9.487E-02	NOT IDENT.
RU-103	5.173E+00	6.562E+00	1.333E+01	FAIL ABUN
RH-106	-2.414E-01	4.562E-01	8.008E-01	NOT IDENT.
RU-106	-2.414E-01	4.562E-01	8.008E-01	NOT IDENT.
AG-108M	-2.565E-02	3.068E-02	5.325E-02	FAIL ABUN
AG-110M	-2.689E-02	8.626E-02	1.650E-01	NOT IDENT.
SN-113	-8.626E-02	2.513E-01	4.150E-01	NOT IDENT.
CD-115	0.000E+00	1.908E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.178E+05	0.000E+00	SHORT HLIF
TE-123M	-2.056E-02	1.222E-01	2.211E-01	NOT IDENT.
SB-124	-6.167E-02	1.663E+00	3.451E+00	FAIL ABUN
SB-125	4.597E-02	1.077E-01	2.124E-01	NOT IDENT.
TE-125M	1.914E+02	2.394E+02	4.763E+02	NOT IDENT.
I-126	0.000E+00	1.295E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.594E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	5.653E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	8.587E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.314E+27	0.000E+00	SHORT HLIF
BA-133	-4.407E-02	4.771E-02	7.565E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	3.050E-02	5.159E-02	1.013E-01	NOT IDENT.
CS-135	1.794E-02	1.364E-01	2.444E-01	NOT IDENT.
I-135	0.000E+00	1.632E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	4.064E+05	0.000E+00	SHORT HLIF
CE-139	9.394E-03	9.938E-02	1.834E-01	NOT IDENT.
BA-140	0.000E+00	4.235E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.524E+05	0.000E+00	SHORT HLIF
CE-141	-1.689E+01	2.669E+01	4.643E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	2.211E-01	3.517E-01	6.332E-01	NOT IDENT.
PM-144	-1.013E-02	4.502E-02	8.228E-02	NOT IDENT.
PR-144	-1.243E+00	3.975E+00	7.157E+00	NOT IDENT.
PM-146	8.201E-03	4.350E-02	8.424E-02	NOT IDENT.
ND-147	0.000E+00	4.887E+07	0.000E+00	SHORT HLIF
PM-147	-3.412E+01	7.324E+02	1.361E+03	NOT IDENT.
PM-149	0.000E+00	1.237E+41	0.000E+00	SHORT HLIF
EU-150	-1.696E-03	2.627E-02	4.539E-02	FAIL ABUN
EU-152	1.567E-02	9.275E-02	1.811E-01	FAIL ABUN
GD-153	-5.762E-02	1.549E-01	2.621E-01	NOT IDENT.
EU-154	-3.713E-02	8.688E-02	1.589E-01	FAIL ABUN
TB-160	1.226E+00	1.504E+00	3.373E+00	FAIL ABUN
HO-166M	1.593E-03	4.615E-02	8.804E-02	FAIL ABUN
TM-171	5.599E+00	9.701E+00	1.982E+01	NOT IDENT.
HF-172	8.408E-03	2.042E-01	3.808E-01	FAIL ABUN
LU-172	-4.981E-03	6.783E-02	1.315E-01	FAIL ABUN
LU-176	3.662E-03	2.207E-02	4.363E-02	FAIL ABUN
HF-181	-8.016E-01	4.807E+00	8.964E+00	NOT IDENT.

TA-182	8.139E-02	8.541E-01	1.666E+00	FAIL ABUN
RE-183	1.166E+00	1.691E+00	3.450E+00	NOT IDENT.
RE-184	9.775E+00	2.902E+01	6.016E+01	NOT IDENT.
W-188	8.433E+00	1.113E+02	1.983E+02	FAIL ABUN
IR-192	3.218E-01	4.774E-01	9.718E-01	FAIL ABUN
HG-203	1.448E+00	2.448E+00	4.597E+00	NOT IDENT.
BI-207	-1.332E-02	3.611E-02	6.789E-02	FAIL ABUN
PB-210	-4.432E-01	1.285E+00	2.558E+00	NOT IDENT.
BI-211	0.000E+00	4.868E-01	7.353E-01	FAIL ABUN
PB-211	3.733E-01	6.982E-01	1.277E+00	NOT IDENT.
BI-212	0.000E+00	6.990E-01	1.187E+00	FAIL ABUN
RN-219	5.585E-03	3.627E-01	6.966E-01	FAIL ABUN
RA-223	5.092E-01	5.614E-01	1.083E+00	FAIL ABUN
AC-227	1.163E-01	2.215E-01	4.484E-01	FAIL ABUN
TH-227	1.163E-01	2.215E-01	4.484E-01	FAIL ABUN
TH-229	-4.498E-02	4.879E-01	8.695E-01	FAIL ABUN
TH-231	5.092E-01	5.614E-01	1.083E+00	FAIL ABUN
PA-233	-5.449E-03	5.268E-02	1.020E-01	FAIL ABUN
PA-234	1.837E-01	2.256E-01	4.892E-01	FAIL ABUN
PA-234M	-2.650E+00	3.674E+00	6.504E+00	NOT IDENT.
U-235	1.255E-01	1.698E-01	3.256E-01	FAIL ABUN
NP-237	-5.449E-03	5.268E-02	1.020E-01	FAIL ABUN
NP-238	0.000E+00	1.637E+41	0.000E+00	SHORT HLIF
NP-239	2.723E-02	2.115E-01	3.989E-01	FAIL ABUN
PU-239	2.824E+02	2.898E+02	5.698E+02	NOT IDENT.
AM-241	4.583E-03	8.366E-02	1.516E-01	NOT IDENT.
CM-243	2.000E-02	7.881E-02	1.415E-01	FAIL ABUN
BK-247	-7.230E-02	6.601E-02	1.191E-01	FAIL ABUN
CM-247	1.871E-02	3.313E-02	6.670E-02	FAIL ABUN
CF-249	1.475E-02	3.654E-02	7.250E-02	NOT IDENT.
CF-251	1.980E-02	1.136E-01	2.084E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	409	10.66*	1.403E+00	1.319E+01	1.319E+01	10.43
CO-58	810.76	12	99.45*	2.251E+00	2.571E-02	5.127E-01	156.68
CD-109	88.03	139	3.70*	7.568E+00	2.392E+00	3.788E+00	45.93
SN-126	64.28	89	9.60	5.536E+00	8.091E-01	8.091E-01	93.09
	86.94	139	8.90	7.568E+00	9.944E-01	9.944E-01	45.93
	87.57	139	37.00*	7.568E+00	2.392E-01	2.392E-01	45.93
BA-137M	661.66	1007	89.90*	2.624E+00	2.058E+00	2.098E+00	7.49
CS-137	661.66	1007	85.10*	2.624E+00	2.174E+00	2.216E+00	7.49
EU-155	86.55	139	30.70	7.568E+00	2.883E-01	3.258E-01	45.93
	105.31	51	21.10*	8.063E+00	1.433E-01	1.619E-01	84.59
TL-208	277.37	46	6.60	5.128E+00	6.519E-01	6.519E-01	125.97
	583.19	133	85.00*	2.886E+00	2.619E-01	2.619E-01	30.18
	860.56	25	12.50	2.150E+00	4.481E-01	4.481E-01	135.31
BI-211	72.87	-----	1.23	6.585E+00	-----	Line Not Found	-----
	351.06	337	12.92*	4.262E+00	2.946E+00	2.946E+00	16.86
PB-212	74.82	263	10.28	6.758E+00	1.827E+00	1.827E+00	32.07
	77.11	339	17.10	6.949E+00	1.376E+00	1.376E+00	19.56
	238.63	551	43.60*	5.747E+00	1.060E+00	1.060E+00	11.65
	300.09	46	3.30	4.829E+00	1.402E+00	1.402E+00	79.42
BI-214	609.32	152	45.49*	2.791E+00	5.775E-01	5.777E-01	29.30
	1120.29	49	14.92	1.754E+00	9.007E-01	9.010E-01	59.54
	1764.49	35	15.30	1.177E+00	9.458E-01	9.461E-01	40.84
PB-214	74.82	263	5.80	6.758E+00	3.238E+00	3.239E+00	32.07
	77.11	339	9.70	6.949E+00	2.425E+00	2.426E+00	19.56
	87.09	139	3.41	7.568E+00	2.595E+00	2.596E+00	45.93
	242.00	152	7.25	5.697E+00	1.767E+00	1.768E+00	52.67
	295.22	205	18.42	4.889E+00	1.099E+00	1.100E+00	22.56
	351.93	337	35.60*	4.262E+00	1.069E+00	1.070E+00	16.86
RN-222	609.32	152	45.49*	2.791E+00	5.775E-01	5.777E-01	29.30
	1120.29	49	14.92	1.754E+00	9.007E-01	9.010E-01	59.54
	1764.49	35	15.30	1.177E+00	9.458E-01	9.461E-01	40.84
RA-224	240.99	152	4.10*	5.697E+00	3.125E+00	3.125E+00	52.67
RA-226	609.32	152	45.49*	2.791E+00	5.775E-01	5.777E-01	29.30
	1120.29	49	14.92	1.754E+00	9.007E-01	9.010E-01	59.54
	1764.49	35	15.30	1.177E+00	9.458E-01	9.461E-01	40.84
AC-228	105.21	51	1.10	8.063E+00	2.748E+00	2.748E+00	84.59
	338.32	68	11.27	4.394E+00	6.612E-01	6.612E-01	69.99
	794.95	-----	4.25	2.286E+00	-----	Line Not Found	-----
	835.71	-----	1.61	2.201E+00	-----	Line Not Found	-----
	911.20	107	25.80*	2.060E+00	9.737E-01	9.737E-01	29.57
	968.97	52	15.80	1.966E+00	8.046E-01	8.046E-01	40.21
RA-228	105.21	51	1.10	8.063E+00	2.748E+00	2.748E+00	84.59
	338.32	68	11.27	4.394E+00	6.612E-01	6.612E-01	69.99
	794.95	-----	4.25	2.286E+00	-----	Line Not Found	-----
	835.71	-----	1.61	2.201E+00	-----	Line Not Found	-----
	911.20	107	25.80*	2.060E+00	9.737E-01	9.737E-01	29.57
	968.97	52	15.80	1.966E+00	8.046E-01	8.046E-01	40.21

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	263	10.28	6.758E+00	1.827E+00	1.827E+00	32.07
	77.11	339	17.10	6.949E+00	1.376E+00	1.376E+00	19.56
	238.63	551	43.60*	5.747E+00	1.060E+00	1.060E+00	11.65
	300.09	46	3.30	4.829E+00	1.402E+00	1.402E+00	79.42
TH-230	609.32	152	45.49*	2.791E+00	5.775E-01	5.775E-01	29.30
	1120.29	49	14.92	1.754E+00	9.007E-01	9.007E-01	59.54
	1764.49	35	15.30	1.177E+00	9.458E-01	9.458E-01	40.84
PA-231	283.69	-----	1.70	5.044E+00	-----	Line Not Found	-----
	301.36	46	5.35*	4.829E+00	8.646E-01	8.646E-01	79.42
TH-232	105.21	51	1.10	8.063E+00	2.748E+00	2.748E+00	84.59
	338.32	68	11.27	4.394E+00	6.612E-01	6.612E-01	69.99
	835.71	-----	1.61	2.201E+00	-----	Line Not Found	-----
	911.20	107	25.80*	2.060E+00	9.737E-01	9.737E-01	29.57
	968.97	52	15.80	1.966E+00	8.046E-01	8.046E-01	40.21
TH-234	63.29	89	3.70*	5.536E+00	2.099E+00	2.099E+00	93.09
	92.59	81	4.23	7.800E+00	1.184E+00	1.184E+00	78.13
U-234	609.32	152	45.49*	2.791E+00	5.775E-01	5.775E-01	29.30
	1120.29	49	14.92	1.754E+00	9.007E-01	9.007E-01	59.54
	1764.49	35	15.30	1.177E+00	9.458E-01	9.458E-01	40.84
U-238	63.29	89	3.70*	5.536E+00	2.099E+00	2.099E+00	93.09
	92.59	81	4.23	7.800E+00	1.184E+00	1.184E+00	78.13
AM-243	43.53	-----	5.90	2.021E+00	-----	Line Not Found	-----
	74.66	263	67.20*	6.758E+00	2.795E-01	2.795E-01	32.07
ANH-511	511.00	37	100.00*	3.192E+00	5.553E-02	5.553E-02	155.34

Flag: "*" = Keyline

Total number of lines in spectrum 53
Number of unidentified lines 15
Number of lines tentatively identified by NID 38 71.70%

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	1.319E+01	1.319E+01	0.138E+01	10.43	
CO-58	70.86D	19.9	2.571E-02	5.127E-01	8.033E-01	156.68	
CD-109	461.40D	1.58	2.392E+00	3.788E+00	1.740E+00	45.93	
SN-126	2.30E+05Y	1.00	2.392E-01	2.392E-01	1.099E-01	45.93	
BA-137M	30.08Y	1.02	2.058E+00	2.098E+00	0.157E+00	7.49	
CS-137	30.08Y	1.02	2.174E+00	2.216E+00	0.166E+00	7.49	
EU-155	4.75Y	1.13	1.433E-01	1.619E-01	1.369E-01	84.59	
TL-208	1.41E+10Y	1.00	2.619E-01	2.619E-01	0.791E-01	30.18	
BI-211	7.04E+08Y	1.00	2.946E+00	2.946E+00	0.497E+00	16.86	
PB-212	1.41E+10Y	1.00	1.060E+00	1.060E+00	0.124E+00	11.65	
BI-214	1600.00Y	1.00	5.775E-01	5.777E-01	1.693E-01	29.30	
PB-214	1600.00Y	1.00	1.069E+00	1.070E+00	0.180E+00	16.86	
RN-222	1600.00Y	1.00	5.775E-01	5.777E-01	1.693E-01	29.30	
RA-224	1.41E+10Y	1.00	3.125E+00	3.125E+00	1.646E+00	52.67	
RA-226	1600.00Y	1.00	5.775E-01	5.777E-01	1.693E-01	29.30	
AC-228	1.41E+10Y	1.00	9.737E-01	9.737E-01	2.879E-01	29.57	
RA-228	1.41E+10Y	1.00	9.737E-01	9.737E-01	2.879E-01	29.57	
TH-228	1.41E+10Y	1.00	1.060E+00	1.060E+00	0.124E+00	11.65	
TH-230	7.54E+04Y	1.00	5.775E-01	5.775E-01	1.692E-01	29.30	
PA-231	7.04E+08Y	1.00	8.646E-01	8.646E-01	6.866E-01	79.42	
TH-232	1.41E+10Y	1.00	9.737E-01	9.737E-01	2.879E-01	29.57	
TH-234	4.47E+09Y	1.00	2.099E+00	2.099E+00	1.954E+00	93.09	
U-234	2.45E+05Y	1.00	5.775E-01	5.775E-01	1.692E-01	29.30	
U-238	4.47E+09Y	1.00	2.099E+00	2.099E+00	1.954E+00	93.09	
AM-243	7370.00Y	1.00	2.795E-01	2.795E-01	0.896E-01	32.07	
ANH-511	1.00E+09Y	1.00	5.553E-02	5.553E-02	8.627E-02	155.34	

Total Activity : 4.095E+01 4.294E+01

Grand Total Activity : 4.095E+01 4.294E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	83.74	34	258	1.52	166.81	165	7	7.29E-03	****	7.38E+00	T
3	95.46	62	195	1.41	190.27	182	13	1.35E-02	****	7.87E+00	T
0	136.89	65	170	0.90	273.15	270	8	1.45E-02	81.7	7.87E+00	T
0	186.02	80	246	1.01	371.45	366	11	1.84E-02	89.9	6.81E+00	T
0	270.35	54	108	1.76	540.18	536	9	1.29E-02	80.7	5.23E+00	T
0	328.39	62	86	2.34	656.30	651	10	1.52E-02	65.3	4.50E+00	T
0	394.83	23	69	0.72	789.24	786	8	5.71E-03	****	3.89E+00	
0	408.86	52	58	1.14	817.32	813	9	1.30E-02	62.6	3.79E+00	
0	536.91	47	57	7.37	1073.53	1065	19	1.20E-02	85.6	3.07E+00	T
0	554.81	19	41	3.48	1109.35	1101	13	4.98E-03	****	3.00E+00	
0	645.81	24	28	2.44	1291.43	1286	12	6.33E-03	****	2.67E+00	T
0	654.80	21	36	4.26	1309.43	1300	15	5.38E-03	****	2.64E+00	
0	722.27	17	18	3.38	1444.45	1439	10	4.40E-03	****	2.46E+00	T
0	726.97	52	24	1.90	1453.85	1449	11	1.37E-02	46.5	2.44E+00	T
0	755.46	21	19	1.54	1510.85	1507	9	5.56E-03	88.6	2.38E+00	T
0	816.68	42	15	4.54	1633.37	1625	19	1.12E-02	54.9	2.24E+00	T
0	953.31	11	9	1.71	1906.78	1900	9	3.11E-03	****	1.99E+00	T
2	964.74	35	16	2.24	1929.66	1923	22	9.46E-03	57.3	1.97E+00	T
0	1150.90	14	12	3.15	2302.21	2296	12	3.89E-03	****	1.72E+00	
0	1255.13	9	18	2.84	2510.82	2500	15	2.40E-03	****	1.60E+00	
0	1301.45	7	20	2.68	2603.53	2591	14	2.04E-03	****	1.55E+00	
0	1314.68	8	5	0.90	2629.99	2622	11	2.38E-03	****	1.54E+00	
0	1318.32	12	5	2.18	2637.29	2632	10	3.33E-03	90.5	1.53E+00	
0	1339.26	5	10	0.51	2679.20	2668	14	1.48E-03	****	1.51E+00	
0	1377.72	16	6	1.08	2756.18	2750	13	4.58E-03	80.5	1.48E+00	
0	1480.60	10	3	2.96	2962.08	2956	12	2.74E-03	95.3	1.39E+00	
3	1588.20	12	1	2.90	3177.46	3174	16	3.53E-03	59.0	1.30E+00	
3	1592.38	10	3	1.91	3185.83	3174	16	3.02E-03	78.1	1.30E+00	
0	1847.52	14	0	1.98	3696.53	3690	11	4.17E-03	51.6	1.12E+00	

Flags: "T" = Tentatively associated

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*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                         *
*                               Charleston, SC 29407                     *
*                               *****                                   *
*                               *                                         *
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235018.CNF;1 *
* Acquisition date   : 3-OCT-2016 08:16:22 Sensitivity      : 3.000      *
* Detector ID        : GAM27 Energy tolerance: 1.500      *
* Elapsed live time  : 0 01:00:00.00 Abundance limit: 75.000 *
* Elapsed real time  : 0 01:00:00.98 Half life ratio : ***** *
* Sample date       : 2-DEC-2015 10:19:00 Nuclide Library : SOLID      *
* Sample ID         : G405235018 Analyst initials: MXR1      *
* Batch Number      : 1596247 Sample Quantity : 1.5582E+02 GRAM *
* Wet wt corr       : 1.00000 Wet Weight      : 0.00000      *
*                               Dry Weight      : 0.00000      *
*                               *****                                   *
*                               *                                         *
*                               CALIBRATION INFORMATION                   *
*                               *                                         *
* Eff. Cal. date    : 3-OCT-2016 06:09:32 Eff. Geometry   : CAN      *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM27 CAN.CNF;13 *
*                               *****                                   *

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.059E-01
CO-58	4.291E-01
CD-109	8.062E-01
SN-126	5.104E-02
BA-137M	2.650E-02
CS-137	2.800E-02
EU-155	7.300E-02
TL-208	2.717E-02
PB-212	3.978E-02
BI-214	5.525E-02
PB-214	5.445E-02
RN-222	5.525E-02
RA-224	4.264E-01
RA-226	5.525E-02
AC-228	8.966E-02
RA-228	8.966E-02
TH-228	3.978E-02
TH-230	5.523E-02
PA-231	3.683E-01
TH-232	8.966E-02
TH-234	6.868E-01
U-234	5.523E-02
U-238	6.868E-01
AM-243	3.084E-02
ANH-511	2.308E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.236E+01	NOT IDENT.
NA-22	2.682E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	3.121E-02	NOT IDENT.
SC-46	2.968E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF

CR-51	0.000E+00	SHORT HLIF
MN-54	5.320E-02	NOT IDENT.
CO-56	3.152E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	3.688E-02	FAIL ABUN
FE-59	5.212E+00	NOT IDENT.
CO-60	2.073E-02	NOT IDENT.
ZN-65	1.572E-01	NOT IDENT.
GE-68	1.697E+00	NOT IDENT.
AS-73	4.043E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.630E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.599E-01	NOT IDENT.
KR-85	5.749E+00	NOT IDENT.
SR-85	6.477E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.935E-01	NOT IDENT.
Y-91	4.801E+02	NOT IDENT.
NB-94	2.546E-02	NOT IDENT.
NB-95	6.709E-01	NOT IDENT.
NB-95M	2.141E+00	NOT IDENT.
ZR-95	1.290E+00	FAIL ABUN
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.697E-02	NOT IDENT.
RH-102	4.229E-02	NOT IDENT.
RU-103	6.159E+00	FAIL ABUN
RH-106	3.569E-01	NOT IDENT.
RU-106	3.569E-01	NOT IDENT.
AG-108M	2.456E-02	FAIL ABUN
AG-110M	7.234E-02	NOT IDENT.
SN-113	1.907E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.040E-01	NOT IDENT.
SB-124	1.346E+00	FAIL ABUN
SB-125	9.855E-02	NOT IDENT.
TE-125M	2.253E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.509E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	4.613E-02	NOT IDENT.
CS-135	1.141E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	8.617E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.195E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.000E-01	NOT IDENT.
PM-144	3.636E-02	NOT IDENT.
PR-144	3.162E+00	NOT IDENT.
PM-146	3.882E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	6.429E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.107E-02	FAIL ABUN
EU-152	8.440E-02	FAIL ABUN
GD-153	1.237E-01	NOT IDENT.
EU-154	6.668E-02	FAIL ABUN
TB-160	1.491E+00	FAIL ABUN
HO-166M	3.904E-02	FAIL ABUN
TM-171	9.380E+00	NOT IDENT.
HF-172	1.799E-01	FAIL ABUN
LU-172	5.772E-02	FAIL ABUN
LU-176	2.028E-02	FAIL ABUN
HF-181	4.108E+00	NOT IDENT.
TA-182	7.375E-01	FAIL ABUN

RE-183	1.636E+00	NOT IDENT.
RE-184	2.672E+01	NOT IDENT.
W-188	9.196E+01	FAIL ABUN
IR-192	4.545E-01	FAIL ABUN
HG-203	2.143E+00	NOT IDENT.
BI-207	2.900E-02	FAIL ABUN
PB-210	1.215E+00	NOT IDENT.
BI-211	3.554E-01	FAIL ABUN
PB-211	5.915E-01	NOT IDENT.
BI-212	5.528E-01	FAIL ABUN
RN-219	3.216E-01	FAIL ABUN
RA-223	5.038E-01	FAIL ABUN
AC-227	2.110E-01	FAIL ABUN
TH-227	2.110E-01	FAIL ABUN
TH-229	4.113E-01	FAIL ABUN
TH-231	5.038E-01	FAIL ABUN
PA-233	4.724E-02	FAIL ABUN
PA-234	2.170E-01	FAIL ABUN
PA-234M	2.840E+00	NOT IDENT.
U-235	1.546E-01	FAIL ABUN
NP-237	4.724E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.886E-01	FAIL ABUN
PU-239	2.711E+02	NOT IDENT.
AM-241	7.188E-02	NOT IDENT.
CM-243	6.651E-02	FAIL ABUN
BK-247	5.523E-02	FAIL ABUN
CM-247	3.090E-02	FAIL ABUN
CF-249	3.364E-02	NOT IDENT.
CF-251	9.851E-02	NOT IDENT.

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235018.CNF;1
* Acquisition date   : 3-OCT-2016 08:16:22 Sensitivity      : 3.000
* Detector ID        : GAM27 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.98 Half life ratio : *****
* Sample date        : 2-DEC-2015 10:19:00 Nuclide Library : SOLID
* Sample ID          : G405235018 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.5582E+02 GRAM
*                               Quantity Err(%) : 1.2836E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 3-OCT-2016 06:09:32 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM27 CAN.CNF;13
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
      (pCi/GRAM)      (1.96-sigma)      (1.96-sigma)
K-40         1.319E+01      1.514E+00      1.514E+00
CO-58        5.127E-01      7.876E-01      7.876E-01
CD-109       2.183E+00      1.762E+00      1.762E+00
SN-126       1.379E-01      1.110E-01      1.110E-01
BA-137M      2.098E+00      1.785E-01      1.785E-01
CS-137       2.216E+00      1.885E-01      1.885E-01
EU-155       1.619E-01      1.347E-01      1.347E-01
TL-208       2.619E-01      7.827E-02      7.827E-02
PB-212       1.060E+00      1.338E-01      1.338E-01
BI-214       5.777E-01      1.677E-01      1.677E-01
PB-214       1.070E+00      1.824E-01      1.824E-01
RN-222       5.777E-01      1.677E-01      1.677E-01
RA-224       1.181E+00      1.676E+00      1.676E+00
RA-226       5.777E-01      1.677E-01      1.677E-01
AC-228       9.737E-01      2.865E-01      2.865E-01
RA-228       9.737E-01      2.865E-01      2.865E-01
TH-228       1.060E+00      1.338E-01      1.338E-01
TH-230       5.775E-01      1.677E-01      1.677E-01
PA-231       8.646E-01      6.978E-01      6.978E-01
TH-232       9.737E-01      2.865E-01      2.865E-01
TH-234       2.099E+00      1.971E+00      1.971E+00
U-234        5.775E-01      1.677E-01      1.677E-01
U-238        2.099E+00      1.971E+00      1.971E+00
AM-243       1.846E-01      9.180E-02      9.180E-02
ANH-511      5.553E-02      8.457E-02      8.457E-02

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

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Nuclide      Key-Line
              Activity      K.L Act error      TPU
              (pCi/GRAM)      (1.96-sigma)      (1.96-sigma)
BE-7         1.854E+00      1.400E+01      1.403E+01 NOT IDENT.
NA-22        -1.638E-02      3.531E-02      3.607E-02 NOT IDENT.
NA-24        -1.000E+41      5.275E+41      0.000E+00 SHORT HLIF
AL-26        3.874E-02      2.739E-02      3.249E-02 NOT IDENT.
SC-46        9.603E-02      3.228E-01      3.257E-01 FAIL ABUN

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V-48	2.628E+03	1.790E+04	1.794E+04	SHORT HLIF
CR-51	-1.305E+02	4.233E+02	4.274E+02	SHORT HLIF
MN-54	5.415E-02	5.311E-02	5.845E-02	NOT IDENT.
CO-56	-2.903E-01	4.019E-01	4.227E-01	NOT IDENT.
MN-56	-1.000E+41	1.392E+41	0.000E+00	SHORT HLIF
CO-57	-3.318E-03	4.215E-02	4.217E-02	FAIL ABUN
FE-59	-3.865E+00	6.694E+00	6.917E+00	NOT IDENT.
CO-60	1.028E-02	2.365E-02	2.410E-02	NOT IDENT.
ZN-65	6.215E-02	1.965E-01	1.985E-01	NOT IDENT.
GE-68	-2.862E-01	2.015E+00	2.019E+00	NOT IDENT.
AS-73	-3.048E+00	4.600E+00	4.801E+00	NOT IDENT.
AS-74	7.101E+03	6.829E+03	7.543E+03	SHORT HLIF
SE-75	-2.039E-01	1.945E-01	2.152E-01	FAIL ABUN
BR-77	1.125E+39	9.939E+39	0.000E+00	SHORT HLIF
SR-82	2.157E+02	7.184E+02	7.250E+02	SHORT HLIF
RB-83	-4.170E-01	6.992E-01	7.241E-01	NOT IDENT.
KR-85	-4.591E+00	8.088E+00	8.349E+00	NOT IDENT.
SR-85	-5.166E-01	9.111E-01	9.404E-01	NOT IDENT.
RB-86	-1.055E+04	2.974E+04	3.012E+04	SHORT HLIF
Y-88	1.816E-02	2.207E-01	2.209E-01	NOT IDENT.
Y-91	3.156E+02	5.165E+02	5.357E+02	NOT IDENT.
NB-94	1.547E-02	2.818E-02	2.903E-02	NOT IDENT.
NB-95	-5.483E-01	8.884E-01	9.221E-01	NOT IDENT.
NB-95M	-4.289E-01	2.602E+00	2.609E+00	NOT IDENT.
ZR-95	2.137E+00	1.858E+00	2.093E+00	FAIL ABUN
NB-97	1.000E+41	2.235E+41	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	2.432E+42	0.000E+00	SHORT HLIF
MO-99	2.651E+32	6.463E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	8.974E+40	0.000E+00	SHORT HLIF
RH-101	-1.392E-02	3.183E-02	3.245E-02	NOT IDENT.
RH-102	3.331E-03	4.936E-02	4.938E-02	NOT IDENT.
RU-103	5.173E+00	6.566E+00	6.968E+00	FAIL ABUN
RH-106	-2.414E-01	4.564E-01	4.692E-01	NOT IDENT.
RU-106	-2.414E-01	4.564E-01	4.692E-01	NOT IDENT.
AG-108M	-2.565E-02	3.070E-02	3.280E-02	FAIL ABUN
AG-110M	-2.689E-02	8.627E-02	8.712E-02	NOT IDENT.
SN-113	-8.626E-02	2.514E-01	2.543E-01	NOT IDENT.
CD-115	-8.038E+37	1.908E+40	0.000E+00	SHORT HLIF
SN-117M	5.614E+03	1.178E+05	1.178E+05	SHORT HLIF
TE-123M	-2.056E-02	1.222E-01	1.226E-01	NOT IDENT.
SB-124	-6.167E-02	1.663E+00	1.664E+00	FAIL ABUN
SB-125	4.597E-02	1.077E-01	1.097E-01	NOT IDENT.
TE-125M	1.914E+02	2.397E+02	2.548E+02	NOT IDENT.
I-126	2.786E+05	1.295E+06	1.301E+06	SHORT HLIF
SB-126	1.358E+05	1.595E+06	1.596E+06	SHORT HLIF
SB-127	-2.715E+22	6.816E+22	0.000E+00	SHORT HLIF
I-131	-9.392E+08	8.587E+09	8.598E+09	SHORT HLIF
I-132	-1.000E+41	1.962E+42	0.000E+00	SHORT HLIF
TE-132	-2.444E+26	1.318E+27	0.000E+00	SHORT HLIF
BA-133	-4.407E-02	4.774E-02	5.171E-02	FAIL ABUN
I-133	1.000E+41	2.749E+41	0.000E+00	SHORT HLIF
CS-134	3.050E-02	5.161E-02	5.341E-02	NOT IDENT.
CS-135	1.794E-02	1.364E-01	1.367E-01	NOT IDENT.
I-135	1.000E+41	7.102E+41	0.000E+00	SHORT HLIF
CS-136	-6.038E+04	4.065E+05	4.074E+05	SHORT HLIF
CE-139	9.394E-03	9.940E-02	9.949E-02	NOT IDENT.
BA-140	5.050E+06	4.240E+06	4.812E+06	SHORT HLIF
LA-140	-1.231E+05	4.524E+05	4.558E+05	SHORT HLIF
CE-141	-1.689E+01	2.670E+01	2.776E+01	NOT IDENT.
CE-143	1.000E+41	2.263E+41	0.000E+00	SHORT HLIF
CE-144	2.211E-01	3.519E-01	3.657E-01	NOT IDENT.
PM-144	-1.013E-02	4.503E-02	4.526E-02	NOT IDENT.
PR-144	-1.243E+00	3.975E+00	4.014E+00	NOT IDENT.
PM-146	8.201E-03	4.350E-02	4.366E-02	NOT IDENT.
ND-147	7.012E+06	4.887E+07	4.897E+07	SHORT HLIF
PM-147	-3.412E+01	7.324E+02	7.326E+02	NOT IDENT.
PM-149	1.000E+41	1.256E+41	0.000E+00	SHORT HLIF
EU-150	-1.696E-03	2.627E-02	2.628E-02	FAIL ABUN
EU-152	1.567E-02	9.276E-02	9.303E-02	FAIL ABUN
GD-153	-5.762E-02	1.549E-01	1.571E-01	NOT IDENT.
EU-154	-3.713E-02	8.689E-02	8.849E-02	FAIL ABUN
TB-160	1.226E+00	1.506E+00	1.604E+00	FAIL ABUN
HO-166M	1.593E-03	4.615E-02	4.615E-02	FAIL ABUN
TM-171	5.599E+00	9.713E+00	1.004E+01	NOT IDENT.
HF-172	8.408E-03	2.042E-01	2.042E-01	FAIL ABUN
LU-172	-4.981E-03	6.783E-02	6.787E-02	FAIL ABUN
LU-176	3.662E-03	2.207E-02	2.213E-02	FAIL ABUN
HF-181	-8.016E-01	4.807E+00	4.820E+00	NOT IDENT.

TA-182	8.139E-02	8.541E-01	8.549E-01	FAIL ABUN
RE-183	1.166E+00	1.701E+00	1.781E+00	NOT IDENT.
RE-184	9.775E+00	2.912E+01	2.945E+01	NOT IDENT.
W-188	8.433E+00	1.113E+02	1.114E+02	FAIL ABUN
IR-192	3.218E-01	4.776E-01	4.992E-01	FAIL ABUN
HG-203	1.448E+00	2.449E+00	2.534E+00	NOT IDENT.
BI-207	-1.332E-02	3.611E-02	3.661E-02	FAIL ABUN
PB-210	-4.432E-01	1.285E+00	1.301E+00	NOT IDENT.
BI-211	2.946E+00	5.046E-01	1.421E+00	FAIL ABUN
PB-211	3.733E-01	6.985E-01	7.185E-01	NOT IDENT.
BI-212	1.534E+00	7.033E-01	9.862E-01	FAIL ABUN
RN-219	5.585E-03	3.627E-01	3.627E-01	FAIL ABUN
RA-223	5.092E-01	5.623E-01	6.074E-01	FAIL ABUN
AC-227	1.163E-01	2.221E-01	2.282E-01	FAIL ABUN
TH-227	1.163E-01	2.221E-01	2.282E-01	FAIL ABUN
TH-229	-4.498E-02	4.879E-01	4.883E-01	FAIL ABUN
TH-231	5.092E-01	5.623E-01	6.074E-01	FAIL ABUN
PA-233	-5.449E-03	5.268E-02	5.274E-02	FAIL ABUN
PA-234	1.837E-01	3.083E-01	3.193E-01	FAIL ABUN
PA-234M	-2.650E+00	3.675E+00	3.865E+00	NOT IDENT.
U-235	1.255E-01	1.699E-01	1.791E-01	FAIL ABUN
NP-237	-5.449E-03	5.268E-02	5.274E-02	FAIL ABUN
NP-238	-1.000E+41	1.638E+41	0.000E+00	SHORT HLIF
NP-239	2.723E-02	2.115E-01	2.119E-01	FAIL ABUN
PU-239	2.824E+02	2.901E+02	3.168E+02	NOT IDENT.
AM-241	4.583E-03	8.366E-02	8.368E-02	NOT IDENT.
CM-243	2.000E-02	7.883E-02	7.935E-02	FAIL ABUN
BK-247	-7.230E-02	6.760E-02	7.505E-02	FAIL ABUN
CM-247	1.871E-02	3.328E-02	3.434E-02	FAIL ABUN
CF-249	1.475E-02	3.656E-02	3.716E-02	NOT IDENT.
CF-251	1.980E-02	1.136E-01	1.140E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	87.8545	87.09	159.0519	136.47	79.3663
45.60	104.5483	87.57	138.2499	140.51	0.0000
46.54	100.0665	88.03	138.3703	143.76	89.3306
49.72	0.0000	88.34	165.0228	144.24	77.9277
51.35	106.2390	88.47	165.0636	145.44	111.3422
51.87	93.8141	89.96	111.5187	152.43	84.5711
52.39	88.1330	1093.63	134.8350	153.25	0.0000
52.97	102.8177	91.11	0.0000	323.87	92.8943
53.44	113.6281	92.59	133.2050	156.02	0.0000
54.07	94.3593	93.35	133.3905	158.56	0.0000
57.36	0.0000	94.56	133.6827	159.00	87.6228
57.53	96.1768	94.65	133.7039	162.33	90.3354
57.98	92.3545	94.67	133.7087	162.66	0.0000
59.27	109.0760	94.87	133.7572	163.33	97.4961
59.32	109.0895	97.43	105.2203	165.86	77.7687
59.54	109.1482	98.43	86.8883	176.31	89.4882
60.96	102.9268	98.44	86.8901	176.60	0.0000
61.17	100.3383	99.53	78.4929	177.52	94.3947
62.93	131.2527	100.11	92.1433	181.07	0.0000
63.29	131.3635	102.03	83.1325	181.52	94.4334
63.58	131.4532	103.18	74.6791	184.41	98.7601
64.28	131.6682	103.37	74.7029	143.76	98.9077
66.73	101.6488	105.21	82.1410	193.51	104.6367
67.24	125.8688	105.31	82.1544	197.03	106.2609
125.81	143.7539	106.12	96.6983	198.01	91.7015
67.75	143.7757	106.47	96.7548	201.83	87.1683
69.67	123.1886	109.28	80.5203	203.43	94.6956
70.83	125.5269	111.00	97.1129	205.31	77.6320
72.81	143.6872	111.76	0.0000	210.85	87.9971
72.87	143.7056	114.06	89.9149	215.65	77.2219
74.66	130.6455	116.30	0.0000	222.11	90.2615
74.82	130.6895	116.74	96.9026	227.09	84.8273
74.97	130.7305	119.76	92.9318	227.38	78.1301
77.11	131.3145	121.12	90.9081	228.16	0.0000
78.74	135.8712	121.22	97.5746	228.18	81.5546
79.69	123.7582	121.78	97.6579	116.74	81.5546
80.12	125.2416	122.06	95.4791	235.69	94.0040
80.19	0.0000	122.92	101.1614	235.96	70.3099
80.57	119.8445	123.07	104.5201	238.63	70.4880
81.00	128.2203	265.00	94.5997	238.98	0.0000
81.07	117.8965	125.81	97.1342	240.99	70.6451
81.75	120.1277	127.23	117.4769	242.00	70.7118
83.79	137.2469	127.91	113.1153	244.70	55.0892
84.00	137.3033	129.30	98.7556	252.40	0.0000
85.43	100.1345	131.20	133.9149	252.80	83.4650
86.55	100.3499	133.02	87.2537	254.15	0.0000
86.79	158.9603	133.52	88.8205	256.23	72.5024
86.94	159.0056	136.00	90.6445	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	76.5256	355.39	0.0000	584.27	33.0334
264.80	73.0557	356.01	67.2539	595.83	0.0000
265.00	79.1584	364.49	0.0000	427.87	25.7744
268.22	62.8066	366.42	0.0000	602.52	0.0000
269.46	68.1135	372.51	44.4058	604.72	27.4382
270.03	68.1469	375.05	59.6252	607.14	37.1644
271.23	66.4675	377.52	65.4119	609.32	36.6632
273.65	0.0000	356.01	40.9371	610.33	36.6798
276.40	59.7352	388.16	47.7376	614.28	38.9092
277.37	59.7836	388.63	0.0000	618.01	25.9844
277.60	59.7961	391.69	50.2409	620.36	28.1794
278.00	59.8154	264.66	56.7901	621.93	30.3698
279.20	50.1904	401.81	48.1628	630.19	0.0000
279.54	50.2055	402.40	42.3994	631.29	21.7847
279.70	54.1754	404.85	41.9840	633.25	23.9846
280.46	51.5660	410.95	50.8669	634.78	0.0000
283.69	60.9857	413.71	40.7644	635.95	17.4648
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	53.1079	423.72	0.0000	645.85	26.3135
285.90	0.0000	427.09	52.8475	657.76	13.2261
287.50	51.4261	427.87	46.9980	657.90	0.0000
290.67	53.3374	433.94	62.8971	661.66	28.1531
293.27	0.0000	439.40	65.0762	664.57	0.0000
351.93	62.4577	453.88	42.7629	666.33	0.0000
295.96	62.4961	463.37	61.9987	666.50	0.0000
879.38	62.6272	468.07	61.1638	667.71	0.0000
299.98	62.6984	473.00	0.0000	677.62	24.4573
300.09	62.7026	475.06	46.3070	685.70	0.0000
300.13	62.7055	476.78	51.3901	695.00	0.0000
301.36	64.5601	477.60	45.3653	696.49	22.4129
302.85	61.9431	482.18	43.4610	696.51	23.5336
256.23	55.0130	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	24.6623
306.78	54.9325	497.08	35.6672	697.49	24.6641
308.46	57.7096	505.52	19.9630	702.65	22.4707
311.90	54.2480	507.63	0.0000	706.68	24.7590
316.51	55.3483	511.00	40.0438	711.68	18.0436
319.41	0.0000	514.00	53.9911	720.70	0.0000
320.08	0.0000	514.00	53.9911	721.93	0.0000
321.04	61.0036	520.40	44.3717	722.78	10.1960
323.87	41.0605	520.69	0.0000	722.91	10.1964
325.23	47.9530	522.65	0.0000	723.31	10.1982
328.76	0.0000	527.90	0.0000	724.19	10.2019
333.37	67.5440	528.26	29.0117	727.33	15.3221
333.97	57.9205	529.59	28.6175	733.00	17.7461
334.37	52.4193	529.87	0.0000	735.93	22.7783
338.28	71.0157	531.02	0.0000	333.97	20.5129
338.32	71.0173	537.26	0.0000	739.50	0.0000
311.90	63.7399	546.56	0.0000	747.24	19.4494
340.48	63.7399	552.55	25.1787	748.06	13.7334
340.55	0.0000	563.25	44.2986	752.31	24.0736
344.28	59.2839	569.33	39.1424	753.82	0.0000
345.93	58.9832	946.00	39.1454	756.73	20.6704
351.06	49.3327	569.70	39.1484	756.80	20.6711
351.93	49.3640	583.19	33.0170	884.68	18.4258

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	34.5728	1274.44	11.2401	1620.50	9.8849
766.42	31.1232	1001.03	20.6378	1621.92	14.2830
766.84	31.1287	1002.74	21.5878	1678.03	0.0000
772.60	0.0000	1004.73	19.7227	1690.97	4.4578
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	3.6189
778.90	15.0577	1028.54	0.0000	1063.66	4.5288
783.70	0.0000	1037.84	16.1295	1771.35	5.6622
785.37	17.4170	1038.76	0.0000	1791.20	0.0000
792.07	31.4308	631.29	17.1244	1808.65	0.9125
794.95	25.6380	1048.07	0.0000	1810.72	0.0000
795.86	25.6470	1049.04	22.8486	1836.06	6.4210
810.06	19.6896	1050.41	18.0966		
810.29	19.6909	1063.66	15.2998		
344.28	19.6923	1077.00	0.0000		
810.76	17.5842	1077.34	17.2815		
815.77	0.0000	1085.87	17.3254		
1048.07	0.0000	1093.63	18.3297		
832.01	22.1527	1099.45	22.2251		
834.85	14.1924	1112.07	17.4573		
835.71	16.8587	1112.84	24.3909		
836.80	0.0000	1115.54	21.7465		
846.75	0.0000	1120.29	23.3320		
846.77	23.1618	1120.55	23.3335		
856.80	0.0000	1221.41	23.3379		
860.56	16.1142	1129.67	14.6210		
871.09	17.9712	1131.51	0.0000		
873.19	12.5892	1147.95	0.0000		
875.33	0.0000	1173.23	17.7605		
879.38	10.8142	1177.95	14.8196		
880.51	17.1289	1189.05	20.8103		
883.24	15.3404	1204.77	15.9229		
884.68	20.7651	1221.41	18.9930		
889.28	15.3725	1231.02	23.0505		
894.76	15.4016	1235.36	0.0000		
898.04	14.5117	1238.28	27.1104		
900.72	17.2489	1260.41	0.0000		
903.28	17.2640	1271.87	9.1165		
911.20	17.3104	1274.44	13.1769		
912.08	17.3156	1274.54	13.1769		
923.98	0.0000	1291.59	16.2891		
926.50	20.1470	1298.22	0.0000		
929.11	19.2479	1312.11	0.0000		
937.49	18.3820	1332.49	3.2914		
944.13	0.0000	1362.66	0.0000		
946.00	11.5870	1365.19	14.5161		
949.00	16.2374	1368.63	0.0000		
667.71	0.0000	1384.29	2.7777		
962.31	16.3083	1408.01	8.3804		
964.08	13.9069	1457.56	0.0000		
966.17	13.9165	1460.82	7.4234		
911.20	13.9288	1489.16	7.4717		
968.97	13.9288	1505.03	10.7117		
983.53	0.0000	1584.12	6.9754		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:21:30.20

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235019.CNF;1
Background file : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM11.CNF;517
Sample date    : 8-DEC-2015 14:30:00. Background date : 2-OCT-2016 11:00:34.
Sample ID     : G405235019. Acquisition date : 3-OCT-2016 08:21:03.
Detector name  : GAM11. Sample quantity : 1.75975E+02 GRAM
Elapsed live time: 0 01:00:00.00. Detector geometry: CAN
Energy tolerance: 1.50000 keV. Elapsed real time: 0 01:00:00.63 0.0%
Abundance limit : 75.00000. Analyst Initials : MXR1
Batch ID       : 1596247. Sensitivity : 3.00000
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.02*	26	272	1.13	125.95	122	11	7.13E-03	127.1	
2	2	74.87*	137	156	0.88	149.66	146	14	3.80E-02	15.9	3.97E-01
3	2	77.15*	212	134	0.91	154.22	146	14	5.89E-02	11.0	
4	0	83.89*	45	165	1.04	167.71	165	7	1.26E-02	49.5	
5	0	86.82	58	157	0.74	173.58	172	6	1.62E-02	36.4	
6	0	89.82	64	123	1.37	179.58	177	6	1.78E-02	30.4	
7	0	92.82*	59	156	1.46	185.58	182	7	1.65E-02	39.8	
8	0	185.56*	175	124	1.20	371.18	365	13	4.85E-02	15.6	
9	0	209.55	50	127	1.42	419.20	414	11	1.37E-02	46.2	
10	2	238.65*	400	90	1.03	477.44	473	15	1.11E-01	6.2	2.44E+00
11	2	241.64	100	95	1.41	483.41	473	15	2.77E-02	21.6	
12	4	270.47	56	52	1.75	541.11	537	27	1.57E-02	28.2	4.29E+00
13	4	274.41	40	44	1.20	549.00	537	27	1.11E-02	31.1	
14	4	276.97	20	72	1.76	554.12	537	27	5.44E-03	92.0	
15	4	295.35*	182	55	1.36	590.91	586	23	5.06E-02	9.9	3.06E+00
16	4	300.14	38	53	1.80	600.49	586	23	1.06E-02	45.7	
17	0	338.45*	83	87	0.92	677.16	672	11	2.30E-02	24.7	
18	0	351.87*	248	51	1.32	704.01	698	12	6.89E-02	8.7	
19	0	415.66	34	112	7.63	831.66	813	24	9.52E-03	84.0	
20	0	428.86	10	41	1.41	858.08	851	9	2.79E-03	120.8	
21	0	469.33	25	25	1.81	939.06	935	9	6.91E-03	41.4	
22	1	491.68	15	25	1.55	983.78	977	17	4.30E-03	63.8	1.99E+00
23	1	494.93	16	18	1.55	990.28	977	17	4.46E-03	48.9	
24	0	498.75	32	23	3.26	997.93	993	10	8.92E-03	32.8	
25	0	510.95*	18	45	1.03	1022.34	1019	9	4.92E-03	92.2	
26	0	544.28	12	22	3.54	1089.02	1081	10	3.20E-03	82.5	
27	0	583.46*	160	29	1.56	1167.43	1162	14	4.45E-02	11.0	
28	0	609.42*	167	44	1.23	1219.36	1214	11	4.63E-02	11.2	
29	0	660.96*	23	18	0.84	1322.50	1316	11	6.49E-03	43.8	
30	6	668.21	28	19	1.54	1337.00	1333	12	7.79E-03	27.8	9.15E+00
31	6	670.75	9	11	1.65	1342.09	1333	12	2.38E-03	71.4	
32	0	701.59	16	38	5.90	1403.77	1395	15	4.31E-03	89.8	
33	0	727.59*	40	18	1.92	1455.79	1451	11	1.12E-02	26.8	
34	0	747.05	20	17	1.62	1494.74	1490	10	5.55E-03	45.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	768.97	24	27	2.85	1538.59	1533	11	6.59E-03	51.5	
36	0	817.97	15	14	3.22	1636.63	1631	11	4.13E-03	55.0	
37	0	860.97	28	12	1.35	1722.66	1717	11	7.88E-03	31.1	
38	0	911.28*	87	19	2.09	1823.31	1817	15	2.41E-02	15.7	
39	0	935.17	11	9	1.29	1871.08	1867	8	3.18E-03	57.9	
40	1	964.79	26	20	1.90	1930.35	1920	25	7.29E-03	33.5	1.53E+00
41	1	968.79	50	15	1.84	1938.35	1920	25	1.38E-02	21.9	
42	0	1003.33*	30	4	5.74	2007.44	2000	15	8.36E-03	25.3	
43	0	1116.48	11	11	1.51	2233.79	2225	12	3.03E-03	69.8	
44	0	1120.37*	42	8	1.39	2241.57	2237	10	1.17E-02	20.5	
45	0	1153.38	14	22	2.48	2307.60	2301	11	3.89E-03	70.2	
46	0	1166.18	10	7	2.27	2333.20	2329	7	2.78E-03	54.1	
47	0	1336.20	9	4	0.68	2673.26	2669	8	2.36E-03	52.6	
48	0	1377.44	18	5	2.28	2755.75	2750	10	5.00E-03	33.1	
49	0	1415.36	12	0	0.83	2831.58	2827	9	3.33E-03	28.9	
50	0	1460.91*	413	8	1.73	2922.68	2915	14	1.15E-01	5.1	
51	0	1509.86	7	5	1.79	3020.57	3014	10	1.94E-03	70.7	
52	0	1764.78*	32	3	2.13	3530.35	3524	12	8.81E-03	22.1	
53	0	1847.73	7	2	1.26	3696.23	3691	9	1.90E-03	54.9	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235019.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 8-DEC-2015 14:30:00   Acquisition date : 3-OCT-2016 08:21:03
Sample ID        : G405235019             Sample quantity  : 175.98 GRAM
Sample type       : SOLID                  Sample geometry   :
Detector name     : GAMMA11               Detector geometry: CAN
Elapsed live time : 0 01:00:00.00          Elapsed real time: 0 01:00:00.63   0.0%
Energy tolerance  : 1.50 keV               Half life ratio  : 10.00
Errors propagated: No                      Systematic Error : 0.00 %
Efficiency type   : Linear                 Efficiencies at   : Peak Energy
Abundance limit   : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	TH-229	85.43
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.238E+00	1.308E+01	1.308E+01	10.29	OK
ZN-65	1115.54	50.60*	1.552E+00	6.051E-02	1.418E-01	139.62	OK
CD-109	88.03	3.70*	6.225E+00	4.599E-01	7.215E-01	244.59	OK
SN-126	64.28	9.60	3.845E+00	4.320E-01	4.320E-01	254.25	OK
	86.94	8.90	6.225E+00	1.912E-01	1.912E-01	244.59	OK
	87.57	37.00*	6.225E+00	4.599E-02	4.599E-02	244.59	OK
BA-137M	661.66	89.90*	2.341E+00	5.215E-02	5.314E-02	87.64	OK
CS-137	661.66	85.10*	2.341E+00	5.509E-02	5.614E-02	87.64	OK
TL-208	277.37	6.60	4.720E+00	3.303E-01	3.303E-01	183.91	OK
	583.19	85.00*	2.581E+00	3.483E-01	3.483E-01	21.98	OK
	860.56	12.50	1.906E+00	5.387E-01	5.387E-01	62.18	OK
PB-212	74.82	10.28	5.239E+00	9.007E-01	9.007E-01	56.51	OK
	77.11	17.10	5.459E+00	1.382E+00	1.382E+00	21.98	OK
	238.63	43.60*	5.299E+00	9.269E-01	9.269E-01	12.41	OK
	300.09	3.30	4.424E+00	1.357E+00	1.357E+00	91.45	OK
BI-214	609.32	45.49*	2.494E+00	6.972E-01	6.975E-01	22.43	OK
	1120.29	14.92	1.548E+00	7.912E-01	7.915E-01	41.03	OK
	1764.49	15.30	1.040E+00	8.093E-01	8.096E-01	44.16	OK
PB-214	74.82	5.80	5.234E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	5.459E+00	2.436E+00	2.437E+00	21.98	OK
	87.09	3.41	6.242E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	5.244E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	4.482E+00	1.150E+00	1.150E+00	19.77	OK
	351.93	35.60*	3.884E+00	9.156E-01	9.159E-01	17.41	OK
RN-222	609.32	45.49*	2.494E+00	6.972E-01	6.975E-01	22.43	OK
	1120.29	14.92	1.548E+00	7.912E-01	7.915E-01	41.03	OK
	1764.49	15.30	1.040E+00	8.093E-01	8.096E-01	44.16	OK
RA-224	240.99	4.10*	5.250E+00	4.419E-01	4.419E-01	258.61	OK
RA-226	609.32	45.49*	2.494E+00	6.972E-01	6.975E-01	22.43	OK
	1120.29	14.92	1.548E+00	7.912E-01	7.915E-01	41.03	OK
	1764.49	15.30	1.040E+00	8.093E-01	8.096E-01	44.16	OK
AC-228	105.21	1.10	7.023E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.010E+00	9.376E-01	9.376E-01	49.50	OK
	794.95	4.25	2.028E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.951E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.823E+00	8.277E-01	8.277E-01	31.41	OK
	968.97	15.80	1.738E+00	8.072E-01	8.072E-01	43.85	OK
RA-228	105.21	1.10	7.023E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.010E+00	9.376E-01	9.376E-01	49.50	OK
	794.95	4.25	2.028E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.951E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.823E+00	8.277E-01	8.277E-01	31.41	OK
	968.97	15.80	1.738E+00	8.072E-01	8.072E-01	43.85	OK
TH-228	74.82	10.28	5.239E+00	9.007E-01	9.007E-01	56.51	OK
	77.11	17.10	5.459E+00	1.382E+00	1.382E+00	21.98	OK
	238.63	43.60*	5.299E+00	9.269E-01	9.269E-01	12.41	OK
	300.09	3.30	4.424E+00	1.357E+00	1.357E+00	91.45	OK
TH-229	85.43	14.70	6.225E+00	1.158E-01	1.158E-01	244.59	OK
	88.47	24.00	6.409E+00	2.491E-01	2.491E-01	60.75	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	193.51	4.41*	6.133E+00	----- Line	Not Found	-----	Absent
	210.85	2.80	5.821E+00	1.651E+00	1.651E+00	92.48	OK
TH-230	609.32	45.49*	2.494E+00	6.972E-01	6.972E-01	22.43	OK
	1120.29	14.92	1.548E+00	7.912E-01	7.912E-01	41.03	OK
	1764.49	15.30	1.040E+00	8.093E-01	8.093E-01	44.16	OK
PA-231	283.69	1.70	4.630E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	4.424E+00	8.372E-01	8.372E-01	91.45	OK
TH-232	105.21	1.10	7.023E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.010E+00	9.376E-01	9.376E-01	49.50	OK
	835.71	1.61	1.951E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.823E+00	8.277E-01	8.277E-01	31.41	OK
	968.97	15.80	1.738E+00	8.072E-01	8.072E-01	43.85	OK
TH-234	63.29	3.70*	3.845E+00	1.121E+00	1.121E+00	254.25	OK
	92.59	4.23	6.570E+00	1.273E+00	1.273E+00	79.53	OK
U-234	609.32	45.49*	2.494E+00	6.972E-01	6.972E-01	22.43	OK
	1120.29	14.92	1.548E+00	7.912E-01	7.912E-01	41.03	OK
	1764.49	15.30	1.040E+00	8.093E-01	8.093E-01	44.16	OK
U-235	89.96	3.47	6.409E+00	1.723E+00	1.723E+00	60.75	OK
	93.35	5.60	6.570E+00	9.616E-01	9.616E-01	79.53	OK
	143.76	10.96*	7.059E+00	----- Line	Not Found	-----	Absent
	163.33	5.08	6.731E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	6.293E+00	2.677E-01	2.677E-01	31.14	OK
	205.31	5.01	5.902E+00	----- Line	Not Found	-----	Absent
U-238	63.29	3.70*	3.845E+00	1.121E+00	1.121E+00	254.25	OK
	92.59	4.23	6.570E+00	1.273E+00	1.273E+00	79.53	OK
AM-243	43.53	5.90	9.310E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	5.239E+00	1.378E-01	1.378E-01	56.51	OK
ANH-511	511.00	100.00*	2.868E+00	3.004E-02	3.004E-02	184.44	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235019.CNF;1
* Acquisition date   : 3-OCT-2016 08:21:03 Sensitivity      : 3.000
* Detector ID        : GAM11 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.63 Half life ratio : *****
* Sample date        : 8-DEC-2015 14:30:00 Analyst initials: MXR1
* Sample ID          : G405235019 Sample Quantity : 1.7598E+02 GRAM
* Batch Number       : 1596247 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 2-AUG-2016 10:31:39 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM11 CAN.CNF;14
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.308E+01	1.319E+00	3.933E-01
ZN-65	1.418E-01	1.940E-01	2.419E-01
CD-109	7.215E-01	1.729E+00	1.412E+00
SN-126	4.599E-02	1.102E-01	9.996E-02
BA-137M	5.314E-02	4.564E-02	4.713E-02
CS-137	5.614E-02	4.822E-02	4.978E-02
TL-208	3.483E-01	7.503E-02	5.067E-02
PB-212	9.269E-01	1.127E-01	8.229E-02
BI-214	6.975E-01	1.533E-01	1.022E-01
PB-214	9.159E-01	1.562E-01	9.511E-02
RN-222	6.975E-01	1.533E-01	1.022E-01
RA-224	4.419E-01	1.120E+00	8.823E-01
RA-226	6.975E-01	1.533E-01	1.022E-01
AC-228	8.277E-01	2.547E-01	1.987E-01
RA-228	8.277E-01	2.547E-01	1.987E-01
TH-228	9.269E-01	1.127E-01	8.229E-02
TH-229	-8.168E-02	3.649E-01	6.825E-01
TH-230	6.972E-01	1.532E-01	1.022E-01
PA-231	8.372E-01	7.503E-01	6.279E-01
TH-232	8.277E-01	2.547E-01	1.987E-01
TH-234	1.121E+00	2.793E+00	1.538E+00
U-234	6.972E-01	1.532E-01	1.022E-01
U-235	-2.306E-02	1.394E-01	2.680E-01
U-238	1.121E+00	2.793E+00	1.538E+00
AM-243	1.378E-01	7.631E-02	7.049E-02
ANH-511	3.004E-02	5.430E-02	4.182E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-2.030E+00	9.521E+00	1.863E+01	NOT IDENT.
NA-22	-4.410E-03	3.432E-02	6.846E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	1.871E-02	2.462E-02	6.211E-02	NOT IDENT.

SC-46	3.402E-01	2.517E-01	6.183E-01	FAIL ABUN
V-48	0.000E+00	9.984E+03	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.117E+02	0.000E+00	SHORT HLIF
MN-54	-5.091E-03	5.301E-02	1.003E-01	NOT IDENT.
CO-56	-1.179E-01	3.829E-01	7.025E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	4.973E-03	3.363E-02	6.752E-02	NOT IDENT.
CO-58	-2.941E-01	3.921E-01	6.621E-01	NOT IDENT.
FE-59	-1.537E+00	4.969E+00	9.690E+00	NOT IDENT.
CO-60	-1.192E-02	4.096E-02	6.849E-02	NOT IDENT.
GE-68	1.051E+00	1.852E+00	4.066E+00	NOT IDENT.
AS-73	-6.730E-01	5.407E+00	1.124E+01	NOT IDENT.
AS-74	0.000E+00	4.441E+03	0.000E+00	SHORT HLIF
SE-75	-2.080E-02	1.573E-01	2.918E-01	NOT IDENT.
BR-77	0.000E+00	1.978E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	5.237E+02	0.000E+00	SHORT HLIF
RB-83	8.125E-03	5.009E-01	1.004E+00	NOT IDENT.
KR-85	-1.717E+00	5.560E+00	9.456E+00	NOT IDENT.
SR-85	-1.822E-01	5.869E-01	9.978E-01	NOT IDENT.
RB-86	0.000E+00	2.390E+04	0.000E+00	SHORT HLIF
Y-88	1.539E-01	1.336E-01	4.012E-01	NOT IDENT.
Y-91	1.451E+02	4.130E+02	8.711E+02	NOT IDENT.
NB-94	3.236E-02	5.694E-02	4.936E-02	FAIL ABUN
NB-95	4.936E-01	8.228E-01	1.545E+00	NOT IDENT.
NB-95M	2.028E+00	2.085E+00	3.960E+00	NOT IDENT.
ZR-95	2.861E-01	1.125E+00	2.282E+00	NOT IDENT.
NB-97	0.000E+00	1.585E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.205E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-6.699E-03	2.612E-02	5.036E-02	NOT IDENT.
RH-102	-1.461E-02	4.451E-02	8.412E-02	NOT IDENT.
RU-103	8.096E+00	4.274E+00	9.608E+00	FAIL ABUN
RH-106	-2.769E-01	4.128E-01	7.376E-01	NOT IDENT.
RU-106	-2.769E-01	4.128E-01	7.376E-01	NOT IDENT.
AG-108M	6.667E-03	1.918E-02	4.064E-02	NOT IDENT.
AG-110M	-4.382E-03	7.159E-02	1.392E-01	NOT IDENT.
SN-113	-5.393E-02	1.605E-01	3.157E-01	NOT IDENT.
CD-115	0.000E+00	2.409E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	6.910E+04	0.000E+00	SHORT HLIF
TE-123M	-1.664E-02	9.651E-02	1.848E-01	NOT IDENT.
SB-124	1.150E+00	1.310E+00	3.577E+00	NOT IDENT.
SB-125	6.234E-02	1.477E-01	1.689E-01	FAIL ABUN
TE-125M	8.779E+01	1.970E+02	4.059E+02	NOT IDENT.
I-126	0.000E+00	7.461E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	8.010E+05	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.446E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	3.541E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	5.442E+40	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.044E+26	0.000E+00	SHORT HLIF
BA-133	2.751E-03	3.202E-02	5.973E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	-1.254E-02	4.511E-02	8.276E-02	NOT IDENT.
CS-135	-1.282E-02	1.107E-01	1.886E-01	NOT IDENT.
I-135	0.000E+00	1.843E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.139E+05	0.000E+00	SHORT HLIF
CE-139	9.921E-02	8.832E-02	1.845E-01	NOT IDENT.
BA-140	0.000E+00	1.032E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	2.577E+05	0.000E+00	SHORT HLIF
CE-141	-1.223E+00	1.804E+01	3.498E+01	NOT IDENT.
CE-143	0.000E+00	9.385E+40	0.000E+00	SHORT HLIF
CE-144	5.676E-02	2.533E-01	5.079E-01	NOT IDENT.
PM-144	1.962E-02	4.483E-02	8.540E-02	NOT IDENT.
PR-144	1.786E+00	3.906E+00	7.461E+00	NOT IDENT.
PM-146	4.898E-04	2.943E-02	6.010E-02	FAIL ABUN
ND-147	0.000E+00	2.339E+07	0.000E+00	SHORT HLIF
PM-147	2.411E+02	6.008E+02	1.227E+03	NOT IDENT.
PM-149	0.000E+00	3.548E+40	0.000E+00	SHORT HLIF
EU-150	-5.887E-03	2.094E-02	3.722E-02	FAIL ABUN
EU-152	6.035E-03	7.271E-02	1.488E-01	FAIL ABUN
GD-153	8.733E-03	1.268E-01	2.560E-01	NOT IDENT.
EU-154	-1.268E-02	8.373E-02	1.664E-01	FAIL ABUN
EU-155	2.673E-02	7.650E-02	1.571E-01	FAIL ABUN
TB-160	-1.163E+00	1.475E+00	2.444E+00	FAIL ABUN
HO-166M	-1.428E-02	4.819E-02	8.957E-02	FAIL ABUN
TM-171	-1.285E+00	1.269E+01	2.648E+01	NOT IDENT.
HF-172	-8.547E-02	1.759E-01	3.337E-01	FAIL ABUN
LU-172	2.802E-02	6.473E-02	1.379E-01	FAIL ABUN

LU-176	-1.290E-02	1.860E-02	3.159E-02	FAIL ABUN
HF-181	-1.802E+00	3.171E+00	5.940E+00	NOT IDENT.
TA-182	4.024E-01	6.947E-01	1.513E+00	FAIL ABUN
RE-183	6.868E-01	1.784E+00	3.825E+00	NOT IDENT.
RE-184	7.369E+00	2.491E+01	5.015E+01	NOT IDENT.
W-188	-8.317E-01	9.107E+01	1.564E+02	FAIL ABUN
IR-192	1.873E-01	3.482E-01	6.921E-01	FAIL ABUN
HG-203	7.031E-01	1.858E+00	3.612E+00	NOT IDENT.
BI-207	1.043E-02	3.756E-02	7.951E-02	FAIL ABUN
PB-210	1.166E+00	1.708E+00	3.780E+00	NOT IDENT.
BI-211	0.000E+00	4.304E-01	6.421E-01	FAIL ABUN
PB-211	-1.196E-01	5.261E-01	9.302E-01	NOT IDENT.
BI-212	0.000E+00	6.742E-01	1.117E+00	FAIL ABUN
RN-219	5.979E-02	2.698E-01	5.614E-01	FAIL ABUN
RA-223	-3.781E-02	4.420E-01	8.962E-01	FAIL ABUN
AC-227	-6.068E-02	1.723E-01	3.119E-01	FAIL ABUN
TH-227	-6.068E-02	1.723E-01	3.119E-01	FAIL ABUN
TH-231	-3.781E-02	4.420E-01	8.962E-01	FAIL ABUN
PA-233	-5.017E-02	4.711E-02	7.543E-02	FAIL ABUN
PA-234	2.962E-02	2.102E-01	4.173E-01	NOT IDENT.
PA-234M	3.362E+00	3.111E+00	6.960E+00	NOT IDENT.
NP-237	-5.017E-02	4.711E-02	7.543E-02	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	2.354E-02	1.642E-01	3.315E-01	FAIL ABUN
PU-239	-2.539E+01	2.347E+02	4.572E+02	NOT IDENT.
AM-241	9.666E-03	8.947E-02	1.750E-01	NOT IDENT.
CM-243	-3.383E-03	6.738E-02	1.350E-01	FAIL ABUN
BK-247	-1.496E-02	5.689E-02	1.036E-01	FAIL ABUN
CM-247	-4.980E-03	2.489E-02	4.952E-02	FAIL ABUN
CF-249	-6.187E-03	2.648E-02	5.266E-02	NOT IDENT.
CF-251	4.211E-02	8.575E-02	1.720E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	405	10.66*	1.238E+00	1.308E+01	1.308E+01	10.29
ZN-65	1115.54	11	50.60*	1.552E+00	6.051E-02	1.418E-01	139.62
CD-109	88.03	82	3.70*	6.225E+00	1.519E+00	2.384E+00	72.74
SN-126	64.28	37	9.60	3.845E+00	4.320E-01	4.320E-01	254.25
	86.94	82	8.90	6.225E+00	6.317E-01	6.317E-01	72.74
	87.57	82	37.00*	6.225E+00	1.519E-01	1.519E-01	72.74
BA-137M	661.66	26	89.90*	2.341E+00	5.215E-02	5.314E-02	87.64
CS-137	661.66	26	85.10*	2.341E+00	5.509E-02	5.614E-02	87.64
TL-208	277.37	24	6.60	4.720E+00	3.303E-01	3.303E-01	183.91
	583.19	179	85.00*	2.581E+00	3.483E-01	3.483E-01	21.98
	860.56	30	12.50	1.906E+00	5.387E-01	5.387E-01	62.18
BI-211	72.87	-----	1.23	5.033E+00	-----	Line Not Found	-----
	351.06	297	12.92*	3.884E+00	2.523E+00	2.523E+00	17.41
PB-212	74.82	196	10.28	5.239E+00	1.549E+00	1.549E+00	31.79
	77.11	302	17.10	5.459E+00	1.382E+00	1.382E+00	21.98
	238.63	502	43.60*	5.299E+00	9.269E-01	9.269E-01	12.41
	300.09	46	3.30	4.424E+00	1.357E+00	1.357E+00	91.45
BI-214	609.32	185	45.49*	2.494E+00	6.972E-01	6.975E-01	22.43
	1120.29	43	14.92	1.548E+00	7.912E-01	7.915E-01	41.03
	1764.49	30	15.30	1.040E+00	8.093E-01	8.096E-01	44.16
PB-214	74.82	196	5.80	5.239E+00	2.746E+00	2.747E+00	31.79
	77.11	302	9.70	5.459E+00	2.436E+00	2.437E+00	21.98
	87.09	82	3.41	6.225E+00	1.649E+00	1.649E+00	72.74
	242.00	125	7.25	5.250E+00	1.400E+00	1.400E+00	43.23
	295.22	222	18.42	4.482E+00	1.150E+00	1.150E+00	19.77
	351.93	297	35.60*	3.884E+00	9.156E-01	9.159E-01	17.41
RN-222	609.32	185	45.49*	2.494E+00	6.972E-01	6.975E-01	22.43
	1120.29	43	14.92	1.548E+00	7.912E-01	7.915E-01	41.03
	1764.49	30	15.30	1.040E+00	8.093E-01	8.096E-01	44.16
RA-224	240.99	125	4.10*	5.250E+00	2.475E+00	2.475E+00	43.23
RA-226	609.32	185	45.49*	2.494E+00	6.972E-01	6.975E-01	22.43
	1120.29	43	14.92	1.548E+00	7.912E-01	7.915E-01	41.03
	1764.49	30	15.30	1.040E+00	8.093E-01	8.096E-01	44.16
AC-228	105.21	-----	1.10	7.023E+00	-----	Line Not Found	-----
	338.32	99	11.27	4.010E+00	9.376E-01	9.376E-01	49.50
	794.95	-----	4.25	2.028E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.951E+00	-----	Line Not Found	-----
	911.20	91	25.80*	1.823E+00	8.277E-01	8.277E-01	31.41
	968.97	52	15.80	1.738E+00	8.072E-01	8.072E-01	43.85
RA-228	105.21	-----	1.10	7.023E+00	-----	Line Not Found	-----
	338.32	99	11.27	4.010E+00	9.376E-01	9.376E-01	49.50
	794.95	-----	4.25	2.028E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.951E+00	-----	Line Not Found	-----
	911.20	91	25.80*	1.823E+00	8.277E-01	8.277E-01	31.41
	968.97	52	15.80	1.738E+00	8.072E-01	8.072E-01	43.85
TH-228	74.82	196	10.28	5.239E+00	1.549E+00	1.549E+00	31.79
	77.11	302	17.10	5.459E+00	1.382E+00	1.382E+00	21.98

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-229	238.63	502	43.60*	5.299E+00	9.269E-01	9.269E-01	12.41
	300.09	46	3.30	4.424E+00	1.357E+00	1.357E+00	91.45
	85.43	82	14.70	6.225E+00	3.824E-01	3.825E-01	72.74
	88.47	90	24.00	6.409E+00	2.491E-01	2.491E-01	60.75
	193.51	-----	4.41*	6.133E+00	-----	Line Not Found	-----
TH-230	210.85	63	2.80	5.821E+00	1.651E+00	1.651E+00	92.48
	609.32	185	45.49*	2.494E+00	6.972E-01	6.972E-01	22.43
	1120.29	43	14.92	1.548E+00	7.912E-01	7.912E-01	41.03
	1764.49	30	15.30	1.040E+00	8.093E-01	8.093E-01	44.16
PA-231	283.69	-----	1.70	4.630E+00	-----	Line Not Found	-----
	301.36	46	5.35*	4.424E+00	8.372E-01	8.372E-01	91.45
TH-232	105.21	-----	1.10	7.023E+00	-----	Line Not Found	-----
	338.32	99	11.27	4.010E+00	9.376E-01	9.376E-01	49.50
	835.71	-----	1.61	1.951E+00	-----	Line Not Found	-----
	911.20	91	25.80*	1.823E+00	8.277E-01	8.277E-01	31.41
TH-234	968.97	52	15.80	1.738E+00	8.072E-01	8.072E-01	43.85
	63.29	37	3.70*	3.845E+00	1.121E+00	1.121E+00	254.25
	92.59	83	4.23	6.570E+00	1.273E+00	1.273E+00	79.53
U-234	609.32	185	45.49*	2.494E+00	6.972E-01	6.972E-01	22.43
	1120.29	43	14.92	1.548E+00	7.912E-01	7.912E-01	41.03
	1764.49	30	15.30	1.040E+00	8.093E-01	8.093E-01	44.16
U-235	89.96	90	3.47	6.409E+00	1.723E+00	1.723E+00	60.75
	93.35	83	5.60	6.570E+00	9.616E-01	9.616E-01	79.53
	143.76	-----	10.96*	7.059E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.731E+00	-----	Line Not Found	-----
U-238	185.72	226	57.20	6.293E+00	2.677E-01	2.677E-01	31.14
	205.31	-----	5.01	5.902E+00	-----	Line Not Found	-----
	63.29	37	3.70*	3.845E+00	1.121E+00	1.121E+00	254.25
	92.59	83	4.23	6.570E+00	1.273E+00	1.273E+00	79.53
AM-243	43.53	-----	5.90	9.310E-01	-----	Line Not Found	-----
ANH-511	74.66	196	67.20*	5.239E+00	2.370E-01	2.370E-01	31.79
	511.00	20	100.00*	2.868E+00	3.004E-02	3.004E-02	184.44

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G405235019

Page : 3
Acquisition date : 3-OCT-2016 08:21:03

Total number of lines in spectrum 53
Number of unidentified lines 13
Number of lines tentatively identified by NID 40 75.47%

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	1.308E+01	1.308E+01	0.135E+01	10.29	
ZN-65	244.06D	2.34	6.051E-02	1.418E-01	1.979E-01	139.62	
CD-109	461.40D	1.57	1.519E+00	2.384E+00	1.734E+00	72.74	
SN-126	2.30E+05Y	1.00	1.519E-01	1.519E-01	1.105E-01	72.74	
BA-137M	30.08Y	1.02	5.215E-02	5.314E-02	4.658E-02	87.64	
CS-137	30.08Y	1.02	5.509E-02	5.614E-02	4.920E-02	87.64	
TL-208	1.41E+10Y	1.00	3.483E-01	3.483E-01	0.766E-01	21.98	
BI-211	7.04E+08Y	1.00	2.523E+00	2.523E+00	0.439E+00	17.41	
PB-212	1.41E+10Y	1.00	9.269E-01	9.269E-01	1.150E-01	12.41	
BI-214	1600.00Y	1.00	6.972E-01	6.975E-01	1.564E-01	22.43	
PB-214	1600.00Y	1.00	9.156E-01	9.159E-01	1.594E-01	17.41	
RN-222	1600.00Y	1.00	6.972E-01	6.975E-01	1.564E-01	22.43	
RA-224	1.41E+10Y	1.00	2.475E+00	2.475E+00	1.070E+00	43.23	
RA-226	1600.00Y	1.00	6.972E-01	6.975E-01	1.564E-01	22.43	
AC-228	1.41E+10Y	1.00	8.277E-01	8.277E-01	2.599E-01	31.41	
RA-228	1.41E+10Y	1.00	8.277E-01	8.277E-01	2.599E-01	31.41	
TH-228	1.41E+10Y	1.00	9.269E-01	9.269E-01	1.150E-01	12.41	
TH-229	7340.00Y	1.00	2.491E-01	2.491E-01	1.513E-01	60.75	K
TH-230	7.54E+04Y	1.00	6.972E-01	6.972E-01	1.564E-01	22.43	
PA-231	7.04E+08Y	1.00	8.372E-01	8.372E-01	7.656E-01	91.45	
TH-232	1.41E+10Y	1.00	8.277E-01	8.277E-01	2.599E-01	31.41	
TH-234	4.47E+09Y	1.00	1.121E+00	1.121E+00	2.850E+00	254.25	
U-234	2.45E+05Y	1.00	6.972E-01	6.972E-01	1.564E-01	22.43	
U-235	7.04E+08Y	1.00	2.677E-01	2.677E-01	0.834E-01	31.14	K
U-238	4.47E+09Y	1.00	1.121E+00	1.121E+00	2.850E+00	254.25	
AM-243	7370.00Y	1.00	2.370E-01	2.370E-01	0.754E-01	31.79	
ANH-511	1.00E+09Y	1.00	3.004E-02	3.004E-02	5.541E-02	184.44	
Total Activity :			3.287E+01	3.382E+01			

Grand Total Activity : 3.287E+01 3.382E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	83.89	64	233	1.04	167.71	165	7	1.26E-02	98.9	6.02E+00	T
4	270.47	70	65	1.75	541.11	537	27	1.57E-02	56.3	4.81E+00	T
4	274.41	49	54	1.20	549.00	537	27	1.11E-02	62.2	4.75E+00	T
0	415.66	40	131	7.63	831.66	813	24	9.52E-03	****	3.39E+00	T
0	428.86	12	48	1.41	858.08	851	9	2.79E-03	****	3.30E+00	T
0	469.33	29	29	1.81	939.06	935	9	6.91E-03	82.7	3.07E+00	T
1	491.68	18	29	1.55	983.78	977	17	4.30E-03	****	2.96E+00	T
1	494.93	18	21	1.55	990.28	977	17	4.46E-03	97.7	2.94E+00	
0	498.75	37	26	3.26	997.93	993	10	8.92E-03	65.7	2.92E+00	
0	544.28	13	25	3.54	1089.02	1081	10	3.20E-03	****	2.73E+00	
6	668.21	31	21	1.54	1337.00	1333	12	7.79E-03	55.5	2.32E+00	T
6	670.75	9	12	1.65	1342.09	1333	12	2.38E-03	****	2.31E+00	
0	701.59	17	41	5.90	1403.77	1395	15	4.31E-03	****	2.23E+00	T
0	727.59	44	19	1.92	1455.79	1451	11	1.12E-02	53.5	2.17E+00	T
0	747.05	22	18	1.62	1494.74	1490	10	5.55E-03	89.9	2.13E+00	T
0	768.97	26	29	2.85	1538.59	1533	11	6.59E-03	****	2.08E+00	
0	817.97	16	15	3.22	1636.63	1631	11	4.13E-03	****	1.98E+00	T
0	935.17	12	9	1.29	1871.08	1867	8	3.18E-03	****	1.79E+00	
1	964.79	27	21	1.90	1930.35	1920	25	7.29E-03	67.1	1.74E+00	T
0	1003.33	31	4	5.74	2007.44	2000	15	8.36E-03	50.5	1.69E+00	T
0	1153.38	14	22	2.48	2307.60	2301	11	3.89E-03	****	1.51E+00	
0	1166.18	10	7	2.27	2333.20	2329	7	2.78E-03	****	1.50E+00	
0	1336.20	8	3	0.68	2673.26	2669	8	2.36E-03	****	1.34E+00	
0	1377.44	18	5	2.28	2755.75	2750	10	5.00E-03	66.2	1.30E+00	
0	1415.36	12	0	0.83	2831.58	2827	9	3.33E-03	57.7	1.27E+00	
0	1509.86	7	5	1.79	3020.57	3014	10	1.94E-03	****	1.20E+00	
0	1847.73	6	2	1.26	3696.23	3691	9	1.90E-03	****	9.94E-01	

Flags: "T" = Tentatively associated

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*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                           *
*                               Charleston, SC 29407                       *
*                               *                                           *
*****
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                           *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235019.CNF;1 *
* Acquisition date   : 3-OCT-2016 08:21:03 Sensitivity      : 3.000          *
* Detector ID        : GAM11 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 01:00:00.63 Half life ratio : *****        *
* Sample date        : 8-DEC-2015 14:30:00 Nuclide Library : SOLID        *
* Sample ID          : G405235019 Analyst initials: MXR1         *
* Batch Number       : 1596247 Sample Quantity : 1.7598E+02 GRAM        *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000          *
*                               Dry Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                   *
*                               *                                           *
* Eff. Cal. date     : 2-AUG-2016 10:31:39 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM11 CAN.CNF;14        *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.523E-01
ZN-65	1.034E-01
CD-109	6.630E-01
SN-126	4.723E-02
BA-137M	2.065E-02
CS-137	2.181E-02
TL-208	2.259E-02
PB-212	3.846E-02
BI-214	4.579E-02
PB-214	4.312E-02
RN-222	4.579E-02
RA-224	4.124E-01
RA-226	4.579E-02
AC-228	8.671E-02
RA-228	8.671E-02
TH-228	3.846E-02
TH-229	3.182E-01
TH-230	4.577E-02
PA-231	2.878E-01
TH-232	8.671E-02
TH-234	7.241E-01
U-234	4.577E-02
U-235	1.259E-01
U-238	7.241E-01
AM-243	3.341E-02
ANH-511	1.880E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	8.359E+00	NOT IDENT.
NA-22	2.897E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.532E-02	NOT IDENT.
SC-46	2.709E-01	FAIL ABUN

V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	4.422E-02	NOT IDENT.
CO-56	3.057E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	3.156E-02	NOT IDENT.
CO-58	2.746E-01	NOT IDENT.
FE-59	4.135E+00	NOT IDENT.
CO-60	2.937E-02	NOT IDENT.
GE-68	1.786E+00	NOT IDENT.
AS-73	5.277E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.337E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.490E-01	NOT IDENT.
KR-85	4.212E+00	NOT IDENT.
SR-85	4.444E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.595E-01	NOT IDENT.
Y-91	3.815E+02	NOT IDENT.
NB-94	2.199E-02	FAIL ABUN
NB-95	6.989E-01	NOT IDENT.
NB-95M	1.860E+00	NOT IDENT.
ZR-95	1.007E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.365E-02	NOT IDENT.
RH-102	3.690E-02	NOT IDENT.
RU-103	4.352E+00	FAIL ABUN
RH-106	3.256E-01	NOT IDENT.
RU-106	3.256E-01	NOT IDENT.
AG-108M	1.826E-02	NOT IDENT.
AG-110M	5.950E-02	NOT IDENT.
SN-113	1.417E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	8.610E-02	NOT IDENT.
SB-124	1.432E+00	NOT IDENT.
SB-125	7.687E-02	FAIL ABUN
TE-125M	1.906E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.715E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	3.684E-02	NOT IDENT.
CS-135	8.634E-02	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	8.694E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.639E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.375E-01	NOT IDENT.
PM-144	3.795E-02	NOT IDENT.
PR-144	3.318E+00	NOT IDENT.
PM-146	2.676E-02	FAIL ABUN
ND-147	0.000E+00	SHORT HLIF
PM-147	5.753E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.701E-02	FAIL ABUN
EU-152	6.831E-02	FAIL ABUN
GD-153	1.203E-01	NOT IDENT.
EU-154	7.033E-02	FAIL ABUN
EU-155	7.370E-02	FAIL ABUN
TB-160	1.035E+00	FAIL ABUN
HO-166M	3.977E-02	FAIL ABUN
TM-171	1.243E+01	NOT IDENT.
HF-172	1.563E-01	FAIL ABUN
LU-172	6.088E-02	FAIL ABUN
LU-176	1.428E-02	FAIL ABUN

HF-181	2.632E+00	NOT IDENT.
TA-182	6.638E-01	FAIL ABUN
RE-183	1.796E+00	NOT IDENT.
RE-184	2.207E+01	NOT IDENT.
W-188	7.154E+01	FAIL ABUN
IR-192	3.167E-01	FAIL ABUN
HG-203	1.666E+00	NOT IDENT.
BI-207	3.476E-02	FAIL ABUN
PB-210	1.776E+00	NOT IDENT.
BI-211	3.090E-01	FAIL ABUN
PB-211	4.184E-01	NOT IDENT.
BI-212	5.172E-01	FAIL ABUN
RN-219	2.542E-01	FAIL ABUN
RA-223	4.110E-01	FAIL ABUN
AC-227	1.430E-01	FAIL ABUN
TH-227	1.430E-01	FAIL ABUN
TH-231	4.110E-01	FAIL ABUN
PA-233	3.398E-02	FAIL ABUN
PA-234	1.807E-01	NOT IDENT.
PA-234M	3.064E+00	NOT IDENT.
NP-237	3.398E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.547E-01	FAIL ABUN
PU-239	2.147E+02	NOT IDENT.
AM-241	8.212E-02	NOT IDENT.
CM-243	6.302E-02	FAIL ABUN
BK-247	4.760E-02	FAIL ABUN
CM-247	2.232E-02	FAIL ABUN
CF-249	2.374E-02	NOT IDENT.
CF-251	8.039E-02	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.308E+01	1.485E+00	1.485E+00
ZN-65	1.418E-01	1.940E-01	1.940E-01
CD-109	7.215E-01	1.743E+00	1.743E+00
SN-126	4.599E-02	1.111E-01	1.111E-01
BA-137M	5.314E-02	4.570E-02	4.570E-02
CS-137	5.614E-02	4.828E-02	4.828E-02
TL-208	3.483E-01	7.648E-02	7.648E-02
PB-212	9.269E-01	1.230E-01	1.230E-01
BI-214	6.975E-01	1.562E-01	1.562E-01
PB-214	9.159E-01	1.608E-01	1.608E-01
RN-222	6.975E-01	1.562E-01	1.562E-01
RA-224	4.419E-01	1.128E+00	1.128E+00
RA-226	6.975E-01	1.562E-01	1.562E-01
AC-228	8.277E-01	2.582E-01	2.582E-01
RA-228	8.277E-01	2.582E-01	2.582E-01
TH-228	9.269E-01	1.230E-01	1.230E-01
TH-229	-8.168E-02	3.649E-01	3.649E-01
TH-230	6.972E-01	1.561E-01	1.561E-01
PA-231	8.372E-01	7.713E-01	7.713E-01
TH-232	8.277E-01	2.582E-01	2.582E-01
TH-234	1.121E+00	2.804E+00	2.804E+00
U-234	6.972E-01	1.561E-01	1.561E-01
U-235	-2.306E-02	1.394E-01	1.394E-01
U-238	1.121E+00	2.804E+00	2.804E+00
AM-243	1.378E-01	7.780E-02	7.780E-02
ANH-511	3.004E-02	5.432E-02	5.432E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-2.030E+00	9.521E+00	9.565E+00	NOT IDENT.
NA-22	-4.410E-03	3.432E-02	3.437E-02	NOT IDENT.
NA-24	1.000E+41	6.019E+41	0.000E+00	SHORT HLIF
AL-26	1.871E-02	2.465E-02	2.605E-02	NOT IDENT.

SC-46	3.402E-01	2.521E-01	2.951E-01	FAIL ABUN
V-48	3.854E+03	9.985E+03	1.014E+04	SHORT HLIF
CR-51	1.703E+02	3.118E+02	3.211E+02	SHORT HLIF
MN-54	-5.091E-03	5.301E-02	5.306E-02	NOT IDENT.
CO-56	-1.179E-01	3.830E-01	3.866E-01	NOT IDENT.
MN-56	-1.000E+41	3.138E+41	0.000E+00	SHORT HLIF
CO-57	4.973E-03	3.363E-02	3.370E-02	NOT IDENT.
CO-58	-2.941E-01	3.923E-01	4.141E-01	NOT IDENT.
FE-59	-1.537E+00	4.971E+00	5.019E+00	NOT IDENT.
CO-60	-1.192E-02	4.097E-02	4.132E-02	NOT IDENT.
GE-68	1.051E+00	1.853E+00	1.912E+00	NOT IDENT.
AS-73	-6.730E-01	5.408E+00	5.417E+00	NOT IDENT.
AS-74	-1.108E+03	4.442E+03	4.470E+03	SHORT HLIF
SE-75	-2.080E-02	1.573E-01	1.576E-01	NOT IDENT.
BR-77	1.627E+38	1.407E+39	0.000E+00	SHORT HLIF
SR-82	-6.725E+02	5.246E+02	6.059E+02	SHORT HLIF
RB-83	8.125E-03	5.009E-01	5.009E-01	NOT IDENT.
KR-85	-1.717E+00	5.561E+00	5.614E+00	NOT IDENT.
SR-85	-1.822E-01	5.869E-01	5.926E-01	NOT IDENT.
RB-86	3.761E+03	2.391E+04	2.397E+04	SHORT HLIF
Y-88	1.539E-01	1.340E-01	1.509E-01	NOT IDENT.
Y-91	1.451E+02	4.130E+02	4.182E+02	NOT IDENT.
NB-94	3.236E-02	5.695E-02	5.879E-02	FAIL ABUN
NB-95	4.936E-01	8.231E-01	8.526E-01	NOT IDENT.
NB-95M	2.028E+00	2.091E+00	2.282E+00	NOT IDENT.
ZR-95	2.861E-01	1.125E+00	1.132E+00	NOT IDENT.
NB-97	-1.000E+41	1.586E+41	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	3.098E+42	0.000E+00	SHORT HLIF
MO-99	-1.909E+31	1.205E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	2.402E+41	0.000E+00	SHORT HLIF
RH-101	-6.699E-03	2.615E-02	2.633E-02	NOT IDENT.
RH-102	-1.461E-02	4.453E-02	4.501E-02	NOT IDENT.
RU-103	8.096E+00	4.292E+00	5.634E+00	FAIL ABUN
RH-106	-2.769E-01	4.131E-01	4.316E-01	NOT IDENT.
RU-106	-2.769E-01	4.131E-01	4.316E-01	NOT IDENT.
AG-108M	6.667E-03	1.918E-02	1.942E-02	NOT IDENT.
AG-110M	-4.382E-03	7.159E-02	7.162E-02	NOT IDENT.
SN-113	-5.393E-02	1.605E-01	1.623E-01	NOT IDENT.
CD-115	-1.407E+39	2.423E+39	0.000E+00	SHORT HLIF
SN-117M	-4.171E+03	6.911E+04	6.913E+04	SHORT HLIF
TE-123M	-1.664E-02	9.651E-02	9.680E-02	NOT IDENT.
SB-124	1.150E+00	1.312E+00	1.411E+00	NOT IDENT.
SB-125	6.234E-02	1.477E-01	1.503E-01	FAIL ABUN
TE-125M	8.779E+01	1.970E+02	2.010E+02	NOT IDENT.
I-126	4.452E+05	7.485E+05	7.750E+05	SHORT HLIF
SB-126	2.165E+05	8.020E+05	8.079E+05	SHORT HLIF
SB-127	-2.355E+21	1.481E+22	0.000E+00	SHORT HLIF
I-131	1.211E+08	3.541E+09	3.542E+09	SHORT HLIF
I-132	1.000E+41	1.848E+42	0.000E+00	SHORT HLIF
TE-132	-2.159E+26	3.168E+26	0.000E+00	SHORT HLIF
BA-133	2.751E-03	3.202E-02	3.205E-02	FAIL ABUN
I-133	-1.000E+41	7.873E+41	0.000E+00	SHORT HLIF
CS-134	-1.254E-02	4.511E-02	4.546E-02	NOT IDENT.
CS-135	-1.282E-02	1.107E-01	1.109E-01	NOT IDENT.
I-135	-1.000E+41	7.019E+41	0.000E+00	SHORT HLIF
CS-136	3.372E+04	2.140E+05	2.145E+05	SHORT HLIF
CE-139	9.921E-02	9.055E-02	1.010E-01	NOT IDENT.
BA-140	-3.105E+05	1.032E+06	1.042E+06	SHORT HLIF
LA-140	7.780E+04	2.578E+05	2.601E+05	SHORT HLIF
CE-141	-1.223E+00	1.804E+01	1.805E+01	NOT IDENT.
CE-143	1.000E+41	9.440E+40	0.000E+00	SHORT HLIF
CE-144	5.676E-02	2.533E-01	2.546E-01	NOT IDENT.
PM-144	1.962E-02	4.485E-02	4.571E-02	NOT IDENT.
PR-144	1.786E+00	3.907E+00	3.989E+00	NOT IDENT.
PM-146	4.898E-04	2.943E-02	2.943E-02	FAIL ABUN
ND-147	4.458E+06	2.339E+07	2.348E+07	SHORT HLIF
PM-147	2.411E+02	6.009E+02	6.107E+02	NOT IDENT.
PM-149	-4.995E+39	3.550E+40	0.000E+00	SHORT HLIF
EU-150	-5.887E-03	2.094E-02	2.111E-02	FAIL ABUN
EU-152	6.035E-03	7.271E-02	7.276E-02	FAIL ABUN
GD-153	8.733E-03	1.268E-01	1.269E-01	NOT IDENT.
EU-154	-1.268E-02	8.373E-02	8.393E-02	FAIL ABUN
EU-155	2.673E-02	7.652E-02	7.746E-02	FAIL ABUN
TB-160	-1.163E+00	1.477E+00	1.567E+00	FAIL ABUN
HO-166M	-1.428E-02	4.820E-02	4.863E-02	FAIL ABUN
TM-171	-1.285E+00	1.269E+01	1.271E+01	NOT IDENT.
HF-172	-8.547E-02	1.765E-01	1.806E-01	FAIL ABUN
LU-172	2.802E-02	6.480E-02	6.602E-02	FAIL ABUN

LU-176	-1.290E-02	1.860E-02	1.949E-02	FAIL ABUN
HF-181	-1.802E+00	3.172E+00	3.274E+00	NOT IDENT.
TA-182	4.024E-01	6.949E-01	7.181E-01	FAIL ABUN
RE-183	6.868E-01	1.787E+00	1.814E+00	NOT IDENT.
RE-184	7.369E+00	2.498E+01	2.520E+01	NOT IDENT.
W-188	-8.317E-01	9.107E+01	9.107E+01	FAIL ABUN
IR-192	1.873E-01	3.483E-01	3.584E-01	FAIL ABUN
HG-203	7.031E-01	1.858E+00	1.885E+00	NOT IDENT.
BI-207	1.043E-02	3.757E-02	3.786E-02	FAIL ABUN
PB-210	1.166E+00	1.711E+00	1.790E+00	NOT IDENT.
BI-211	2.523E+00	4.449E-01	1.221E+00	FAIL ABUN
PB-211	-1.196E-01	5.261E-01	5.289E-01	NOT IDENT.
BI-212	1.286E+00	6.773E-01	8.915E-01	FAIL ABUN
RN-219	5.979E-02	2.699E-01	2.713E-01	FAIL ABUN
RA-223	-3.781E-02	4.420E-01	4.423E-01	FAIL ABUN
AC-227	-6.068E-02	1.724E-01	1.746E-01	FAIL ABUN
TH-227	-6.068E-02	1.724E-01	1.746E-01	FAIL ABUN
TH-231	-3.781E-02	4.420E-01	4.423E-01	FAIL ABUN
PA-233	-5.017E-02	4.717E-02	5.231E-02	FAIL ABUN
PA-234	2.962E-02	2.129E-01	2.133E-01	NOT IDENT.
PA-234M	3.362E+00	3.115E+00	3.464E+00	NOT IDENT.
NP-237	-5.017E-02	4.717E-02	5.231E-02	FAIL ABUN
NP-238	6.669E+00	3.130E+01	0.000E+00	SHORT HLIF
NP-239	2.354E-02	1.642E-01	1.646E-01	FAIL ABUN
PU-239	-2.539E+01	2.347E+02	2.350E+02	NOT IDENT.
AM-241	9.666E-03	8.947E-02	8.958E-02	NOT IDENT.
CM-243	-3.383E-03	6.738E-02	6.740E-02	FAIL ABUN
BK-247	-1.496E-02	5.697E-02	5.736E-02	FAIL ABUN
CM-247	-4.980E-03	2.491E-02	2.501E-02	FAIL ABUN
CF-249	-6.187E-03	2.649E-02	2.663E-02	NOT IDENT.
CF-251	4.211E-02	8.588E-02	8.795E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	54.6419	87.09	97.7634	136.47	66.6544
45.60	66.8561	87.57	97.8610	140.51	0.0000
46.54	53.4742	88.03	79.1166	143.76	74.6378
49.72	0.0000	88.34	79.1666	144.24	67.4290
51.35	77.5164	88.47	79.1877	145.44	74.8213
51.87	91.4366	89.96	96.4491	152.43	77.6697
52.39	80.3444	1093.63	49.2376	153.25	0.0000
52.97	76.1527	91.11	0.0000	323.87	66.2886
53.44	82.3216	92.59	92.5236	156.02	0.0000
54.07	72.9207	93.35	87.5850	158.56	0.0000
57.36	0.0000	94.56	68.7085	159.00	66.7270
57.53	78.0111	94.65	68.7206	162.33	64.9000
57.98	69.3302	94.67	68.7233	162.66	0.0000
59.27	77.4982	94.87	70.0234	163.33	91.6204
59.32	77.5086	97.43	79.6476	165.86	61.9985
59.54	75.2041	98.43	59.6093	176.31	62.8410
60.96	83.7444	98.44	59.6108	176.60	0.0000
61.17	83.7907	99.53	84.7841	177.52	57.5110
62.93	86.2496	100.11	89.6992	181.07	0.0000
63.29	86.3296	102.03	60.9827	181.52	45.0759
63.58	86.3936	103.18	74.6930	184.41	49.2490
64.28	86.5481	103.37	67.9268	143.76	49.3279
66.73	95.7601	105.21	66.2086	193.51	68.6006
67.24	70.7119	105.31	69.1420	197.03	67.7733
125.81	80.3872	106.12	70.2191	198.01	78.9736
67.75	97.2010	106.47	74.1671	201.83	67.0322
69.67	94.9440	109.28	68.6558	203.43	90.6590
70.83	103.3682	111.00	76.7348	205.31	56.8299
72.81	114.1762	111.76	0.0000	210.85	48.5305
72.87	114.1924	114.06	70.2205	215.65	61.2683
74.66	110.7022	116.30	0.0000	222.11	57.1266
74.82	110.7428	116.74	61.6003	227.09	57.4287
74.97	110.7816	119.76	77.8911	227.38	58.5952
77.11	111.3207	121.12	66.0564	228.16	0.0000
78.74	111.7269	121.22	66.0670	228.18	64.3937
79.69	85.1277	121.78	65.1260	116.74	64.3937
80.12	75.3291	122.06	65.1562	235.69	55.6245
80.19	0.0000	122.92	91.3471	235.96	63.3677
80.57	85.2926	123.07	91.3694	238.63	68.5771
81.00	74.2371	265.00	69.3490	238.98	0.0000
81.07	74.2480	125.81	85.7244	240.99	68.7400
81.75	91.7081	127.23	85.9189	242.00	68.8093
83.79	82.1522	127.91	67.7979	244.70	45.2175
84.00	82.1885	129.30	82.1445	252.40	0.0000
85.43	95.5518	131.20	87.4763	252.80	54.2221
86.55	95.7760	133.02	65.2832	254.15	0.0000
86.79	97.7023	133.52	64.3122	256.23	47.3059
86.94	97.7333	136.00	84.0270	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	42.9170	355.39	0.0000	584.27	22.6846
264.80	42.9225	356.01	32.1663	595.83	0.0000
265.00	47.7014	364.49	0.0000	427.87	24.8596
268.22	41.4650	366.42	0.0000	602.52	0.0000
269.46	37.1219	372.51	28.6521	604.72	26.9033
270.03	37.1417	375.05	26.9648	607.14	20.9504
271.23	37.1824	377.52	27.0127	609.32	24.9674
273.65	0.0000	356.01	32.3863	610.33	24.9797
276.40	37.3584	388.16	31.6069	614.28	27.0308
277.37	37.3915	388.63	0.0000	618.01	21.0615
277.60	37.3990	391.69	30.8044	620.36	22.0904
278.00	37.4132	264.66	25.6818	621.93	28.1356
279.20	37.4530	401.81	27.4750	630.19	0.0000
279.54	37.4653	402.40	31.0323	631.29	21.1974
279.70	37.4700	404.85	30.6402	633.25	15.1550
280.46	40.3178	410.95	26.7535	634.78	0.0000
283.69	37.2000	413.71	26.8030	635.95	13.1513
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	36.4471	423.72	0.0000	645.85	18.2944
285.90	0.0000	427.09	26.1385	657.76	19.9293
287.50	38.9482	427.87	26.1520	657.90	0.0000
290.67	39.0566	433.94	21.7280	661.66	16.8934
293.27	0.0000	439.40	21.8037	664.57	0.0000
351.93	40.4363	453.88	22.0029	666.33	0.0000
295.96	40.4625	463.37	28.5870	666.50	0.0000
879.38	40.5541	468.07	24.9697	667.71	0.0000
299.98	40.6024	473.00	0.0000	677.62	15.4700
300.09	40.6055	475.06	25.0752	685.70	0.0000
300.13	40.6075	476.78	28.8197	695.00	0.0000
301.36	40.6498	477.60	28.8336	696.49	15.6006
302.85	40.7011	482.18	27.9797	696.51	15.6012
256.23	26.3490	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	14.0460
306.78	42.0735	497.08	5.6449	697.49	14.0471
308.46	33.4583	505.52	23.6343	702.65	22.9435
311.90	47.2252	507.63	0.0000	706.68	29.7745
316.51	29.9392	511.00	26.5528	711.68	25.1279
319.41	0.0000	514.00	27.0724	720.70	0.0000
320.08	0.0000	514.00	27.0724	721.93	0.0000
321.04	35.8937	520.40	23.8332	722.78	22.0920
323.87	42.6681	520.69	0.0000	722.91	20.5156
325.23	55.2780	522.65	0.0000	723.31	14.2053
328.76	0.0000	527.90	0.0000	724.19	12.6318
333.37	45.5208	528.26	19.1496	727.33	12.6489
333.97	43.0126	529.59	19.1642	733.00	17.4339
334.37	50.6189	529.87	0.0000	735.93	7.4053
338.28	37.2342	531.02	0.0000	333.97	13.7617
338.32	37.2351	537.26	0.0000	739.50	0.0000
311.90	47.0461	546.56	0.0000	747.24	20.1960
340.48	47.0461	552.55	31.0443	748.06	19.1396
340.55	0.0000	563.25	22.4394	752.31	14.0604
344.28	40.8076	569.33	20.5531	753.82	0.0000
345.93	39.8379	946.00	21.5345	756.73	16.0071
351.06	31.6192	569.70	20.5574	756.80	16.0077
351.93	31.6403	583.19	22.6715	884.68	27.2930

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	20.8870	1274.44	2.7970	1620.50	6.1919
766.42	20.8925	1001.03	7.0034	1621.92	5.1617
766.84	20.8957	1002.74	13.1387	1678.03	0.0000
772.60	0.0000	1004.73	13.1470	1690.97	1.0477
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	1.0638
778.90	10.7682	1028.54	0.0000	1063.66	3.4082
783.70	0.0000	1037.84	7.0869	1771.35	3.6525
785.37	22.6722	1038.76	0.0000	1791.20	0.0000
792.07	23.8154	631.29	17.7673	1808.65	2.1466
794.95	19.5081	1048.07	0.0000	1810.72	0.0000
795.86	26.0195	1049.04	13.3356	1836.06	0.0000
810.06	13.0825	1050.41	11.5623		
810.29	14.1743	1063.66	13.3969		
344.28	14.1748	1077.00	0.0000		
810.76	15.2675	1077.34	11.6599		
815.77	0.0000	1085.87	11.6908		
1048.07	0.0000	1093.63	14.4229		
832.01	10.9949	1099.45	14.4482		
834.85	19.8127	1112.07	11.6031		
835.71	14.3140	1112.84	14.5068		
836.80	0.0000	1115.54	11.6148		
846.75	0.0000	1120.29	11.6313		
846.77	18.7964	1120.55	11.6320		
856.80	0.0000	1221.41	14.5439		
860.56	16.6711	1129.67	20.9589		
871.09	20.0830	1131.51	0.0000		
873.19	15.6321	1147.95	0.0000		
875.33	0.0000	1173.23	10.1520		
879.38	19.0254	1177.95	11.0896		
880.51	12.3155	1189.05	16.6882		
883.24	11.2069	1204.77	13.0370		
884.68	12.3343	1221.41	11.2266		
889.28	4.4927	1231.02	16.8849		
894.76	9.0029	1235.36	0.0000		
898.04	13.5205	1238.28	11.2793		
900.72	12.4059	1260.41	0.0000		
903.28	14.6747	1271.87	16.1253		
911.20	15.8480	1274.44	11.3906		
912.08	15.8531	1274.54	11.3906		
923.98	0.0000	1291.59	8.5820		
926.50	14.7959	1298.22	0.0000		
929.11	14.8091	1312.11	0.0000		
937.49	10.2825	1332.49	13.8788		
944.13	0.0000	1362.66	0.0000		
946.00	12.6042	1365.19	6.8035		
949.00	14.9112	1368.63	0.0000		
667.71	0.0000	1384.29	4.8828		
962.31	12.6749	1408.01	9.8236		
964.08	12.6825	1457.56	0.0000		
966.17	12.6914	1460.82	3.9802		
911.20	12.7031	1489.16	6.0103		
968.97	12.7031	1505.03	8.0435		
983.53	0.0000	1584.12	9.2137		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:53:52.33

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235020.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM01.CNF;402
Background date    : 2-OCT-2016 10:59:55.
Sample date       : 8-DEC-2015 13:50:00. Acquisition date : 3-OCT-2016 08:53:24.
Sample ID        : G405235020 Sample quantity : 1.70763E+02 GRAM
Detector name    : GAM01 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.37 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596247 Detector SN# :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	5	35.35*	36	10	1.84	71.39	67	32	1.01E-02	40.9	3.54E+00
2	5	40.33*	29	55	1.85	81.37	67	32	8.00E-03	63.5	
3	5	45.15*	19	62	1.16	91.00	67	32	5.17E-03	72.2	
4	2	74.90	101	157	1.45	150.50	143	17	2.81E-02	26.0	1.02E+00
5	2	77.16*	150	151	1.28	155.01	143	17	4.16E-02	17.0	
6	0	87.73	46	213	0.97	176.15	170	9	1.27E-02	59.7	
7	0	92.89*	42	141	1.12	186.47	183	8	1.16E-02	56.2	
8	0	185.65*	85	176	1.41	371.96	366	14	2.37E-02	35.8	
9	0	209.98	95	138	5.43	420.62	413	18	2.65E-02	30.8	
10	0	216.83	24	42	1.25	434.33	431	6	6.67E-03	47.3	
11	3	238.63*	344	59	1.15	477.92	471	21	9.55E-02	6.7	1.09E+00
12	3	241.71*	94	77	1.80	484.09	471	21	2.61E-02	24.6	
13	0	295.30*	85	61	0.84	591.25	587	9	2.37E-02	20.1	
14	0	338.55*	53	55	0.86	677.74	673	10	1.48E-02	30.5	
15	0	351.87*	224	45	1.27	704.36	699	12	6.22E-02	9.1	
16	0	388.82	14	82	2.33	778.26	766	17	3.93E-03	148.2	
17	0	463.85	40	66	4.43	928.29	920	20	1.11E-02	52.1	
18	0	511.04*	46	55	1.72	1022.65	1013	20	1.27E-02	46.8	
19	0	566.51*	31	53	0.87	1133.56	1127	16	8.51E-03	56.9	
20	0	583.08*	110	35	1.53	1166.70	1159	17	3.06E-02	15.7	
21	0	609.50*	118	33	1.75	1219.53	1215	11	3.29E-02	13.2	
22	0	636.61	7	20	1.40	1273.74	1266	11	2.07E-03	120.1	
23	0	727.70	51	20	3.47	1455.87	1446	16	1.41E-02	24.3	
24	0	737.71	25	10	3.50	1475.89	1468	14	6.82E-03	34.5	
25	0	768.80	18	25	0.62	1538.04	1531	12	4.86E-03	63.4	
26	0	785.79	11	13	1.51	1572.02	1568	8	3.16E-03	63.4	
27	0	860.90	31	15	1.86	1722.19	1715	15	8.61E-03	32.6	
28	0	904.69*	11	13	4.40	1809.75	1802	13	3.18E-03	72.3	
29	0	911.34*	57	22	1.13	1823.05	1817	11	1.59E-02	21.2	
30	0	964.44	28	16	1.32	1929.20	1922	13	7.83E-03	34.9	
31	0	969.20	41	12	1.61	1938.71	1934	10	1.13E-02	22.5	
32	0	1063.09	6	5	1.46	2126.44	2123	6	1.77E-03	66.2	
33	0	1119.89*	39	8	1.43	2239.99	2234	11	1.08E-02	21.7	
34	0	1143.54	8	11	0.53	2287.27	2282	7	2.08E-03	80.4	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1155.31	10	10	1.46	2310.80	2305	10	2.78E-03	67.1	
36	0	1173.52	5	4	0.52	2347.20	2346	4	1.45E-03	74.2	
37	0	1234.37	8	20	3.32	2468.87	2459	13	2.08E-03	126.8	
38	0	1254.20	10	0	1.66	2508.50	2505	7	2.78E-03	31.6	
39	0	1285.78	11	0	1.28	2571.64	2568	7	3.06E-03	30.2	
40	0	1460.69*	257	9	2.06	2921.30	2915	12	7.15E-02	6.7	
41	0	1493.39	12	0	1.65	2986.67	2982	9	3.33E-03	28.9	
42	0	1591.81	10	0	1.41	3183.40	3179	8	2.78E-03	31.6	
43	0	1729.55	11	0	1.72	3458.73	3455	7	3.06E-03	30.2	
44	0	1764.44*	21	3	1.00	3528.46	3522	13	5.94E-03	29.1	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235020.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 8-DEC-2015 13:50:00 Acquisition date : 3-OCT-2016 08:53:24
Sample ID : G405235020 Sample quantity : 170.76 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA1 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.37 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	9.709E-01	1.069E+01	1.069E+01	13.46	OK
CD-109	88.03	3.70*	4.617E+00	1.021E+00	1.602E+00	191.53	OK
SN-126	64.28	9.60	2.409E+00	-----	Line Not Found	-----	Absent
	86.94	8.90	4.617E+00	4.245E-01	4.245E-01	191.53	OK
	87.57	37.00*	4.617E+00	1.021E-01	1.021E-01	191.53	OK
TL-208	277.37	6.60	3.944E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	2.090E+00	3.015E-01	3.015E-01	31.39	OK
	860.56	12.50	1.519E+00	7.551E-01	7.551E-01	65.24	OK
PB-210	46.54	4.25*	4.948E-01	5.729E+00	5.877E+00	144.32	OK
BI-211	72.87	1.23	3.328E+00	-----	Line Not Found	-----	Absent
	351.06	12.92*	3.217E+00	9.887E-01	9.887E-01	89.78	OK
BI-212	727.33	6.67*	1.742E+00	2.061E+00	2.061E+00	48.56	OK
	785.37	1.10	1.636E+00	2.959E+00	2.959E+00	126.79	OK
	1620.50	1.47	8.816E-01	-----	Line Not Found	-----	Absent
PB-212	74.82	10.28	3.530E+00	1.345E+00	1.345E+00	67.22	OK
	77.11	17.10	3.747E+00	1.433E+00	1.433E+00	34.06	OK
	238.63	43.60*	4.455E+00	9.612E-01	9.612E-01	13.33	OK
	300.09	3.30	3.690E+00	-----	Line Not Found	-----	Absent
BI-214	609.32	45.49*	2.015E+00	6.255E-01	6.257E-01	26.31	OK
	1120.29	14.92	1.223E+00	9.517E-01	9.521E-01	43.42	OK
	1764.49	15.30	8.116E-01	7.200E-01	7.202E-01	58.11	OK
PB-214	74.82	5.80	3.522E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	3.747E+00	2.527E+00	2.528E+00	34.06	OK
	87.09	3.41	4.572E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	4.406E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	3.741E+00	6.557E-01	6.560E-01	40.21	OK
	351.93	35.60*	3.216E+00	-----	Line Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	2.015E+00	6.255E-01	6.257E-01	26.31	OK
	1120.29	14.92	1.223E+00	9.517E-01	9.521E-01	43.42	OK
	1764.49	15.30	8.116E-01	7.200E-01	7.202E-01	58.11	OK
RA-224	240.99	4.10*	4.410E+00	1.655E+00	1.655E+00	88.30	OK
RA-226	609.32	45.49*	2.015E+00	6.255E-01	6.257E-01	26.31	OK
	1120.29	14.92	1.223E+00	9.517E-01	9.521E-01	43.42	OK
	1764.49	15.30	8.116E-01	7.200E-01	7.202E-01	58.11	OK
AC-228	105.21	1.10	5.519E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.326E+00	7.402E-01	7.402E-01	61.04	OK
	794.95	4.25	1.621E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.557E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.450E+00	7.028E-01	7.028E-01	42.33	OK
	968.97	15.80	1.379E+00	8.506E-01	8.506E-01	45.09	OK
RA-228	105.21	1.10	5.519E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.326E+00	7.402E-01	7.402E-01	61.04	OK
	794.95	4.25	1.621E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.557E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.450E+00	7.028E-01	7.028E-01	42.33	OK
	968.97	15.80	1.379E+00	8.506E-01	8.506E-01	45.09	OK
TH-228	74.82	10.28	3.530E+00	1.345E+00	1.345E+00	67.22	OK
	77.11	17.10	3.747E+00	1.433E+00	1.433E+00	34.06	OK
	238.63	43.60*	4.455E+00	9.612E-01	9.612E-01	13.33	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	300.09	3.30	3.690E+00	----- Line	Not Found	-----	Absent
TH-230	609.32	45.49*	2.015E+00	6.255E-01	6.255E-01	26.31	OK
	1120.29	14.92	1.223E+00	9.517E-01	9.517E-01	43.42	OK
	1764.49	15.30	8.116E-01	7.200E-01	7.200E-01	58.11	OK
TH-232	105.21	1.10	5.519E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.326E+00	7.402E-01	7.402E-01	61.04	OK
	835.71	1.61	1.557E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.450E+00	7.028E-01	7.028E-01	42.33	OK
	968.97	15.80	1.379E+00	8.506E-01	8.506E-01	45.09	OK
U-234	609.32	45.49*	2.015E+00	6.255E-01	6.255E-01	26.31	OK
	1120.29	14.92	1.223E+00	9.517E-01	9.517E-01	43.42	OK
	1764.49	15.30	8.116E-01	7.200E-01	7.200E-01	58.11	OK
AM-243	43.53	5.90	3.822E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.530E+00	2.057E-01	2.057E-01	67.22	OK
CF-249	252.80	2.50	4.256E+00	----- Line	Not Found	-----	Absent
	333.37	14.60	3.371E+00	----- Line	Not Found	-----	Absent
	388.16	66.00*	2.950E+00	3.721E-02	3.727E-02	296.41	OK
ANH-511	511.00	100.00*	2.334E+00	9.690E-02	9.690E-02	93.64	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235020.CNF;1
* Acquisition date   : 3-OCT-2016 08:53:24 Sensitivity      : 3.000
* Detector ID        : GAM01 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.37 Half life ratio : *****
* Sample date        : 8-DEC-2015 13:50:00 Analyst initials: MXR1
* Sample ID          : G405235020 Sample Quantity : 1.7076E+02 GRAM
* Batch Number       : 1596247 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight       : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 20-JUL-2016 07:03:55 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM01 CAN.CNF;9
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.069E+01	1.409E+00	5.458E-01
CD-109	1.602E+00	3.007E+00	2.651E+00
SN-126	1.021E-01	1.917E-01	1.565E-01
TL-208	3.015E-01	9.276E-02	5.255E-02
PB-210	5.877E+00	8.313E+00	5.825E+00
BI-211	9.887E-01	8.698E-01	3.512E-01
BI-212	2.061E+00	9.807E-01	7.016E-01
PB-212	9.612E-01	1.255E-01	8.471E-02
BI-214	6.257E-01	1.613E-01	1.341E-01
PB-214	1.015E+00	1.814E-01	3.053E-01
RN-222	6.257E-01	1.613E-01	1.341E-01
RA-224	1.655E+00	1.432E+00	9.080E-01
RA-226	6.257E-01	1.613E-01	1.341E-01
AC-228	7.028E-01	2.916E-01	2.577E-01
RA-228	7.028E-01	2.916E-01	2.577E-01
TH-228	9.612E-01	1.255E-01	8.471E-02
TH-230	6.255E-01	1.613E-01	1.341E-01
TH-232	7.028E-01	2.916E-01	2.577E-01
U-234	6.255E-01	1.613E-01	1.341E-01
AM-243	2.057E-01	1.355E-01	9.483E-02
CF-249	3.727E-02	1.083E-01	6.516E-02
ANH-511	9.690E-02	8.892E-02	4.329E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-4.924E+00	1.067E+01	1.994E+01	NOT IDENT.
NA-22	2.738E-02	4.452E-02	1.007E-01	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	1.405E-02	1.733E-02	5.652E-02	NOT IDENT.
SC-46	4.814E-02	3.610E-01	7.244E-01	FAIL ABUN
V-48	0.000E+00	1.335E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.813E+02	0.000E+00	SHORT HLIF
MN-54	2.968E-02	5.948E-02	1.255E-01	NOT IDENT.

CO-56	1.764E-01	4.299E-01	9.045E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-3.997E-02	4.279E-02	8.228E-02	NOT IDENT.
CO-58	-2.614E-01	5.486E-01	9.853E-01	NOT IDENT.
FE-59	-2.573E+00	6.343E+00	1.130E+01	NOT IDENT.
CO-60	-2.207E-02	2.975E-02	5.307E-02	FAIL ABUN
ZN-65	-2.641E-02	1.685E-01	2.802E-01	NOT IDENT.
GE-68	-6.242E-01	2.138E+00	3.931E+00	NOT IDENT.
AS-73	2.796E+00	1.080E+01	2.143E+01	NOT IDENT.
AS-74	0.000E+00	5.875E+03	0.000E+00	SHORT HLIF
SE-75	5.865E-02	1.871E-01	3.847E-01	NOT IDENT.
BR-77	0.000E+00	2.235E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.128E+02	0.000E+00	SHORT HLIF
RB-83	-5.550E-04	5.099E-01	1.031E+00	NOT IDENT.
KR-85	2.082E+00	5.606E+00	1.174E+01	NOT IDENT.
SR-85	2.176E-01	5.918E-01	1.239E+00	NOT IDENT.
RB-86	0.000E+00	2.610E+04	0.000E+00	SHORT HLIF
Y-88	-4.372E-02	2.273E-01	4.699E-01	NOT IDENT.
Y-91	1.208E+02	4.561E+02	9.861E+02	NOT IDENT.
NB-94	1.537E-02	3.167E-02	6.535E-02	NOT IDENT.
NB-95	4.826E-01	9.693E-01	1.815E+00	NOT IDENT.
NB-95M	-1.840E-01	2.374E+00	4.219E+00	NOT IDENT.
ZR-95	-2.812E-01	1.414E+00	2.659E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.531E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.851E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	7.438E-04	3.293E-02	6.716E-02	NOT IDENT.
RH-102	-1.297E-02	4.933E-02	8.361E-02	NOT IDENT.
RU-103	-4.617E+00	5.126E+00	8.870E+00	FAIL ABUN
RH-106	-4.426E-01	4.392E-01	7.218E-01	NOT IDENT.
RU-106	-4.426E-01	4.392E-01	7.218E-01	NOT IDENT.
AG-108M	7.609E-05	2.467E-02	4.916E-02	NOT IDENT.
AG-110M	4.315E-02	8.373E-02	1.836E-01	NOT IDENT.
SN-113	4.383E-02	2.244E-01	4.133E-01	NOT IDENT.
CD-115	0.000E+00	2.477E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	8.817E+04	0.000E+00	SHORT HLIF
TE-123M	7.173E-02	1.193E-01	2.513E-01	NOT IDENT.
SB-124	1.758E+00	2.005E+00	5.217E+00	NOT IDENT.
SB-125	1.072E-02	8.474E-02	1.730E-01	FAIL ABUN
TE-125M	9.450E+01	2.968E+02	5.647E+02	NOT IDENT.
I-126	0.000E+00	7.657E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.341E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.012E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.540E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.687E+26	0.000E+00	SHORT HLIF
BA-133	-4.435E-03	4.221E-02	7.404E-02	NOT IDENT.
I-133	0.000E+00	1.823E+41	0.000E+00	SHORT HLIF
CS-134	3.244E-02	4.509E-02	9.842E-02	NOT IDENT.
CS-135	-7.638E-02	1.329E-01	2.513E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.541E+05	0.000E+00	SHORT HLIF
BA-137M	3.751E-02	3.609E-02	7.869E-02	NOT IDENT.
CS-137	3.962E-02	3.813E-02	8.313E-02	NOT IDENT.
CE-139	-3.178E-02	9.683E-02	1.917E-01	NOT IDENT.
BA-140	0.000E+00	1.208E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	3.755E+05	0.000E+00	SHORT HLIF
CE-141	3.115E-01	2.283E+01	4.630E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	1.498E-01	3.408E-01	7.123E-01	NOT IDENT.
PM-144	4.402E-02	5.266E-02	1.146E-01	NOT IDENT.
PR-144	3.809E+00	4.572E+00	9.951E+00	NOT IDENT.
PM-146	-1.214E-02	3.260E-02	6.245E-02	NOT IDENT.
ND-147	0.000E+00	3.024E+07	0.000E+00	SHORT HLIF
PM-147	-2.548E+02	7.513E+02	1.508E+03	NOT IDENT.
PM-149	0.000E+00	4.331E+40	0.000E+00	SHORT HLIF
EU-150	-1.270E-02	2.744E-02	4.574E-02	FAIL ABUN
EU-152	-7.684E-02	8.370E-02	1.499E-01	FAIL ABUN
GD-153	-1.793E-01	1.938E-01	3.322E-01	NOT IDENT.
EU-154	6.338E-02	1.083E-01	2.445E-01	NOT IDENT.
EU-155	6.365E-02	1.031E-01	2.037E-01	FAIL ABUN
TB-160	-7.199E-01	1.731E+00	3.134E+00	FAIL ABUN
HO-166M	2.188E-02	4.819E-02	1.026E-01	FAIL ABUN
TM-171	6.729E+00	2.542E+01	5.066E+01	NOT IDENT.
HF-172	-7.921E-02	2.098E-01	4.189E-01	NOT IDENT.
LU-172	3.032E-02	6.454E-02	1.402E-01	FAIL ABUN
LU-176	-1.611E-02	2.231E-02	4.127E-02	FAIL ABUN

HF-181	2.602E+00	3.542E+00	7.821E+00	NOT IDENT.
TA-182	2.248E-01	8.492E-01	1.808E+00	FAIL ABUN
RE-183	-5.144E-01	3.730E+00	7.089E+00	NOT IDENT.
RE-184	3.349E+01	4.743E+01	5.484E+01	FAIL ABUN
W-188	1.903E+01	1.140E+02	2.079E+02	NOT IDENT.
IR-192	6.747E-02	4.262E-01	8.613E-01	FAIL ABUN
HG-203	-9.829E-01	2.254E+00	4.310E+00	NOT IDENT.
BI-207	3.053E-02	3.961E-02	9.927E-02	FAIL ABUN
PB-211	-1.031E-01	5.692E-01	1.111E+00	NOT IDENT.
RN-219	-1.239E-02	3.529E-01	6.960E-01	NOT IDENT.
RA-223	-3.173E-01	4.935E-01	9.193E-01	FAIL ABUN
AC-227	2.433E-02	2.086E-01	4.208E-01	NOT IDENT.
TH-227	2.433E-02	2.086E-01	4.208E-01	NOT IDENT.
TH-229	-3.639E-02	4.542E-01	9.037E-01	FAIL ABUN
PA-231	1.156E-01	4.450E-01	8.958E-01	NOT IDENT.
TH-231	-3.173E-01	4.935E-01	9.193E-01	FAIL ABUN
PA-233	-1.389E-02	5.283E-02	1.027E-01	NOT IDENT.
PA-234	-1.350E-02	2.696E-01	5.200E-01	NOT IDENT.
PA-234M	1.356E+00	4.383E+00	9.216E+00	NOT IDENT.
TH-234	-4.212E-01	1.464E+00	2.801E+00	FAIL ABUN
U-235	-7.525E-02	1.741E-01	3.446E-01	FAIL ABUN
NP-237	-1.389E-02	5.283E-02	1.027E-01	NOT IDENT.
NP-238	0.000E+00	1.611E+41	0.000E+00	SHORT HLIF
U-238	-4.212E-01	1.464E+00	2.801E+00	FAIL ABUN
NP-239	-3.997E-02	2.683E-01	4.895E-01	NOT IDENT.
PU-239	2.487E+02	3.152E+02	6.675E+02	NOT IDENT.
AM-241	-2.316E-02	1.566E-01	2.979E-01	NOT IDENT.
CM-243	-6.645E-02	1.022E-01	1.799E-01	NOT IDENT.
BK-247	2.848E-02	6.512E-02	1.352E-01	NOT IDENT.
CM-247	4.868E-03	3.055E-02	6.195E-02	NOT IDENT.
CF-251	-5.439E-02	1.037E-01	2.013E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	252	10.66*	9.709E-01	1.069E+01	1.069E+01	13.46
CD-109	88.03	63	3.70*	4.617E+00	1.625E+00	2.550E+00	119.39
SN-126	64.28	-----	9.60	2.409E+00	-----	Line Not Found	-----
	86.94	63	8.90	4.617E+00	6.758E-01	6.758E-01	119.39
	87.57	63	37.00*	4.617E+00	1.625E-01	1.625E-01	119.39
TL-208	277.37	-----	6.60	3.944E+00	-----	Line Not Found	-----
	583.19	122	85.00*	2.090E+00	3.015E-01	3.015E-01	31.39
	860.56	33	12.50	1.519E+00	7.551E-01	7.551E-01	65.24
PB-210	46.54	27	4.25*	4.948E-01	5.729E+00	5.877E+00	144.32
BI-211	72.87	-----	1.23	3.328E+00	-----	Line Not Found	-----
	351.06	264	12.92*	3.217E+00	2.795E+00	2.795E+00	18.24
BI-212	727.33	54	6.67*	1.742E+00	2.061E+00	2.061E+00	48.56
	785.37	12	1.10	1.636E+00	2.959E+00	2.959E+00	126.79
	1620.50	-----	1.47	8.816E-01	-----	Line Not Found	-----
PB-212	74.82	142	10.28	3.530E+00	1.714E+00	1.714E+00	52.00
	77.11	209	17.10	3.747E+00	1.433E+00	1.433E+00	34.06
	238.63	425	43.60*	4.455E+00	9.612E-01	9.612E-01	13.33
	300.09	-----	3.30	3.690E+00	-----	Line Not Found	-----
BI-214	609.32	130	45.49*	2.015E+00	6.255E-01	6.257E-01	26.31
	1120.29	40	14.92	1.223E+00	9.517E-01	9.521E-01	43.42
	1764.49	20	15.30	8.116E-01	7.200E-01	7.202E-01	58.11
PB-214	74.82	142	5.80	3.530E+00	3.039E+00	3.040E+00	52.00
	77.11	209	9.70	3.747E+00	2.527E+00	2.528E+00	34.06
	87.09	63	3.41	4.617E+00	1.764E+00	1.764E+00	119.39
	242.00	116	7.25	4.410E+00	1.592E+00	1.592E+00	49.21
	295.22	103	18.42	3.741E+00	6.557E-01	6.560E-01	40.21
	351.93	264	35.60*	3.217E+00	1.015E+00	1.015E+00	18.24
RN-222	609.32	130	45.49*	2.015E+00	6.255E-01	6.257E-01	26.31
	1120.29	40	14.92	1.223E+00	9.517E-01	9.521E-01	43.42
	1764.49	20	15.30	8.116E-01	7.200E-01	7.202E-01	58.11
RA-224	240.99	116	4.10*	4.410E+00	2.815E+00	2.815E+00	49.21
RA-226	609.32	130	45.49*	2.015E+00	6.255E-01	6.257E-01	26.31
	1120.29	40	14.92	1.223E+00	9.517E-01	9.521E-01	43.42
	1764.49	20	15.30	8.116E-01	7.200E-01	7.202E-01	58.11
AC-228	105.21	-----	1.10	5.519E+00	-----	Line Not Found	-----
	338.32	63	11.27	3.326E+00	7.402E-01	7.402E-01	61.04
	794.95	-----	4.25	1.621E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.557E+00	-----	Line Not Found	-----
	911.20	60	25.80*	1.450E+00	7.028E-01	7.028E-01	42.33
	968.97	42	15.80	1.379E+00	8.506E-01	8.506E-01	45.09
RA-228	105.21	-----	1.10	5.519E+00	-----	Line Not Found	-----
	338.32	63	11.27	3.326E+00	7.402E-01	7.402E-01	61.04
	794.95	-----	4.25	1.621E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.557E+00	-----	Line Not Found	-----
	911.20	60	25.80*	1.450E+00	7.028E-01	7.028E-01	42.33
	968.97	42	15.80	1.379E+00	8.506E-01	8.506E-01	45.09
TH-228	74.82	142	10.28	3.530E+00	1.714E+00	1.714E+00	52.00

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	209	17.10	3.747E+00	1.433E+00	1.433E+00	34.06
	238.63	425	43.60*	4.455E+00	9.612E-01	9.612E-01	13.33
	300.09	-----	3.30	3.690E+00	-----	Line Not Found	-----
TH-230	609.32	130	45.49*	2.015E+00	6.255E-01	6.255E-01	26.31
	1120.29	40	14.92	1.223E+00	9.517E-01	9.517E-01	43.42
	1764.49	20	15.30	8.116E-01	7.200E-01	7.200E-01	58.11
TH-232	105.21	-----	1.10	5.519E+00	-----	Line Not Found	-----
	338.32	63	11.27	3.326E+00	7.402E-01	7.402E-01	61.04
	835.71	-----	1.61	1.557E+00	-----	Line Not Found	-----
	911.20	60	25.80*	1.450E+00	7.028E-01	7.028E-01	42.33
	968.97	42	15.80	1.379E+00	8.506E-01	8.506E-01	45.09
U-234	609.32	130	45.49*	2.015E+00	6.255E-01	6.255E-01	26.31
	1120.29	40	14.92	1.223E+00	9.517E-01	9.517E-01	43.42
	1764.49	20	15.30	8.116E-01	7.200E-01	7.200E-01	58.11
AM-243	43.53	-----	5.90	3.822E-01	-----	Line Not Found	-----
	74.66	142	67.20*	3.530E+00	2.623E-01	2.623E-01	52.00
CF-249	252.80	-----	2.50	4.256E+00	-----	Line Not Found	-----
	333.37	-----	14.60	3.371E+00	-----	Line Not Found	-----
	388.16	16	66.00*	2.950E+00	3.721E-02	3.727E-02	296.41
ANH-511	511.00	51	100.00*	2.334E+00	9.690E-02	9.690E-02	93.64

Flag: "*" = Keyline

Total number of lines in spectrum 44
Number of unidentified lines 11
Number of lines tentatively identified by NID 33 75.00%

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	1.069E+01	1.069E+01	0.144E+01	13.46	
CD-109	461.40D	1.57	1.625E+00	2.550E+00	3.045E+00	119.39	
SN-126	2.30E+05Y	1.00	1.625E-01	1.625E-01	1.941E-01	119.39	
TL-208	1.41E+10Y	1.00	3.015E-01	3.015E-01	0.947E-01	31.39	
PB-210	22.20Y	1.03	5.729E+00	5.877E+00	8.483E+00	144.32	
BI-211	7.04E+08Y	1.00	2.795E+00	2.795E+00	0.510E+00	18.24	
BI-212	1.41E+10Y	1.00	2.061E+00	2.061E+00	1.001E+00	48.56	
PB-212	1.41E+10Y	1.00	9.612E-01	9.612E-01	1.281E-01	13.33	
BI-214	1600.00Y	1.00	6.255E-01	6.257E-01	1.646E-01	26.31	
PB-214	1600.00Y	1.00	1.015E+00	1.015E+00	0.185E+00	18.24	
RN-222	1600.00Y	1.00	6.255E-01	6.257E-01	1.646E-01	26.31	
RA-224	1.41E+10Y	1.00	2.815E+00	2.815E+00	1.385E+00	49.21	
RA-226	1600.00Y	1.00	6.255E-01	6.257E-01	1.646E-01	26.31	
AC-228	1.41E+10Y	1.00	7.028E-01	7.028E-01	2.975E-01	42.33	
RA-228	1.41E+10Y	1.00	7.028E-01	7.028E-01	2.975E-01	42.33	
TH-228	1.41E+10Y	1.00	9.612E-01	9.612E-01	1.281E-01	13.33	
TH-230	7.54E+04Y	1.00	6.255E-01	6.255E-01	1.646E-01	26.31	
TH-232	1.41E+10Y	1.00	7.028E-01	7.028E-01	2.975E-01	42.33	
U-234	2.45E+05Y	1.00	6.255E-01	6.255E-01	1.646E-01	26.31	
AM-243	7370.00Y	1.00	2.623E-01	2.623E-01	1.364E-01	52.00	
CF-249	351.00Y	1.00	3.721E-02	3.727E-02	11.05E-02	296.41	
ANH-511	1.00E+09Y	1.00	9.690E-02	9.690E-02	9.074E-02	93.64	

Total Activity : 3.475E+01 3.582E+01

Grand Total Activity : 3.475E+01 3.582E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	35.35	55	15	1.84	71.39	67	32	1.01E-02	81.7	4.02E-02	
5	40.33	43	82	1.85	81.37	67	32	8.00E-03	****	2.01E-01	
0	92.89	57	193	1.12	186.47	183	8	1.16E-02	****	4.95E+00	T
0	185.65	108	223	1.41	371.96	366	14	2.37E-02	71.6	5.30E+00	T
0	209.98	119	172	5.43	420.62	413	18	2.65E-02	61.5	4.90E+00	T
0	216.83	30	52	1.25	434.33	431	6	6.67E-03	94.6	4.79E+00	T
0	463.85	45	75	4.43	928.29	920	20	1.11E-02	****	2.53E+00	T
0	566.51	34	59	0.87	1133.56	1127	16	8.51E-03	****	2.14E+00	
0	636.61	8	21	1.40	1273.74	1266	11	2.07E-03	****	1.94E+00	T
0	737.71	26	11	3.50	1475.89	1468	14	6.82E-03	69.0	1.72E+00	T
0	768.80	19	26	0.62	1538.04	1531	12	4.86E-03	****	1.67E+00	
0	904.69	12	14	4.40	1809.75	1802	13	3.18E-03	****	1.46E+00	T
0	964.44	29	16	1.32	1929.20	1922	13	7.83E-03	69.8	1.38E+00	T
0	1063.09	7	5	1.46	2126.44	2123	6	1.77E-03	****	1.28E+00	T
0	1143.54	8	11	0.53	2287.27	2282	7	2.08E-03	****	1.20E+00	
0	1155.31	10	10	1.46	2310.80	2305	10	2.78E-03	****	1.19E+00	
0	1173.52	5	4	0.52	2347.20	2346	4	1.45E-03	****	1.18E+00	T
0	1234.37	8	20	3.32	2468.87	2459	13	2.08E-03	****	1.13E+00	T
0	1254.20	10	0	1.66	2508.50	2505	7	2.78E-03	63.2	1.11E+00	
0	1285.78	11	0	1.28	2571.64	2568	7	3.06E-03	60.3	1.09E+00	
0	1493.39	12	0	1.65	2986.67	2982	9	3.33E-03	57.7	9.51E-01	
0	1591.81	10	0	1.41	3183.40	3179	8	2.78E-03	63.2	8.97E-01	
0	1729.55	10	0	1.72	3458.73	3455	7	3.06E-03	60.3	8.28E-01	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235020.CNF;1
* Acquisition date   : 3-OCT-2016 08:53:24 Sensitivity      : 3.000
* Detector ID        : GAM01 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.37 Half life ratio : *****
* Sample date        : 8-DEC-2015 13:50:00 Nuclide Library : SOLID
* Sample ID          : G405235020 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.7076E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 20-JUL-2016 07:03:55 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM01 CAN.CNF;9
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.147E-01
CD-109	1.266E+00
SN-126	7.444E-02
TL-208	2.278E-02
PB-210	2.644E+00
BI-211	1.605E-01
BI-212	2.978E-01
PB-212	3.908E-02
BI-214	6.032E-02
PB-214	1.472E-01
RN-222	6.032E-02
RA-224	4.189E-01
RA-226	6.032E-02
AC-228	1.125E-01
RA-228	1.125E-01
TH-228	3.908E-02
TH-230	6.030E-02
TH-232	1.125E-01
U-234	6.030E-02
AM-243	4.462E-02
CF-249	2.935E-02
ANH-511	1.898E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	8.769E+00	NOT IDENT.
NA-22	4.349E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.069E-02	NOT IDENT.
SC-46	3.128E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.509E-02	NOT IDENT.
CO-56	3.935E-01	NOT IDENT.

MN-56	0.000E+00	SHORT HLIF
CO-57	3.837E-02	NOT IDENT.
CO-58	4.200E-01	NOT IDENT.
FE-59	4.727E+00	NOT IDENT.
CO-60	2.014E-02	FAIL ABUN
ZN-65	1.172E-01	NOT IDENT.
GE-68	1.644E+00	NOT IDENT.
AS-73	1.002E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.775E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.485E-01	NOT IDENT.
KR-85	5.218E+00	NOT IDENT.
SR-85	5.506E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.807E-01	NOT IDENT.
Y-91	4.224E+02	NOT IDENT.
NB-94	2.923E-02	NOT IDENT.
NB-95	8.131E-01	NOT IDENT.
NB-95M	1.963E+00	NOT IDENT.
ZR-95	1.158E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.167E-02	NOT IDENT.
RH-102	3.523E-02	NOT IDENT.
RU-103	3.864E+00	FAIL ABUN
RH-106	3.058E-01	NOT IDENT.
RU-106	3.058E-01	NOT IDENT.
AG-108M	2.200E-02	NOT IDENT.
AG-110M	7.879E-02	NOT IDENT.
SN-113	1.866E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.180E-01	NOT IDENT.
SB-124	2.139E+00	NOT IDENT.
SB-125	7.700E-02	FAIL ABUN
TE-125M	2.664E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.366E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	4.337E-02	NOT IDENT.
CS-135	1.159E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.563E-02	NOT IDENT.
CS-137	3.764E-02	NOT IDENT.
CE-139	8.935E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.179E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.357E-01	NOT IDENT.
PM-144	5.125E-02	NOT IDENT.
PR-144	4.448E+00	NOT IDENT.
PM-146	2.709E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.058E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.089E-02	FAIL ABUN
EU-152	6.742E-02	FAIL ABUN
GD-153	1.558E-01	NOT IDENT.
EU-154	1.054E-01	NOT IDENT.
EU-155	9.556E-02	FAIL ABUN
TB-160	1.326E+00	FAIL ABUN
HO-166M	4.488E-02	FAIL ABUN
TM-171	2.364E+01	NOT IDENT.
HF-172	1.963E-01	NOT IDENT.
LU-172	5.961E-02	FAIL ABUN
LU-176	1.877E-02	FAIL ABUN
HF-181	3.485E+00	NOT IDENT.

TA-182	7.829E-01	FAIL ABUN
RE-183	3.325E+00	NOT IDENT.
RE-184	2.353E+01	FAIL ABUN
W-188	9.581E+01	NOT IDENT.
IR-192	3.945E-01	FAIL ABUN
HG-203	1.984E+00	NOT IDENT.
BI-207	4.314E-02	FAIL ABUN
PB-211	4.974E-01	NOT IDENT.
RN-219	3.149E-01	NOT IDENT.
RA-223	4.139E-01	FAIL ABUN
AC-227	1.945E-01	NOT IDENT.
TH-227	1.945E-01	NOT IDENT.
TH-229	4.238E-01	FAIL ABUN
PA-231	4.158E-01	NOT IDENT.
TH-231	4.139E-01	FAIL ABUN
PA-233	4.676E-02	NOT IDENT.
PA-234	2.238E-01	NOT IDENT.
PA-234M	4.068E+00	NOT IDENT.
TH-234	1.323E+00	FAIL ABUN
U-235	1.623E-01	FAIL ABUN
NP-237	4.676E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
U-238	1.323E+00	FAIL ABUN
NP-239	2.306E-01	NOT IDENT.
PU-239	3.164E+02	NOT IDENT.
AM-241	1.392E-01	NOT IDENT.
CM-243	8.411E-02	NOT IDENT.
BK-247	6.244E-02	NOT IDENT.
CM-247	2.793E-02	NOT IDENT.
CF-251	9.384E-02	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.069E+01	1.516E+00	1.516E+00
CD-109	1.602E+00	3.012E+00	3.012E+00
SN-126	1.021E-01	1.919E-01	1.919E-01
TL-208	3.015E-01	9.364E-02	9.364E-02
PB-210	5.877E+00	8.343E+00	8.343E+00
BI-211	9.887E-01	8.779E-01	8.779E-01
BI-212	2.061E+00	9.862E-01	9.862E-01
PB-212	9.612E-01	1.355E-01	1.355E-01
BI-214	6.257E-01	1.635E-01	1.635E-01
PB-214	1.015E+00	1.862E-01	1.862E-01
RN-222	6.257E-01	1.635E-01	1.635E-01
RA-224	1.655E+00	1.437E+00	1.437E+00
RA-226	6.257E-01	1.635E-01	1.635E-01
AC-228	7.028E-01	2.938E-01	2.938E-01
RA-228	7.028E-01	2.938E-01	2.938E-01
TH-228	9.612E-01	1.355E-01	1.355E-01
TH-230	6.255E-01	1.635E-01	1.635E-01
TH-232	7.028E-01	2.938E-01	2.938E-01
U-234	6.255E-01	1.635E-01	1.635E-01
AM-243	2.057E-01	1.363E-01	1.363E-01
CF-249	3.727E-02	1.083E-01	1.083E-01
ANH-511	9.690E-02	8.901E-02	8.901E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-4.924E+00	1.068E+01	1.090E+01	NOT IDENT.
NA-22	2.738E-02	4.453E-02	4.621E-02	NOT IDENT.
NA-24	1.000E+41	2.203E+42	0.000E+00	SHORT HLIF
AL-26	1.405E-02	1.736E-02	1.848E-02	NOT IDENT.
SC-46	4.814E-02	3.611E-01	3.617E-01	FAIL ABUN
V-48	4.336E+03	1.335E+04	1.349E+04	SHORT HLIF
CR-51	-2.615E+02	3.815E+02	3.993E+02	SHORT HLIF
MN-54	2.968E-02	5.950E-02	6.098E-02	NOT IDENT.

CO-56	1.764E-01	4.299E-01	4.372E-01	NOT IDENT.
MN-56	1.000E+41	2.437E+41	0.000E+00	SHORT HLIF
CO-57	-3.997E-02	4.283E-02	4.646E-02	NOT IDENT.
CO-58	-2.614E-01	5.487E-01	5.612E-01	NOT IDENT.
FE-59	-2.573E+00	6.346E+00	6.451E+00	NOT IDENT.
CO-60	-2.207E-02	2.976E-02	3.138E-02	FAIL ABUN
ZN-65	-2.641E-02	1.685E-01	1.689E-01	NOT IDENT.
GE-68	-6.242E-01	2.138E+00	2.156E+00	NOT IDENT.
AS-73	2.796E+00	1.081E+01	1.088E+01	NOT IDENT.
AS-74	1.607E+03	5.877E+03	5.921E+03	SHORT HLIF
SE-75	5.865E-02	1.871E-01	1.890E-01	NOT IDENT.
BR-77	1.712E+38	1.481E+39	0.000E+00	SHORT HLIF
SR-82	-1.858E+02	6.129E+02	6.186E+02	SHORT HLIF
RB-83	-5.550E-04	5.099E-01	5.099E-01	NOT IDENT.
KR-85	2.082E+00	5.607E+00	5.685E+00	NOT IDENT.
SR-85	2.176E-01	5.918E-01	5.999E-01	NOT IDENT.
RB-86	-5.605E+03	2.610E+04	2.622E+04	SHORT HLIF
Y-88	-4.372E-02	2.273E-01	2.282E-01	NOT IDENT.
Y-91	1.208E+02	4.561E+02	4.594E+02	NOT IDENT.
NB-94	1.537E-02	3.167E-02	3.242E-02	NOT IDENT.
NB-95	4.826E-01	9.696E-01	9.937E-01	NOT IDENT.
NB-95M	-1.840E-01	2.374E+00	2.375E+00	NOT IDENT.
ZR-95	-2.812E-01	1.414E+00	1.419E+00	NOT IDENT.
NB-97	1.000E+41	1.668E+42	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.531E+41	0.000E+00	SHORT HLIF
MO-99	-2.145E+31	1.851E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	2.467E+41	0.000E+00	SHORT HLIF
RH-101	7.438E-04	3.293E-02	3.294E-02	NOT IDENT.
RH-102	-1.297E-02	4.934E-02	4.969E-02	NOT IDENT.
RU-103	-4.617E+00	5.131E+00	5.537E+00	FAIL ABUN
RH-106	-4.426E-01	4.400E-01	4.832E-01	NOT IDENT.
RU-106	-4.426E-01	4.400E-01	4.832E-01	NOT IDENT.
AG-108M	7.609E-05	2.467E-02	2.467E-02	NOT IDENT.
AG-110M	4.315E-02	8.376E-02	8.599E-02	NOT IDENT.
SN-113	4.383E-02	2.245E-01	2.253E-01	NOT IDENT.
CD-115	3.351E+38	2.478E+39	0.000E+00	SHORT HLIF
SN-117M	9.722E+03	8.818E+04	8.829E+04	SHORT HLIF
TE-123M	7.173E-02	1.193E-01	1.236E-01	NOT IDENT.
SB-124	1.758E+00	2.008E+00	2.158E+00	NOT IDENT.
SB-125	1.072E-02	8.474E-02	8.488E-02	FAIL ABUN
TE-125M	9.450E+01	2.969E+02	2.999E+02	NOT IDENT.
I-126	3.377E+05	7.671E+05	7.820E+05	SHORT HLIF
SB-126	-1.330E+05	1.341E+06	1.342E+06	SHORT HLIF
SB-127	-3.836E+20	2.013E+22	0.000E+00	SHORT HLIF
I-131	1.689E+09	4.541E+09	4.604E+09	SHORT HLIF
I-132	-1.000E+41	1.877E+42	0.000E+00	SHORT HLIF
TE-132	1.652E+26	3.747E+26	0.000E+00	SHORT HLIF
BA-133	-4.435E-03	4.221E-02	4.226E-02	NOT IDENT.
I-133	1.000E+41	2.568E+41	0.000E+00	SHORT HLIF
CS-134	3.244E-02	4.511E-02	4.743E-02	NOT IDENT.
CS-135	-7.638E-02	1.330E-01	1.374E-01	NOT IDENT.
I-135	-1.000E+41	9.112E+41	0.000E+00	SHORT HLIF
CS-136	-2.013E+05	2.551E+05	2.707E+05	SHORT HLIF
BA-137M	3.751E-02	3.613E-02	3.989E-02	NOT IDENT.
CS-137	3.962E-02	3.817E-02	4.214E-02	NOT IDENT.
CE-139	-3.178E-02	9.704E-02	9.810E-02	NOT IDENT.
BA-140	4.119E+05	1.208E+06	1.223E+06	SHORT HLIF
LA-140	1.304E+05	3.755E+05	3.801E+05	SHORT HLIF
CE-141	3.115E-01	2.283E+01	2.283E+01	NOT IDENT.
CE-143	-1.000E+41	2.145E+41	0.000E+00	SHORT HLIF
CE-144	1.498E-01	3.409E-01	3.476E-01	NOT IDENT.
PM-144	4.402E-02	5.273E-02	5.634E-02	NOT IDENT.
PR-144	3.809E+00	4.575E+00	4.886E+00	NOT IDENT.
PM-146	-1.214E-02	3.261E-02	3.307E-02	NOT IDENT.
ND-147	6.976E+06	3.024E+07	3.040E+07	SHORT HLIF
PM-147	-2.548E+02	7.514E+02	7.601E+02	NOT IDENT.
PM-149	-2.895E+39	4.331E+40	0.000E+00	SHORT HLIF
EU-150	-1.270E-02	2.745E-02	2.804E-02	FAIL ABUN
EU-152	-7.684E-02	8.381E-02	9.069E-02	FAIL ABUN
GD-153	-1.793E-01	1.941E-01	2.103E-01	NOT IDENT.
EU-154	6.338E-02	1.084E-01	1.121E-01	NOT IDENT.
EU-155	6.365E-02	1.032E-01	1.071E-01	FAIL ABUN
TB-160	-7.199E-01	1.731E+00	1.762E+00	FAIL ABUN
HO-166M	2.188E-02	4.821E-02	4.921E-02	FAIL ABUN
TM-171	6.729E+00	2.543E+01	2.561E+01	NOT IDENT.
HF-172	-7.921E-02	2.102E-01	2.132E-01	NOT IDENT.
LU-172	3.032E-02	6.461E-02	6.604E-02	FAIL ABUN
LU-176	-1.611E-02	2.232E-02	2.347E-02	FAIL ABUN

HF-181	2.602E+00	3.544E+00	3.733E+00	NOT IDENT.
TA-182	2.248E-01	8.493E-01	8.553E-01	FAIL ABUN
RE-183	-5.144E-01	3.731E+00	3.738E+00	NOT IDENT.
RE-184	3.349E+01	4.810E+01	5.042E+01	FAIL ABUN
W-188	1.903E+01	1.141E+02	1.144E+02	NOT IDENT.
IR-192	6.747E-02	4.262E-01	4.273E-01	FAIL ABUN
HG-203	-9.829E-01	2.255E+00	2.298E+00	NOT IDENT.
BI-207	3.053E-02	3.963E-02	4.195E-02	FAIL ABUN
PB-211	-1.031E-01	5.692E-01	5.711E-01	NOT IDENT.
RN-219	-1.239E-02	3.529E-01	3.529E-01	NOT IDENT.
RA-223	-3.173E-01	4.939E-01	5.142E-01	FAIL ABUN
AC-227	2.433E-02	2.086E-01	2.089E-01	NOT IDENT.
TH-227	2.433E-02	2.086E-01	2.089E-01	NOT IDENT.
TH-229	-3.639E-02	4.542E-01	4.545E-01	FAIL ABUN
PA-231	1.156E-01	4.457E-01	4.487E-01	NOT IDENT.
TH-231	-3.173E-01	4.939E-01	5.142E-01	FAIL ABUN
PA-233	-1.389E-02	5.284E-02	5.321E-02	NOT IDENT.
PA-234	-1.350E-02	2.701E-01	2.702E-01	NOT IDENT.
PA-234M	1.356E+00	4.383E+00	4.426E+00	NOT IDENT.
TH-234	-4.212E-01	1.467E+00	1.479E+00	FAIL ABUN
U-235	-7.525E-02	1.742E-01	1.774E-01	FAIL ABUN
NP-237	-1.389E-02	5.284E-02	5.321E-02	NOT IDENT.
NP-238	-1.000E+41	1.612E+41	0.000E+00	SHORT HLIF
U-238	-4.212E-01	1.467E+00	1.479E+00	FAIL ABUN
NP-239	-3.997E-02	2.684E-01	2.690E-01	NOT IDENT.
PU-239	2.487E+02	3.154E+02	3.347E+02	NOT IDENT.
AM-241	-2.316E-02	1.566E-01	1.569E-01	NOT IDENT.
CM-243	-6.645E-02	1.024E-01	1.067E-01	NOT IDENT.
BK-247	2.848E-02	6.537E-02	6.662E-02	NOT IDENT.
CM-247	4.868E-03	3.056E-02	3.064E-02	NOT IDENT.
CF-251	-5.439E-02	1.039E-01	1.067E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	32.3526	87.09	125.0983	136.47	94.4772
45.60	32.4465	87.57	125.1552	140.51	0.0000
46.54	32.4883	88.03	149.1172	143.76	88.1912
49.72	0.0000	88.34	137.8120	144.24	93.3104
51.35	67.7282	88.47	137.8284	145.44	84.8999
51.87	61.9311	89.96	119.3485	152.43	79.3401
52.39	59.6337	1093.63	119.4240	153.25	0.0000
52.97	54.9971	91.11	0.0000	323.87	68.3325
53.44	63.2258	92.59	113.5360	156.02	0.0000
54.07	73.8219	93.35	113.6148	158.56	0.0000
57.36	0.0000	94.56	66.8581	159.00	65.1254
57.53	71.7839	94.65	66.8636	162.33	63.5516
57.98	80.0647	94.67	66.8648	162.66	0.0000
59.27	70.7545	94.87	78.2949	163.33	60.1563
59.32	70.7588	97.43	99.3207	165.86	70.5847
59.54	70.7774	98.43	81.0000	176.31	74.5230
60.96	89.8015	98.44	81.0010	176.60	0.0000
61.17	89.8235	99.53	78.6221	177.52	74.5790
62.93	82.9012	100.11	77.4330	181.07	0.0000
63.29	81.7507	102.03	91.1055	181.52	62.5935
63.58	81.7779	103.18	86.2669	184.41	71.4130
64.28	86.5877	103.37	86.2813	143.76	71.4697
66.73	111.8036	105.21	61.7268	193.51	77.9338
67.24	108.2972	105.31	61.7321	197.03	78.9725
125.81	98.8247	106.12	69.1874	198.01	63.2146
67.75	84.5427	106.47	86.5099	201.83	60.7147
69.67	77.9592	109.28	84.2374	203.43	51.7874
70.83	92.3938	111.00	94.2822	205.31	46.2884
72.81	85.0064	111.76	0.0000	210.85	55.7204
72.87	85.0118	114.06	104.4681	215.65	37.2465
74.66	85.1716	116.30	0.0000	222.11	67.6373
74.82	85.1857	116.74	93.4776	227.09	62.4648
74.97	85.1990	119.76	62.4683	227.38	56.2273
77.11	85.3872	121.12	78.3773	228.16	0.0000
78.74	96.3708	121.22	79.2174	228.18	57.1439
79.69	94.8553	121.78	85.0918	116.74	57.1439
80.12	94.8961	122.06	85.1105	235.69	61.8532
80.19	0.0000	122.92	71.8080	235.96	57.8278
80.57	109.4209	123.07	71.8163	238.63	47.5838
81.00	107.8581	265.00	71.8504	238.98	0.0000
81.07	107.8656	125.81	82.8474	240.99	47.6420
81.75	106.3275	127.23	90.4771	242.00	47.6668
83.79	106.5403	127.91	82.1422	244.70	45.9313
84.00	106.5625	129.30	89.7806	252.40	0.0000
85.43	111.5607	131.20	110.0755	252.80	56.9720
86.55	125.0338	133.02	81.6168	254.15	0.0000
86.79	125.0621	133.52	79.1222	256.23	48.0108
86.94	125.0802	136.00	88.5425	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	41.8429	355.39	0.0000	584.27	14.3287
264.80	40.9360	356.01	35.5156	595.83	0.0000
265.00	40.9396	364.49	0.0000	427.87	22.6230
268.22	58.3164	366.42	0.0000	602.52	0.0000
269.46	43.7637	372.51	26.6926	604.72	32.4305
270.03	45.5994	375.05	28.6279	607.14	21.6349
271.23	52.9259	377.52	20.0588	609.32	26.8030
273.65	0.0000	356.01	24.4167	610.33	26.8104
276.40	49.3978	388.16	27.8135	614.28	20.1300
277.37	48.5046	388.63	0.0000	618.01	20.6681
277.60	45.7642	391.69	25.9305	620.36	14.4774
278.00	44.8578	264.66	28.9087	621.93	21.7255
279.20	53.1265	401.81	30.8496	630.19	0.0000
279.54	54.9670	402.40	26.0349	631.29	12.4468
279.70	57.7205	404.85	27.0236	633.25	3.1134
280.46	43.0766	410.95	31.9211	634.78	0.0000
283.69	37.6342	413.71	28.0802	635.95	17.6558
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	49.6066	423.72	0.0000	645.85	14.5793
285.90	0.0000	427.09	21.4056	657.76	17.7609
287.50	48.7354	427.87	20.4386	657.90	0.0000
290.67	42.8208	433.94	24.3841	661.66	16.7337
293.27	0.0000	439.40	20.5223	664.57	0.0000
351.93	33.2205	453.88	18.6614	666.33	0.0000
295.96	33.2314	463.37	20.6928	666.50	0.0000
879.38	52.6791	468.07	23.6865	667.71	0.0000
299.98	39.9507	473.00	0.0000	677.62	11.5532
300.09	44.3916	475.06	24.7314	685.70	0.0000
300.13	44.3926	476.78	22.7660	695.00	0.0000
301.36	50.8945	477.60	23.7622	696.49	13.7210
302.85	54.6319	482.18	13.8826	696.51	13.7210
256.23	36.1396	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	15.8356
306.78	46.3796	497.08	26.9044	697.49	14.7804
308.46	31.5616	505.52	13.4887	702.65	17.9712
311.90	39.0469	507.63	0.0000	706.68	9.5240
316.51	37.2624	511.00	17.0157	711.68	11.6557
319.41	0.0000	514.00	17.0318	720.70	0.0000
320.08	0.0000	514.00	17.0318	721.93	0.0000
321.04	35.4688	520.40	15.0586	722.78	23.9081
323.87	37.3812	520.69	0.0000	722.91	23.9090
325.23	39.2725	522.65	0.0000	723.31	15.9406
328.76	0.0000	527.90	0.0000	724.19	10.6295
333.37	42.7862	528.26	18.1150	727.33	10.6380
333.97	46.4576	529.59	14.0951	733.00	6.3918
334.37	38.0174	529.87	0.0000	735.93	11.7269
338.28	36.6688	531.02	0.0000	333.97	11.7314
338.32	36.6696	537.26	0.0000	739.50	0.0000
311.90	36.7021	546.56	0.0000	747.24	11.7600
340.48	36.7021	552.55	17.2366	748.06	12.8315
340.55	0.0000	563.25	10.6803	752.31	14.9855
344.28	41.4729	569.33	25.4751	753.82	0.0000
345.93	27.3533	946.00	18.3428	756.73	16.0736
351.06	37.8076	569.70	18.3442	756.80	16.0736
351.93	37.8206	583.19	14.3241	884.68	12.8813

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	17.7199	1274.44	7.9100	1620.50	3.7656
766.42	22.5560	1001.03	10.1796	1621.92	4.7079
766.84	21.4844	1002.74	20.3665	1678.03	0.0000
772.60	0.0000	1004.73	18.1107	1690.97	1.9015
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	3.8413
778.90	8.6188	1028.54	0.0000	1063.66	5.7664
783.70	0.0000	1037.84	7.9758	1771.35	2.8835
785.37	14.0273	1038.76	0.0000	1791.20	0.0000
792.07	17.2917	631.29	5.7068	1808.65	0.0000
794.95	11.8961	1048.07	0.0000	1810.72	0.0000
795.86	10.8171	1049.04	9.1348	1836.06	4.8471
810.06	16.2793	1050.41	2.2843		
810.29	16.2805	1063.66	22.3295		
344.28	18.4519	1077.00	0.0000		
810.76	16.2823	1077.34	11.4811		
815.77	0.0000	1085.87	9.1999		
1048.07	0.0000	1093.63	6.9102		
832.01	16.3623	1099.45	12.6829		
834.85	12.0066	1112.07	10.4011		
835.71	14.1928	1112.84	12.7143		
836.80	0.0000	1115.54	10.4077		
846.75	0.0000	1120.29	10.4172		
846.77	10.9448	1120.55	8.6816		
856.80	0.0000	1221.41	13.8926		
860.56	9.8811	1129.67	10.4355		
871.09	8.8037	1131.51	0.0000		
873.19	11.0099	1147.95	0.0000		
875.33	0.0000	1173.23	18.4070		
879.38	14.3325	1177.95	16.0424		
880.51	14.3357	1189.05	20.2177		
883.24	15.4481	1204.77	9.6962		
884.68	7.7263	1221.41	11.4932		
889.28	12.1539	1231.02	17.7112		
894.76	12.1682	1235.36	0.0000		
898.04	6.6418	1238.28	21.2798		
900.72	4.9843	1260.41	0.0000		
903.28	14.6287	1271.87	11.5932		
911.20	15.9861	1274.44	8.0294		
912.08	13.3242	1274.54	8.0299		
923.98	0.0000	1291.59	7.1582		
926.50	8.9102	1298.22	0.0000		
929.11	12.2582	1312.11	0.0000		
937.49	15.6292	1332.49	8.1079		
944.13	0.0000	1362.66	0.0000		
946.00	13.4204	1365.19	4.5285		
949.00	8.9525	1368.63	0.0000		
667.71	0.0000	1384.29	4.5422		
962.31	15.1496	1408.01	6.3831		
964.08	15.1551	1457.56	0.0000		
966.17	0.0000	1460.82	4.5972		
911.20	6.7422	1489.16	7.3872		
968.97	6.7422	1505.03	7.4048		
983.53	0.0000	1584.12	7.4922		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:51:34.03

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621350.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM31.CNF;306
Sample date      : 12-SEP-2016 00:00:00      Background date : 2-OCT-2016 11:01:52.
Sample ID        : G1203621350              Acquisition date  : 3-OCT-2016 08:50:58.
Detector name    : GAM31                    Sample quantity   : 1.75975E+02 GRAM
Elapsed live time: 0 01:00:00.00            Detector geometry:  CAN
Energy tolerance : 1.50000 keV              Elapsed real time: 0 01:00:06.18  0.2%
Abundance limit  : 75.00000                 Analyst Initials   : MXR1
Batch ID         : 1596247                  Sensitivity        : 3.00000
Matrix Spike ID  :                          Detector SN#      :
LCS ID           :                          : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.22*	1	130	0.79	92.08	89	7	3.17E-04	*****	
2	0	54.71	24	187	1.30	109.05	103	8	6.75E-03	100.3	
3	0	62.87*	29	119	1.89	125.37	122	7	8.02E-03	73.9	
4	0	187.22*	18	47	6.25	373.88	366	18	4.98E-03	100.5	
5	0	296.25*	10	24	1.89	591.79	586	9	2.85E-03	97.3	
6	0	338.11*	17	8	0.93	675.45	671	8	4.71E-03	42.2	
7	0	397.11	11	8	3.32	793.37	788	9	2.96E-03	58.8	
8	0	408.80	8	22	1.17	816.72	813	11	2.31E-03	123.8	
9	0	416.83	23	11	5.28	832.78	825	15	6.38E-03	38.0	
10	0	437.75	9	6	1.73	874.59	871	8	2.40E-03	60.2	
11	0	483.85	12	8	1.86	966.73	960	10	3.42E-03	50.5	
12	0	569.56	14	5	3.28	1138.04	1133	9	3.75E-03	39.3	
13	0	609.71*	2	8	1.53	1218.28	1214	8	5.07E-04	344.1	
14	0	702.13*	14	15	1.58	1403.00	1396	15	3.84E-03	68.2	
15	0	873.87	8	1	0.69	1746.26	1743	6	2.10E-03	44.4	
16	0	911.55*	6	2	0.71	1821.58	1817	8	1.59E-03	75.0	
17	0	1121.09	12	2	1.86	2240.41	2236	9	3.33E-03	36.4	

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

Configuration	: DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621350.CNF;1	
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4	
Sample title	: MXR1	
Sample date	: 12-SEP-2016 00:00:00	Acquisition date : 3-OCT-2016 08:50:58
Sample ID	: G1203621350	Sample quantity : 175.98 GRAM
Sample type	: SOLID	Sample geometry :
Detector name	: GAMMA31	Detector geometry: CAN
Elapsed live time:	0 01:00:00.00	Elapsed real time: 0 01:00:06.18 ' 0.2%
Energy tolerance :	1.50 keV	Half life ratio : 10.00
Errors propagated:	No	Systematic Error : 0.00 %
Efficiency type :	Linear	Efficiencies at : Peak Energy
Abundance limit :	75.00	

Interference Report

No interference correction performed

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AS-73	53.44	36	10.30*	5.699E+00	2.612E-01	3.141E-01	200.62
PB-210	46.54	2	4.25*	5.454E+00	3.158E-02	3.164E-02	3576.45
BI-214	609.32	2	45.49*	1.433E+00	1.328E-02	1.328E-02	688.26
	1120.29	12	14.92	8.735E-01	4.009E-01	4.009E-01	72.77
	1764.49	-----	15.30	5.813E-01	-----	Line Not Found	-----
RN-222	609.32	2	45.49*	1.433E+00	1.328E-02	1.328E-02	688.26
	1120.29	12	14.92	8.735E-01	4.009E-01	4.009E-01	72.77
	1764.49	-----	15.30	5.813E-01	-----	Line Not Found	-----
RA-226	609.32	2	45.49*	1.433E+00	1.328E-02	1.328E-02	688.26
	1120.29	12	14.92	8.735E-01	4.009E-01	4.009E-01	72.77
	1764.49	-----	15.30	5.813E-01	-----	Line Not Found	-----
TH-230	609.32	2	45.49*	1.433E+00	1.328E-02	1.328E-02	688.26
	1120.29	12	14.92	8.735E-01	4.009E-01	4.009E-01	72.77
	1764.49	-----	15.30	5.813E-01	-----	Line Not Found	-----
U-234	609.32	2	45.49*	1.433E+00	1.328E-02	1.328E-02	688.26
	1120.29	12	14.92	8.735E-01	4.009E-01	4.009E-01	72.77
	1764.49	-----	15.30	5.813E-01	-----	Line Not Found	-----

Flag: "*" = Keyline

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621350.CNF;1
* Acquisition date   : 3-OCT-2016 08:50:58 Sensitivity      : 3.000
* Detector ID        : GAM31 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:06.18 Half life ratio : *****
* Sample date        : 12-SEP-2016 00:00:00 Analyst initials: MXR1
* Sample ID          : G1203621350 Sample Quantity : 1.7598E+02 GRAM
* Batch Number       : 1596247 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 15-JUN-2016 06:54:07 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM31 CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
AS-73	3.141E-01	6.176E-01	4.265E-01
PB-210	3.164E-02	1.109E+00	8.948E-01
BI-214	1.328E-02	8.955E-02	1.264E-01
RN-222	1.328E-02	8.955E-02	1.264E-01
RA-226	1.328E-02	8.955E-02	1.264E-01
TH-230	1.328E-02	8.955E-02	1.264E-01
U-234	1.328E-02	8.955E-02	1.264E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	3.192E-01	3.357E-01	7.599E-01	NOT IDENT.
NA-22	-3.592E-03	3.315E-02	7.002E-02	NOT IDENT.
NA-24	0.000E+00	6.647E+08	0.000E+00	SHORT HLIF
AL-26	1.400E-03	2.822E-02	7.048E-02	NOT IDENT.
K-40	-3.065E-01	4.013E-01	8.243E-01	NOT IDENT.
SC-46	-5.700E-03	3.058E-02	6.534E-02	FAIL ABUN
V-48	3.865E-02	6.426E-02	1.635E-01	NOT IDENT.
CR-51	2.452E-01	3.834E-01	8.556E-01	NOT IDENT.
MN-54	8.034E-03	3.087E-02	6.749E-02	NOT IDENT.
CO-56	2.805E-02	3.965E-02	9.091E-02	NOT IDENT.
MN-56	0.000E+00	1.398E+41	0.000E+00	SHORT HLIF
CO-57	-7.439E-03	1.511E-02	2.905E-02	NOT IDENT.
CO-58	1.836E-02	3.932E-02	8.673E-02	NOT IDENT.
FE-59	1.914E-02	6.225E-02	1.525E-01	NOT IDENT.
CO-60	-1.436E-02	3.492E-02	6.679E-02	NOT IDENT.
ZN-65	-1.288E-02	8.718E-02	1.630E-01	NOT IDENT.
GE-68	4.670E-01	8.860E-01	2.219E+00	NOT IDENT.
AS-74	-2.636E-02	1.119E-01	2.179E-01	NOT IDENT.
SE-75	4.532E-03	3.091E-02	6.271E-02	NOT IDENT.
BR-77	-1.491E+01	4.397E+01	8.724E+01	NOT IDENT.
SR-82	1.672E-01	2.487E-01	6.368E-01	NOT IDENT.
RB-83	4.340E-02	5.757E-02	1.378E-01	NOT IDENT.
KR-85	-1.712E+01	9.643E+00	1.474E+01	NOT IDENT.

SR-85	-9.700E-02	5.458E-02	8.341E-02	NOT IDENT.
RB-86	3.865E-01	7.697E-01	1.862E+00	NOT IDENT.
Y-88	1.552E-03	3.319E-02	8.264E-02	NOT IDENT.
Y-91	-4.665E+00	1.229E+01	2.485E+01	NOT IDENT.
NB-94	5.045E-02	6.744E-02	7.033E-02	FAIL ABUN
NB-95	4.156E-02	3.015E-02	8.291E-02	NOT IDENT.
NB-95M	1.991E-02	9.302E-02	1.864E-01	NOT IDENT.
ZR-95	4.506E-02	6.228E-02	1.485E-01	NOT IDENT.
NB-97	0.000E+00	9.852E+40	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	9.093E+08	0.000E+00	SHORT HLIF
MO-99	-3.081E+01	4.615E+01	7.911E+01	NOT IDENT.
TC-99M	0.000E+00	6.015E+23	0.000E+00	SHORT HLIF
RH-101	3.524E-03	1.662E-02	3.538E-02	NOT IDENT.
RH-102	2.133E-02	3.833E-02	9.209E-02	NOT IDENT.
RU-103	2.408E-02	3.125E-02	7.666E-02	FAIL ABUN
RH-106	5.307E-02	2.699E-01	5.795E-01	NOT IDENT.
RU-106	5.307E-02	2.699E-01	5.795E-01	NOT IDENT.
AG-108M	8.855E-03	2.375E-02	4.941E-02	NOT IDENT.
CD-109	-1.024E-01	3.376E-01	6.878E-01	NOT IDENT.
AG-110M	1.994E-02	3.936E-02	9.531E-02	NOT IDENT.
SN-113	-9.468E-03	3.346E-02	6.481E-02	NOT IDENT.
CD-115	-3.537E+01	4.899E+01	8.714E+01	NOT IDENT.
SN-117M	1.612E-02	4.783E-02	1.003E-01	NOT IDENT.
TE-123M	1.619E-02	1.764E-02	3.994E-02	NOT IDENT.
SB-124	5.479E-02	8.481E-02	2.295E-01	NOT IDENT.
SB-125	-1.106E-02	6.651E-02	1.377E-01	NOT IDENT.
TE-125M	2.479E-02	5.160E+00	1.079E+01	NOT IDENT.
I-126	9.312E-02	2.072E-01	4.891E-01	NOT IDENT.
SB-126	-8.453E-02	1.438E-01	2.550E-01	NOT IDENT.
SN-126	-2.219E-03	3.158E-02	6.630E-02	FAIL ABUN
SB-127	-1.671E+00	3.741E+00	6.894E+00	NOT IDENT.
I-131	2.471E-02	1.526E-01	3.312E-01	NOT IDENT.
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	-2.105E+00	1.983E+00	3.185E+00	NOT IDENT.
BA-133	7.285E-03	2.942E-02	6.533E-02	NOT IDENT.
I-133	0.000E+00	5.019E+05	0.000E+00	SHORT HLIF
CS-134	1.823E-02	3.484E-02	7.903E-02	FAIL ABUN
CS-135	-1.955E-02	1.207E-01	2.270E-01	NOT IDENT.
I-135	0.000E+00	4.139E+22	0.000E+00	SHORT HLIF
CS-136	2.886E-03	1.249E-01	2.698E-01	NOT IDENT.
BA-137M	2.648E-02	2.396E-02	6.339E-02	NOT IDENT.
CS-137	2.797E-02	2.531E-02	6.697E-02	NOT IDENT.
CE-139	-2.293E-02	1.862E-02	3.021E-02	NOT IDENT.
BA-140	3.489E-02	3.009E-01	6.447E-01	NOT IDENT.
LA-140	-3.715E-03	9.130E-02	2.099E-01	NOT IDENT.
CE-141	-2.091E-02	4.305E-02	7.643E-02	NOT IDENT.
CE-143	0.000E+00	1.850E+03	0.000E+00	SHORT HLIF
CE-144	4.573E-02	1.151E-01	2.477E-01	NOT IDENT.
PM-144	6.831E-03	2.977E-02	5.888E-02	NOT IDENT.
PR-144	5.181E-01	2.237E+00	4.425E+00	NOT IDENT.
PM-146	7.788E-03	3.754E-02	8.018E-02	NOT IDENT.
ND-147	1.559E-01	5.305E-01	1.235E+00	NOT IDENT.
PM-147	2.632E+02	3.763E+02	8.582E+02	NOT IDENT.
PM-149	2.685E+02	3.623E+02	8.871E+02	NOT IDENT.
EU-150	-1.003E-03	2.085E-02	3.981E-02	NOT IDENT.
EU-152	7.826E-02	6.709E-02	1.670E-01	NOT IDENT.
GD-153	-5.142E-03	4.189E-02	8.624E-02	NOT IDENT.
EU-154	-7.019E-03	9.461E-02	2.013E-01	FAIL ABUN
EU-155	1.538E-02	4.702E-02	1.039E-01	NOT IDENT.
TB-160	-6.873E-03	1.069E-01	2.338E-01	FAIL ABUN
HO-166M	8.549E-03	5.779E-02	1.114E-01	NOT IDENT.
TM-171	6.925E-01	4.164E+00	8.585E+00	NOT IDENT.
HF-172	-3.697E-02	1.130E-01	2.215E-01	FAIL ABUN
LU-172	-1.494E-02	4.600E-02	9.335E-02	FAIL ABUN
LU-176	9.537E-04	1.815E-02	3.933E-02	NOT IDENT.
HF-181	1.492E-02	3.663E-02	8.333E-02	NOT IDENT.
TA-182	-4.265E-02	1.358E-01	2.710E-01	FAIL ABUN
RE-183	-2.075E-02	7.051E-02	1.432E-01	NOT IDENT.
RE-184	1.816E-02	1.288E-01	2.823E-01	NOT IDENT.
W-188	-1.002E+00	4.692E+00	9.480E+00	FAIL ABUN
IR-192	-2.401E-02	2.859E-02	5.361E-02	FAIL ABUN
HG-203	-1.315E-02	3.176E-02	5.701E-02	NOT IDENT.
BI-207	1.611E-02	2.576E-02	7.357E-02	FAIL ABUN
TL-208	1.739E-02	3.273E-02	7.812E-02	NOT IDENT.
BI-211	-1.654E-01	1.816E-01	3.525E-01	NOT IDENT.
PB-211	-2.101E-01	5.907E-01	1.035E+00	NOT IDENT.
BI-212	-1.201E-02	3.035E-01	6.548E-01	NOT IDENT.
PB-212	-2.936E-02	4.572E-02	8.696E-02	NOT IDENT.

PB-214	5.843E-03	6.678E-02	1.460E-01	FAIL ABUN
RN-219	1.143E-01	2.486E-01	5.883E-01	NOT IDENT.
RA-223	-1.072E-01	4.903E-01	1.008E+00	FAIL ABUN
RA-224	-9.417E-02	4.363E-01	8.415E-01	NOT IDENT.
AC-227	-2.110E-03	1.661E-01	3.281E-01	NOT IDENT.
TH-227	-2.110E-03	1.661E-01	3.281E-01	NOT IDENT.
AC-228	9.592E-02	1.410E-01	3.011E-01	FAIL ABUN
RA-228	9.592E-02	1.410E-01	3.011E-01	FAIL ABUN
TH-228	-2.936E-02	4.572E-02	8.696E-02	NOT IDENT.
TH-229	-1.597E-01	3.437E-01	5.754E-01	NOT IDENT.
PA-231	-9.458E-02	2.899E-01	6.000E-01	NOT IDENT.
TH-231	-1.072E-01	4.903E-01	1.008E+00	FAIL ABUN
TH-232	9.592E-02	1.410E-01	3.011E-01	FAIL ABUN
PA-233	-6.134E-03	4.837E-02	1.012E-01	NOT IDENT.
PA-234	-1.013E-01	1.891E-01	3.699E-01	FAIL ABUN
PA-234M	2.789E+00	4.242E+00	9.882E+00	NOT IDENT.
TH-234	8.671E-01	1.256E+00	1.287E+00	FAIL ABUN
U-235	2.736E-04	1.196E-01	2.296E-01	NOT IDENT.
NP-237	-6.134E-03	4.837E-02	1.012E-01	NOT IDENT.
NP-238	0.000E+00	1.091E+02	0.000E+00	SHORT HLIF
U-238	8.671E-01	1.256E+00	1.287E+00	FAIL ABUN
NP-239	-8.259E-02	1.465E-01	2.802E-01	NOT IDENT.
PU-239	-1.068E+01	1.757E+02	3.606E+02	NOT IDENT.
AM-241	5.273E-02	5.486E-02	1.138E-01	NOT IDENT.
AM-243	5.730E-03	2.103E-02	4.489E-02	NOT IDENT.
CM-243	2.968E-03	5.081E-02	1.075E-01	NOT IDENT.
BK-247	0.000E+00	5.464E-02	1.077E-01	NOT IDENT.
CM-247	1.874E-03	2.444E-02	5.355E-02	NOT IDENT.
CF-249	-2.265E-02	2.734E-02	4.984E-02	NOT IDENT.
CF-251	-8.210E-02	7.861E-02	1.312E-01	NOT IDENT.
ANH-511	-9.288E-02	5.292E-02	1.075E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AS-73	53.44	36	10.30*	5.699E+00	2.612E-01	3.141E-01	200.62
PB-210	46.54	2	4.25*	5.454E+00	3.158E-02	3.164E-02	3576.45
BI-214	609.32	2	45.49*	1.433E+00	1.328E-02	1.328E-02	688.26
	1120.29	12	14.92	8.735E-01	4.009E-01	4.009E-01	72.77
	1764.49	-----	15.30	5.813E-01	-----	Line Not Found	-----
RN-222	609.32	2	45.49*	1.433E+00	1.328E-02	1.328E-02	688.26
	1120.29	12	14.92	8.735E-01	4.009E-01	4.009E-01	72.77
	1764.49	-----	15.30	5.813E-01	-----	Line Not Found	-----
RA-226	609.32	2	45.49*	1.433E+00	1.328E-02	1.328E-02	688.26
	1120.29	12	14.92	8.735E-01	4.009E-01	4.009E-01	72.77
	1764.49	-----	15.30	5.813E-01	-----	Line Not Found	-----
TH-230	609.32	2	45.49*	1.433E+00	1.328E-02	1.328E-02	688.26
	1120.29	12	14.92	8.735E-01	4.009E-01	4.009E-01	72.77
	1764.49	-----	15.30	5.813E-01	-----	Line Not Found	-----
U-234	609.32	2	45.49*	1.433E+00	1.328E-02	1.328E-02	688.26
	1120.29	12	14.92	8.735E-01	4.009E-01	4.009E-01	72.77
	1764.49	-----	15.30	5.813E-01	-----	Line Not Found	-----

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1203621350

Page : 2
Acquisition date : 3-OCT-2016 08:50:58

Total number of lines in spectrum 17
Number of unidentified lines 6
Number of lines tentatively identified by NID 11 64.71%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AS-73	80.30D	1.20	2.612E-01	3.141E-01	6.302E-01	200.62	
PB-210	22.20Y	1.00	3.158E-02	3.164E-02	113.1E-02	3576.45	
BI-214	1600.00Y	1.00	1.328E-02	1.328E-02	9.138E-02	688.26	
RN-222	1600.00Y	1.00	1.328E-02	1.328E-02	9.138E-02	688.26	
RA-226	1600.00Y	1.00	1.328E-02	1.328E-02	9.138E-02	688.26	
TH-230	7.54E+04Y	1.00	1.328E-02	1.328E-02	9.138E-02	688.26	
U-234	2.45E+05Y	1.00	1.328E-02	1.328E-02	9.138E-02	688.26	
Total Activity :			3.591E-01	4.122E-01			

Grand Total Activity : 3.591E-01 4.122E-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	62.87	42	174	1.89	125.37	122	7	8.02E-03	****	5.59E+00	T
0	187.22	23	61	6.25	373.88	366	18	4.98E-03	****	3.89E+00	
0	296.25	13	29	1.89	591.79	586	9	2.85E-03	****	2.66E+00	T
0	338.11	20	9	0.93	675.45	671	8	4.71E-03	84.5	2.37E+00	T
0	397.11	13	10	3.32	793.37	788	9	2.96E-03	****	2.06E+00	
0	408.80	10	25	1.17	816.72	813	11	2.31E-03	****	2.01E+00	
0	416.83	27	13	5.28	832.78	825	15	6.38E-03	75.9	1.97E+00	
0	437.75	10	7	1.73	874.59	871	8	2.40E-03	****	1.89E+00	
0	483.85	14	9	1.86	966.73	960	10	3.42E-03	****	1.74E+00	
0	569.56	15	5	3.28	1138.04	1133	9	3.75E-03	78.6	1.52E+00	T
0	702.13	15	16	1.58	1403.00	1396	15	3.84E-03	****	1.28E+00	T
0	873.87	8	2	0.69	1746.26	1743	6	2.10E-03	88.8	1.07E+00	T
0	911.55	6	2	0.71	1821.58	1817	8	1.59E-03	****	1.03E+00	T

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621350.CNF;1  *
* Acquisition date   : 3-OCT-2016 08:50:58 Sensitivity      : 3.000             *
* Detector ID        : GAM31 Energy tolerance: 1.500       *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000       *
* Elapsed real time  : 0 01:00:06.18 Half life ratio : *****       *
* Sample date        : 12-SEP-2016 00:00:00 Nuclide Library : SOLID       *
* Sample ID          : G1203621350 Analyst initials: MXR1         *
* Batch Number       : 1596247 Sample Quantity : 1.7598E+02 GRAM      *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000         *
*                               Dry Weight      : 0.00000         *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 15-JUN-2016 06:54:07 Eff. Geometry   : CAN         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM31 CAN.CNF;7       *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
AS-73	1.999E-01
PB-210	4.194E-01
BI-214	5.396E-02
RN-222	5.396E-02
RA-226	5.396E-02
TH-230	5.396E-02
U-234	5.396E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	3.362E-01	NOT IDENT.
NA-22	2.738E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.497E-02	NOT IDENT.
K-40	3.331E-01	NOT IDENT.
SC-46	2.593E-02	FAIL ABUN
V-48	6.632E-02	NOT IDENT.
CR-51	3.851E-01	NOT IDENT.
MN-54	2.811E-02	NOT IDENT.
CO-56	3.887E-02	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	1.295E-02	NOT IDENT.
CO-58	3.685E-02	NOT IDENT.
FE-59	5.980E-02	NOT IDENT.
CO-60	2.554E-02	NOT IDENT.
ZN-65	6.733E-02	NOT IDENT.
GE-68	8.944E-01	NOT IDENT.
AS-74	9.282E-02	NOT IDENT.
SE-75	2.729E-02	NOT IDENT.
BR-77	3.931E+01	NOT IDENT.
SR-82	2.579E-01	NOT IDENT.
RB-83	5.910E-02	NOT IDENT.
KR-85	6.523E+00	NOT IDENT.
SR-85	3.690E-02	NOT IDENT.

RB-86	7.630E-01	NOT IDENT.
Y-88	2.928E-02	NOT IDENT.
Y-91	8.869E+00	NOT IDENT.
NB-94	3.046E-02	FAIL ABUN
NB-95	3.510E-02	NOT IDENT.
NB-95M	8.343E-02	NOT IDENT.
ZR-95	6.271E-02	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	3.065E+01	NOT IDENT.
TC-99M	0.000E+00	SHORT HLIF
RH-101	1.576E-02	NOT IDENT.
RH-102	3.823E-02	NOT IDENT.
RU-103	3.259E-02	FAIL ABUN
RH-106	2.449E-01	NOT IDENT.
RU-106	2.449E-01	NOT IDENT.
AG-108M	2.117E-02	NOT IDENT.
CD-109	3.106E-01	NOT IDENT.
AG-110M	3.945E-02	NOT IDENT.
SN-113	2.725E-02	NOT IDENT.
CD-115	3.294E+01	NOT IDENT.
SN-117M	4.516E-02	NOT IDENT.
TE-123M	1.802E-02	NOT IDENT.
SB-124	8.890E-02	NOT IDENT.
SB-125	5.807E-02	NOT IDENT.
TE-125M	4.804E+00	NOT IDENT.
I-126	2.014E-01	NOT IDENT.
SB-126	9.785E-02	NOT IDENT.
SN-126	2.993E-02	FAIL ABUN
SB-127	2.857E+00	NOT IDENT.
I-131	1.441E-01	NOT IDENT.
I-132	0.000E+00	SHORT HLIF
TE-132	1.374E+00	NOT IDENT.
BA-133	2.827E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	3.333E-02	FAIL ABUN
CS-135	1.001E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	1.102E-01	NOT IDENT.
BA-137M	2.670E-02	NOT IDENT.
CS-137	2.820E-02	NOT IDENT.
CE-139	1.303E-02	NOT IDENT.
BA-140	2.724E-01	NOT IDENT.
LA-140	7.436E-02	NOT IDENT.
CE-141	3.371E-02	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	1.113E-01	NOT IDENT.
PM-144	2.455E-02	NOT IDENT.
PR-144	1.845E+00	NOT IDENT.
PM-146	3.494E-02	NOT IDENT.
ND-147	5.062E-01	NOT IDENT.
PM-147	3.837E+02	NOT IDENT.
PM-149	3.842E+02	NOT IDENT.
EU-150	1.722E-02	NOT IDENT.
EU-152	7.355E-02	NOT IDENT.
GD-153	3.869E-02	NOT IDENT.
EU-154	7.908E-02	FAIL ABUN
EU-155	4.609E-02	NOT IDENT.
TB-160	9.409E-02	FAIL ABUN
HO-166M	4.690E-02	NOT IDENT.
TM-171	4.045E+00	NOT IDENT.
HF-172	9.909E-02	FAIL ABUN
LU-172	3.591E-02	FAIL ABUN
LU-176	1.711E-02	NOT IDENT.
HF-181	3.551E-02	NOT IDENT.
TA-182	1.049E-01	FAIL ABUN
RE-183	6.749E-02	NOT IDENT.
RE-184	1.184E-01	NOT IDENT.
W-188	4.036E+00	FAIL ABUN
IR-192	2.317E-02	FAIL ABUN
HG-203	2.478E-02	NOT IDENT.
BI-207	2.807E-02	FAIL ABUN
TL-208	3.428E-02	NOT IDENT.
BI-211	1.555E-01	NOT IDENT.
PB-211	4.373E-01	NOT IDENT.
BI-212	2.549E-01	NOT IDENT.
PB-212	3.903E-02	NOT IDENT.
PB-214	6.544E-02	FAIL ABUN

RN-219	2.486E-01	NOT IDENT.
RA-223	4.411E-01	FAIL ABUN
RA-224	3.730E-01	NOT IDENT.
AC-227	1.424E-01	NOT IDENT.
TH-227	1.424E-01	NOT IDENT.
AC-228	1.283E-01	FAIL ABUN
RA-228	1.283E-01	FAIL ABUN
TH-228	3.903E-02	NOT IDENT.
TH-229	2.502E-01	NOT IDENT.
PA-231	2.559E-01	NOT IDENT.
TH-231	4.411E-01	FAIL ABUN
TH-232	1.283E-01	FAIL ABUN
PA-233	4.429E-02	NOT IDENT.
PA-234	1.356E-01	FAIL ABUN
PA-234M	4.205E+00	NOT IDENT.
TH-234	6.122E-01	FAIL ABUN
U-235	1.023E-01	NOT IDENT.
NP-237	4.429E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
U-238	6.122E-01	FAIL ABUN
NP-239	1.243E-01	NOT IDENT.
PU-239	1.596E+02	NOT IDENT.
AM-241	5.373E-02	NOT IDENT.
AM-243	2.069E-02	NOT IDENT.
CM-243	4.788E-02	NOT IDENT.
BK-247	4.679E-02	NOT IDENT.
CM-247	2.260E-02	NOT IDENT.
CF-249	2.049E-02	NOT IDENT.
CF-251	5.659E-02	NOT IDENT.
ANH-511	5.009E-02	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621350.CNF;1
* Acquisition date   : 3-OCT-2016 08:50:58 Sensitivity      : 3.000
* Detector ID        : GAM31 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:06.18 Half life ratio : *****
* Sample date        : 12-SEP-2016 00:00:00 Nuclide Library: SOLID
* Sample ID          : G1203621350 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.7598E+02 GRAM
*                               Quantity Err(%) : 1.1365E-03 %
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000
*                               Dry Weight       : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 15-JUN-2016 06:54:07 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM31 CAN.CNF;7
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
AS-73	3.141E-01	6.210E-01	6.210E-01
PB-210	3.164E-02	1.109E+00	1.109E+00
BI-214	1.328E-02	8.955E-02	8.955E-02
RN-222	1.328E-02	8.955E-02	8.955E-02
RA-226	1.328E-02	8.955E-02	8.955E-02
TH-230	1.328E-02	8.955E-02	8.955E-02
U-234	1.328E-02	8.955E-02	8.955E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	3.192E-01	3.360E-01	3.655E-01	NOT IDENT.
NA-22	-3.592E-03	3.315E-02	3.319E-02	NOT IDENT.
NA-24	2.666E+08	6.648E+08	6.756E+08	SHORT HLIF
AL-26	1.400E-03	2.822E-02	2.822E-02	NOT IDENT.
K-40	-3.065E-01	4.017E-01	4.248E-01	NOT IDENT.
SC-46	-5.700E-03	3.058E-02	3.068E-02	FAIL ABUN
V-48	3.865E-02	6.427E-02	6.659E-02	NOT IDENT.
CR-51	2.452E-01	3.835E-01	3.991E-01	NOT IDENT.
MN-54	8.034E-03	3.087E-02	3.108E-02	NOT IDENT.
CO-56	2.805E-02	3.967E-02	4.164E-02	NOT IDENT.
MN-56	1.000E+41	1.399E+41	0.000E+00	SHORT HLIF
CO-57	-7.439E-03	1.512E-02	1.548E-02	NOT IDENT.
CO-58	1.836E-02	3.933E-02	4.019E-02	NOT IDENT.
FE-59	1.914E-02	6.227E-02	6.286E-02	NOT IDENT.
CO-60	-1.436E-02	3.492E-02	3.551E-02	NOT IDENT.
ZN-65	-1.288E-02	8.718E-02	8.737E-02	NOT IDENT.
GE-68	4.670E-01	8.862E-01	9.108E-01	NOT IDENT.
AS-74	-2.636E-02	1.119E-01	1.125E-01	NOT IDENT.
SE-75	4.532E-03	3.091E-02	3.098E-02	NOT IDENT.
BR-77	-1.491E+01	4.493E+01	4.543E+01	NOT IDENT.
SR-82	1.672E-01	2.488E-01	2.600E-01	NOT IDENT.
RB-83	4.340E-02	5.788E-02	6.109E-02	NOT IDENT.
KR-85	-1.712E+01	9.669E+00	1.237E+01	NOT IDENT.

SR-85	-9.700E-02	5.472E-02	7.005E-02	NOT IDENT.
RB-86	3.865E-01	7.699E-01	7.893E-01	NOT IDENT.
Y-88	1.552E-03	3.319E-02	3.320E-02	NOT IDENT.
Y-91	-4.665E+00	1.229E+01	1.247E+01	NOT IDENT.
NB-94	5.045E-02	6.748E-02	7.121E-02	FAIL ABUN
NB-95	4.156E-02	3.020E-02	3.554E-02	NOT IDENT.
NB-95M	1.991E-02	9.304E-02	9.347E-02	NOT IDENT.
ZR-95	4.506E-02	6.231E-02	6.554E-02	NOT IDENT.
NB-97	-1.000E+41	9.861E+40	0.000E+00	SHORT HLIF
ZR-97	-2.172E+08	9.093E+08	9.146E+08	SHORT HLIF
MO-99	-3.081E+01	4.618E+01	4.822E+01	NOT IDENT.
TC-99M	-2.273E+23	6.019E+23	0.000E+00	SHORT HLIF
RH-101	3.524E-03	1.663E-02	1.671E-02	NOT IDENT.
RH-102	2.133E-02	3.837E-02	3.956E-02	NOT IDENT.
RU-103	2.408E-02	3.127E-02	3.310E-02	FAIL ABUN
RH-106	5.307E-02	2.699E-01	2.710E-01	NOT IDENT.
RU-106	5.307E-02	2.699E-01	2.710E-01	NOT IDENT.
AG-108M	8.855E-03	2.375E-02	2.408E-02	NOT IDENT.
CD-109	-1.024E-01	3.377E-01	3.408E-01	NOT IDENT.
AG-110M	1.994E-02	3.937E-02	4.038E-02	NOT IDENT.
SN-113	-9.468E-03	3.347E-02	3.374E-02	NOT IDENT.
CD-115	-3.537E+01	4.904E+01	5.156E+01	NOT IDENT.
SN-117M	1.612E-02	4.784E-02	4.839E-02	NOT IDENT.
TE-123M	1.619E-02	1.765E-02	1.910E-02	NOT IDENT.
SB-124	5.479E-02	8.486E-02	8.838E-02	NOT IDENT.
SB-125	-1.106E-02	6.651E-02	6.670E-02	NOT IDENT.
TE-125M	2.479E-02	5.160E+00	5.160E+00	NOT IDENT.
I-126	9.312E-02	2.073E-01	2.115E-01	NOT IDENT.
SB-126	-8.453E-02	1.440E-01	1.490E-01	NOT IDENT.
SN-126	-2.219E-03	3.158E-02	3.159E-02	FAIL ABUN
SB-127	-1.671E+00	3.745E+00	3.820E+00	NOT IDENT.
I-131	2.471E-02	1.526E-01	1.530E-01	NOT IDENT.
I-132	1.000E+41	3.056E+41	0.000E+00	SHORT HLIF
TE-132	-2.105E+00	1.991E+00	2.206E+00	NOT IDENT.
BA-133	7.285E-03	2.942E-02	2.960E-02	NOT IDENT.
I-133	1.472E+05	5.024E+05	5.068E+05	SHORT HLIF
CS-134	1.823E-02	3.485E-02	3.580E-02	FAIL ABUN
CS-135	-1.955E-02	1.207E-01	1.210E-01	NOT IDENT.
I-135	9.213E+21	4.163E+22	0.000E+00	SHORT HLIF
CS-136	2.886E-03	1.249E-01	1.249E-01	NOT IDENT.
BA-137M	2.648E-02	2.399E-02	2.679E-02	NOT IDENT.
CS-137	2.797E-02	2.534E-02	2.831E-02	NOT IDENT.
CE-139	-2.293E-02	1.918E-02	2.179E-02	NOT IDENT.
BA-140	3.489E-02	3.009E-01	3.013E-01	NOT IDENT.
LA-140	-3.715E-03	9.130E-02	9.132E-02	NOT IDENT.
CE-141	-2.091E-02	4.306E-02	4.408E-02	NOT IDENT.
CE-143	9.909E+02	1.851E+03	1.904E+03	SHORT HLIF
CE-144	4.573E-02	1.151E-01	1.170E-01	NOT IDENT.
PM-144	6.831E-03	2.978E-02	2.993E-02	NOT IDENT.
PR-144	5.181E-01	2.237E+00	2.249E+00	NOT IDENT.
PM-146	7.788E-03	3.754E-02	3.770E-02	NOT IDENT.
ND-147	1.559E-01	5.306E-01	5.352E-01	NOT IDENT.
PM-147	2.632E+02	3.765E+02	3.947E+02	NOT IDENT.
PM-149	2.685E+02	3.641E+02	3.837E+02	NOT IDENT.
EU-150	-1.003E-03	2.085E-02	2.086E-02	NOT IDENT.
EU-152	7.826E-02	6.723E-02	7.593E-02	NOT IDENT.
GD-153	-5.142E-03	4.189E-02	4.196E-02	NOT IDENT.
EU-154	-7.019E-03	9.461E-02	9.466E-02	FAIL ABUN
EU-155	1.538E-02	4.703E-02	4.754E-02	NOT IDENT.
TB-160	-6.873E-03	1.069E-01	1.070E-01	FAIL ABUN
HO-166M	8.549E-03	5.779E-02	5.792E-02	NOT IDENT.
TM-171	6.925E-01	4.165E+00	4.176E+00	NOT IDENT.
HF-172	-3.697E-02	1.132E-01	1.144E-01	FAIL ABUN
LU-172	-1.494E-02	4.602E-02	4.651E-02	FAIL ABUN
LU-176	9.537E-04	1.815E-02	1.815E-02	NOT IDENT.
HF-181	1.492E-02	3.663E-02	3.725E-02	NOT IDENT.
TA-182	-4.265E-02	1.358E-01	1.371E-01	FAIL ABUN
RE-183	-2.075E-02	7.054E-02	7.116E-02	NOT IDENT.
RE-184	1.816E-02	1.288E-01	1.290E-01	NOT IDENT.
W-188	-1.002E+00	4.693E+00	4.715E+00	FAIL ABUN
IR-192	-2.401E-02	2.861E-02	3.059E-02	FAIL ABUN
HG-203	-1.315E-02	3.176E-02	3.231E-02	NOT IDENT.
BI-207	1.611E-02	2.577E-02	2.677E-02	FAIL ABUN
TL-208	1.739E-02	3.274E-02	3.366E-02	NOT IDENT.
BI-211	-1.654E-01	1.817E-01	1.964E-01	NOT IDENT.
PB-211	-2.101E-01	5.908E-01	5.983E-01	NOT IDENT.
BI-212	-1.201E-02	3.035E-01	3.036E-01	NOT IDENT.
PB-212	-2.936E-02	4.574E-02	4.762E-02	NOT IDENT.

PB-214	5.843E-03	6.678E-02	6.683E-02	FAIL ABUN
RN-219	1.143E-01	2.490E-01	2.542E-01	NOT IDENT.
RA-223	-1.072E-01	4.904E-01	4.928E-01	FAIL ABUN
RA-224	-9.417E-02	4.363E-01	4.384E-01	NOT IDENT.
AC-227	-2.110E-03	1.661E-01	1.661E-01	NOT IDENT.
TH-227	-2.110E-03	1.661E-01	1.661E-01	NOT IDENT.
AC-228	9.592E-02	1.410E-01	1.475E-01	FAIL ABUN
RA-228	9.592E-02	1.410E-01	1.475E-01	FAIL ABUN
TH-228	-2.936E-02	4.574E-02	4.762E-02	NOT IDENT.
TH-229	-1.597E-01	3.438E-01	3.512E-01	NOT IDENT.
PA-231	-9.458E-02	2.906E-01	2.937E-01	NOT IDENT.
TH-231	-1.072E-01	4.904E-01	4.928E-01	FAIL ABUN
TH-232	9.592E-02	1.410E-01	1.475E-01	FAIL ABUN
PA-233	-6.134E-03	4.837E-02	4.845E-02	NOT IDENT.
PA-234	-1.013E-01	2.218E-01	2.264E-01	FAIL ABUN
PA-234M	2.789E+00	4.244E+00	4.426E+00	NOT IDENT.
TH-234	8.671E-01	1.270E+00	1.329E+00	FAIL ABUN
U-235	2.736E-04	1.196E-01	1.196E-01	NOT IDENT.
NP-237	-6.134E-03	4.837E-02	4.845E-02	NOT IDENT.
NP-238	1.300E+02	1.092E+02	1.239E+02	SHORT HLIF
U-238	8.671E-01	1.270E+00	1.329E+00	FAIL ABUN
NP-239	-8.259E-02	1.467E-01	1.513E-01	NOT IDENT.
PU-239	-1.068E+01	1.757E+02	1.758E+02	NOT IDENT.
AM-241	5.273E-02	5.500E-02	5.991E-02	NOT IDENT.
AM-243	5.730E-03	2.103E-02	2.119E-02	NOT IDENT.
CM-243	2.968E-03	5.081E-02	5.082E-02	NOT IDENT.
BK-247	0.000E+00	5.464E-02	0.000E+00	NOT IDENT.
CM-247	1.874E-03	2.444E-02	2.445E-02	NOT IDENT.
CF-249	-2.265E-02	2.740E-02	2.924E-02	NOT IDENT.
CF-251	-8.210E-02	7.915E-02	8.737E-02	NOT IDENT.
ANH-511	-9.288E-02	5.305E-02	6.759E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	61.1367	87.09	24.8846	136.47	26.2474
45.60	74.4062	87.57	23.9529	140.51	22.1901
46.54	74.6438	88.03	27.8134	143.76	19.1170
49.72	83.2346	88.34	27.8325	144.24	23.3827
51.35	82.5072	88.47	26.8802	145.44	22.3612
51.87	90.7905	89.96	30.8201	152.43	23.6748
52.39	75.1992	90.64	69.4468	153.25	16.1616
52.97	75.3346	91.11	71.4476	154.21	26.9741
53.44	75.4442	92.59	23.2454	156.02	29.2095
54.07	75.5899	93.35	28.1334	158.56	22.8024
57.36	0.0000	94.56	74.8887	159.00	16.2978
57.53	77.2653	94.65	74.9028	162.33	24.0175
57.98	96.9305	94.67	74.9057	162.66	22.9367
59.27	78.5486	94.87	74.9374	163.33	16.3989
59.32	78.5596	97.43	27.3942	165.86	29.6231
59.54	69.0809	98.43	26.4698	176.31	20.0327
60.96	82.5148	98.44	26.4702	176.60	20.0404
61.17	82.5636	99.53	21.6160	177.52	26.7532
62.93	69.4417	100.11	26.5596	181.07	25.3855
63.29	69.5109	102.03	16.7868	181.52	22.4124
63.58	71.0718	103.18	21.7734	184.41	20.2470
64.28	68.7940	103.37	21.7816	185.72	20.2813
66.73	67.4261	105.21	16.8917	193.51	21.2410
67.24	65.6922	105.31	16.8949	197.03	24.0005
67.68	54.8071	106.12	22.8937	198.01	16.0196
67.75	54.8167	106.47	20.9170	201.83	21.8423
69.67	39.4825	109.28	22.0305	203.43	17.2771
70.83	48.8088	111.00	31.1433	205.31	25.3969
72.81	40.7236	111.76	32.1936	210.85	12.7819
72.87	40.7297	114.06	24.2477	215.65	28.0437
74.66	41.8407	116.30	16.2311	222.11	23.5422
74.82	41.8569	116.74	28.4268	227.09	7.1020
74.97	44.6638	119.76	22.4560	227.38	18.9446
77.11	40.2197	121.12	15.3477	228.16	27.2563
78.74	48.8274	121.22	15.3503	228.18	27.2570
79.69	27.2919	121.78	21.5116	235.69	21.5068
80.12	31.0876	122.06	29.7208	235.96	21.5132
80.19	31.0926	122.92	27.7127	238.63	20.3761
80.57	33.0064	123.07	27.7199	238.98	17.9855
81.00	28.3195	123.68	25.6937	240.99	16.8224
81.07	29.2683	125.81	28.8823	242.00	28.8691
81.75	38.7706	127.23	19.6460	244.70	26.5386
83.79	24.7013	127.91	22.7743	252.40	12.1594
84.00	24.7132	129.30	20.7523	252.80	12.1645
85.43	31.4680	131.20	23.9406	254.15	0.0000
86.55	37.2823	133.02	24.0125	256.23	14.6483
86.79	37.3019	133.52	20.8975	260.90	18.3966
86.94	25.8333	136.00	24.1294	264.66	13.5412

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.80	13.5429	364.49	13.4250	600.60	12.4507
265.00	14.7770	366.42	15.2375	602.52	0.0000
268.22	21.0005	372.51	14.4079	604.72	9.9816
269.46	23.4995	375.05	9.0222	607.14	7.8079
270.03	16.0873	377.52	12.6547	609.32	11.4646
271.23	27.2563	383.85	9.9898	610.33	9.3849
273.65	18.6273	388.16	14.5768	614.28	11.2847
276.40	22.4116	388.63	16.4048	618.01	9.4215
277.37	11.2162	391.69	12.0570	620.36	9.4329
277.60	11.2187	400.66	6.8951	621.93	8.3913
278.00	12.4701	401.81	6.4407	630.19	0.0000
279.20	19.9746	402.40	9.2049	631.29	4.2153
279.54	17.4833	404.85	13.8315	633.25	9.4937
279.70	17.4859	410.95	5.5564	634.78	4.2227
280.46	13.7490	413.71	5.5671	635.95	8.4502
283.69	13.3727	414.70	5.5709	636.99	8.4544
284.31	15.8894	423.72	8.4088	645.85	7.4301
285.41	11.7199	427.09	12.1737	657.76	11.7434
285.90	7.5377	427.87	11.2434	657.90	0.0000
287.50	12.5815	433.94	8.4672	661.66	2.1392
290.67	13.1231	439.40	12.7472	664.57	0.0000
293.27	0.0000	453.88	13.3455	666.33	4.2878
295.22	16.0498	463.37	10.5499	666.50	3.2161
295.96	16.0606	468.07	14.4293	667.71	0.0000
298.58	12.7094	473.00	12.5443	677.62	8.6214
299.98	15.2703	475.06	12.5604	685.70	11.8992
300.09	15.2717	476.78	8.7050	695.00	6.5186
300.13	15.2725	477.60	8.1288	696.49	6.5229
301.36	14.4399	482.18	7.7638	696.51	6.5229
302.85	19.5621	487.02	13.1405	697.00	6.5244
304.50	12.7766	492.35	9.7654	697.30	9.7881
304.85	12.7805	497.08	4.8966	697.49	9.7888
306.78	14.5094	505.52	20.6702	702.65	9.8119
308.46	15.3856	507.63	0.0000	706.68	9.8302
311.90	18.0037	511.00	28.6371	711.68	6.5681
316.51	23.2399	514.00	48.4736	720.70	7.6938
319.41	18.9837	514.00	48.4736	721.93	0.0000
320.08	18.9944	520.40	5.9578	722.78	2.2003
321.04	23.3306	520.69	5.9587	722.91	2.2004
323.87	19.0557	522.65	0.0000	723.31	1.1004
325.23	16.4758	527.90	7.9782	724.19	2.2017
328.76	15.6552	528.26	7.9798	727.33	4.4095
333.37	17.0248	529.59	3.9928	733.00	5.5257
333.97	14.4127	529.87	0.0000	735.93	4.4263
334.37	18.3494	531.02	4.9951	737.46	3.3219
338.28	14.0254	537.26	9.0234	739.50	8.8662
338.32	14.0257	546.56	0.0000	747.24	8.8962
340.48	13.1723	552.55	12.1348	748.06	11.1243
340.55	13.1732	563.25	9.1545	752.31	5.5723
344.28	7.0469	569.33	4.0822	753.82	8.9215
345.93	15.8767	569.50	4.0825	756.73	4.4663
351.06	15.9415	569.70	4.0830	756.80	5.5831
351.93	9.7488	583.19	4.1126	763.94	8.9603
355.39	0.0000	584.27	12.3447	765.81	1.1209
356.01	11.5586	595.83	13.4549	766.42	5.6061

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
766.84	6.7285	1002.74	6.4367	1678.03	0.0000
772.60	0.0000	1004.73	11.0416	1690.97	1.1062
776.52	2.2520	1021.30	0.0000	1750.46	0.0000
777.92	4.5067	1025.87	0.0000	1764.49	3.3710
778.90	4.5085	1028.54	0.0000	1770.23	5.4000
783.70	4.5176	1037.84	7.4429	1771.35	3.6010
785.37	2.2603	1038.76	0.0000	1791.20	0.0000
792.07	9.0664	1046.59	6.5313	1808.65	1.8144
794.95	4.5386	1048.07	6.5343	1810.72	0.0000
795.86	5.6755	1049.04	10.2715	1836.06	1.8245
801.95	7.9653	1050.41	8.4078		
810.06	2.2834	1063.66	0.9382		
810.29	5.7088	1077.00	3.7690		
810.45	5.7092	1077.34	2.8271		
810.76	6.8521	1085.87	4.7247		
815.77	3.4329	1093.63	5.6836		
818.51	5.7277	1099.45	2.8469		
832.01	6.9104	1112.07	6.6689		
834.85	3.4591	1112.84	6.6706		
835.71	3.4603	1115.54	8.9015		
836.80	0.0000	1120.29	9.1693		
846.75	0.0000	1120.55	5.7316		
846.77	5.7922	1121.30	3.0574		
856.80	6.9778	1129.67	6.7056		
860.56	3.4940	1131.51	0.0000		
871.09	8.4196	1147.95	0.0000		
873.19	1.7555	1173.23	4.8529		
875.33	0.0000	1177.95	3.8877		
879.38	6.1585	1189.05	1.9503		
880.51	7.9217	1204.77	3.9185		
883.24	7.0486	1221.41	5.9059		
884.68	4.4078	1231.02	2.9612		
889.28	6.1816	1235.36	5.9297		
894.76	7.0791	1238.28	3.9563		
898.04	5.3159	1260.41	0.0000		
900.72	12.4162	1271.87	4.9924		
903.28	7.9893	1274.44	4.9957		
911.20	8.0126	1274.54	4.9960		
1093.63	4.2749	1291.59	5.0195		
923.98	0.0000	1298.22	0.0000		
926.50	4.4765	1312.11	2.0190		
929.11	4.4806	1332.49	6.0901		
937.49	5.3930	1362.66	0.0000		
944.13	2.7029	1365.19	5.1190		
946.00	5.4095	1368.63	0.0000		
949.00	3.6101	1384.29	3.0868		
954.55	0.0000	1408.01	4.1406		
962.31	3.6272	1457.56	0.0000		
964.08	5.4441	1460.82	5.2448		
966.17	5.4481	1489.16	3.1686		
968.97	5.4534	1505.03	6.3618		
983.53	2.7405	1584.12	5.4007		
984.45	0.0000	1596.21	2.1663		
996.26	9.1751	1620.50	2.1782		
1001.03	4.5949	1621.92	1.0895		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:54:48.92

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621351.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM05.CNF;477
Background date    : Z-OCT-2016 11:00:07.
Sample date       : 10-DEC-2015 14:20:00 Acquisition date : 3-OCT-2016 08:53:50.
Sample ID        : G1203621351 Sample quantity : 1.41585E+02 GRAM
Detector name     : GAM05 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.64 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1596247 Detector SN# :
Matrix Spike ID   : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	32.25	26	121	0.67	66.34	63	6	7.19E-03	70.8	
2	1	39.16	44	91	0.83	80.15	76	12	1.22E-02	35.0	1.94E+00
3	1	41.51	22	84	0.84	84.85	76	12	6.03E-03	70.2	
4	0	45.75*	88	180	0.73	93.31	88	10	2.44E-02	31.9	
5	0	62.89*	47	239	0.89	127.57	124	8	1.30E-02	60.7	
6	2	74.47*	260	182	0.81	150.71	147	20	7.23E-02	9.7	2.46E+00
7	2	76.75*	485	135	0.81	155.27	147	20	1.35E-01	5.9	
8	2	79.29	33	127	1.04	160.36	147	20	9.28E-03	64.1	
9	0	83.50*	44	112	1.39	168.76	167	5	1.22E-02	40.1	
10	4	86.89*	143	172	1.11	175.55	172	20	3.97E-02	17.2	5.47E-01
11	4	89.44	93	185	1.29	180.65	172	20	2.59E-02	27.7	
12	4	92.28*	134	174	1.30	186.32	172	20	3.73E-02	20.7	
13	0	185.83*	138	134	1.24	373.29	369	11	3.83E-02	19.2	
14	0	208.97	27	90	1.18	419.54	416	7	7.43E-03	62.5	
15	2	238.32*	486	60	0.95	478.20	474	15	1.35E-01	5.3	9.67E-01
16	2	241.49	123	92	1.37	484.53	474	15	3.40E-02	16.6	
17	0	269.53	49	83	0.93	540.57	536	10	1.35E-02	37.8	
18	0	277.75	18	68	1.32	557.00	552	8	5.00E-03	82.8	
19	0	294.91*	186	68	1.12	591.30	587	10	5.18E-02	11.2	
20	0	327.78	32	37	1.08	656.98	654	6	8.82E-03	35.2	
21	1	337.92*	100	54	1.37	677.25	671	15	2.77E-02	16.0	6.51E+00
22	1	339.92*	29	40	1.37	681.25	671	15	7.98E-03	56.5	
23	0	351.75*	267	76	1.09	704.90	700	11	7.42E-02	8.9	
24	0	409.97	30	29	1.86	821.26	818	7	8.43E-03	34.7	
25	2	427.28	18	35	1.62	855.85	848	26	5.02E-03	68.2	2.73E+00
26	2	431.57	32	35	1.62	864.44	848	26	8.90E-03	36.9	
27	0	463.04	28	41	1.17	927.33	922	11	7.82E-03	48.0	
28	0	510.54*	76	68	2.41	1022.27	1014	17	2.12E-02	30.0	
29	0	530.48	14	30	1.47	1062.12	1054	11	4.02E-03	77.8	
30	0	583.24*	118	49	1.12	1167.58	1161	10	3.28E-02	14.5	
31	0	609.16*	184	18	1.20	1219.37	1215	9	5.12E-02	8.6	
32	0	623.99	25	28	1.74	1249.01	1240	14	7.05E-03	48.4	
33	0	661.90	163	81	1.42	1324.79	1319	14	4.52E-02	14.1	
34	0	727.79	49	30	2.05	1456.49	1448	17	1.37E-02	29.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	735.20	4	21	1.06	1471.28	1466	9	1.17E-03	200.0	
36	0	754.89	9	17	0.61	1510.64	1506	8	2.61E-03	83.9	
37	0	786.51	25	26	6.39	1573.84	1565	17	6.97E-03	50.3	
38	0	795.16	12	25	0.73	1591.13	1587	10	3.33E-03	83.1	
39	0	806.54	10	21	0.50	1613.88	1608	9	2.85E-03	87.9	
40	0	815.54	7	18	1.27	1631.86	1626	10	1.88E-03	122.7	
41	0	892.23	15	6	1.85	1785.15	1780	9	4.09E-03	40.9	
42	0	911.09*	112	12	1.47	1822.85	1815	16	3.12E-02	11.8	
43	0	920.75	7	11	1.40	1842.14	1836	9	1.94E-03	94.4	
44	2	934.55	25	4	2.10	1869.73	1863	19	6.81E-03	29.6	9.47E-01
45	2	938.82	14	0	2.11	1878.27	1863	19	4.00E-03	28.7	
46	0	964.48	31	11	0.73	1929.55	1924	11	8.61E-03	27.4	
47	3	969.17	51	4	1.91	1938.93	1935	16	1.42E-02	15.3	1.40E+00
48	3	973.23	14	1	2.35	1947.04	1935	16	4.02E-03	33.2	
49	0	1035.77	4	21	1.05	2072.04	2064	10	1.14E-03	210.2	
50	0	1121.15*	39	23	1.61	2242.70	2237	13	1.07E-02	31.7	
51	0	1156.90	7	8	1.13	2314.17	2311	7	1.95E-03	74.2	
52	0	1230.25	13	18	3.83	2460.78	2449	15	3.48E-03	80.4	
53	0	1238.71	33	17	2.38	2477.68	2471	11	9.29E-03	29.2	
54	0	1280.62	16	3	1.95	2561.44	2558	7	4.42E-03	31.5	
55	0	1377.31	17	0	1.29	2754.71	2748	12	4.72E-03	24.3	
56	0	1460.98*	471	4	1.90	2921.96	2913	15	1.31E-01	4.7	
57	0	1631.06	12	0	1.44	3261.92	3257	10	3.33E-03	28.9	
58	0	1764.57	42	0	2.74	3528.79	3523	12	1.17E-02	15.4	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621351.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 10-DEC-2015 14:20:00 Acquisition date : 3-OCT-2016 08:53:50
Sample ID : G1203621351 Sample quantity : 141.59 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA5 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.64 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	TH-229	85.43
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
TL-208	277.37	HG-203	279.20
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.244E+00	1.807E+01	1.807E+01	9.45	OK
CD-109	88.03	3.70*	8.913E+00	1.624E+00	2.540E+00	61.32	OK
SN-126	64.28	9.60	9.123E+00	3.524E-01	3.524E-01	121.47	OK
	86.94	8.90	8.913E+00	6.751E-01	6.751E-01	61.32	OK
	87.57	37.00*	8.913E+00	1.624E-01	1.624E-01	61.32	OK
CS-135	268.22	16.00*	5.040E+00	3.559E-01	3.559E-01	75.52	OK
BA-137M	661.66	89.90*	2.416E+00	4.095E-01	4.173E-01	28.18	OK
CS-137	661.66	85.10*	2.416E+00	4.326E-01	4.408E-01	28.18	OK
HG-203	70.83	3.69	9.006E+00	-----	Line Not Found	-----	Absent
	72.87	6.19	8.990E+00	-----	Line Not Found	-----	Absent
	279.20	81.56*	4.917E+00	3.160E-03	2.654E-01	1398.35	OK
TL-208	277.37	6.60	4.923E+00	-----	Line Not Found	-----	<<INT Reject
	583.19	85.00*	2.673E+00	2.870E-01	2.870E-01	29.00	OK
	860.56	12.50	1.959E+00	-----	Line Not Found	-----	Absent
PB-210	46.54	4.25*	9.655E+00	1.443E+00	1.480E+00	63.86	OK
BI-212	727.33	6.67*	2.240E+00	1.795E+00	1.795E+00	57.93	OK
	785.37	1.10	2.105E+00	5.833E+00	5.833E+00	100.60	OK
	1620.50	1.47	1.126E+00	-----	Line Not Found	-----	Absent
PB-212	74.82	10.28	8.980E+00	1.122E+00	1.122E+00	34.81	OK
	77.11	17.10	8.967E+00	2.051E+00	2.051E+00	11.84	OK
	238.63	43.60*	5.564E+00	1.192E+00	1.192E+00	10.57	OK
	300.09	3.30	4.613E+00	-----	Line Not Found	-----	Absent
BI-214	609.32	45.49*	2.581E+00	8.641E-01	8.644E-01	17.29	OK
	1120.29	14.92	1.575E+00	8.566E-01	8.569E-01	63.42	OK
	1764.49	15.30	1.032E+00	1.329E+00	1.329E+00	30.86	OK
PB-214	74.82	5.80	8.977E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	8.967E+00	3.616E+00	3.618E+00	11.84	OK
	87.09	3.41	8.912E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	5.497E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	4.680E+00	1.264E+00	1.265E+00	22.46	OK
	351.93	35.60*	4.043E+00	1.070E+00	1.070E+00	17.74	OK
RN-222	609.32	45.49*	2.581E+00	8.641E-01	8.644E-01	17.29	OK
	1120.29	14.92	1.575E+00	8.566E-01	8.569E-01	63.42	OK
	1764.49	15.30	1.032E+00	1.329E+00	1.329E+00	30.86	OK
RA-224	240.99	4.10*	5.506E+00	9.903E-01	9.903E-01	119.26	OK
RA-226	609.32	45.49*	2.581E+00	8.641E-01	8.644E-01	17.29	OK
	1120.29	14.92	1.575E+00	8.566E-01	8.569E-01	63.42	OK
	1764.49	15.30	1.032E+00	1.329E+00	1.329E+00	30.86	OK
AC-228	105.21	1.10	8.704E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.180E+00	1.223E+00	1.223E+00	31.98	OK
	794.95	4.25	2.087E+00	7.274E-01	7.274E-01	166.25	OK
	835.71	1.61	2.005E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.870E+00	1.236E+00	1.236E+00	23.55	OK
	968.97	15.80	1.778E+00	9.614E-01	9.614E-01	30.58	OK
RA-228	105.21	1.10	8.704E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.180E+00	1.223E+00	1.223E+00	31.98	OK
	794.95	4.25	2.087E+00	7.274E-01	7.274E-01	166.25	OK
	835.71	1.61	2.005E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.870E+00	1.236E+00	1.236E+00	23.55	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-228	968.97	15.80	1.778E+00	9.614E-01	9.614E-01	30.58	OK
	74.82	10.28	8.980E+00	1.122E+00	1.122E+00	34.81	OK
	77.11	17.10	8.967E+00	2.051E+00	2.051E+00	11.84	OK
	238.63	43.60*	5.564E+00	1.192E+00	1.192E+00	10.57	OK
	300.09	3.30	4.613E+00	-----	Line Not Found	-----	Absent
TH-229	85.43	14.70	8.913E+00	4.088E-01	4.088E-01	61.32	OK
	88.47	24.00	8.895E+00	2.808E-01	2.808E-01	55.31	OK
	193.51	4.41*	6.511E+00	-----	Line Not Found	-----	Absent
	210.85	2.80	6.116E+00	-----	Line Not Found	-----	Absent
TH-230	609.32	45.49*	2.581E+00	8.641E-01	8.641E-01	17.29	OK
	1120.29	14.92	1.575E+00	8.566E-01	8.566E-01	63.42	OK
	1764.49	15.30	1.032E+00	1.329E+00	1.329E+00	30.86	OK
TH-232	105.21	1.10	8.704E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.180E+00	1.223E+00	1.223E+00	31.98	OK
	835.71	1.61	2.005E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.870E+00	1.236E+00	1.236E+00	23.55	OK
	968.97	15.80	1.778E+00	9.614E-01	9.614E-01	30.58	OK
TH-234	63.29	3.70*	9.123E+00	9.143E-01	9.143E-01	121.47	OK
	92.59	4.23	8.870E+00	2.293E+00	2.293E+00	41.31	OK
U-234	609.32	45.49*	2.581E+00	8.641E-01	8.641E-01	17.29	OK
	1120.29	14.92	1.575E+00	8.566E-01	8.566E-01	63.42	OK
	1764.49	15.30	1.032E+00	1.329E+00	1.329E+00	30.86	OK
U-235	89.96	3.47	8.895E+00	1.942E+00	1.942E+00	55.31	OK
	93.35	5.60	8.870E+00	1.732E+00	1.732E+00	41.31	OK
	143.76	10.96*	7.808E+00	-----	Line Not Found	-----	Absent
	163.33	5.08	7.279E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	6.697E+00	2.183E-01	2.183E-01	38.33	OK
	205.31	5.01	6.238E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	9.123E+00	9.143E-01	9.143E-01	121.47	OK
	92.59	4.23	8.870E+00	2.293E+00	2.293E+00	41.31	OK
AM-243	43.53	5.90	9.491E+00	-----	Line Not Found	-----	Absent
	74.66	67.20*	8.980E+00	1.716E-01	1.716E-01	34.81	OK
ANH-511	511.00	100.00*	2.976E+00	1.434E-01	1.434E-01	59.99	OK

Flag: "*" = Keyline

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.807E+01	1.673E+00	5.312E-01
CD-109	2.540E+00	1.527E+00	1.161E+00
SN-126	1.624E-01	9.759E-02	7.417E-02
CS-135	3.559E-01	2.634E-01	2.149E-01
BA-137M	4.173E-01	1.152E-01	6.556E-02
CS-137	4.408E-01	1.217E-01	6.925E-02
HG-203	2.654E-01	3.637E+00	3.759E+00
TL-208	2.870E-01	8.156E-02	6.791E-02
PB-210	1.480E+00	9.261E-01	5.346E-01
BI-212	1.795E+00	1.019E+00	7.345E-01
PB-212	1.192E+00	1.234E-01	8.005E-02
BI-214	8.644E-01	1.465E-01	9.851E-02
PB-214	1.070E+00	1.861E-01	1.207E-01
RN-222	8.644E-01	1.465E-01	9.851E-02
RA-224	9.903E-01	1.157E+00	8.588E-01
RA-226	8.644E-01	1.465E-01	9.851E-02
AC-228	1.236E+00	2.852E-01	2.059E-01
RA-228	1.236E+00	2.852E-01	2.059E-01
TH-228	1.192E+00	1.234E-01	8.005E-02
TH-229	-2.553E-01	4.379E-01	7.714E-01
TH-230	8.641E-01	1.464E-01	9.848E-02
TH-232	1.236E+00	2.852E-01	2.059E-01
TH-234	9.143E-01	1.088E+00	8.558E-01
U-234	8.641E-01	1.464E-01	9.848E-02
U-235	7.009E-04	1.524E-01	2.858E-01
U-238	9.143E-01	1.088E+00	8.558E-01
AM-243	1.716E-01	5.854E-02	4.948E-02
ANH-511	1.434E-01	8.432E-02	4.633E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	1.198E+00	1.188E+01	2.333E+01	NOT IDENT.
NA-22	-8.524E-03	4.026E-02	7.806E-02	NOT IDENT.

NA-24	0.000E+00	1.218E+41	0.000E+00	SHORT HLIF
AL-26	-1.819E-02	2.522E-02	3.887E-02	NOT IDENT.
SC-46	2.973E-02	3.425E-01	6.047E-01	FAIL ABUN
V-48	0.000E+00	1.099E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.698E+02	0.000E+00	SHORT HLIF
MN-54	2.230E-02	5.728E-02	1.160E-01	NOT IDENT.
CO-56	-6.903E-02	4.712E-01	8.916E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	7.749E-03	3.492E-02	6.848E-02	NOT IDENT.
CO-58	-1.150E-01	6.885E-01	1.013E+00	NOT IDENT.
FE-59	2.591E+00	6.204E+00	1.314E+01	NOT IDENT.
CO-60	6.116E-03	3.470E-02	7.276E-02	NOT IDENT.
ZN-65	-1.431E-01	2.130E-01	3.177E-01	NOT IDENT.
GE-68	-2.938E-01	2.118E+00	4.172E+00	NOT IDENT.
AS-73	-1.457E-01	1.670E+00	3.358E+00	NOT IDENT.
AS-74	0.000E+00	4.936E+03	0.000E+00	SHORT HLIF
SE-75	1.219E-02	1.742E-01	3.234E-01	NOT IDENT.
BR-77	0.000E+00	1.219E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.493E+02	0.000E+00	SHORT HLIF
RB-83	-2.829E-01	5.702E-01	1.045E+00	FAIL ABUN
KR-85	1.970E+00	5.981E+00	1.118E+01	NOT IDENT.
SR-85	2.010E-01	6.181E-01	1.155E+00	NOT IDENT.
RB-86	0.000E+00	2.381E+04	0.000E+00	SHORT HLIF
Y-88	9.869E-02	1.990E-01	4.849E-01	NOT IDENT.
Y-91	-4.783E+02	5.949E+02	1.021E+03	NOT IDENT.
NB-94	2.110E-02	3.395E-02	6.849E-02	NOT IDENT.
NB-95	-9.650E-01	9.129E-01	1.453E+00	NOT IDENT.
NB-95M	-1.421E+00	2.144E+00	3.333E+00	NOT IDENT.
ZR-95	-4.361E-02	1.500E+00	2.538E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	7.475E+40	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.007E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.684E+41	0.000E+00	SHORT HLIF
RH-101	-2.626E-02	2.720E-02	4.825E-02	NOT IDENT.
RH-102	1.073E-02	4.765E-02	9.727E-02	NOT IDENT.
RU-103	-3.534E+00	4.918E+00	8.768E+00	FAIL ABUN
RH-106	2.090E-01	4.657E-01	9.522E-01	NOT IDENT.
RU-106	2.090E-01	4.657E-01	9.522E-01	NOT IDENT.
AG-108M	-1.608E-02	2.313E-02	4.206E-02	NOT IDENT.
AG-110M	-5.618E-02	8.945E-02	1.502E-01	FAIL ABUN
SN-113	-7.373E-02	1.739E-01	3.317E-01	NOT IDENT.
CD-115	0.000E+00	1.474E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	7.285E+04	0.000E+00	SHORT HLIF
TE-123M	-3.381E-02	1.057E-01	1.945E-01	NOT IDENT.
SB-124	5.851E-01	1.573E+00	3.832E+00	NOT IDENT.
SB-125	1.226E-01	1.638E-01	2.028E-01	FAIL ABUN
TE-125M	3.826E+01	2.051E+02	4.006E+02	NOT IDENT.
I-126	0.000E+00	7.802E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.085E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.410E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	3.679E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.222E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.054E+26	0.000E+00	SHORT HLIF
BA-133	1.321E-02	3.586E-02	6.805E-02	FAIL ABUN
I-133	0.000E+00	1.526E+41	0.000E+00	SHORT HLIF
CS-134	4.753E-02	7.744E-02	1.062E-01	FAIL ABUN
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.302E+05	0.000E+00	SHORT HLIF
CE-139	5.537E-04	9.138E-02	1.721E-01	NOT IDENT.
BA-140	0.000E+00	9.242E+05	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.833E+05	0.000E+00	SHORT HLIF
CE-141	1.082E+01	1.897E+01	3.748E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	4.280E-02	2.800E-01	5.411E-01	FAIL ABUN
PM-144	-1.650E-02	5.341E-02	9.727E-02	NOT IDENT.
PR-144	-1.460E+00	4.631E+00	8.426E+00	NOT IDENT.
PM-146	2.852E-02	4.088E-02	8.571E-02	FAIL ABUN
ND-147	0.000E+00	4.757E+07	0.000E+00	SHORT HLIF
PM-147	-2.543E+02	6.036E+02	1.126E+03	NOT IDENT.
PM-149	0.000E+00	2.111E+40	0.000E+00	SHORT HLIF
EU-150	-1.118E-02	2.838E-02	4.399E-02	FAIL ABUN
EU-152	1.583E-02	8.325E-02	1.542E-01	FAIL ABUN
GD-153	-3.971E-02	1.225E-01	2.322E-01	NOT IDENT.
EU-154	-1.862E-02	9.932E-02	1.934E-01	NOT IDENT.
EU-155	5.563E-02	8.219E-02	1.657E-01	FAIL ABUN
TB-160	3.548E-01	1.808E+00	3.530E+00	FAIL ABUN
HO-166M	-2.302E-02	5.423E-02	9.785E-02	FAIL ABUN
TM-171	1.147E+00	3.793E+00	7.812E+00	NOT IDENT.

HF-172	1.406E-01	1.800E-01	3.641E-01	FAIL ABUN
LU-172	3.597E-02	8.218E-02	1.708E-01	FAIL ABUN
LU-176	-2.303E-02	2.340E-02	3.722E-02	FAIL ABUN
HF-181	-2.095E+00	4.058E+00	7.444E+00	NOT IDENT.
TA-182	1.355E-01	8.576E-01	1.568E+00	FAIL ABUN
RE-183	-2.948E-02	8.280E-01	1.657E+00	NOT IDENT.
RE-184	1.334E+01	2.908E+01	5.875E+01	NOT IDENT.
W-188	9.998E+01	1.138E+02	2.104E+02	FAIL ABUN
IR-192	1.234E-01	4.267E-01	7.979E-01	FAIL ABUN
BI-207	1.032E-03	4.267E-02	8.643E-02	FAIL ABUN
BI-211	0.000E+00	5.125E-01	8.430E-01	FAIL ABUN
PB-211	2.983E-01	6.093E-01	1.254E+00	FAIL ABUN
RN-219	-1.275E-01	3.364E-01	6.381E-01	NOT IDENT.
RA-223	-2.049E-01	6.432E-01	1.013E+00	FAIL ABUN
AC-227	2.618E-02	1.990E-01	3.709E-01	FAIL ABUN
TH-227	2.618E-02	1.990E-01	3.709E-01	FAIL ABUN
PA-231	-1.344E-01	4.492E-01	7.813E-01	NOT IDENT.
TH-231	-2.049E-01	6.432E-01	1.013E+00	FAIL ABUN
PA-233	3.083E-02	5.582E-02	1.074E-01	FAIL ABUN
PA-234	1.892E-01	2.740E-01	5.727E-01	NOT IDENT.
PA-234M	-6.718E-01	4.014E+00	7.941E+00	NOT IDENT.
NP-237	3.083E-02	5.582E-02	1.074E-01	FAIL ABUN
NP-238	0.000E+00	1.938E+41	0.000E+00	SHORT HLIF
NP-239	-1.725E-01	1.917E-01	3.446E-01	FAIL ABUN
PU-239	1.092E+02	2.525E+02	4.958E+02	NOT IDENT.
AM-241	2.777E-02	4.648E-02	9.007E-02	NOT IDENT.
CM-243	-2.004E-02	6.947E-02	1.323E-01	FAIL ABUN
BK-247	1.205E-02	6.575E-02	1.145E-01	FAIL ABUN
CM-247	-4.604E-03	3.008E-02	5.856E-02	FAIL ABUN
CF-249	2.627E-02	3.068E-02	6.637E-02	NOT IDENT.
CF-251	-2.207E-02	9.952E-02	1.827E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	452	10.66*	1.244E+00	1.807E+01	1.807E+01	9.45
CD-109	88.03	173	3.70*	8.913E+00	2.789E+00	4.363E+00	34.45
SN-126	64.28	58	9.60	9.123E+00	3.524E-01	3.524E-01	121.47
	86.94	173	8.90	8.913E+00	1.160E+00	1.160E+00	34.45
	87.57	173	37.00*	8.913E+00	2.789E-01	2.789E-01	34.45
CS-135	268.22	54	16.00*	5.040E+00	3.559E-01	3.559E-01	75.52
BA-137M	661.66	168	89.90*	2.416E+00	4.095E-01	4.173E-01	28.18
CS-137	661.66	168	85.10*	2.416E+00	4.326E-01	4.408E-01	28.18
HG-203	70.83	-----	3.69	9.006E+00	-----	Line Not Found	-----
	72.87	-----	6.19	8.990E+00	-----	Line Not Found	-----
	279.20	20	81.56*	4.917E+00	2.638E-02	2.215E+00	165.55
TL-208	277.37	20	6.60	4.917E+00	3.260E-01	3.260E-01	165.55
	583.19	123	85.00*	2.673E+00	2.870E-01	2.870E-01	29.00
	860.56	-----	12.50	1.959E+00	-----	Line Not Found	-----
PB-210	46.54	112	4.25*	9.655E+00	1.443E+00	1.480E+00	63.86
BI-211	72.87	-----	1.23	8.990E+00	-----	Line Not Found	-----
	351.06	290	12.92*	4.043E+00	2.948E+00	2.948E+00	17.74
BI-212	727.33	51	6.67*	2.240E+00	1.795E+00	1.795E+00	57.93
	785.37	25	1.10	2.105E+00	5.833E+00	5.833E+00	100.60
	1620.50	-----	1.47	1.126E+00	-----	Line Not Found	-----
PB-212	74.82	319	10.28	8.980E+00	1.835E+00	1.835E+00	19.40
	77.11	593	17.10	8.967E+00	2.051E+00	2.051E+00	11.84
	238.63	545	43.60*	5.564E+00	1.192E+00	1.192E+00	10.57
	300.09	-----	3.30	4.613E+00	-----	Line Not Found	-----
BI-214	609.32	191	45.49*	2.581E+00	8.641E-01	8.644E-01	17.29
	1120.29	38	14.92	1.575E+00	8.566E-01	8.569E-01	63.42
	1764.49	40	15.30	1.032E+00	1.329E+00	1.329E+00	30.86
PB-214	74.82	319	5.80	8.980E+00	3.252E+00	3.253E+00	19.40
	77.11	593	9.70	8.967E+00	3.616E+00	3.618E+00	11.84
	87.09	173	3.41	8.913E+00	3.026E+00	3.028E+00	34.45
	242.00	137	7.25	5.506E+00	1.824E+00	1.825E+00	33.13
	295.22	206	18.42	4.680E+00	1.264E+00	1.265E+00	22.46
	351.93	290	35.60*	4.043E+00	1.070E+00	1.070E+00	17.74
RN-222	609.32	191	45.49*	2.581E+00	8.641E-01	8.644E-01	17.29
	1120.29	38	14.92	1.575E+00	8.566E-01	8.569E-01	63.42
	1764.49	40	15.30	1.032E+00	1.329E+00	1.329E+00	30.86
RA-224	240.99	137	4.10*	5.506E+00	3.226E+00	3.226E+00	33.13
RA-226	609.32	191	45.49*	2.581E+00	8.641E-01	8.644E-01	17.29
	1120.29	38	14.92	1.575E+00	8.566E-01	8.569E-01	63.42
	1764.49	40	15.30	1.032E+00	1.329E+00	1.329E+00	30.86
AC-228	105.21	-----	1.10	8.704E+00	-----	Line Not Found	-----
	338.32	109	11.27	4.180E+00	1.223E+00	1.223E+00	31.98
	794.95	12	4.25	2.087E+00	7.274E-01	7.274E-01	166.25
	835.71	-----	1.61	2.005E+00	-----	Line Not Found	-----
	911.20	112	25.80*	1.870E+00	1.236E+00	1.236E+00	23.55
	968.97	51	15.80	1.778E+00	9.614E-01	9.614E-01	30.58
RA-228	105.21	-----	1.10	8.704E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	338.32	109	11.27	4.180E+00	1.223E+00	1.223E+00	31.98
	794.95	12	4.25	2.087E+00	7.274E-01	7.274E-01	166.25
	835.71	-----	1.61	2.005E+00	-----	Line Not Found	-----
	911.20	112	25.80*	1.870E+00	1.236E+00	1.236E+00	23.55
	968.97	51	15.80	1.778E+00	9.614E-01	9.614E-01	30.58
TH-228	74.82	319	10.28	8.980E+00	1.835E+00	1.835E+00	19.40
	77.11	593	17.10	8.967E+00	2.051E+00	2.051E+00	11.84
	238.63	545	43.60*	5.564E+00	1.192E+00	1.192E+00	10.57
	300.09	-----	3.30	4.613E+00	-----	Line Not Found	-----
TH-229	85.43	173	14.70	8.913E+00	7.021E-01	7.021E-01	34.45
	88.47	113	24.00	8.895E+00	2.808E-01	2.808E-01	55.31
	193.51	-----	4.41*	6.511E+00	-----	Line Not Found	-----
	210.85	-----	2.80	6.116E+00	-----	Line Not Found	-----
TH-230	609.32	191	45.49*	2.581E+00	8.641E-01	8.641E-01	17.29
	1120.29	38	14.92	1.575E+00	8.566E-01	8.566E-01	63.42
	1764.49	40	15.30	1.032E+00	1.329E+00	1.329E+00	30.86
TH-232	105.21	-----	1.10	8.704E+00	-----	Line Not Found	-----
	338.32	109	11.27	4.180E+00	1.223E+00	1.223E+00	31.98
	835.71	-----	1.61	2.005E+00	-----	Line Not Found	-----
	911.20	112	25.80*	1.870E+00	1.236E+00	1.236E+00	23.55
	968.97	51	15.80	1.778E+00	9.614E-01	9.614E-01	30.58
TH-234	63.29	58	3.70*	9.123E+00	9.143E-01	9.143E-01	121.47
	92.59	162	4.23	8.870E+00	2.293E+00	2.293E+00	41.31
U-234	609.32	191	45.49*	2.581E+00	8.641E-01	8.641E-01	17.29
	1120.29	38	14.92	1.575E+00	8.566E-01	8.566E-01	63.42
	1764.49	40	15.30	1.032E+00	1.329E+00	1.329E+00	30.86
U-235	89.96	113	3.47	8.895E+00	1.942E+00	1.942E+00	55.31
	93.35	162	5.60	8.870E+00	1.732E+00	1.732E+00	41.31
	143.76	-----	10.96*	7.808E+00	-----	Line Not Found	-----
	163.33	-----	5.08	7.279E+00	-----	Line Not Found	-----
	185.72	158	57.20	6.697E+00	2.183E-01	2.183E-01	38.33
	205.31	-----	5.01	6.238E+00	-----	Line Not Found	-----
U-238	63.29	58	3.70*	9.123E+00	9.143E-01	9.143E-01	121.47
	92.59	162	4.23	8.870E+00	2.293E+00	2.293E+00	41.31
AM-243	43.53	-----	5.90	9.491E+00	-----	Line Not Found	-----
	74.66	319	67.20*	8.980E+00	2.807E-01	2.807E-01	19.40
ANH-511	511.00	80	100.00*	2.976E+00	1.434E-01	1.434E-01	59.99

Flag: "*" = Keyline

Total number of lines in spectrum 58
Number of unidentified lines 16
Number of lines tentatively identified by NID 42 72.41%

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	1.807E+01	1.807E+01	0.171E+01	9.45	
CD-109	461.40D	1.56	2.789E+00	4.363E+00	1.503E+00	34.45	
SN-126	2.30E+05Y	1.00	2.789E-01	2.789E-01	0.961E-01	34.45	
CS-135	2.30E+06Y	1.00	3.559E-01	3.559E-01	2.688E-01	75.52	
BA-137M	30.08Y	1.02	4.095E-01	4.173E-01	1.176E-01	28.18	
CS-137	30.08Y	1.02	4.326E-01	4.408E-01	1.242E-01	28.18	
HG-203	46.59D	84.0	2.638E-02	2.215E+00	3.667E+00	165.55	
TL-208	1.41E+10Y	1.00	2.870E-01	2.870E-01	0.832E-01	29.00	
PB-210	22.20Y	1.03	1.443E+00	1.480E+00	0.945E+00	63.86	
BI-211	7.04E+08Y	1.00	2.948E+00	2.948E+00	0.523E+00	17.74	
BI-212	1.41E+10Y	1.00	1.795E+00	1.795E+00	1.040E+00	57.93	
PB-212	1.41E+10Y	1.00	1.192E+00	1.192E+00	0.126E+00	10.57	
BI-214	1600.00Y	1.00	8.641E-01	8.644E-01	1.495E-01	17.29	
PB-214	1600.00Y	1.00	1.070E+00	1.070E+00	0.190E+00	17.74	
RN-222	1600.00Y	1.00	8.641E-01	8.644E-01	1.495E-01	17.29	
RA-224	1.41E+10Y	1.00	3.226E+00	3.226E+00	1.069E+00	33.13	
RA-226	1600.00Y	1.00	8.641E-01	8.644E-01	1.495E-01	17.29	
AC-228	1.41E+10Y	1.00	1.236E+00	1.236E+00	0.291E+00	23.55	
RA-228	1.41E+10Y	1.00	1.236E+00	1.236E+00	0.291E+00	23.55	
TH-228	1.41E+10Y	1.00	1.192E+00	1.192E+00	0.126E+00	10.57	
TH-229	7340.00Y	1.00	2.808E-01	2.808E-01	1.553E-01	55.31	K
TH-230	7.54E+04Y	1.00	8.641E-01	8.641E-01	1.494E-01	17.29	
TH-232	1.41E+10Y	1.00	1.236E+00	1.236E+00	0.291E+00	23.55	
TH-234	4.47E+09Y	1.00	9.143E-01	9.143E-01	11.11E-01	121.47	
U-234	2.45E+05Y	1.00	8.641E-01	8.641E-01	1.494E-01	17.29	
U-235	7.04E+08Y	1.00	2.183E-01	2.183E-01	0.837E-01	38.33	K
U-238	4.47E+09Y	1.00	9.143E-01	9.143E-01	11.11E-01	121.47	
AM-243	7370.00Y	1.00	2.807E-01	2.807E-01	0.545E-01	19.40	
ANH-511	1.00E+09Y	1.00	1.434E-01	1.434E-01	0.860E-01	59.99	
Total Activity :			4.629E+01	5.011E+01			

Grand Total Activity : 4.629E+01 5.011E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	32.25	34	158	0.67	66.34	63	6	7.19E-03	****	2.13E+00	
1	39.16	57	116	0.83	80.15	76	12	1.22E-02	70.0	8.19E+00	
1	41.51	28	107	0.84	84.85	76	12	6.03E-03	****	9.10E+00	
2	79.29	41	155	1.04	160.36	147	20	9.28E-03	****	8.95E+00	T
0	83.50	53	137	1.39	168.76	167	5	1.22E-02	80.3	8.93E+00	T
0	208.97	30	102	1.18	419.54	416	7	7.43E-03	****	6.16E+00	
0	327.78	35	41	1.08	656.98	654	6	8.82E-03	70.5	4.29E+00	T
1	339.92	31	44	1.37	681.25	671	15	7.98E-03	****	4.16E+00	T
0	409.97	33	31	1.86	821.26	818	7	8.43E-03	69.4	3.56E+00	T
2	427.28	19	37	1.62	855.85	848	26	5.02E-03	****	3.44E+00	T
2	431.57	34	37	1.62	864.44	848	26	8.90E-03	73.7	3.41E+00	
0	463.04	30	43	1.17	927.33	922	11	7.82E-03	96.0	3.22E+00	T
0	530.48	15	31	1.47	1062.12	1054	11	4.02E-03	****	2.88E+00	T
0	623.99	26	29	1.74	1249.01	1240	14	7.05E-03	96.8	2.53E+00	
0	735.20	4	21	1.06	1471.28	1466	9	1.17E-03	****	2.22E+00	T
0	754.89	10	17	0.61	1510.64	1506	8	2.61E-03	****	2.18E+00	T
0	806.54	10	21	0.50	1613.88	1608	9	2.85E-03	****	2.06E+00	
0	815.54	7	18	1.27	1631.86	1626	10	1.88E-03	****	2.05E+00	T
0	892.23	15	6	1.85	1785.15	1780	9	4.09E-03	81.8	1.90E+00	
0	920.75	7	11	1.40	1842.14	1836	9	1.94E-03	****	1.85E+00	
2	934.55	24	4	2.10	1869.73	1863	19	6.81E-03	59.2	1.83E+00	
2	938.82	14	0	2.11	1878.27	1863	19	4.00E-03	57.4	1.83E+00	T
0	964.48	31	11	0.73	1929.55	1924	11	8.61E-03	54.8	1.79E+00	T
3	973.23	14	1	2.35	1947.04	1935	16	4.02E-03	66.4	1.77E+00	
0	1035.77	4	21	1.05	2072.04	2064	10	1.14E-03	****	1.68E+00	
0	1156.90	7	8	1.13	2314.17	2311	7	1.95E-03	****	1.53E+00	
0	1230.25	12	18	3.83	2460.78	2449	15	3.48E-03	****	1.45E+00	T
0	1238.71	33	16	2.38	2477.68	2471	11	9.29E-03	58.4	1.44E+00	T
0	1280.62	15	3	1.95	2561.44	2558	7	4.42E-03	63.1	1.40E+00	
0	1377.31	16	0	1.29	2754.71	2748	12	4.72E-03	48.5	1.31E+00	
0	1631.06	11	0	1.44	3261.92	3257	10	3.33E-03	57.7	1.12E+00	

Flags: "T" = Tentatively associated


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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621351.CNF;1  *
* Acquisition date   : 3-OCT-2016 08:53:50 Sensitivity      : 3.000             *
* Detector ID        : GAM05 Energy tolerance: 1.500       *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 01:00:00.64 Half life ratio : ***** *
* Sample date       : 10-DEC-2015 14:20:00 Nuclide Library : SOLID      *
* Sample ID         : G1203621351 Analyst initials: MXR1       *
* Batch Number      : 1596247 Sample Quantity : 1.4159E+02 GRAM *
* Wet wt corr       : 1.00000 Wet Weight      : 0.00000       *
*                               Dry Weight      : 0.00000       *
*****
*                               CALIBRATION INFORMATION                       *
*
* Eff. Cal. date    : 4-SEP-2016 08:00:28 Eff. Geometry   : CAN       *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM05 CAN.CNF;20 *
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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.113E-01
CD-109	5.445E-01
SN-126	3.478E-02
CS-135	9.828E-02
BA-137M	2.935E-02
CS-137	3.101E-02
HG-203	1.723E+00
TL-208	3.073E-02
PB-210	2.481E-01
BI-212	3.184E-01
PB-212	3.695E-02
BI-214	4.302E-02
PB-214	5.519E-02
RN-222	4.302E-02
RA-224	3.965E-01
RA-226	4.302E-02
AC-228	8.789E-02
RA-228	8.789E-02
TH-228	3.695E-02
TH-229	3.597E-01
TH-230	4.300E-02
TH-232	8.789E-02
TH-234	4.053E-01
U-234	4.300E-02
U-235	1.341E-01
U-238	4.053E-01
AM-243	2.348E-02
ANH-511	2.070E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.058E+01	NOT IDENT.
NA-22	3.266E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF

AL-26	1.228E-02	NOT IDENT.
SC-46	2.576E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.096E-02	NOT IDENT.
CO-56	3.927E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	3.199E-02	NOT IDENT.
CO-58	4.411E-01	NOT IDENT.
FE-59	5.743E+00	NOT IDENT.
CO-60	3.045E-02	NOT IDENT.
ZN-65	1.378E-01	NOT IDENT.
GE-68	1.791E+00	NOT IDENT.
AS-73	1.576E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.479E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.616E-01	FAIL ABUN
KR-85	4.986E+00	NOT IDENT.
SR-85	5.149E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.919E-01	NOT IDENT.
Y-91	4.467E+02	NOT IDENT.
NB-94	3.107E-02	NOT IDENT.
NB-95	6.411E-01	NOT IDENT.
NB-95M	1.532E+00	NOT IDENT.
ZR-95	1.114E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.253E-02	NOT IDENT.
RH-102	4.258E-02	NOT IDENT.
RU-103	3.874E+00	FAIL ABUN
RH-106	4.256E-01	NOT IDENT.
RU-106	4.256E-01	NOT IDENT.
AG-108M	1.863E-02	NOT IDENT.
AG-110M	6.317E-02	FAIL ABUN
SN-113	1.474E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	9.044E-02	NOT IDENT.
SB-124	1.484E+00	NOT IDENT.
SB-125	9.258E-02	FAIL ABUN
TE-125M	1.885E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.088E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	4.776E-02	FAIL ABUN
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	8.024E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.759E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.532E-01	FAIL ABUN
PM-144	4.305E-02	NOT IDENT.
PR-144	3.728E+00	NOT IDENT.
PM-146	3.903E-02	FAIL ABUN
ND-147	0.000E+00	SHORT HLIF
PM-147	5.240E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.014E-02	FAIL ABUN
EU-152	7.008E-02	FAIL ABUN
GD-153	1.091E-01	NOT IDENT.
EU-154	8.106E-02	NOT IDENT.
EU-155	7.822E-02	FAIL ABUN
TB-160	1.547E+00	FAIL ABUN
HO-166M	4.300E-02	FAIL ABUN
TM-171	3.676E+00	NOT IDENT.
HF-172	1.711E-01	FAIL ABUN

LU-172	7.575E-02	FAIL ABUN
LU-176	1.686E-02	FAIL ABUN
HF-181	3.340E+00	NOT IDENT.
TA-182	6.729E-01	FAIL ABUN
RE-183	7.826E-01	NOT IDENT.
RE-184	2.593E+01	NOT IDENT.
W-188	9.768E+01	FAIL ABUN
IR-192	3.657E-01	FAIL ABUN
BI-207	3.722E-02	FAIL ABUN
BI-211	4.075E-01	FAIL ABUN
PB-211	5.730E-01	FAIL ABUN
RN-219	2.882E-01	NOT IDENT.
RA-223	4.635E-01	FAIL ABUN
AC-227	1.705E-01	FAIL ABUN
TH-227	1.705E-01	FAIL ABUN
PA-231	3.605E-01	NOT IDENT.
TH-231	4.635E-01	FAIL ABUN
PA-233	4.938E-02	FAIL ABUN
PA-234	2.530E-01	NOT IDENT.
PA-234M	3.473E+00	NOT IDENT.
NP-237	4.938E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.611E-01	FAIL ABUN
PU-239	2.334E+02	NOT IDENT.
AM-241	4.273E-02	NOT IDENT.
CM-243	6.190E-02	FAIL ABUN
BK-247	5.237E-02	FAIL ABUN
CM-247	2.645E-02	FAIL ABUN
CF-249	3.018E-02	NOT IDENT.
CF-251	8.510E-02	NOT IDENT.

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621351.CNF;1
* Acquisition date   : 3-OCT-2016 08:53:50 Sensitivity      : 3.000
* Detector ID        : GAM05 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.64 Half life ratio : *****
* Sample date       : 10-DEC-2015 14:20:00 Nuclide Library : SOLID
* Sample ID         : G1203621351 Analyst initials: MXR1
* Batch Number      : 1596247 Sample Quantity : 1.4159E+02 GRAM
*                               Quantity Err(%) : 1.4126E-03 %
* Wet wt corr       : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 4-SEP-2016 08:00:28 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM05 CAN.CNF;20
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.807E+01	1.921E+00	1.921E+00
CD-109	2.540E+00	1.557E+00	1.557E+00
SN-126	1.624E-01	9.918E-02	9.918E-02
CS-135	3.559E-01	2.645E-01	2.645E-01
BA-137M	4.173E-01	1.166E-01	1.166E-01
CS-137	4.408E-01	1.232E-01	1.232E-01
HG-203	2.654E-01	3.643E+00	3.643E+00
TL-208	2.870E-01	8.247E-02	8.247E-02
PB-210	1.480E+00	9.379E-01	9.379E-01
BI-212	1.795E+00	1.023E+00	1.023E+00
PB-212	1.192E+00	1.387E-01	1.387E-01
BI-214	8.644E-01	1.511E-01	1.511E-01
PB-214	1.070E+00	1.913E-01	1.913E-01
RN-222	8.644E-01	1.511E-01	1.511E-01
RA-224	9.903E-01	1.168E+00	1.168E+00
RA-226	8.644E-01	1.511E-01	1.511E-01
AC-228	1.236E+00	2.921E-01	2.921E-01
RA-228	1.236E+00	2.921E-01	2.921E-01
TH-228	1.192E+00	1.387E-01	1.387E-01
TH-229	-2.553E-01	4.381E-01	4.381E-01
TH-230	8.641E-01	1.511E-01	1.511E-01
TH-232	1.236E+00	2.921E-01	2.921E-01
TH-234	9.143E-01	1.107E+00	1.107E+00
U-234	8.641E-01	1.511E-01	1.511E-01
U-235	7.009E-04	1.524E-01	1.524E-01
U-238	9.143E-01	1.107E+00	1.107E+00
AM-243	1.716E-01	6.106E-02	6.106E-02
ANH-511	1.434E-01	8.452E-02	8.452E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	1.198E+00	1.188E+01	1.189E+01	NOT IDENT.
NA-22	-8.524E-03	4.027E-02	4.045E-02	NOT IDENT.

NA-24	-1.000E+41	1.293E+41	0.000E+00	SHORT HLIF
AL-26	-1.819E-02	2.525E-02	2.655E-02	NOT IDENT.
SC-46	2.973E-02	3.425E-01	3.428E-01	FAIL ABUN
V-48	-5.603E+03	1.100E+04	1.128E+04	SHORT HLIF
CR-51	-3.415E+01	3.698E+02	3.701E+02	SHORT HLIF
MN-54	2.230E-02	5.729E-02	5.816E-02	NOT IDENT.
CO-56	-6.903E-02	4.712E-01	4.722E-01	FAIL ABUN
MN-56	-1.000E+41	7.515E+41	0.000E+00	SHORT HLIF
CO-57	7.749E-03	3.493E-02	3.510E-02	NOT IDENT.
CO-58	-1.150E-01	6.885E-01	6.904E-01	NOT IDENT.
FE-59	2.591E+00	6.206E+00	6.315E+00	NOT IDENT.
CO-60	6.116E-03	3.470E-02	3.481E-02	NOT IDENT.
ZN-65	-1.431E-01	2.130E-01	2.226E-01	NOT IDENT.
GE-68	-2.938E-01	2.118E+00	2.122E+00	NOT IDENT.
AS-73	-1.457E-01	1.670E+00	1.671E+00	NOT IDENT.
AS-74	-5.065E+02	4.936E+03	4.941E+03	SHORT HLIF
SE-75	1.219E-02	1.742E-01	1.743E-01	NOT IDENT.
BR-77	1.177E+38	1.012E+39	0.000E+00	SHORT HLIF
SR-82	5.163E+02	6.498E+02	6.902E+02	SHORT HLIF
RB-83	-2.829E-01	5.715E-01	5.855E-01	FAIL ABUN
KR-85	1.970E+00	5.981E+00	6.047E+00	NOT IDENT.
SR-85	2.010E-01	6.181E-01	6.247E-01	NOT IDENT.
RB-86	1.284E+03	2.381E+04	2.381E+04	SHORT HLIF
Y-88	9.869E-02	1.991E-01	2.040E-01	NOT IDENT.
Y-91	-4.783E+02	5.952E+02	6.330E+02	NOT IDENT.
NB-94	2.110E-02	3.396E-02	3.527E-02	NOT IDENT.
NB-95	-9.650E-01	9.139E-01	1.012E+00	NOT IDENT.
NB-95M	-1.421E+00	2.147E+00	2.241E+00	NOT IDENT.
ZR-95	-4.361E-02	1.500E+00	1.500E+00	NOT IDENT.
NB-97	1.000E+41	1.485E+42	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	7.486E+40	0.000E+00	SHORT HLIF
MO-99	-3.682E+30	1.007E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.687E+41	0.000E+00	SHORT HLIF
RH-101	-2.626E-02	2.761E-02	3.004E-02	NOT IDENT.
RH-102	1.073E-02	4.766E-02	4.790E-02	NOT IDENT.
RU-103	-3.534E+00	4.920E+00	5.172E+00	FAIL ABUN
RH-106	2.090E-01	4.659E-01	4.753E-01	NOT IDENT.
RU-106	2.090E-01	4.659E-01	4.753E-01	NOT IDENT.
AG-108M	-1.608E-02	2.314E-02	2.425E-02	NOT IDENT.
AG-110M	-5.618E-02	8.950E-02	9.301E-02	FAIL ABUN
SN-113	-7.373E-02	1.739E-01	1.771E-01	NOT IDENT.
CD-115	-3.925E+38	1.476E+39	0.000E+00	SHORT HLIF
SN-117M	-5.892E+04	7.318E+04	7.785E+04	SHORT HLIF
TE-123M	-3.381E-02	1.057E-01	1.068E-01	NOT IDENT.
SB-124	5.851E-01	1.574E+00	1.595E+00	NOT IDENT.
SB-125	1.226E-01	1.639E-01	1.729E-01	FAIL ABUN
TE-125M	3.826E+01	2.051E+02	2.058E+02	NOT IDENT.
I-126	4.960E+05	7.831E+05	8.144E+05	SHORT HLIF
SB-126	2.163E+05	1.086E+06	1.090E+06	SHORT HLIF
SB-127	1.259E+21	1.421E+22	0.000E+00	SHORT HLIF
I-131	-2.082E+08	3.679E+09	3.681E+09	SHORT HLIF
I-132	-1.000E+41	1.840E+42	0.000E+00	SHORT HLIF
TE-132	-2.398E+25	2.057E+26	0.000E+00	SHORT HLIF
BA-133	1.321E-02	3.587E-02	3.636E-02	FAIL ABUN
I-133	1.000E+41	2.357E+41	0.000E+00	SHORT HLIF
CS-134	4.753E-02	7.747E-02	8.038E-02	FAIL ABUN
I-135	1.000E+41	1.080E+42	0.000E+00	SHORT HLIF
CS-136	4.573E+04	2.303E+05	2.312E+05	SHORT HLIF
CE-139	5.537E-04	9.138E-02	9.138E-02	NOT IDENT.
BA-140	7.225E+05	9.247E+05	9.804E+05	SHORT HLIF
LA-140	-5.438E+05	4.840E+05	5.425E+05	SHORT HLIF
CE-141	1.082E+01	1.898E+01	1.960E+01	NOT IDENT.
CE-143	1.000E+41	2.746E+41	0.000E+00	SHORT HLIF
CE-144	4.280E-02	2.800E-01	2.807E-01	FAIL ABUN
PM-144	-1.650E-02	5.342E-02	5.393E-02	NOT IDENT.
PR-144	-1.460E+00	4.631E+00	4.678E+00	NOT IDENT.
PM-146	2.852E-02	4.093E-02	4.290E-02	FAIL ABUN
ND-147	3.118E+07	4.760E+07	4.963E+07	SHORT HLIF
PM-147	-2.543E+02	6.037E+02	6.145E+02	NOT IDENT.
PM-149	7.426E+39	2.117E+40	0.000E+00	SHORT HLIF
EU-150	-1.118E-02	2.839E-02	2.883E-02	FAIL ABUN
EU-152	1.583E-02	8.325E-02	8.356E-02	FAIL ABUN
GD-153	-3.971E-02	1.225E-01	1.238E-01	NOT IDENT.
EU-154	-1.862E-02	9.933E-02	9.968E-02	NOT IDENT.
EU-155	5.563E-02	8.229E-02	8.602E-02	FAIL ABUN
TB-160	3.548E-01	1.809E+00	1.816E+00	FAIL ABUN
HO-166M	-2.302E-02	5.424E-02	5.523E-02	FAIL ABUN
TM-171	1.147E+00	3.795E+00	3.830E+00	NOT IDENT.

HF-172	1.406E-01	1.815E-01	1.922E-01	FAIL ABUN
LU-172	3.597E-02	8.226E-02	8.384E-02	FAIL ABUN
LU-176	-2.303E-02	2.342E-02	2.562E-02	FAIL ABUN
HF-181	-2.095E+00	4.059E+00	4.168E+00	NOT IDENT.
TA-182	1.355E-01	8.576E-01	8.598E-01	FAIL ABUN
RE-183	-2.948E-02	8.280E-01	8.281E-01	NOT IDENT.
RE-184	1.334E+01	2.926E+01	2.987E+01	NOT IDENT.
W-188	9.998E+01	1.144E+02	1.229E+02	FAIL ABUN
IR-192	1.234E-01	4.267E-01	4.303E-01	FAIL ABUN
BI-207	1.032E-03	4.267E-02	4.267E-02	FAIL ABUN
BI-211	2.948E+00	5.292E-01	1.430E+00	FAIL ABUN
PB-211	2.983E-01	6.095E-01	6.242E-01	FAIL ABUN
RN-219	-1.275E-01	3.368E-01	3.417E-01	NOT IDENT.
RA-223	-2.049E-01	6.433E-01	6.499E-01	FAIL ABUN
AC-227	2.618E-02	1.990E-01	1.994E-01	FAIL ABUN
TH-227	2.618E-02	1.990E-01	1.994E-01	FAIL ABUN
PA-231	-1.344E-01	4.501E-01	4.542E-01	NOT IDENT.
TH-231	-2.049E-01	6.433E-01	6.499E-01	FAIL ABUN
PA-233	3.083E-02	5.584E-02	5.754E-02	FAIL ABUN
PA-234	1.892E-01	3.491E-01	3.594E-01	NOT IDENT.
PA-234M	-6.718E-01	4.014E+00	4.025E+00	NOT IDENT.
NP-237	3.083E-02	5.584E-02	5.754E-02	FAIL ABUN
NP-238	-2.003E+39	1.938E+41	0.000E+00	SHORT HLIF
NP-239	-1.725E-01	1.922E-01	2.074E-01	FAIL ABUN
PU-239	1.092E+02	2.525E+02	2.573E+02	NOT IDENT.
AM-241	2.777E-02	4.653E-02	4.818E-02	NOT IDENT.
CM-243	-2.004E-02	6.949E-02	7.008E-02	FAIL ABUN
BK-247	1.205E-02	6.579E-02	6.602E-02	FAIL ABUN
CM-247	-4.604E-03	3.009E-02	3.016E-02	FAIL ABUN
CF-249	2.627E-02	3.075E-02	3.295E-02	NOT IDENT.
CF-251	-2.207E-02	9.955E-02	1.000E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	49.1228	87.09	76.1071	136.47	69.0987
45.60	55.7147	87.57	76.1977	140.51	0.0000
46.54	55.9163	88.03	76.2836	143.76	73.9265
49.72	0.0000	88.34	76.3411	144.24	68.0682
51.35	80.6338	88.47	76.3656	145.44	65.2417
51.87	66.5273	89.96	76.6420	152.43	64.0059
52.39	68.2366	1093.63	76.7676	153.25	0.0000
52.97	71.5557	91.11	0.0000	323.87	70.2094
53.44	70.8767	92.59	77.1247	156.02	0.0000
54.07	76.6183	93.35	77.2629	158.56	0.0000
57.36	0.0000	94.56	73.9057	159.00	65.6982
57.53	91.2452	94.65	73.9214	162.33	67.0594
57.98	97.8495	94.67	73.9246	162.66	0.0000
59.27	93.1185	94.87	73.9586	163.33	64.1113
59.32	93.1339	97.43	84.5951	165.86	63.3415
59.54	96.4511	98.43	75.7671	176.31	61.2300
60.96	102.3334	98.44	75.7687	176.60	0.0000
61.17	99.1332	99.53	73.2425	177.52	66.5361
62.93	106.8018	100.11	66.0944	181.07	0.0000
63.29	106.9211	102.03	72.7411	181.52	55.7690
63.58	107.0168	103.18	86.5982	184.41	75.5991
64.28	106.6966	103.37	78.4263	143.76	62.0645
66.73	103.0565	105.21	80.5711	193.51	77.6271
67.24	109.0391	105.31	77.8412	197.03	72.6567
125.81	109.1810	106.12	84.3984	198.01	58.8437
67.75	111.7038	106.47	94.5602	201.83	78.5004
69.67	114.8485	109.28	80.3472	203.43	70.0454
70.83	114.3900	111.00	77.8553	205.31	99.3868
72.81	121.7988	111.76	0.0000	210.85	66.7343
72.87	121.8197	114.06	58.7587	215.65	56.9250
74.66	115.6247	116.30	0.0000	222.11	46.3483
74.82	115.6755	116.74	90.9597	227.09	44.4104
74.97	115.7233	119.76	78.2976	227.38	47.7576
77.11	116.3987	121.12	69.0474	228.16	0.0000
78.74	116.9072	121.22	69.0607	228.18	45.5807
79.69	117.2008	121.78	71.9765	116.74	45.5807
80.12	117.3326	122.06	62.5402	235.69	58.3278
80.19	0.0000	122.92	69.2880	235.96	58.3469
80.57	117.4706	123.07	71.2069	238.63	48.3986
81.00	117.6024	265.00	72.2404	238.98	0.0000
81.07	117.6241	125.81	63.9442	240.99	48.5312
81.75	62.3809	127.23	89.9520	242.00	48.5882
83.79	80.1266	127.91	76.6528	244.70	45.3381
84.00	88.8835	129.30	74.9293	252.40	0.0000
85.43	89.2041	131.20	73.2643	252.80	41.1784
86.55	76.0059	133.02	84.1472	254.15	0.0000
86.79	76.0509	133.52	67.7655	256.23	41.3350
86.94	76.0793	136.00	70.0137	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	37.0801	355.39	0.0000	584.27	31.0475
264.80	37.0859	356.01	26.5422	595.83	0.0000
265.00	35.5482	364.49	0.0000	427.87	32.8254
268.22	38.3849	366.42	0.0000	602.52	0.0000
269.46	38.4352	372.51	29.8994	604.72	20.9359
270.03	38.4584	375.05	35.9545	607.14	25.4564
271.23	46.6748	377.52	35.1685	609.32	15.9915
273.65	0.0000	356.01	31.8993	610.33	19.5008
276.40	46.9275	388.16	21.6273	614.28	18.0396
277.37	46.9751	388.63	0.0000	618.01	18.0754
277.60	46.9861	391.69	26.8929	620.36	21.1154
278.00	43.8719	264.66	27.0815	621.93	18.1143
279.20	40.7890	401.81	34.9748	630.19	0.0000
279.54	34.5254	402.40	31.4912	631.29	12.1362
279.70	34.5308	404.85	29.7977	633.25	22.2730
280.46	45.5538	410.95	33.0177	634.78	0.0000
283.69	39.0062	413.71	27.7926	635.95	19.2636
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	42.6270	423.72	0.0000	645.85	16.3060
285.90	0.0000	427.09	29.4067	657.76	29.2248
287.50	46.2756	427.87	29.4235	657.90	0.0000
290.67	38.0908	433.94	29.5538	661.66	24.6592
293.27	0.0000	439.40	29.6699	664.57	0.0000
351.93	40.6541	453.88	24.5248	666.33	0.0000
295.96	40.6842	463.37	22.8577	666.50	0.0000
879.38	51.1849	468.07	26.4164	667.71	0.0000
299.98	44.4479	473.00	0.0000	677.62	21.7520
300.09	44.4524	475.06	31.3334	685.70	0.0000
300.13	44.4547	476.78	34.1380	695.00	0.0000
301.36	54.1310	477.60	30.4635	696.49	24.0463
302.85	37.3442	482.18	33.3347	696.51	24.0472
256.23	37.4028	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	24.0566
306.78	49.5771	497.08	28.9862	697.49	23.0125
308.46	35.1225	505.52	35.2547	702.65	23.0706
311.90	34.0225	507.63	0.0000	706.68	23.1154
316.51	35.3898	511.00	23.5850	711.68	21.0645
319.41	0.0000	514.00	18.4312	720.70	0.0000
320.08	0.0000	514.00	18.4312	721.93	0.0000
321.04	34.3130	520.40	25.6223	722.78	23.8229
323.87	45.8703	520.69	0.0000	722.91	27.0014
325.23	36.0857	522.65	0.0000	723.31	27.0066
328.76	0.0000	527.90	0.0000	724.19	20.6608
333.37	33.0469	528.26	22.8867	727.33	14.3245
333.97	47.9439	529.59	22.9053	733.00	12.7671
334.37	56.2295	529.87	0.0000	735.93	17.5789
338.28	41.0748	531.02	0.0000	333.97	15.9918
338.32	41.0758	537.26	0.0000	739.50	0.0000
311.90	41.1543	546.56	0.0000	747.24	13.9225
340.48	41.1543	552.55	20.3215	748.06	18.2133
340.55	0.0000	563.25	22.3973	752.31	16.1023
344.28	30.0300	569.33	19.5451	753.82	0.0000
345.93	31.7440	946.00	19.5475	756.73	17.7481
351.06	38.5972	569.70	17.5942	756.80	17.7488
351.93	38.6263	583.19	30.5371	884.68	22.6628

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:12:49.63

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                   *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621352.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM06.CNF;499
Background date  : Z-OCT-2016 11:00:12.
Sample date     : 12-SEP-2016 00:00:00 Acquisition date : 3-OCT-2016 08:54:28.
Sample ID      : G1203621352 Sample quantity : 1.15000E+02 GRAM
Detector name   : GAM06 Detector geometry: CAN
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:04.93 0.5%
Energy tolerance: 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID       : 1596247 Detector SN# :
Matrix Spike ID : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.45*	5184	5306	0.95	92.64	87	11	5.76E+00	3.1	
2	9	57.98	523	1986	1.73	115.68	113	12	5.81E-01	11.5	2.22E+00
3	9	59.52	14681	1748	0.94	118.76	113	12	1.63E+01	1.0	
4	0	79.75	39	920	0.73	159.19	157	6	4.33E-02	123.8	
5	0	88.05	2683	1645	1.02	175.76	170	12	2.98E+00	3.6	
6	0	122.00	183	893	0.97	243.61	240	8	2.03E-01	29.3	
7	0	176.42	33	496	1.25	352.38	351	6	3.71E-02	106.6	
8	0	207.48	45	455	0.62	414.45	413	5	5.02E-02	72.0	
9	0	263.19	46	538	1.46	525.79	524	7	5.13E-02	84.4	
10	0	344.80	51	355	1.25	688.90	686	6	5.69E-02	60.0	
11	0	422.27	87	507	2.45	843.76	841	8	9.63E-02	46.4	
12	0	624.76	4	431	2.97	1248.56	1237	13	3.90E-03	*****	
13	0	652.88	40	218	1.35	1304.78	1301	7	4.42E-02	63.7	
14	0	661.31	11922	534	1.47	1321.64	1314	16	1.32E+01	1.0	
15	0	682.16	40	198	1.27	1363.33	1359	8	4.42E-02	63.4	
16	0	868.77	65	373	4.15	1736.45	1730	12	7.18E-02	61.2	
17	0	1004.49	51	391	3.20	2007.88	2001	13	5.64E-02	81.9	
18	0	1061.17	22	263	0.95	2121.24	2118	9	2.46E-02	133.3	
19	0	1070.41	51	227	2.08	2139.72	2134	10	5.66E-02	57.6	
20	0	1116.07	129	276	3.81	2231.04	2225	12	1.43E-01	27.5	
21	0	1172.55	7331	305	1.87	2344.00	2338	16	8.15E+00	1.3	
22	0	1331.71	6678	136	2.00	2662.38	2653	18	7.42E+00	1.3	
23	1	1447.49	17	11	2.03	2894.00	2889	19	1.89E-02	36.1	1.24E+00
24	1	1449.99	19	7	2.03	2899.00	2889	19	2.15E-02	38.0	
25	0	1494.41	11	15	3.00	2987.87	2976	14	1.27E-02	75.6	
26	0	1502.94	19	4	1.01	3004.95	2998	14	2.16E-02	30.5	
27	0	1559.77	10	6	0.63	3118.66	3111	12	1.15E-02	56.5	
28	0	1628.13	9	12	1.10	3255.44	3250	12	1.00E-02	83.9	
29	0	1681.09	9	6	1.40	3361.40	3356	9	1.02E-02	59.7	
30	0	1701.37	7	16	1.44	3401.99	3396	13	8.07E-03	119.9	
31	0	1741.41	12	3	0.78	3482.11	3476	11	1.37E-02	38.4	
32	0	1771.88	11	0	1.00	3543.09	3539	9	1.22E-02	30.2	

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

Configuration	: DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621352.CNF;1	
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4	
Sample title	: MXR1	
Sample date	: 12-SEP-2016 00:00:00	Acquisition date : 3-OCT-2016 08:54:28
Sample ID	: G1203621352	Sample quantity : 115.00 GRAM
Sample type	: SOLID	Sample geometry :
Detector name	: GAMMA6	Detector geometry: CAN
Elapsed live time:	0 00:15:00.00	Elapsed real time: 0 00:15:04.93 0.5%
Energy tolerance :	1.50 keV	Half life ratio : 10.00
Errors propagated:	No	Systematic Error : 0.00 %
Efficiency type :	Empirical	Efficiencies at : Peak Energy
Abundance limit :	75.00	

Interference Report

No interference correction performed

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
CO-57	122.06	192	85.60*	6.177E+00	9.479E-01	1.001E+00	58.57
	136.47	-----	10.68	6.083E+00	-----	Line Not Found	-----
CO-60	1173.23	6983	99.85	1.227E+00	1.488E+02	1.500E+02	2.57
	1332.49	6325	99.98*	1.092E+00	1.513E+02	1.525E+02	2.58
ZN-65	1115.54	123	50.60*	1.284E+00	4.950E+00	5.260E+00	55.01
CD-109	88.03	2848	3.70*	5.256E+00	3.825E+02	3.950E+02	7.21
SN-126	64.28	-----	9.60	2.772E+00	-----	Line Not Found	-----
	86.94	2848	8.90	5.256E+00	1.590E+02	1.590E+02	7.21
	87.57	2848	37.00*	5.256E+00	3.825E+01	3.825E+01	7.21
BA-137M	661.66	11644	89.90*	2.028E+00	1.667E+02	1.670E+02	2.03
CS-137	661.66	11644	85.10*	2.028E+00	1.762E+02	1.764E+02	2.03
PM-147	121.22	192	0.00*	6.177E+00	2.847E+04	2.892E+04	58.57
PB-210	46.54	5644	4.25*	6.123E-01	5.664E+03	5.674E+03	6.13
AM-241	59.54	15831	35.90*	2.129E+00	5.410E+02	5.410E+02	1.91

Flag: "*" = Keyline

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621352.CNF;1
* Acquisition date   : 3-OCT-2016 08:54:28 Sensitivity      : 3.000
* Detector ID        : GAM06 Energy tolerance: 1.500
* Elapsed live time  : 0 00:15:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 00:15:04.93 Half life ratio : *****
* Sample date       : 12-SEP-2016 00:00:00 Analyst initials: MXR1
* Sample ID         : G1203621352 Sample Quantity.: 1.1500E+02 GRAM
* Batch Number      : 1596247 Wet Weight : 0.00000
* Wet wt corr       : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 8-MAR-2016 07:26:53 Eff. Geometry : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM06 CAN.CNF;14
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
CO-57	1.001E+00	5.745E-01	5.328E-01
CO-60	1.525E+02	3.856E+00	8.177E-01
ZN-65	5.260E+00	2.836E+00	3.052E+00
CD-109	3.950E+02	2.790E+01	1.577E+01
SN-126	3.825E+01	2.702E+00	1.536E+00
BA-137M	1.670E+02	3.319E+00	9.844E-01
CS-137	1.764E+02	3.506E+00	1.040E+00
PM-147	2.892E+04	1.660E+04	1.538E+04
PB-210	5.674E+03	3.411E+02	1.962E+02
AM-241	5.410E+02	1.014E+01	5.631E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.880E+00	6.849E+00	1.196E+01	NOT IDENT.
NA-22	-2.590E-01	3.644E-01	6.230E-01	NOT IDENT.
NA-24	0.000E+00	6.071E+09	0.000E+00	SHORT HLIF
AL-26	1.211E-01	3.017E-01	6.159E-01	NOT IDENT.
K-40	-4.385E-01	2.341E+00	4.489E+00	NOT IDENT.
SC-46	-1.583E-01	9.402E-01	1.566E+00	NOT IDENT.
V-48	1.084E+00	1.883E+00	3.451E+00	NOT IDENT.
CR-51	3.819E+00	6.398E+00	1.185E+01	NOT IDENT.
MN-54	-4.769E-01	7.182E-01	1.177E+00	NOT IDENT.
CO-56	2.905E-01	8.260E-01	1.421E+00	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-58	6.436E-01	7.617E-01	1.351E+00	NOT IDENT.
FE-59	1.725E+00	2.102E+00	3.847E+00	NOT IDENT.
GE-68	1.399E+01	2.657E+01	4.826E+01	NOT IDENT.
AS-73	1.201E+00	2.460E+01	4.445E+01	NOT IDENT.
AS-74	-2.402E-02	1.812E+00	3.171E+00	NOT IDENT.
SE-75	5.714E-01	9.449E-01	1.206E+00	FAIL ABUN
BR-77	-3.457E+02	7.879E+02	1.299E+03	NOT IDENT.
SR-82	3.582E+00	6.844E+00	1.202E+01	NOT IDENT.
RB-83	6.686E-01	1.276E+00	2.292E+00	NOT IDENT.

KR-85	4.941E+01	1.076E+02	1.932E+02	NOT IDENT.
SR-85	2.804E-01	6.088E-01	1.093E+00	NOT IDENT.
RB-86	1.695E+01	2.054E+01	3.776E+01	NOT IDENT.
Y-88	-6.479E-02	3.626E-01	6.643E-01	NOT IDENT.
Y-91	-7.015E+01	2.336E+02	4.149E+02	NOT IDENT.
NB-94	-2.860E-01	5.000E-01	8.385E-01	NOT IDENT.
NB-95	-2.712E-01	7.392E-01	1.242E+00	NOT IDENT.
NB-95M	-6.750E-01	1.829E+00	3.021E+00	NOT IDENT.
ZR-95	4.638E-01	1.240E+00	2.173E+00	NOT IDENT.
NB-97	0.000E+00	8.509E+40	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.297E+10	0.000E+00	SHORT HLIF
MO-99	-1.167E+03	1.028E+03	1.661E+03	NOT IDENT.
TC-99M	0.000E+00	1.244E+25	0.000E+00	SHORT HLIF
RH-101	-4.632E-02	3.549E-01	6.178E-01	NOT IDENT.
RH-102	3.279E-01	8.920E-01	1.580E+00	NOT IDENT.
RU-103	9.859E-02	7.754E-01	1.374E+00	NOT IDENT.
RH-106	4.659E-01	5.185E+00	9.070E+00	NOT IDENT.
RU-106	4.659E-01	5.185E+00	9.070E+00	NOT IDENT.
AG-108M	4.513E-02	5.714E-01	1.016E+00	NOT IDENT.
AG-110M	-3.650E-01	1.089E+00	1.803E+00	NOT IDENT.
SN-113	-1.085E-01	7.783E-01	1.387E+00	NOT IDENT.
CD-115	-2.673E+02	1.305E+03	2.279E+03	NOT IDENT.
SN-117M	3.390E-01	8.872E-01	1.550E+00	NOT IDENT.
TE-123M	1.288E-01	3.457E-01	6.040E-01	NOT IDENT.
SB-124	8.470E-03	6.127E-01	1.222E+00	NOT IDENT.
SB-125	-6.472E-01	1.680E+00	2.950E+00	FAIL ABUN
TE-125M	3.835E+01	1.170E+02	2.085E+02	NOT IDENT.
I-126	-1.724E+00	5.101E+00	7.724E+00	NOT IDENT.
SB-126	1.511E+00	3.208E+00	5.669E+00	NOT IDENT.
SB-127	-3.088E+01	7.078E+01	1.060E+02	NOT IDENT.
I-131	8.704E-01	3.204E+00	5.820E+00	FAIL ABUN
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	-1.951E+01	4.099E+01	6.761E+01	NOT IDENT.
BA-133	-9.641E-02	6.541E-01	1.175E+00	FAIL ABUN
I-133	0.000E+00	1.400E+07	0.000E+00	SHORT HLIF
CS-134	-1.044E-01	7.186E-01	1.217E+00	NOT IDENT.
CS-135	-2.920E-01	2.333E+00	3.855E+00	NOT IDENT.
I-135	0.000E+00	3.793E+23	0.000E+00	SHORT HLIF
CS-136	2.977E+00	3.047E+00	5.642E+00	FAIL ABUN
CE-139	1.644E-01	3.677E-01	6.421E-01	NOT IDENT.
BA-140	1.513E+00	5.983E+00	1.065E+01	FAIL ABUN
LA-140	-2.759E-01	8.810E-01	1.605E+00	NOT IDENT.
CE-141	7.074E-02	8.172E-01	1.421E+00	NOT IDENT.
CE-143	0.000E+00	4.321E+04	0.000E+00	SHORT HLIF
CE-144	-1.056E+00	2.320E+00	3.980E+00	FAIL ABUN
PM-144	1.240E-01	5.391E-01	9.429E-01	NOT IDENT.
PR-144	9.313E+00	4.048E+01	7.080E+01	NOT IDENT.
PM-146	6.184E-01	8.485E-01	1.532E+00	NOT IDENT.
ND-147	-9.575E+00	1.364E+01	2.330E+01	NOT IDENT.
PM-149	-4.503E+03	9.654E+03	1.566E+04	NOT IDENT.
EU-150	-1.570E-02	4.035E-01	7.303E-01	NOT IDENT.
EU-152	1.510E+00	1.776E+00	2.717E+00	FAIL ABUN
GD-153	2.130E-01	9.702E-01	1.732E+00	NOT IDENT.
EU-154	-7.977E-01	1.021E+00	1.730E+00	FAIL ABUN
EU-155	-6.607E-01	1.193E+00	2.070E+00	FAIL ABUN
TB-160	6.482E-01	2.996E+00	5.094E+00	FAIL ABUN
HO-166M	-9.997E-03	9.507E-01	1.641E+00	FAIL ABUN
TM-171	-2.081E+00	4.953E+02	8.951E+02	NOT IDENT.
HF-172	-7.571E-01	2.330E+00	3.720E+00	FAIL ABUN
LU-172	-7.722E-01	1.308E+00	2.266E+00	FAIL ABUN
LU-176	-1.151E-01	3.856E-01	6.963E-01	FAIL ABUN
HF-181	-6.184E-01	9.069E-01	1.561E+00	FAIL ABUN
TA-182	-5.438E-02	1.912E+00	3.480E+00	NOT IDENT.
RE-183	0.000E+00	6.232E+00	1.224E+01	FAIL ABUN
RE-184	2.127E+00	3.138E+00	5.420E+00	NOT IDENT.
W-188	1.266E+02	1.178E+02	2.030E+02	NOT IDENT.
IR-192	-2.490E-01	5.280E-01	9.467E-01	NOT IDENT.
HG-203	9.750E-02	6.268E-01	1.045E+00	NOT IDENT.
BI-207	-4.066E-01	1.267E+00	1.816E+00	NOT IDENT.
TL-208	-4.466E-02	5.571E-01	9.726E-01	NOT IDENT.
BI-211	7.282E-01	3.057E+00	5.566E+00	NOT IDENT.
PB-211	-1.244E+01	1.190E+01	2.052E+01	NOT IDENT.
BI-212	9.954E-01	7.923E+00	1.374E+01	NOT IDENT.
PB-212	2.726E-01	8.007E-01	1.360E+00	NOT IDENT.
BI-214	-3.289E-01	1.084E+00	1.867E+00	NOT IDENT.
PB-214	-3.957E-01	1.115E+00	1.990E+00	FAIL ABUN
RN-219	2.822E+00	6.745E+00	1.223E+01	NOT IDENT.
RN-222	-3.289E-01	1.084E+00	1.867E+00	NOT IDENT.

RA-223	3.803E+00	9.421E+00	1.733E+01	FAIL ABUN
RA-224	1.718E+00	8.628E+00	1.455E+01	NOT IDENT.
RA-226	-3.289E-01	1.084E+00	1.867E+00	NOT IDENT.
AC-227	-8.529E-01	3.698E+00	6.110E+00	FAIL ABUN
TH-227	-8.529E-01	3.698E+00	6.110E+00	FAIL ABUN
AC-228	2.703E-01	3.166E+00	5.319E+00	NOT IDENT.
RA-228	2.703E-01	3.166E+00	5.319E+00	NOT IDENT.
TH-228	2.726E-01	8.007E-01	1.360E+00	NOT IDENT.
TH-229	-5.997E+00	6.993E+00	1.152E+01	FAIL ABUN
TH-230	-3.289E-01	1.084E+00	1.867E+00	NOT IDENT.
PA-231	-7.971E+00	6.634E+00	1.165E+01	NOT IDENT.
TH-231	3.803E+00	9.421E+00	1.733E+01	FAIL ABUN
TH-232	2.703E-01	3.166E+00	5.319E+00	NOT IDENT.
PA-233	3.978E-01	9.528E-01	1.757E+00	NOT IDENT.
PA-234	4.267E+00	6.913E+00	1.263E+01	NOT IDENT.
PA-234M	3.551E+01	1.052E+02	1.691E+02	NOT IDENT.
TH-234	-2.388E+00	1.776E+01	2.978E+01	NOT IDENT.
U-234	-3.289E-01	1.084E+00	1.867E+00	NOT IDENT.
U-235	-9.497E-01	2.290E+00	3.917E+00	NOT IDENT.
NP-237	3.978E-01	9.528E-01	1.757E+00	NOT IDENT.
NP-238	0.000E+00	3.268E+03	0.000E+00	SHORT HLIF
U-238	-2.388E+00	1.776E+01	2.978E+01	NOT IDENT.
NP-239	4.059E-01	3.137E+00	5.528E+00	NOT IDENT.
PU-239	-1.314E+03	3.882E+03	6.699E+03	NOT IDENT.
AM-243	1.423E-02	6.129E-01	1.101E+00	NOT IDENT.
CM-243	7.317E-02	1.201E+00	2.129E+00	NOT IDENT.
BK-247	-4.071E-01	1.382E+00	2.082E+00	NOT IDENT.
CM-247	1.264E-01	6.125E-01	1.103E+00	NOT IDENT.
CF-249	3.441E-02	6.706E-01	1.204E+00	NOT IDENT.
CF-251	9.590E-01	2.005E+00	2.687E+00	FAIL ABUN
ANH-511	1.798E-01	4.890E-01	8.844E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
CO-57	122.06	192	85.60*	6.177E+00	9.479E-01	1.001E+00	58.57
	136.47	-----	10.68	6.083E+00	-----	Line Not Found	-----
CO-60	1173.23	6983	99.85	1.227E+00	1.488E+02	1.500E+02	2.57
	1332.49	6325	99.98*	1.092E+00	1.513E+02	1.525E+02	2.58
ZN-65	1115.54	123	50.60*	1.284E+00	4.950E+00	5.260E+00	55.01
CD-109	88.03	2848	3.70*	5.256E+00	3.825E+02	3.950E+02	7.21
SN-126	64.28	-----	9.60	2.772E+00	-----	Line Not Found	-----
	86.94	2848	8.90	5.256E+00	1.590E+02	1.590E+02	7.21
	87.57	2848	37.00*	5.256E+00	3.825E+01	3.825E+01	7.21
BA-137M	661.66	11644	89.90*	2.028E+00	1.667E+02	1.670E+02	2.03
CS-137	661.66	11644	85.10*	2.028E+00	1.762E+02	1.764E+02	2.03
PM-147	121.22	192	0.00*	6.177E+00	2.847E+04	2.892E+04	58.57
PB-210	46.54	5644	4.25*	6.123E-01	5.664E+03	5.674E+03	6.13
AM-241	59.54	15831	35.90*	2.129E+00	5.410E+02	5.410E+02	1.91

Flag: "*" = Keyline

Total number of lines in spectrum 32
Number of unidentified lines 16
Number of lines tentatively identified by NID 16 50.00%

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	9.479E-01	1.001E+00	0.586E+00	58.57	
CO-60	5.27Y	1.01	1.513E+02	1.525E+02	0.039E+02	2.58	
ZN-65	244.06D	1.06	4.950E+00	5.260E+00	2.894E+00	55.01	
CD-109	461.40D	1.03	3.825E+02	3.950E+02	0.285E+02	7.21	
SN-126	2.30E+05Y	1.00	3.825E+01	3.825E+01	0.276E+01	7.21	
BA-137M	30.08Y	1.00	1.667E+02	1.670E+02	0.034E+02	2.03	
CS-137	30.08Y	1.00	1.762E+02	1.764E+02	0.036E+02	2.03	
PM-147	2.62Y	1.02	2.847E+04	2.892E+04	1.693E+04	58.57	
PB-210	22.20Y	1.00	5.664E+03	5.674E+03	0.348E+03	6.13	
AM-241	432.60Y	1.00	5.410E+02	5.410E+02	0.103E+02	1.91	
Total Activity :			3.560E+04	3.607E+04			

Grand Total Activity : 3.560E+04 3.607E+04

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
9	57.98	565	2144	1.73	115.68	113	12	5.81E-01	23.0	1.92E+00	T
0	79.75	42	981	0.73	159.19	157	6	4.33E-02	****	4.59E+00	T
0	176.42	35	512	1.25	352.38	351	6	3.71E-02	****	5.43E+00	T
0	207.48	46	466	0.62	414.45	413	5	5.02E-02	****	4.90E+00	
0	263.19	47	546	1.46	525.79	524	7	5.13E-02	****	4.12E+00	T
0	344.80	51	356	1.25	688.90	686	6	5.69E-02	****	3.36E+00	T
0	422.27	86	505	2.45	843.76	841	8	9.63E-02	92.8	2.88E+00	T
0	624.76	3	422	2.97	1248.56	1237	13	3.90E-03	****	2.12E+00	
0	652.88	39	213	1.35	1304.78	1301	7	4.42E-02	****	2.05E+00	
0	682.16	39	193	1.27	1363.33	1359	8	4.42E-02	****	1.98E+00	
0	868.77	62	360	4.15	1736.45	1730	12	7.18E-02	****	1.61E+00	
0	1004.49	49	375	3.20	2007.88	2001	13	5.64E-02	****	1.41E+00	T
0	1061.17	21	251	0.95	2121.24	2118	9	2.46E-02	****	1.35E+00	
0	1070.41	49	217	2.08	2139.72	2134	10	5.66E-02	****	1.33E+00	
1	1447.49	16	10	2.03	2894.00	2889	19	1.89E-02	72.2	1.01E+00	
1	1449.99	18	6	2.03	2899.00	2889	19	2.15E-02	76.0	1.01E+00	
0	1494.41	11	14	3.00	2987.87	2976	14	1.27E-02	****	9.85E-01	
0	1502.94	18	3	1.01	3004.95	2998	14	2.16E-02	61.0	9.80E-01	
0	1559.77	10	5	0.63	3118.66	3111	12	1.15E-02	****	9.49E-01	
0	1628.13	8	11	1.10	3255.44	3250	12	1.00E-02	****	9.15E-01	
0	1681.09	9	5	1.40	3361.40	3356	9	1.02E-02	****	8.92E-01	
0	1701.37	7	15	1.44	3401.99	3396	13	8.07E-03	****	8.84E-01	
0	1741.41	12	2	0.78	3482.11	3476	11	1.37E-02	76.8	8.68E-01	
0	1771.88	10	0	1.00	3543.09	3539	9	1.22E-02	60.3	8.56E-01	T

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621352.CNF;1  *
* Acquisition date   : 3-OCT-2016 08:54:28 Sensitivity      : 3.000             *
* Detector ID        : GAM06 Energy tolerance: 1.500       *
* Elapsed live time  : 0 00:15:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 00:15:04.93 Half life ratio : ***** *
* Sample date        : 12-SEP-2016 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1203621352 Analyst initials: MXR1       *
* Batch Number       : 1596247 Sample Quantity : 1.1500E+02 GRAM *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000       *
*                    : Dry Weight      : 0.00000       *
*****
*                               CALIBRATION INFORMATION                       *
*
* Eff. Cal. date     : 8-MAR-2016 07:26:53 Eff. Geometry   : CAN             *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM06 CAN.CNF;14          *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
CO-57	2.593E-01
CO-60	3.765E-01
ZN-65	1.469E+00
CD-109	7.698E+00
SN-126	7.496E-01
BA-137M	4.730E-01
CS-137	4.996E-01
PM-147	7.486E+03
PB-210	9.676E+01
AM-241	2.770E+00

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

Nuclide	Lc (pCi/GRAM)	
BE-7	5.811E+00	NOT IDENT.
NA-22	2.801E-01	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.663E-01	NOT IDENT.
K-40	1.917E+00	NOT IDENT.
SC-46	7.565E-01	NOT IDENT.
V-48	1.664E+00	NOT IDENT.
CR-51	5.753E+00	NOT IDENT.
MN-54	5.664E-01	NOT IDENT.
CO-56	6.848E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-58	6.504E-01	NOT IDENT.
FE-59	1.858E+00	NOT IDENT.
GE-68	2.327E+01	NOT IDENT.
AS-73	2.192E+01	NOT IDENT.
AS-74	1.523E+00	NOT IDENT.
SE-75	5.866E-01	FAIL ABUN
BR-77	6.322E+02	NOT IDENT.
SR-82	5.778E+00	NOT IDENT.
RB-83	1.109E+00	NOT IDENT.
KR-85	9.332E+01	NOT IDENT.

SR-85	5.282E-01	NOT IDENT.
RB-86	1.821E+01	NOT IDENT.
Y-88	2.835E-01	NOT IDENT.
Y-91	1.930E+02	NOT IDENT.
NB-94	4.011E-01	NOT IDENT.
NB-95	5.962E-01	NOT IDENT.
NB-95M	1.471E+00	NOT IDENT.
ZR-95	1.042E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	7.965E+02	NOT IDENT.
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.004E-01	NOT IDENT.
RH-102	7.598E-01	NOT IDENT.
RU-103	6.652E-01	NOT IDENT.
RH-106	4.363E+00	NOT IDENT.
RU-106	4.363E+00	NOT IDENT.
AG-108M	4.942E-01	NOT IDENT.
AG-110M	8.694E-01	NOT IDENT.
SN-113	6.736E-01	NOT IDENT.
CD-115	1.099E+03	NOT IDENT.
SN-117M	7.540E-01	NOT IDENT.
TE-123M	2.937E-01	NOT IDENT.
SB-124	5.045E-01	NOT IDENT.
SB-125	1.433E+00	FAIL ABUN
TE-125M	1.014E+02	NOT IDENT.
I-126	3.696E+00	NOT IDENT.
SB-126	2.720E+00	NOT IDENT.
SB-127	5.076E+01	NOT IDENT.
I-131	2.825E+00	FAIL ABUN
I-132	0.000E+00	SHORT HLIF
TE-132	3.291E+01	NOT IDENT.
BA-133	5.700E-01	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	5.843E-01	NOT IDENT.
CS-135	1.874E+00	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	2.722E+00	FAIL ABUN
CE-139	3.123E-01	NOT IDENT.
BA-140	5.132E+00	FAIL ABUN
LA-140	6.763E-01	NOT IDENT.
CE-141	6.910E-01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	1.935E+00	FAIL ABUN
PM-144	4.526E-01	NOT IDENT.
PR-144	3.398E+01	NOT IDENT.
PM-146	7.460E-01	NOT IDENT.
ND-147	1.122E+01	NOT IDENT.
PM-149	7.594E+03	NOT IDENT.
EU-150	3.545E-01	NOT IDENT.
EU-152	1.319E+00	FAIL ABUN
GD-153	8.437E-01	NOT IDENT.
EU-154	7.761E-01	FAIL ABUN
EU-155	1.007E+00	FAIL ABUN
TB-160	2.458E+00	FAIL ABUN
HO-166M	7.866E-01	FAIL ABUN
TM-171	4.413E+02	NOT IDENT.
HF-172	1.808E+00	FAIL ABUN
LU-172	1.090E+00	FAIL ABUN
LU-176	3.379E-01	FAIL ABUN
HF-181	7.570E-01	FAIL ABUN
TA-182	1.615E+00	NOT IDENT.
RE-183	6.057E+00	FAIL ABUN
RE-184	2.621E+00	NOT IDENT.
W-188	9.869E+01	NOT IDENT.
IR-192	4.589E-01	NOT IDENT.
HG-203	5.076E-01	NOT IDENT.
BI-207	8.733E-01	NOT IDENT.
TL-208	4.680E-01	NOT IDENT.
BI-211	2.701E+00	NOT IDENT.
PB-211	9.949E+00	NOT IDENT.
BI-212	6.592E+00	NOT IDENT.
PB-212	6.619E-01	NOT IDENT.
BI-214	8.982E-01	NOT IDENT.
PB-214	9.651E-01	FAIL ABUN
RN-219	5.936E+00	NOT IDENT.
RN-222	8.982E-01	NOT IDENT.
RA-223	8.413E+00	FAIL ABUN

RA-224	7.078E+00	NOT IDENT.
RA-226	8.982E-01	NOT IDENT.
AC-227	2.967E+00	FAIL ABUN
TH-227	2.967E+00	FAIL ABUN
AC-228	2.572E+00	NOT IDENT.
RA-228	2.572E+00	NOT IDENT.
TH-228	6.619E-01	NOT IDENT.
TH-229	5.603E+00	FAIL ABUN
TH-230	8.981E-01	NOT IDENT.
PA-231	5.649E+00	NOT IDENT.
TH-231	8.413E+00	FAIL ABUN
TH-232	2.572E+00	NOT IDENT.
PA-233	8.532E-01	NOT IDENT.
PA-234	6.120E+00	NOT IDENT.
PA-234M	8.161E+01	NOT IDENT.
TH-234	1.453E+01	NOT IDENT.
U-234	8.981E-01	NOT IDENT.
U-235	1.905E+00	NOT IDENT.
NP-237	8.532E-01	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
U-238	1.453E+01	NOT IDENT.
NP-239	2.692E+00	NOT IDENT.
PU-239	3.258E+03	NOT IDENT.
AM-243	5.374E-01	NOT IDENT.
CM-243	1.036E+00	NOT IDENT.
BK-247	1.012E+00	NOT IDENT.
CM-247	5.353E-01	NOT IDENT.
CF-249	5.845E-01	NOT IDENT.
CF-251	1.306E+00	FAIL ABUN
ANH-511	4.282E-01	NOT IDENT.

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621352.CNF;1
* Acquisition date   : 3-OCT-2016 08:54:28 Sensitivity      : 3.000
* Detector ID        : GAM06 Energy tolerance: 1.500
* Elapsed live time  : 0 00:15:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 00:15:04.93 Half life ratio : *****
* Sample date        : 12-SEP-2016 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1203621352 Analyst initials: MXR1
* Batch Number       : 1596247 Sample Quantity : 1.1500E+02 GRAM
*                               Quantity Err(%) : 1.7391E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 8-MAR-2016 07:26:53 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM06 CAN.CNF;14
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
CO-57	1.001E+00	5.791E-01	5.791E-01
CO-60	1.525E+02	1.247E+01	1.247E+01
ZN-65	5.260E+00	2.986E+00	2.986E+00
CD-109	3.950E+02	4.779E+01	4.779E+01
SN-126	3.825E+01	4.161E+00	4.161E+00
BA-137M	1.670E+02	1.418E+01	1.418E+01
CS-137	1.764E+02	1.497E+01	1.497E+01
PM-147	2.892E+04	1.673E+04	1.673E+04
PB-210	5.674E+03	5.985E+02	5.985E+02
AM-241	5.410E+02	4.310E+01	4.310E+01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-1.880E+00	6.851E+00	6.903E+00	NOT IDENT.
NA-22	-2.590E-01	3.650E-01	3.833E-01	NOT IDENT.
NA-24	5.870E+08	6.071E+09	6.077E+09	SHORT HLIF
AL-26	1.211E-01	3.018E-01	3.067E-01	NOT IDENT.
K-40	-4.385E-01	2.341E+00	2.350E+00	NOT IDENT.
SC-46	-1.583E-01	9.404E-01	9.432E-01	NOT IDENT.
V-48	1.084E+00	1.889E+00	1.952E+00	NOT IDENT.
CR-51	3.819E+00	6.408E+00	6.635E+00	NOT IDENT.
MN-54	-4.769E-01	7.202E-01	7.516E-01	NOT IDENT.
CO-56	2.905E-01	8.267E-01	8.370E-01	FAIL ABUN
MN-56	1.000E+41	2.766E+41	0.000E+00	SHORT HLIF
CO-58	6.436E-01	7.648E-01	8.180E-01	NOT IDENT.
FE-59	1.725E+00	2.126E+00	2.264E+00	NOT IDENT.
GE-68	1.399E+01	2.667E+01	2.741E+01	NOT IDENT.
AS-73	1.201E+00	2.461E+01	2.461E+01	NOT IDENT.
AS-74	-2.402E-02	1.812E+00	1.812E+00	NOT IDENT.
SE-75	5.714E-01	9.464E-01	9.809E-01	FAIL ABUN
BR-77	-3.457E+02	8.168E+02	8.315E+02	NOT IDENT.
SR-82	3.582E+00	6.854E+00	7.041E+00	NOT IDENT.
RB-83	6.686E-01	1.281E+00	1.316E+00	NOT IDENT.

KR-85	4.941E+01	1.076E+02	1.099E+02	NOT IDENT.
SR-85	2.804E-01	6.092E-01	6.222E-01	NOT IDENT.
RB-86	1.695E+01	2.073E+01	2.210E+01	NOT IDENT.
Y-88	-6.479E-02	3.626E-01	3.638E-01	NOT IDENT.
Y-91	-7.015E+01	2.337E+02	2.358E+02	NOT IDENT.
NB-94	-2.860E-01	5.006E-01	5.170E-01	NOT IDENT.
NB-95	-2.712E-01	7.397E-01	7.497E-01	NOT IDENT.
NB-95M	-6.750E-01	1.831E+00	1.856E+00	NOT IDENT.
ZR-95	4.638E-01	1.241E+00	1.258E+00	NOT IDENT.
NB-97	1.000E+41	8.549E+40	0.000E+00	SHORT HLIF
ZR-97	-5.794E+09	1.298E+10	1.324E+10	SHORT HLIF
MO-99	-1.167E+03	1.034E+03	1.160E+03	NOT IDENT.
TC-99M	-9.070E+24	1.248E+25	0.000E+00	SHORT HLIF
RH-101	-4.632E-02	3.551E-01	3.557E-01	NOT IDENT.
RH-102	3.279E-01	8.927E-01	9.049E-01	NOT IDENT.
RU-103	9.859E-02	7.754E-01	7.767E-01	NOT IDENT.
RH-106	4.659E-01	5.185E+00	5.189E+00	NOT IDENT.
RU-106	4.659E-01	5.185E+00	5.189E+00	NOT IDENT.
AG-108M	4.513E-02	5.714E-01	5.718E-01	NOT IDENT.
AG-110M	-3.650E-01	1.090E+00	1.103E+00	NOT IDENT.
SN-113	-1.085E-01	7.783E-01	7.799E-01	NOT IDENT.
CD-115	-2.673E+02	1.305E+03	1.311E+03	NOT IDENT.
SN-117M	3.390E-01	8.875E-01	9.006E-01	NOT IDENT.
TE-123M	1.288E-01	3.459E-01	3.507E-01	NOT IDENT.
SB-124	8.470E-03	6.127E-01	6.127E-01	NOT IDENT.
SB-125	-6.472E-01	1.681E+00	1.706E+00	FAIL ABUN
TE-125M	3.835E+01	1.170E+02	1.183E+02	NOT IDENT.
I-126	-1.724E+00	5.103E+00	5.162E+00	NOT IDENT.
SB-126	1.511E+00	3.214E+00	3.285E+00	NOT IDENT.
SB-127	-3.088E+01	7.089E+01	7.225E+01	NOT IDENT.
I-131	8.704E-01	3.204E+00	3.228E+00	FAIL ABUN
I-132	1.000E+41	3.538E+41	0.000E+00	SHORT HLIF
TE-132	-1.951E+01	4.105E+01	4.198E+01	NOT IDENT.
BA-133	-9.641E-02	6.542E-01	6.556E-01	FAIL ABUN
I-133	-4.132E+06	1.402E+07	1.414E+07	SHORT HLIF
CS-134	-1.044E-01	7.187E-01	7.202E-01	NOT IDENT.
CS-135	-2.920E-01	2.333E+00	2.337E+00	NOT IDENT.
I-135	-2.706E+23	4.022E+23	0.000E+00	SHORT HLIF
CS-136	2.977E+00	3.092E+00	3.370E+00	FAIL ABUN
CE-139	1.644E-01	3.693E-01	3.767E-01	NOT IDENT.
BA-140	1.513E+00	5.984E+00	6.023E+00	FAIL ABUN
LA-140	-2.759E-01	8.813E-01	8.900E-01	NOT IDENT.
CE-141	7.074E-02	8.172E-01	8.178E-01	NOT IDENT.
CE-143	-5.489E+02	4.321E+04	4.321E+04	SHORT HLIF
CE-144	-1.056E+00	2.322E+00	2.370E+00	FAIL ABUN
PM-144	1.240E-01	5.392E-01	5.421E-01	NOT IDENT.
PR-144	9.313E+00	4.048E+01	4.070E+01	NOT IDENT.
PM-146	6.184E-01	8.509E-01	8.954E-01	NOT IDENT.
ND-147	-9.575E+00	1.367E+01	1.433E+01	NOT IDENT.
PM-149	-4.503E+03	9.680E+03	9.891E+03	NOT IDENT.
EU-150	-1.570E-02	4.035E-01	4.036E-01	NOT IDENT.
EU-152	1.510E+00	1.782E+00	1.908E+00	FAIL ABUN
GD-153	2.130E-01	9.703E-01	9.750E-01	NOT IDENT.
EU-154	-7.977E-01	1.023E+00	1.085E+00	FAIL ABUN
EU-155	-6.607E-01	1.195E+00	1.231E+00	FAIL ABUN
TB-160	6.482E-01	2.998E+00	3.012E+00	FAIL ABUN
HO-166M	-9.997E-03	9.507E-01	9.507E-01	FAIL ABUN
TM-171	-2.081E+00	4.953E+02	4.953E+02	NOT IDENT.
HF-172	-7.571E-01	2.334E+00	2.359E+00	FAIL ABUN
LU-172	-7.722E-01	1.317E+00	1.362E+00	FAIL ABUN
LU-176	-1.151E-01	3.857E-01	3.892E-01	FAIL ABUN
HF-181	-6.184E-01	9.085E-01	9.503E-01	FAIL ABUN
TA-182	-5.438E-02	1.912E+00	1.912E+00	NOT IDENT.
RE-183	2.763E+01	6.890E+00	1.423E+01	FAIL ABUN
RE-184	2.127E+00	3.153E+00	3.295E+00	NOT IDENT.
W-188	1.266E+02	1.191E+02	1.321E+02	NOT IDENT.
IR-192	-2.490E-01	5.285E-01	5.403E-01	NOT IDENT.
HG-203	9.750E-02	6.268E-01	6.284E-01	NOT IDENT.
BI-207	-4.066E-01	1.269E+00	1.282E+00	NOT IDENT.
TL-208	-4.466E-02	5.571E-01	5.575E-01	NOT IDENT.
BI-211	7.282E-01	3.058E+00	3.075E+00	NOT IDENT.
PB-211	-1.244E+01	1.195E+01	1.320E+01	NOT IDENT.
BI-212	9.954E-01	7.924E+00	7.937E+00	NOT IDENT.
PB-212	2.726E-01	8.011E-01	8.105E-01	NOT IDENT.
BI-214	-3.289E-01	1.084E+00	1.094E+00	NOT IDENT.
PB-214	-3.957E-01	1.115E+00	1.129E+00	FAIL ABUN
RN-219	2.822E+00	6.757E+00	6.876E+00	NOT IDENT.
RN-222	-3.289E-01	1.084E+00	1.094E+00	NOT IDENT.

RA-223	3.803E+00	9.430E+00	9.584E+00	FAIL ABUN
RA-224	1.718E+00	8.629E+00	8.664E+00	NOT IDENT.
RA-226	-3.289E-01	1.084E+00	1.094E+00	NOT IDENT.
AC-227	-8.529E-01	3.700E+00	3.720E+00	FAIL ABUN
TH-227	-8.529E-01	3.700E+00	3.720E+00	FAIL ABUN
AC-228	2.703E-01	3.166E+00	3.168E+00	NOT IDENT.
RA-228	2.703E-01	3.166E+00	3.168E+00	NOT IDENT.
TH-228	2.726E-01	8.011E-01	8.105E-01	NOT IDENT.
TH-229	-5.997E+00	7.008E+00	7.511E+00	FAIL ABUN
TH-230	-3.289E-01	1.084E+00	1.094E+00	NOT IDENT.
PA-231	-7.971E+00	6.881E+00	7.763E+00	NOT IDENT.
TH-231	3.803E+00	9.430E+00	9.584E+00	FAIL ABUN
TH-232	2.703E-01	3.166E+00	3.168E+00	NOT IDENT.
PA-233	3.978E-01	9.535E-01	9.702E-01	NOT IDENT.
PA-234	4.267E+00	8.481E+00	8.696E+00	NOT IDENT.
PA-234M	3.551E+01	1.053E+02	1.065E+02	NOT IDENT.
TH-234	-2.388E+00	1.777E+01	1.780E+01	NOT IDENT.
U-234	-3.289E-01	1.084E+00	1.094E+00	NOT IDENT.
U-235	-9.497E-01	2.291E+00	2.331E+00	NOT IDENT.
NP-237	3.978E-01	9.535E-01	9.702E-01	NOT IDENT.
NP-238	1.944E+03	3.280E+03	3.395E+03	SHORT HLIF
U-238	-2.388E+00	1.777E+01	1.780E+01	NOT IDENT.
NP-239	4.059E-01	3.137E+00	3.142E+00	NOT IDENT.
PU-239	-1.314E+03	3.883E+03	3.928E+03	NOT IDENT.
AM-243	1.423E-02	6.129E-01	6.130E-01	NOT IDENT.
CM-243	7.317E-02	1.201E+00	1.202E+00	NOT IDENT.
BK-247	-4.071E-01	1.385E+00	1.397E+00	NOT IDENT.
CM-247	1.264E-01	6.130E-01	6.156E-01	NOT IDENT.
CF-249	3.441E-02	6.706E-01	6.708E-01	NOT IDENT.
CF-251	9.590E-01	2.008E+00	2.054E+00	FAIL ABUN
ANH-511	1.798E-01	4.893E-01	4.959E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	1964.1102	87.09	543.0725	136.47	408.9632
45.60	1653.5233	87.57	543.6205	140.51	429.2876
46.54	1658.5250	88.03	544.1423	143.76	431.3771
49.72	1488.5717	88.34	544.4946	144.24	396.9384
51.35	1543.0040	88.47	544.6424	145.44	411.3519
51.87	1583.8177	89.96	412.7759	152.43	367.5838
52.39	1569.6459	90.64	422.3123	153.25	401.0778
52.97	1610.8647	91.11	440.6485	154.21	408.0317
53.44	1625.3617	92.59	422.7026	156.02	394.0771
54.07	1638.0039	93.35	411.1242	158.56	394.4007
57.36	0.0000	94.56	434.3693	159.00	389.2594
57.53	1148.3273	94.65	434.4481	162.33	379.1556
57.98	1149.7538	94.67	434.4652	162.66	376.0849
59.27	1153.8312	94.87	434.6365	163.33	398.0583
59.32	1153.9841	97.43	442.6662	165.86	391.8196
59.54	1154.6753	98.43	438.6497	176.31	369.7046
60.96	1159.1030	98.44	438.6601	176.60	387.4492
61.17	1159.7546	99.53	452.2791	177.52	417.2925
62.93	516.2480	100.11	468.4312	181.07	426.1812
63.29	523.9438	102.03	415.1772	181.52	429.7448
63.58	517.1239	103.18	427.8779	184.41	455.7509
64.28	549.3857	103.37	428.0305	185.72	477.6435
66.73	546.4628	105.21	448.2537	193.51	474.3121
67.24	558.9999	105.31	448.3368	197.03	443.5702
67.68	586.0448	106.12	402.5224	198.01	431.6502
67.75	586.1478	106.47	423.5623	201.83	418.8242
69.67	572.4478	109.28	412.7963	203.43	442.3439
70.83	547.4277	111.00	415.0669	205.31	387.4597
72.81	551.8744	111.76	438.6048	210.85	501.5160
72.87	567.6429	114.06	428.3455	215.65	462.3163
74.66	553.3564	116.30	421.9538	222.11	459.7844
74.82	553.5613	116.74	444.4453	227.09	448.2363
74.97	575.0912	119.76	433.5675	227.38	444.8740
77.11	525.7336	121.12	438.6215	228.16	469.7811
78.74	586.3143	121.22	438.6940	228.18	469.7933
79.69	557.8715	121.78	439.1027	235.69	464.0754
80.12	558.4072	122.06	439.3070	235.96	448.8912
80.19	558.4934	122.92	439.9365	238.63	407.5923
80.57	584.9567	123.07	427.8218	238.98	446.7409
81.00	599.3088	123.68	429.6140	240.99	416.8667
81.07	599.4012	125.81	416.1079	242.00	406.6216
81.75	605.3193	127.23	410.2280	244.70	387.5279
83.79	584.0486	127.91	400.4141	252.40	364.1497
84.00	608.2906	129.30	436.2925	252.80	373.8801
85.43	643.0718	131.20	408.7134	254.15	0.0000
86.55	542.4550	133.02	425.4116	256.23	383.5511
86.79	542.7246	133.52	430.9233	260.90	365.5590
86.94	542.8986	136.00	400.3504	264.66	452.5277

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.80	452.5847	364.49	350.5050	600.60	203.7072
265.00	428.4145	366.42	365.9636	602.52	0.0000
268.22	398.9092	372.51	352.5831	604.72	217.3263
269.46	392.0739	375.05	325.7884	607.14	209.4534
270.03	387.4072	1093.63	359.1870	609.32	220.8763
271.23	385.4047	383.85	359.9358	610.33	232.1934
273.65	385.0406	388.16	369.9822	614.28	212.2402
276.40	343.1299	388.63	379.0397	618.01	202.4070
277.37	381.4609	391.69	372.6921	620.36	207.7578
277.60	381.5369	400.66	340.7706	621.93	207.9147
278.00	374.3156	401.81	343.7465	630.19	0.0000
279.20	363.6677	402.40	342.0808	631.29	196.5180
279.54	400.6453	404.85	386.0566	633.25	212.1441
279.70	400.7050	410.95	411.2686	634.78	190.6608
280.46	361.6232	413.71	350.1830	635.95	181.4857
283.69	386.1206	414.70	374.9927	636.99	206.3395
284.31	355.4736	423.72	407.9309	645.85	220.6790
285.41	391.6548	427.09	381.0308	657.76	209.4159
285.90	358.4555	427.87	403.9958	657.90	0.0000
287.50	367.6336	433.94	419.4254	661.66	199.3547
290.67	337.6343	439.40	449.5836	664.57	0.0000
293.27	0.0000	453.88	417.3255	666.33	177.3005
295.22	363.9128	463.37	441.3995	666.50	177.3143
295.96	392.8271	468.07	412.5320	667.71	0.0000
298.58	341.2333	473.00	412.8260	677.62	176.6406
299.98	363.7502	475.06	433.2047	685.70	183.6218
300.09	363.7857	476.78	396.7338	695.00	178.0352
300.13	363.7946	477.60	401.6665	696.49	181.3326
301.36	395.0905	482.18	368.5732	696.51	181.3326
302.85	349.5919	487.02	359.1517	697.00	195.1631
304.50	354.2728	492.35	330.6612	697.30	176.0913
304.85	359.4114	497.08	291.3271	697.49	182.4735
306.78	371.7444	505.52	287.9408	702.65	181.8267
308.46	391.6042	507.63	0.0000	706.68	166.1753
311.90	353.9734	511.00	269.5263	711.68	178.2801
316.51	351.1019	514.00	246.7615	720.70	169.3376
319.41	362.1230	514.00	246.7615	721.93	0.0000
320.08	342.7983	520.40	260.2793	722.78	203.8155
321.04	365.9975	520.69	271.0078	722.91	208.1221
323.87	349.8250	522.65	0.0000	723.31	203.8619
325.23	357.0263	527.90	248.7018	724.19	177.1051
328.76	359.7583	528.26	249.7292	727.33	178.4216
333.37	372.2359	529.59	237.2157	733.00	150.8407
333.97	364.6896	529.87	0.0000	735.93	184.4707
334.37	375.1112	531.02	256.9429	737.46	166.2443
338.28	363.3517	537.26	224.4994	739.50	223.6520
338.32	378.8680	546.56	0.0000	747.24	202.7051
340.48	340.5182	552.55	206.6018	748.06	178.9178
340.55	340.5423	563.25	216.7227	752.31	184.6647
344.28	352.9492	569.33	230.3890	753.82	189.1301
345.93	344.3108	569.50	230.4078	756.73	165.4212
351.06	342.6258	569.70	230.4266	756.80	165.4212
351.93	360.2538	583.19	215.9798	763.94	203.0288
355.39	0.0000	584.27	217.0986	765.81	208.6420
356.01	361.3740	595.83	199.1723	766.42	204.3258

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
766.84	199.9924	1002.74	220.8060	1678.03	0.0000
772.60	0.0000	1004.73	220.9492	1690.97	7.4952
776.52	179.9422	1021.30	0.0000	1750.46	0.0000
777.92	205.2921	1025.87	0.0000	1764.49	8.6982
778.90	183.4105	1028.54	0.0000	1770.23	3.4832
783.70	202.4704	1037.84	221.5378	1771.35	1.7421
785.37	198.2080	1038.76	0.0000	1791.20	0.0000
792.07	220.8252	1046.59	228.4980	1808.65	9.8734
794.95	195.6536	1048.07	210.4624	1810.72	0.0000
795.86	201.2546	1049.04	229.5901	1836.06	13.2363
801.95	191.7670	1050.41	243.3003		
810.06	201.2756	1063.66	222.4504		
810.29	202.4098	1077.00	207.8109		
810.45	182.4046	1077.34	218.8256		
810.76	183.5370	1085.87	207.4609		
815.77	215.1067	1093.63	233.7222		
818.51	201.9458	1099.45	225.8444		
832.01	229.9243	1112.07	256.1380		
834.85	248.1394	1112.84	260.6484		
835.71	234.7423	1115.54	219.5403		
836.80	0.0000	1120.29	149.9120		
846.75	0.0000	1120.55	139.5313		
846.77	218.8183	1121.30	142.5375		
856.80	260.4065	1129.67	147.9174		
860.56	259.6470	1131.51	0.0000		
871.09	254.4022	1147.95	0.0000		
873.19	252.8936	1173.23	156.4254		
875.33	0.0000	1177.95	99.6445		
879.38	239.7705	1189.05	85.1935		
880.51	227.3083	1204.77	65.6098		
883.24	257.2632	1221.41	56.3640		
884.68	256.2565	1231.02	39.2733		
889.28	278.4573	1235.36	47.9523		
894.76	312.3086	1238.28	46.0693		
898.04	272.4497	1260.41	0.0000		
900.72	271.5594	1271.87	26.1546		
903.28	251.0779	1274.44	37.8051		
911.20	279.5171	1274.54	37.8051		
912.08	258.8086	1291.59	34.0836		
923.98	0.0000	1298.22	0.0000		
926.50	272.9045	1312.11	33.2903		
929.11	303.3849	1332.49	45.2813		
937.49	291.4531	1362.66	0.0000		
944.13	316.3708	1365.19	14.8901		
946.00	296.4102	1368.63	0.0000		
949.00	326.5671	1384.29	16.9575		
954.55	0.0000	1408.01	17.0591		
962.31	272.4967	1457.56	0.0000		
964.08	302.6686	1460.82	12.1978		
966.17	281.6951	1489.16	21.2862		
968.97	258.0931	1505.03	11.5049		
983.53	220.2847	1584.12	11.5062		
984.45	0.0000	1596.21	12.5867		
996.26	240.8478	1620.50	10.5450		
1001.03	240.1547	1621.92	14.0649		

10/03/16

Gamma Solid

Batch# 1596249

Product: MJWC

Date: 10/03/16

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 10x 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.		✓	DER 1563940
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 statused.	✓		
MS, LCS, and Duplicate RPD/RER values uploaded to LIMS and values verified	✓		
Hlt notification complete (if necessary)	✓		
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.	✓		DER 1563940
Batch Data Exception Reports (DER) second reviewed. Disposition verified to be completed.	✓		
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:

JK - 10/3/16

Secondary Review Performed By:

mm 10-3-16

DATA EXCEPTION REPORT

Mo.Day Yr. 03-OCT-16	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process
Instrument Type: GAMMA SPECTROMETER	Test / Method: DOE HASL 300, 4.5.2.3/Ga-01-R	Matrix Type: Solid	Client Code: MJWC
Batch ID: 1596249	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 405235 Application Issues: Sample received out of holding			
Specification and Requirements Exception Description:		DER Disposition:	
Samples 405235 021, 022, 023, 024, 025, 026, 027, 028, 029, 030, 031, 032, 033, 034, 035, 036, 037, 038, 039, 040, and 1203621355 (duplicate) were received outside of the holding period.		Samples were analyzed in a timely manner upon receipt. Reporting results.	

Originator's Name:

Spencer Collins 03-OCT-16

Data Validator/Group Leader:

Michael Hilton 03-OCT-16

Gamma Spec Queue Sheet 1.G. - 10/3/16

09/13/2016

Batch #: 1596249

Analyst: MXR1

First Client Due Date: 10/04/2016

Internal Due Date: 09/30/2016

Gamma LCS Isotope: Mixed Gamma

LCS Code: 1556Expiration Date: 4/1/37 Vol: 1.0 mlInitials: MSPrep Date: 9/12/16Library: SOLIDBalance ID: N/A

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry	Wet/Dry Aliquot (1 g/F)	Detector	Sealing Date/Time (if Applicable)
405235021-1	4.2B.R.2.3	SAMPLE		MJWC001	SOIL	08-DEC-15 14:17:00	CAN	161.305 g	7	9/12/16
405235022-1	4.2B.R.1.3	SAMPLE		MJWC001	SOIL	08-DEC-15 13:43:00		161.105 g	18	
405235023-1	4.2B.R.11.2	SAMPLE		MJWC001	SOIL	02-DEC-15 10:40:00		141.404 g	24	
405235024-1	4.2B.R.2.2	SAMPLE		MJWC001	SOIL	08-DEC-15 14:13:00		138.962 g	29	
405235025-1	4.2B.R.1.2	SAMPLE		MJWC001	SOIL	08-DEC-15 13:38:00		138.244 g	2	
405235026-1	4.2C.R.1.3	SAMPLE		MJWC001	SOIL	08-DEC-15 10:15:00		155.202 g	30	
405235027-1	4.2C.R.1.4	SAMPLE		MJWC001	SOIL	08-DEC-15 10:19:00		158.553 g	8	
405235028-1	4.3.A.R.1.3	SAMPLE		MJWC001	SOIL	23-NOV-15 14:50:00		125.516 g	9	
405235029-1	4.3.B.R.1.3	SAMPLE		MJWC001	SOIL	23-NOV-15 11:10:00		151.202 g	19	
405235030-1	4.3.A.R.2.3	SAMPLE		MJWC001	SOIL	23-NOV-15 14:44:00		131.12 g	20	
405235031-1	4.3.B.R.1.2	SAMPLE		MJWC001	SOIL	26-NOV-15 14:25:00		139.617 g	32	
405235032-1	4.3B.R.3.3	SAMPLE		MJWC001	SOIL	23-NOV-15 11:48:00		146.947 g	39	
405235033-1	4.3B.R.3.4	SAMPLE		MJWC001	SOIL	23-NOV-15 11:53:00		166.788 g	25	
405235034-1	4.3.B.R.1.4	SAMPLE		MJWC001	SOIL	23-NOV-15 11:20:00		152.487 g	28	
405235035-1	4.3B.R.2.3	SAMPLE		MJWC001	SOIL	23-NOV-15 11:06:00		164.073 g	33	33 33 10-3-16
405235036-1	4.3B.R.2.4	SAMPLE		MJWC001	SOIL	23-NOV-15 11:12:00		162.257 g	36	
405235037-1	4.4C.R.2.4	SAMPLE		MJWC001	SOIL	30-NOV-15 11:19:00		178.756 g	41	
405235038-1	4.4C.R.1.3	SAMPLE		MJWC001	SOIL	30-NOV-15 10:40:00		170.192 g	43	
405235039-1	4.4C.R.1.4	SAMPLE		MJWC001	SOIL	30-NOV-15 10:43:00		175.326 g	44	
405235040-1	4.4D.R.1.3	SAMPLE		MJWC001	SOIL	30-NOV-15 13:23:00		172.014 g	12	
1203621354-1	MB	MB		QC ACCOUNT	SOIL	9/12/16		178.756	16	
1203621355-1	DUP 4.4C.R.1.3(405235038)	DUP		QC ACCOUNT	SOIL	30-NOV-15 10:40:00		170.095	27	
1203621356-1	LCS	LCS		QC ACCOUNT	SOIL	9/12/16		115	6	

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:58:09.35

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235021.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM07.CNF;484
Background date    : Z-OCT-2016 11:00:17.
Sample date       : 8-DEC-2015 14:17:00. Acquisition date : 3-OCT-2016 08:57:41.
Sample ID        : G405235021 Sample quantity : 1.61305E+02 GRAM
Detector name    : GAM07 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.50 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596249 Detector SN# :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.66*	18	180	1.05	125.81	122	9	4.88E-03	143.9	
2	0	70.49	19	125	1.37	141.47	140	6	5.38E-03	94.3	
3	4	74.85*	124	170	1.31	150.19	146	16	3.46E-02	20.9	2.90E+00
4	4	77.17	210	140	1.07	154.82	146	16	5.84E-02	11.1	
5	1	87.24	75	114	1.16	174.95	172	11	2.08E-02	23.9	4.37E+00
6	1	89.87	30	136	1.02	180.21	172	11	8.32E-03	62.4	
7	0	92.89*	74	155	1.47	186.26	183	9	2.07E-02	34.4	
8	0	115.04	15	86	0.60	230.55	228	6	4.24E-03	99.2	
9	0	128.68	48	176	0.63	257.81	253	11	1.33E-02	55.4	
10	0	185.83*	83	133	1.20	372.09	366	11	2.30E-02	30.0	
11	0	209.68	74	97	1.48	419.78	414	11	2.05E-02	28.5	
12	0	238.46*	288	122	1.21	477.32	474	8	8.01E-02	9.0	
13	0	242.08	70	104	1.02	484.57	482	9	1.94E-02	31.3	
14	0	252.03	24	37	0.92	504.47	501	6	6.78E-03	44.4	
15	0	269.99	60	112	4.94	540.38	530	16	1.67E-02	41.4	
16	0	281.65	26	38	1.60	563.70	558	11	7.12E-03	51.9	
17	0	295.17*	128	81	1.17	590.72	584	13	3.54E-02	17.2	
18	0	302.16*	44	84	4.80	604.69	597	16	1.22E-02	49.5	
19	0	338.46*	50	63	0.91	677.29	672	9	1.40E-02	32.4	
20	0	351.81*	192	71	1.32	703.97	698	14	5.34E-02	11.9	
21	0	463.69	16	31	1.37	927.70	922	9	4.47E-03	67.5	
22	0	485.37	40	69	12.38	971.04	957	30	1.10E-02	62.7	
23	3	510.66*	25	27	2.04	1021.61	1014	20	7.03E-03	61.4	2.04E+00
24	3	514.25	19	20	2.04	1028.79	1014	20	5.24E-03	55.9	
25	0	583.25*	103	41	1.27	1166.76	1162	12	2.86E-02	16.2	
26	0	609.13*	146	33	1.48	1218.51	1213	14	4.07E-02	11.8	
27	0	661.74	46	34	1.04	1323.73	1319	10	1.29E-02	27.9	
28	0	665.33	16	13	1.88	1330.89	1328	8	4.31E-03	48.7	
29	0	711.67	8	28	0.78	1423.57	1419	12	2.09E-03	149.1	
30	0	728.14*	13	36	0.92	1456.50	1449	12	3.55E-03	99.6	
31	0	830.98	12	11	1.50	1662.14	1655	11	3.25E-03	66.7	
32	0	852.04	8	14	0.67	1704.25	1694	14	2.22E-03	105.3	
33	0	861.03	27	29	1.54	1722.24	1715	17	7.47E-03	50.3	
34	0	911.88*	91	35	2.35	1823.92	1815	22	2.53E-02	19.6	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	964.23	23	11	1.35	1928.61	1922	11	6.25E-03	35.3	
36	0	968.59*	58	9	1.50	1937.32	1933	10	1.62E-02	16.9	
37	0	991.95	13	1	1.04	1984.05	1981	6	3.49E-03	32.1	
38	0	1055.78	7	16	4.25	2111.68	2103	13	1.93E-03	125.6	
39	0	1102.76	12	15	1.34	2205.63	2200	10	3.33E-03	66.9	
40	0	1119.87	41	12	1.95	2239.84	2231	16	1.14E-02	24.6	
41	0	1128.91	14	2	3.21	2257.93	2253	9	3.86E-03	33.0	
42	0	1238.14	12	9	0.64	2476.37	2473	7	3.43E-03	50.8	
43	0	1376.74	20	3	1.40	2753.54	2746	14	5.43E-03	30.4	
44	0	1460.29*	304	7	1.93	2920.63	2913	14	8.44E-02	6.1	
45	0	1764.35*	29	3	1.45	3528.71	3522	12	8.10E-03	23.5	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235021.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 8-DEC-2015 14:17:00 Acquisition date : 3-OCT-2016 08:57:41
Sample ID : G405235021 Sample quantity : 161.30 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA7 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.50 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.122E+00	1.148E+01	1.148E+01	12.23	OK
KR-85	514.00	0.43*	2.620E+00	8.514E+00	8.986E+00	111.77	OK
SR-85	514.00	96.00*	2.620E+00	3.849E-02	9.489E-01	111.77	OK
CD-109	88.03	3.70*	5.745E+00	1.334E+00	2.093E+00	80.72	OK
SN-126	64.28	9.60	3.624E+00	----- Line	Not Found	-----	Absent
	86.94	8.90	5.745E+00	5.546E-01	5.546E-01	80.72	OK
	87.57	37.00*	5.745E+00	1.334E-01	1.334E-01	80.72	OK
BA-137M	661.66	89.90*	2.138E+00	1.205E-01	1.228E-01	55.70	OK
CS-137	661.66	85.10*	2.138E+00	1.273E-01	1.297E-01	55.70	OK
TL-208	277.37	6.60	4.377E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.365E+00	2.589E-01	2.589E-01	32.49	OK
	860.56	12.50	1.736E+00	5.982E-01	5.982E-01	100.52	OK
PB-212	74.82	10.28	4.784E+00	1.070E+00	1.070E+00	63.93	OK
	77.11	17.10	4.995E+00	1.533E+00	1.533E+00	22.11	OK
	238.63	43.60*	4.933E+00	7.477E-01	7.477E-01	17.95	OK
	300.09	3.30	4.103E+00	----- Line	Not Found	-----	Absent
BI-214	609.32	45.49*	2.284E+00	7.086E-01	7.089E-01	23.69	OK
	1120.29	14.92	1.406E+00	9.123E-01	9.126E-01	49.11	OK
	1764.49	15.30	9.423E-01	8.919E-01	8.922E-01	47.05	OK
PB-214	74.82	5.80	4.781E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	4.995E+00	2.703E+00	2.704E+00	22.11	OK
	87.09	3.41	5.736E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.877E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.160E+00	9.078E-01	9.082E-01	34.41	OK
	351.93	35.60*	3.593E+00	8.043E-01	8.045E-01	23.81	OK
RN-222	609.32	45.49*	2.284E+00	7.086E-01	7.089E-01	23.69	OK
	1120.29	14.92	1.406E+00	9.123E-01	9.126E-01	49.11	OK
	1764.49	15.30	9.423E-01	8.919E-01	8.922E-01	47.05	OK
RA-224	240.99	4.10*	4.876E+00	3.389E-01	3.389E-01	394.49	OK
RA-226	609.32	45.49*	2.284E+00	7.086E-01	7.089E-01	23.69	OK
	1120.29	14.92	1.406E+00	9.123E-01	9.126E-01	49.11	OK
	1764.49	15.30	9.423E-01	8.919E-01	8.922E-01	47.05	OK
AC-228	105.21	1.10	6.488E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.711E+00	6.479E-01	6.479E-01	64.74	OK
	794.95	4.25	1.849E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.777E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.658E+00	1.020E+00	1.020E+00	39.13	OK
	968.97	15.80	1.581E+00	1.112E+00	1.112E+00	33.90	OK
RA-228	105.21	1.10	6.488E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.711E+00	6.479E-01	6.479E-01	64.74	OK
	794.95	4.25	1.849E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.777E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.658E+00	1.020E+00	1.020E+00	39.13	OK
	968.97	15.80	1.581E+00	1.112E+00	1.112E+00	33.90	OK
TH-228	74.82	10.28	4.784E+00	1.070E+00	1.070E+00	63.93	OK
	77.11	17.10	4.995E+00	1.533E+00	1.533E+00	22.11	OK
	238.63	43.60*	4.933E+00	7.477E-01	7.477E-01	17.95	OK
	300.09	3.30	4.103E+00	----- Line	Not Found	-----	Absent
TH-230	609.32	45.49*	2.284E+00	7.086E-01	7.086E-01	23.69	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	1120.29	14.92	1.406E+00	9.123E-01	9.123E-01	49.11	OK
	1764.49	15.30	9.423E-01	8.919E-01	8.919E-01	47.05	OK
PA-231	283.69	1.70	4.298E+00	----- Line Not Found	-----	-----	Absent
	301.36	5.35*	4.080E+00	1.090E+00	1.090E+00	99.01	OK
TH-232	105.21	1.10	6.488E+00	----- Line Not Found	-----	-----	Absent
	338.32	11.27	3.711E+00	6.479E-01	6.479E-01	64.74	OK
	835.71	1.61	1.777E+00	----- Line Not Found	-----	-----	Absent
	911.20	25.80*	1.658E+00	1.020E+00	1.020E+00	39.13	OK
	968.97	15.80	1.581E+00	1.112E+00	1.112E+00	33.90	OK
TH-234	63.29	3.70*	3.418E+00	8.828E-01	8.828E-01	287.78	OK
	92.59	4.23	6.053E+00	1.779E+00	1.779E+00	68.74	OK
U-234	609.32	45.49*	2.284E+00	7.086E-01	7.086E-01	23.69	OK
	1120.29	14.92	1.406E+00	9.123E-01	9.123E-01	49.11	OK
	1764.49	15.30	9.423E-01	8.919E-01	8.919E-01	47.05	OK
U-235	89.96	3.47	5.897E+00	8.997E-01	8.997E-01	124.84	OK
	93.35	5.60	6.053E+00	1.344E+00	1.344E+00	68.74	OK
	143.76	10.96*	6.563E+00	----- Line Not Found	-----	-----	Absent
	163.33	5.08	6.266E+00	----- Line Not Found	-----	-----	Absent
	185.72	57.20	5.856E+00	1.417E-01	1.417E-01	59.94	OK
	205.31	5.01	5.496E+00	----- Line Not Found	-----	-----	Absent
U-238	63.29	3.70*	3.418E+00	8.828E-01	8.828E-01	287.78	OK
	92.59	4.23	6.053E+00	1.779E+00	1.779E+00	68.74	OK
AM-243	43.53	5.90	6.933E-01	----- Line Not Found	-----	-----	Absent
	74.66	67.20*	4.784E+00	1.637E-01	1.637E-01	63.93	OK
ANH-511	511.00	100.00*	2.635E+00	4.932E-02	4.932E-02	122.78	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235021.CNF;1
* Acquisition date   : 3-OCT-2016 08:57:41 Sensitivity      : 3.000
* Detector ID        : GAM07 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.50 Half life ratio : *****
* Sample date        : 8-DEC-2015 14:17:00 Analyst initials: MXR1
* Sample ID          : G405235021 Sample Quantity : 1.6130E+02 GRAM
* Batch Number       : 1596249 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight       : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 19-AUG-2016 11:09:59 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM07 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.148E+01	1.376E+00	6.020E-01
KR-85	8.986E+00	9.843E+00	1.069E+01
SR-85	9.489E-01	1.039E+00	1.129E+00
CD-109	2.093E+00	1.656E+00	1.856E+00
SN-126	1.334E-01	1.055E-01	1.188E-01
BA-137M	1.228E-01	6.702E-02	6.972E-02
CS-137	1.297E-01	7.080E-02	7.365E-02
TL-208	2.589E-01	8.244E-02	6.287E-02
PB-212	7.477E-01	1.315E-01	1.031E-01
BI-214	7.089E-01	1.646E-01	1.049E-01
PB-214	8.045E-01	1.877E-01	1.178E-01
RN-222	7.089E-01	1.646E-01	1.049E-01
RA-224	3.389E-01	1.310E+00	1.312E+00
RA-226	7.089E-01	1.646E-01	1.049E-01
AC-228	1.020E+00	3.911E-01	2.008E-01
RA-228	1.020E+00	3.911E-01	2.008E-01
TH-228	7.477E-01	1.315E-01	1.031E-01
TH-230	7.086E-01	1.645E-01	1.048E-01
PA-231	1.090E+00	1.058E+00	6.675E-01
TH-232	1.020E+00	3.911E-01	2.008E-01
TH-234	8.828E-01	2.490E+00	1.888E+00
U-234	7.086E-01	1.645E-01	1.048E-01
U-235	3.069E-02	1.661E-01	3.129E-01
U-238	8.828E-01	2.490E+00	1.888E+00
AM-243	1.637E-01	1.026E-01	7.753E-02
ANH-511	4.932E-02	5.935E-02	4.372E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	2.392E+00	9.940E+00	1.866E+01	NOT IDENT.
NA-22	-4.722E-03	3.491E-02	6.991E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	6.485E-03	3.382E-02	7.502E-02	FAIL ABUN

SC-46	-1.593E-02	2.996E-01	6.153E-01	FAIL ABUN
V-48	0.000E+00	1.277E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.367E+02	0.000E+00	SHORT HLIF
MN-54	5.176E-02	6.098E-02	1.269E-01	NOT IDENT.
CO-56	-2.602E-01	4.253E-01	6.647E-01	FAIL ABUN
MN-56	0.000E+00	1.702E+41	0.000E+00	SHORT HLIF
CO-57	-3.235E-02	3.999E-02	7.039E-02	NOT IDENT.
CO-58	-3.988E-01	5.759E-01	9.569E-01	NOT IDENT.
FE-59	2.626E+00	6.765E+00	1.300E+01	NOT IDENT.
CO-60	1.241E-02	3.036E-02	6.856E-02	NOT IDENT.
ZN-65	5.526E-02	1.769E-01	3.311E-01	NOT IDENT.
GE-68	-4.394E-01	2.136E+00	4.149E+00	NOT IDENT.
AS-73	-1.865E+00	6.599E+00	1.291E+01	NOT IDENT.
AS-74	0.000E+00	5.387E+03	0.000E+00	SHORT HLIF
SE-75	-2.194E-01	2.022E-01	3.164E-01	NOT IDENT.
BR-77	0.000E+00	2.331E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.800E+02	0.000E+00	SHORT HLIF
RB-83	1.042E-02	5.040E-01	1.004E+00	NOT IDENT.
RB-86	0.000E+00	2.604E+04	0.000E+00	SHORT HLIF
Y-88	3.393E-03	9.615E-02	2.683E-01	NOT IDENT.
Y-91	1.990E+02	6.222E+02	1.242E+03	NOT IDENT.
NB-94	-5.126E-03	2.760E-02	5.135E-02	NOT IDENT.
NB-95	-5.377E-01	8.952E-01	1.524E+00	NOT IDENT.
NB-95M	1.132E+00	1.907E+00	3.707E+00	NOT IDENT.
ZR-95	-5.668E-02	1.476E+00	2.771E+00	NOT IDENT.
NB-97	0.000E+00	1.082E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.168E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.603E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.738E+41	0.000E+00	SHORT HLIF
RH-101	0.000E+00	8.089E-02	5.978E-02	FAIL ABUN
RH-102	-2.224E-02	5.089E-02	9.190E-02	NOT IDENT.
RU-103	8.950E-02	4.626E+00	9.162E+00	FAIL ABUN
RH-106	1.541E-01	4.129E-01	8.536E-01	NOT IDENT.
RU-106	1.541E-01	4.129E-01	8.536E-01	NOT IDENT.
AG-108M	-6.525E-03	2.718E-02	5.150E-02	NOT IDENT.
AG-110M	-3.167E-02	7.927E-02	1.533E-01	NOT IDENT.
SN-113	-2.884E-02	2.214E-01	4.269E-01	NOT IDENT.
CD-115	0.000E+00	2.764E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	8.764E+04	0.000E+00	SHORT HLIF
TE-123M	-1.079E-01	1.253E-01	2.145E-01	NOT IDENT.
SB-124	1.146E-01	2.131E+00	4.424E+00	NOT IDENT.
SB-125	-5.414E-02	8.818E-02	1.605E-01	FAIL ABUN
TE-125M	6.919E+01	2.305E+02	4.499E+02	NOT IDENT.
I-126	0.000E+00	1.004E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.126E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.888E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.311E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.572E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.208E+26	0.000E+00	SHORT HLIF
BA-133	-1.338E-02	4.086E-02	6.908E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	2.153E-02	5.269E-02	1.041E-01	NOT IDENT.
CS-135	7.379E-02	1.144E-01	2.418E-01	NOT IDENT.
I-135	0.000E+00	1.868E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.951E+05	0.000E+00	SHORT HLIF
CE-139	-1.250E-02	1.054E-01	1.927E-01	NOT IDENT.
BA-140	0.000E+00	1.021E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	3.117E+05	0.000E+00	SHORT HLIF
CE-141	1.388E+01	2.089E+01	4.126E+01	NOT IDENT.
CE-143	0.000E+00	1.515E+41	0.000E+00	SHORT HLIF
CE-144	-1.287E-01	3.429E-01	5.708E-01	NOT IDENT.
PM-144	2.690E-02	4.832E-02	1.005E-01	NOT IDENT.
PR-144	2.365E+00	4.201E+00	8.747E+00	NOT IDENT.
PM-146	1.296E-02	3.715E-02	7.623E-02	NOT IDENT.
ND-147	0.000E+00	2.875E+07	0.000E+00	SHORT HLIF
PM-147	1.924E+02	6.547E+02	1.282E+03	NOT IDENT.
PM-149	0.000E+00	3.886E+40	0.000E+00	SHORT HLIF
EU-150	-1.312E-03	2.262E-02	4.017E-02	FAIL ABUN
EU-152	-5.561E-02	7.338E-02	1.339E-01	FAIL ABUN
GD-153	-1.028E-01	1.661E-01	2.784E-01	FAIL ABUN
EU-154	-1.158E-02	8.558E-02	1.714E-01	NOT IDENT.
EU-155	-3.814E-02	9.072E-02	1.676E-01	FAIL ABUN
TB-160	6.524E-01	1.255E+00	2.906E+00	FAIL ABUN
HO-166M	3.408E-02	9.961E-02	1.135E-01	FAIL ABUN
TM-171	-1.794E-01	1.546E+01	3.096E+01	NOT IDENT.
HF-172	-1.101E-01	2.305E-01	3.809E-01	FAIL ABUN
LU-172	-5.708E-02	7.403E-02	1.289E-01	FAIL ABUN
LU-176	-8.387E-03	2.145E-02	3.656E-02	FAIL ABUN

HF-181	4.432E-01	3.660E+00	7.316E+00	NOT IDENT.
TA-182	6.389E-01	9.186E-01	1.966E+00	FAIL ABUN
RE-183	-7.564E-01	2.314E+00	4.481E+00	NOT IDENT.
RE-184	1.372E+01	3.124E+01	6.567E+01	NOT IDENT.
W-188	1.904E+01	1.023E+02	1.882E+02	FAIL ABUN
IR-192	1.089E-01	3.924E-01	7.923E-01	FAIL ABUN
HG-203	-9.161E-01	2.069E+00	3.528E+00	FAIL ABUN
BI-207	2.596E-02	4.647E-02	9.988E-02	FAIL ABUN
PB-210	1.035E+00	2.467E+00	5.096E+00	NOT IDENT.
BI-211	0.000E+00	5.170E-01	7.320E-01	FAIL ABUN
PB-211	2.257E-01	5.095E-01	1.070E+00	FAIL ABUN
BI-212	4.770E-01	9.309E-01	1.119E+00	FAIL ABUN
RN-219	-7.130E-02	3.350E-01	6.430E-01	FAIL ABUN
RA-223	4.393E-02	5.413E-01	1.076E+00	FAIL ABUN
AC-227	-4.093E-02	1.944E-01	3.828E-01	NOT IDENT.
TH-227	-4.093E-02	1.944E-01	3.828E-01	NOT IDENT.
TH-229	6.714E-02	4.220E-01	7.859E-01	FAIL ABUN
TH-231	4.393E-02	5.413E-01	1.076E+00	FAIL ABUN
PA-233	8.350E-03	5.037E-02	1.019E-01	NOT IDENT.
PA-234	8.053E-02	2.328E-01	5.005E-01	NOT IDENT.
PA-234M	-6.592E-01	3.983E+00	7.916E+00	NOT IDENT.
NP-237	8.350E-03	5.037E-02	1.019E-01	NOT IDENT.
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	9.356E-02	2.179E-01	4.002E-01	NOT IDENT.
PU-239	0.000E+00	7.337E+02	6.161E+02	FAIL ABUN
AM-241	-8.491E-03	1.182E-01	2.151E-01	NOT IDENT.
CM-243	2.499E-02	8.365E-02	1.642E-01	NOT IDENT.
BK-247	-4.901E-02	7.077E-02	1.171E-01	NOT IDENT.
CM-247	-2.554E-03	2.981E-02	5.820E-02	NOT IDENT.
CF-249	1.748E-02	3.440E-02	7.092E-02	FAIL ABUN
CF-251	1.018E-01	9.504E-02	1.944E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	295	10.66*	1.122E+00	1.148E+01	1.148E+01	12.23
KR-85	514.00	21	0.43*	2.620E+00	8.514E+00	8.986E+00	111.77
SR-85	514.00	21	96.00*	2.620E+00	3.849E-02	9.489E-01	111.77
CD-109	88.03	99	3.70*	5.745E+00	2.171E+00	3.406E+00	47.80
SN-126	64.28	-----	9.60	3.624E+00	-----	Line Not Found	-----
	86.94	99	8.90	5.745E+00	9.024E-01	9.024E-01	47.80
	87.57	99	37.00*	5.745E+00	2.171E-01	2.171E-01	47.80
BA-137M	661.66	50	89.90*	2.138E+00	1.205E-01	1.228E-01	55.70
CS-137	661.66	50	85.10*	2.138E+00	1.273E-01	1.297E-01	55.70
TL-208	277.37	-----	6.60	4.377E+00	-----	Line Not Found	-----
	583.19	112	85.00*	2.365E+00	2.589E-01	2.589E-01	32.49
	860.56	28	12.50	1.736E+00	5.982E-01	5.982E-01	100.52
BI-211	72.87	-----	1.23	4.591E+00	-----	Line Not Found	-----
	351.06	221	12.92*	3.593E+00	2.216E+00	2.216E+00	23.81
PB-212	74.82	167	10.28	4.784E+00	1.582E+00	1.582E+00	41.77
	77.11	281	17.10	4.995E+00	1.533E+00	1.533E+00	22.11
	238.63	346	43.60*	4.933E+00	7.477E-01	7.477E-01	17.95
	300.09	-----	3.30	4.103E+00	-----	Line Not Found	-----
BI-214	609.32	158	45.49*	2.284E+00	7.086E-01	7.089E-01	23.69
	1120.29	41	14.92	1.406E+00	9.123E-01	9.126E-01	49.11
	1764.49	28	15.30	9.423E-01	8.919E-01	8.922E-01	47.05
PB-214	74.82	167	5.80	4.784E+00	2.805E+00	2.806E+00	41.77
	77.11	281	9.70	4.995E+00	2.703E+00	2.704E+00	22.11
	87.09	99	3.41	5.745E+00	2.355E+00	2.356E+00	47.80
	242.00	84	7.25	4.876E+00	1.099E+00	1.100E+00	62.62
	295.22	149	18.42	4.160E+00	9.078E-01	9.082E-01	34.41
	351.93	221	35.60*	3.593E+00	8.043E-01	8.045E-01	23.81
RN-222	609.32	158	45.49*	2.284E+00	7.086E-01	7.089E-01	23.69
	1120.29	41	14.92	1.406E+00	9.123E-01	9.126E-01	49.11
	1764.49	28	15.30	9.423E-01	8.919E-01	8.922E-01	47.05
RA-224	240.99	84	4.10*	4.876E+00	1.944E+00	1.944E+00	62.62
RA-226	609.32	158	45.49*	2.284E+00	7.086E-01	7.089E-01	23.69
	1120.29	41	14.92	1.406E+00	9.123E-01	9.126E-01	49.11
	1764.49	28	15.30	9.423E-01	8.919E-01	8.922E-01	47.05
AC-228	105.21	-----	1.10	6.488E+00	-----	Line Not Found	-----
	338.32	58	11.27	3.711E+00	6.479E-01	6.479E-01	64.74
	794.95	-----	4.25	1.849E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.777E+00	-----	Line Not Found	-----
	911.20	94	25.80*	1.658E+00	1.020E+00	1.020E+00	39.13
	968.97	60	15.80	1.581E+00	1.112E+00	1.112E+00	33.90
RA-228	105.21	-----	1.10	6.488E+00	-----	Line Not Found	-----
	338.32	58	11.27	3.711E+00	6.479E-01	6.479E-01	64.74
	794.95	-----	4.25	1.849E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.777E+00	-----	Line Not Found	-----
	911.20	94	25.80*	1.658E+00	1.020E+00	1.020E+00	39.13
	968.97	60	15.80	1.581E+00	1.112E+00	1.112E+00	33.90
TH-228	74.82	167	10.28	4.784E+00	1.582E+00	1.582E+00	41.77

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	281	17.10	4.995E+00	1.533E+00	1.533E+00	22.11
	238.63	346	43.60*	4.933E+00	7.477E-01	7.477E-01	17.95
	300.09	-----	3.30	4.103E+00	-----	Line Not Found	-----
TH-230	609.32	158	45.49*	2.284E+00	7.086E-01	7.086E-01	23.69
	1120.29	41	14.92	1.406E+00	9.123E-01	9.123E-01	49.11
	1764.49	28	15.30	9.423E-01	8.919E-01	8.919E-01	47.05
PA-231	283.69	-----	1.70	4.298E+00	-----	Line Not Found	-----
	301.36	51	5.35*	4.080E+00	1.090E+00	1.090E+00	99.01
TH-232	105.21	-----	1.10	6.488E+00	-----	Line Not Found	-----
	338.32	58	11.27	3.711E+00	6.479E-01	6.479E-01	64.74
	835.71	-----	1.61	1.777E+00	-----	Line Not Found	-----
	911.20	94	25.80*	1.658E+00	1.020E+00	1.020E+00	39.13
	968.97	60	15.80	1.581E+00	1.112E+00	1.112E+00	33.90
TH-234	63.29	24	3.70*	3.418E+00	8.828E-01	8.828E-01	287.78
	92.59	98	4.23	6.053E+00	1.779E+00	1.779E+00	68.74
U-234	609.32	158	45.49*	2.284E+00	7.086E-01	7.086E-01	23.69
	1120.29	41	14.92	1.406E+00	9.123E-01	9.123E-01	49.11
	1764.49	28	15.30	9.423E-01	8.919E-01	8.919E-01	47.05
U-235	89.96	40	3.47	5.897E+00	8.997E-01	8.997E-01	124.84
	93.35	98	5.60	6.053E+00	1.344E+00	1.344E+00	68.74
	143.76	-----	10.96*	6.563E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.266E+00	-----	Line Not Found	-----
	185.72	102	57.20	5.856E+00	1.417E-01	1.417E-01	59.94
	205.31	-----	5.01	5.496E+00	-----	Line Not Found	-----
U-238	63.29	24	3.70*	3.418E+00	8.828E-01	8.828E-01	287.78
	92.59	98	4.23	6.053E+00	1.779E+00	1.779E+00	68.74
AM-243	43.53	-----	5.90	6.933E-01	-----	Line Not Found	-----
	74.66	167	67.20*	4.784E+00	2.421E-01	2.421E-01	41.77
ANH-511	511.00	28	100.00*	2.635E+00	4.932E-02	4.932E-02	122.78

Flag: "*" = Keyline

Total number of lines in spectrum 45
Number of unidentified lines 6
Number of lines tentatively identified by NID 39 86.67%

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	1.148E+01	1.148E+01	0.140E+01	12.23	
KR-85	10.56Y	1.06	8.514E+00	8.986E+00	10.04E+00	111.77	
SR-85	64.84D	24.7	3.849E-02	9.489E-01	10.61E-01	111.77	
CD-109	461.40D	1.57	2.171E+00	3.406E+00	1.628E+00	47.80	
SN-126	2.30E+05Y	1.00	2.171E-01	2.171E-01	1.038E-01	47.80	
BA-137M	30.08Y	1.02	1.205E-01	1.228E-01	0.684E-01	55.70	
CS-137	30.08Y	1.02	1.273E-01	1.297E-01	0.722E-01	55.70	
TL-208	1.41E+10Y	1.00	2.589E-01	2.589E-01	0.841E-01	32.49	
BI-211	7.04E+08Y	1.00	2.216E+00	2.216E+00	0.528E+00	23.81	
PB-212	1.41E+10Y	1.00	7.477E-01	7.477E-01	1.342E-01	17.95	
BI-214	1600.00Y	1.00	7.086E-01	7.089E-01	1.679E-01	23.69	
PB-214	1600.00Y	1.00	8.043E-01	8.045E-01	1.915E-01	23.81	
RN-222	1600.00Y	1.00	7.086E-01	7.089E-01	1.679E-01	23.69	
RA-224	1.41E+10Y	1.00	1.944E+00	1.944E+00	1.218E+00	62.62	
RA-226	1600.00Y	1.00	7.086E-01	7.089E-01	1.679E-01	23.69	
AC-228	1.41E+10Y	1.00	1.020E+00	1.020E+00	0.399E+00	39.13	
RA-228	1.41E+10Y	1.00	1.020E+00	1.020E+00	0.399E+00	39.13	
TH-228	1.41E+10Y	1.00	7.477E-01	7.477E-01	1.342E-01	17.95	
TH-230	7.54E+04Y	1.00	7.086E-01	7.086E-01	1.679E-01	23.69	
PA-231	7.04E+08Y	1.00	1.090E+00	1.090E+00	1.079E+00	99.01	
TH-232	1.41E+10Y	1.00	1.020E+00	1.020E+00	0.399E+00	39.13	
TH-234	4.47E+09Y	1.00	8.828E-01	8.828E-01	25.40E-01	287.78	
U-234	2.45E+05Y	1.00	7.086E-01	7.086E-01	1.679E-01	23.69	
U-235	7.04E+08Y	1.00	1.417E-01	1.417E-01	0.850E-01	59.94	K
U-238	4.47E+09Y	1.00	8.828E-01	8.828E-01	25.40E-01	287.78	
AM-243	7370.00Y	1.00	2.421E-01	2.421E-01	1.011E-01	41.77	
ANH-511	1.00E+09Y	1.00	4.932E-02	4.932E-02	6.056E-02	122.78	

Total Activity : 3.928E+01 4.190E+01

Grand Total Activity : 3.928E+01 4.190E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	70.49	26	168	1.37	141.47	140	6	5.38E-03	****	4.34E+00	T
0	115.04	20	111	0.60	230.55	228	6	4.24E-03	****	6.65E+00	T
0	128.68	61	224	0.63	257.81	253	11	1.33E-02	****	6.69E+00	T
0	209.68	90	118	1.48	419.78	414	11	2.05E-02	56.9	5.42E+00	T
0	252.03	29	44	0.92	504.47	501	6	6.78E-03	88.7	4.73E+00	T
0	269.99	71	132	4.94	540.38	530	16	1.67E-02	82.7	4.47E+00	T
0	281.65	30	45	1.60	563.70	558	11	7.12E-03	****	4.32E+00	T
0	463.69	18	34	1.37	927.70	922	9	4.47E-03	****	2.85E+00	T
0	485.37	44	77	12.38	971.04	957	30	1.10E-02	****	2.75E+00	
0	665.33	17	14	1.88	1330.89	1328	8	4.31E-03	97.3	2.13E+00	T
0	711.67	8	30	0.78	1423.57	1419	12	2.09E-03	****	2.02E+00	T
0	728.14	14	38	0.92	1456.50	1449	12	3.55E-03	****	1.98E+00	T
0	830.98	12	12	1.50	1662.14	1655	11	3.25E-03	****	1.79E+00	T
0	852.04	8	15	0.67	1704.25	1694	14	2.22E-03	****	1.75E+00	
0	964.23	23	11	1.35	1928.61	1922	11	6.25E-03	70.7	1.59E+00	T
0	991.95	13	1	1.04	1984.05	1981	6	3.49E-03	64.1	1.55E+00	
0	1055.78	7	16	4.25	2111.68	2103	13	1.93E-03	****	1.47E+00	
0	1102.76	12	15	1.34	2205.63	2200	10	3.33E-03	****	1.42E+00	
0	1128.91	14	2	3.21	2257.93	2253	9	3.86E-03	66.0	1.40E+00	T
0	1238.14	12	9	0.64	2476.37	2473	7	3.43E-03	****	1.29E+00	T
0	1376.74	19	3	1.40	2753.54	2746	14	5.43E-03	60.8	1.18E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235021.CNF;1    *
* Acquisition date   : 3-OCT-2016 08:57:41 Sensitivity      : 3.000              *
* Detector ID        : GAM07 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.50 Half life ratio  : *****      *
* Sample date        : 8-DEC-2015 14:17:00 Nuclide Library : SOLID      *
* Sample ID          : G405235021 Analyst initials: MXR1         *
* Batch Number       : 1596249 Sample Quantity : 1.6130E+02 GRAM    *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000        *
*                               Dry Weight      : 0.00000        *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 19-AUG-2016 11:09:59 Eff. Geometry  : CAN      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM07 CAN.CNF;15      *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.479E-01
KR-85	4.737E+00
SR-85	5.003E-01
CD-109	8.780E-01
SN-126	5.622E-02
BA-137M	3.142E-02
CS-137	3.319E-02
TL-208	2.819E-02
PB-212	4.843E-02
BI-214	4.617E-02
PB-214	5.372E-02
RN-222	4.617E-02
RA-224	6.227E-01
RA-226	4.617E-02
AC-228	8.536E-02
RA-228	8.536E-02
TH-228	4.843E-02
TH-230	4.615E-02
PA-231	3.034E-01
TH-232	8.536E-02
TH-234	8.907E-01
U-234	4.615E-02
U-235	1.471E-01
U-238	8.907E-01
AM-243	3.662E-02
ANH-511	1.938E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	8.209E+00	NOT IDENT.
NA-22	2.866E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	3.063E-02	FAIL ABUN
SC-46	2.621E-01	FAIL ABUN

V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.638E-02	NOT IDENT.
CO-56	2.782E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	3.265E-02	NOT IDENT.
CO-58	4.114E-01	NOT IDENT.
FE-59	5.652E+00	NOT IDENT.
CO-60	2.844E-02	NOT IDENT.
ZN-65	1.445E-01	NOT IDENT.
GE-68	1.779E+00	NOT IDENT.
AS-73	6.035E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.441E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.395E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	8.482E-02	NOT IDENT.
Y-91	5.566E+02	NOT IDENT.
NB-94	2.249E-02	NOT IDENT.
NB-95	6.748E-01	NOT IDENT.
NB-95M	1.715E+00	NOT IDENT.
ZR-95	1.227E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.812E-02	FAIL ABUN
RH-102	3.985E-02	NOT IDENT.
RU-103	4.049E+00	FAIL ABUN
RH-106	3.758E-01	NOT IDENT.
RU-106	3.758E-01	NOT IDENT.
AG-108M	2.334E-02	NOT IDENT.
AG-110M	6.463E-02	NOT IDENT.
SN-113	1.947E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.000E-01	NOT IDENT.
SB-124	1.784E+00	NOT IDENT.
SB-125	7.136E-02	FAIL ABUN
TE-125M	2.106E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.138E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	4.666E-02	NOT IDENT.
CS-135	1.117E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.022E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.936E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.664E-01	NOT IDENT.
PM-144	4.464E-02	NOT IDENT.
PR-144	3.884E+00	NOT IDENT.
PM-146	3.426E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	5.970E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.822E-02	FAIL ABUN
EU-152	5.987E-02	FAIL ABUN
GD-153	1.302E-01	FAIL ABUN
EU-154	7.027E-02	NOT IDENT.
EU-155	7.819E-02	FAIL ABUN
TB-160	1.231E+00	FAIL ABUN
HO-166M	5.083E-02	FAIL ABUN
TM-171	1.447E+01	NOT IDENT.
HF-172	1.783E-01	FAIL ABUN
LU-172	5.482E-02	FAIL ABUN
LU-176	1.652E-02	FAIL ABUN
HF-181	3.261E+00	NOT IDENT.

TA-182	8.720E-01	FAIL ABUN
RE-183	2.099E+00	NOT IDENT.
RE-184	2.925E+01	NOT IDENT.
W-188	8.638E+01	FAIL ABUN
IR-192	3.621E-01	FAIL ABUN
HG-203	1.602E+00	FAIL ABUN
BI-207	4.398E-02	FAIL ABUN
PB-210	2.396E+00	NOT IDENT.
BI-211	3.519E-01	FAIL ABUN
PB-211	4.804E-01	FAIL ABUN
BI-212	5.105E-01	FAIL ABUN
RN-219	2.905E-01	FAIL ABUN
RA-223	4.950E-01	FAIL ABUN
AC-227	1.764E-01	NOT IDENT.
TH-227	1.764E-01	NOT IDENT.
TH-229	3.663E-01	FAIL ABUN
TH-231	4.950E-01	FAIL ABUN
PA-233	4.663E-02	NOT IDENT.
PA-234	2.170E-01	NOT IDENT.
PA-234M	3.462E+00	NOT IDENT.
NP-237	4.663E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
NP-239	1.873E-01	NOT IDENT.
PU-239	2.920E+02	FAIL ABUN
AM-241	1.011E-01	NOT IDENT.
CM-243	7.695E-02	NOT IDENT.
BK-247	5.366E-02	NOT IDENT.
CM-247	2.625E-02	NOT IDENT.
CF-249	3.244E-02	FAIL ABUN
CF-251	9.076E-02	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235021.CNF;1
* Acquisition date   : 3-OCT-2016 08:57:41 Sensitivity      : 3.000
* Detector ID        : GAM07 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.50 Half life ratio : *****
* Sample date        : 8-DEC-2015 14:17:00 Nuclide Library : SOLID
* Sample ID          : G405235021 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.6130E+02 GRAM
*                               Quantity Err(%) : 1.2399E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 19-AUG-2016 11:09:59 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM07 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.148E+01	1.501E+00	1.501E+00
KR-85	8.986E+00	9.849E+00	9.849E+00
SR-85	9.489E-01	1.040E+00	1.040E+00
CD-109	2.093E+00	1.672E+00	1.672E+00
SN-126	1.334E-01	1.064E-01	1.064E-01
BA-137M	1.228E-01	6.723E-02	6.723E-02
CS-137	1.297E-01	7.102E-02	7.102E-02
TL-208	2.589E-01	8.317E-02	8.317E-02
PB-212	7.477E-01	1.374E-01	1.374E-01
BI-214	7.089E-01	1.674E-01	1.674E-01
PB-214	8.045E-01	1.907E-01	1.907E-01
RN-222	7.089E-01	1.674E-01	1.674E-01
RA-224	3.389E-01	1.315E+00	1.315E+00
RA-226	7.089E-01	1.674E-01	1.674E-01
AC-228	1.020E+00	3.946E-01	3.946E-01
RA-228	1.020E+00	3.946E-01	3.946E-01
TH-228	7.477E-01	1.374E-01	1.374E-01
TH-230	7.086E-01	1.673E-01	1.673E-01
PA-231	1.090E+00	1.083E+00	1.083E+00
TH-232	1.020E+00	3.946E-01	3.946E-01
TH-234	8.828E-01	2.497E+00	2.497E+00
U-234	7.086E-01	1.673E-01	1.673E-01
U-235	3.069E-02	1.661E-01	1.661E-01
U-238	8.828E-01	2.497E+00	2.497E+00
AM-243	1.637E-01	1.035E-01	1.035E-01
ANH-511	4.932E-02	5.938E-02	5.938E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	2.392E+00	9.940E+00	9.999E+00	NOT IDENT.
NA-22	-4.722E-03	3.491E-02	3.497E-02	NOT IDENT.
NA-24	1.000E+41	2.950E+41	0.000E+00	SHORT HLIF
AL-26	6.485E-03	3.382E-02	3.395E-02	FAIL ABUN

SC-46	-1.593E-02	2.996E-01	2.997E-01	FAIL ABUN
V-48	5.642E+03	1.277E+04	1.302E+04	SHORT HLIF
CR-51	-2.792E+02	3.369E+02	3.597E+02	SHORT HLIF
MN-54	5.176E-02	6.102E-02	6.532E-02	NOT IDENT.
CO-56	-2.602E-01	4.254E-01	4.413E-01	FAIL ABUN
MN-56	-1.000E+41	1.703E+41	0.000E+00	SHORT HLIF
CO-57	-3.235E-02	4.002E-02	4.259E-02	NOT IDENT.
CO-58	-3.988E-01	5.762E-01	6.036E-01	NOT IDENT.
FE-59	2.626E+00	6.767E+00	6.870E+00	NOT IDENT.
CO-60	1.241E-02	3.036E-02	3.087E-02	NOT IDENT.
ZN-65	5.526E-02	1.769E-01	1.786E-01	NOT IDENT.
GE-68	-4.394E-01	2.136E+00	2.145E+00	NOT IDENT.
AS-73	-1.865E+00	6.610E+00	6.664E+00	NOT IDENT.
AS-74	-4.685E+03	5.401E+03	5.799E+03	SHORT HLIF
SE-75	-2.194E-01	2.025E-01	2.253E-01	NOT IDENT.
BR-77	1.325E+38	1.147E+39	0.000E+00	SHORT HLIF
SR-82	-1.811E+02	6.801E+02	6.849E+02	SHORT HLIF
RB-83	1.042E-02	5.040E-01	5.040E-01	NOT IDENT.
RB-86	-3.319E+03	2.604E+04	2.608E+04	SHORT HLIF
Y-88	3.393E-03	9.615E-02	9.617E-02	NOT IDENT.
Y-91	1.990E+02	6.223E+02	6.287E+02	NOT IDENT.
NB-94	-5.126E-03	2.760E-02	2.770E-02	NOT IDENT.
NB-95	-5.377E-01	8.955E-01	9.277E-01	NOT IDENT.
NB-95M	1.132E+00	1.909E+00	1.976E+00	NOT IDENT.
ZR-95	-5.668E-02	1.476E+00	1.477E+00	NOT IDENT.
NB-97	-1.000E+41	1.083E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.168E+41	0.000E+00	SHORT HLIF
MO-99	8.480E+31	1.604E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.741E+41	0.000E+00	SHORT HLIF
RH-101	7.445E-02	8.201E-02	8.861E-02	FAIL ABUN
RH-102	-2.224E-02	5.092E-02	5.190E-02	NOT IDENT.
RU-103	8.950E-02	4.626E+00	4.626E+00	FAIL ABUN
RH-106	1.541E-01	4.130E-01	4.188E-01	NOT IDENT.
RU-106	1.541E-01	4.130E-01	4.188E-01	NOT IDENT.
AG-108M	-6.525E-03	2.718E-02	2.734E-02	NOT IDENT.
AG-110M	-3.167E-02	7.928E-02	8.056E-02	NOT IDENT.
SN-113	-2.884E-02	2.214E-01	2.217E-01	NOT IDENT.
CD-115	1.042E+39	2.770E+39	0.000E+00	SHORT HLIF
SN-117M	-4.146E+04	8.778E+04	8.975E+04	SHORT HLIF
TE-123M	-1.079E-01	1.254E-01	1.345E-01	NOT IDENT.
SB-124	1.146E-01	2.131E+00	2.132E+00	NOT IDENT.
SB-125	-5.414E-02	8.821E-02	9.152E-02	FAIL ABUN
TE-125M	6.919E+01	2.306E+02	2.327E+02	NOT IDENT.
I-126	1.053E+06	1.014E+06	1.120E+06	SHORT HLIF
SB-126	-2.367E+04	1.126E+06	1.126E+06	SHORT HLIF
SB-127	-7.599E+21	2.158E+22	0.000E+00	SHORT HLIF
I-131	5.698E+08	4.311E+09	4.318E+09	SHORT HLIF
I-132	1.000E+41	1.855E+42	0.000E+00	SHORT HLIF
TE-132	-1.446E+26	3.261E+26	0.000E+00	SHORT HLIF
BA-133	-1.338E-02	4.086E-02	4.130E-02	FAIL ABUN
I-133	-1.000E+41	4.115E+41	0.000E+00	SHORT HLIF
CS-134	2.153E-02	5.270E-02	5.359E-02	NOT IDENT.
CS-135	7.379E-02	1.145E-01	1.193E-01	NOT IDENT.
I-135	-1.000E+41	7.026E+41	0.000E+00	SHORT HLIF
CS-136	-6.716E+02	2.951E+05	2.951E+05	SHORT HLIF
CE-139	-1.250E-02	1.054E-01	1.056E-01	NOT IDENT.
BA-140	5.230E+05	1.021E+06	1.048E+06	SHORT HLIF
LA-140	-5.901E+04	3.117E+05	3.129E+05	SHORT HLIF
CE-141	1.388E+01	2.090E+01	2.181E+01	NOT IDENT.
CE-143	1.000E+41	1.519E+41	0.000E+00	SHORT HLIF
CE-144	-1.287E-01	3.430E-01	3.478E-01	NOT IDENT.
PM-144	2.690E-02	4.834E-02	4.984E-02	NOT IDENT.
PR-144	2.365E+00	4.203E+00	4.336E+00	NOT IDENT.
PM-146	1.296E-02	3.716E-02	3.762E-02	NOT IDENT.
ND-147	1.585E+07	2.876E+07	2.964E+07	SHORT HLIF
PM-147	1.924E+02	6.547E+02	6.604E+02	NOT IDENT.
PM-149	1.561E+40	3.901E+40	0.000E+00	SHORT HLIF
EU-150	-1.312E-03	2.262E-02	2.263E-02	FAIL ABUN
EU-152	-5.561E-02	7.345E-02	7.761E-02	FAIL ABUN
GD-153	-1.028E-01	1.662E-01	1.725E-01	FAIL ABUN
EU-154	-1.158E-02	8.558E-02	8.574E-02	NOT IDENT.
EU-155	-3.814E-02	9.076E-02	9.238E-02	FAIL ABUN
TB-160	6.524E-01	1.255E+00	1.289E+00	FAIL ABUN
HO-166M	3.408E-02	9.963E-02	1.008E-01	FAIL ABUN
TM-171	-1.794E-01	1.546E+01	1.546E+01	NOT IDENT.
HF-172	-1.101E-01	2.312E-01	2.364E-01	FAIL ABUN
LU-172	-5.708E-02	7.426E-02	7.859E-02	FAIL ABUN
LU-176	-8.387E-03	2.145E-02	2.178E-02	FAIL ABUN

HF-181	4.432E-01	3.661E+00	3.666E+00	NOT IDENT.
TA-182	6.389E-01	9.189E-01	9.630E-01	FAIL ABUN
RE-183	-7.564E-01	2.317E+00	2.342E+00	NOT IDENT.
RE-184	1.372E+01	3.141E+01	3.201E+01	NOT IDENT.
W-188	1.904E+01	1.023E+02	1.027E+02	FAIL ABUN
IR-192	1.089E-01	3.924E-01	3.955E-01	FAIL ABUN
HG-203	-9.161E-01	2.069E+00	2.110E+00	FAIL ABUN
BI-207	2.596E-02	4.649E-02	4.794E-02	FAIL ABUN
PB-210	1.035E+00	2.468E+00	2.512E+00	NOT IDENT.
BI-211	2.216E+00	5.264E-01	1.129E+00	FAIL ABUN
PB-211	2.257E-01	5.096E-01	5.196E-01	FAIL ABUN
BI-212	4.770E-01	9.312E-01	9.557E-01	FAIL ABUN
RN-219	-7.130E-02	3.351E-01	3.367E-01	FAIL ABUN
RA-223	4.393E-02	5.413E-01	5.417E-01	FAIL ABUN
AC-227	-4.093E-02	1.945E-01	1.953E-01	NOT IDENT.
TH-227	-4.093E-02	1.945E-01	1.953E-01	NOT IDENT.
TH-229	6.714E-02	4.220E-01	4.231E-01	FAIL ABUN
TH-231	4.393E-02	5.413E-01	5.417E-01	FAIL ABUN
PA-233	8.350E-03	5.037E-02	5.051E-02	NOT IDENT.
PA-234	8.053E-02	2.504E-01	2.530E-01	NOT IDENT.
PA-234M	-6.592E-01	3.984E+00	3.995E+00	NOT IDENT.
NP-237	8.350E-03	5.037E-02	5.051E-02	NOT IDENT.
NP-238	8.921E+00	4.010E+41	0.000E+00	SHORT HLIF
NP-239	9.356E-02	2.180E-01	2.221E-01	NOT IDENT.
PU-239	6.753E+02	7.343E+02	7.949E+02	FAIL ABUN
AM-241	-8.491E-03	1.182E-01	1.183E-01	NOT IDENT.
CM-243	2.499E-02	8.368E-02	8.444E-02	NOT IDENT.
BK-247	-4.901E-02	7.146E-02	7.480E-02	NOT IDENT.
CM-247	-2.554E-03	2.982E-02	2.984E-02	NOT IDENT.
CF-249	1.748E-02	3.443E-02	3.532E-02	FAIL ABUN
CF-251	1.018E-01	9.572E-02	1.061E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	61.8428	87.09	102.2612	136.47	64.7451
45.60	62.2083	87.57	102.3518	140.51	0.0000
46.54	63.3312	88.03	102.4387	143.76	72.2641
49.72	0.0000	88.34	102.4966	144.24	70.0137
51.35	74.8469	88.47	102.5211	145.44	60.9278
51.87	68.1345	89.96	95.0544	152.43	64.9585
52.39	69.2008	1093.63	95.1711	153.25	0.0000
52.97	74.1842	91.11	0.0000	323.87	67.4298
53.44	75.2502	92.59	70.7438	156.02	0.0000
54.07	73.4127	93.35	70.8389	158.56	0.0000
57.36	0.0000	94.56	53.9524	159.00	85.3753
57.53	81.9412	94.65	53.9609	162.33	76.3286
57.98	82.0299	94.67	53.9628	162.66	0.0000
59.27	77.9876	94.87	53.9818	163.33	72.8937
59.32	77.9969	97.43	77.0515	165.86	75.4746
59.54	84.6510	98.43	69.6799	176.31	64.4645
60.96	86.2613	98.44	69.6809	176.60	0.0000
61.17	84.9756	99.53	71.9578	177.52	43.0356
62.93	92.9871	100.11	77.4036	181.07	0.0000
63.29	93.0635	102.03	78.7321	181.52	49.6352
63.58	93.1251	103.18	66.9956	184.41	67.4647
64.28	92.2697	103.37	67.0169	143.76	67.5621
66.73	99.4977	105.21	74.8086	193.51	59.6201
67.24	95.9074	105.31	74.8207	197.03	62.2862
125.81	90.2739	106.12	68.4049	198.01	47.6800
67.75	90.2875	106.47	73.8754	201.83	56.4633
69.67	94.7226	109.28	61.1137	203.43	60.2459
70.83	93.6003	111.00	75.5056	205.31	52.5605
72.81	81.7303	111.76	0.0000	210.85	37.9917
72.87	81.7407	114.06	52.7769	215.65	51.0373
74.66	97.0840	116.30	0.0000	222.11	62.6366
74.82	97.1158	116.74	60.3543	227.09	57.9029
74.97	97.1461	119.76	56.5633	227.38	57.9190
77.11	97.5672	121.12	53.3438	228.16	0.0000
78.74	97.8843	121.22	54.4633	228.18	57.9633
79.69	103.5927	121.78	71.1948	116.74	57.9633
80.12	100.9149	122.06	73.4499	235.69	39.3399
80.19	0.0000	122.92	63.5144	235.96	41.8882
80.57	101.0040	123.07	63.5284	238.63	81.4395
81.00	113.5508	265.00	69.1625	238.98	0.0000
81.07	113.5666	125.81	85.0431	240.99	117.3233
81.75	83.2068	127.23	74.0040	242.00	49.7807
83.79	84.9243	127.91	74.0765	244.70	47.3441
84.00	84.9584	129.30	74.2228	252.40	0.0000
85.43	94.9630	131.20	70.6635	252.80	39.9553
86.55	109.1559	133.02	67.8287	254.15	0.0000
86.79	102.2040	133.52	75.4181	256.23	49.9877
86.94	102.2330	136.00	68.1088	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	57.2988	355.39	0.0000	584.27	25.4238
264.80	57.3069	356.01	39.1041	595.83	0.0000
265.00	54.7110	364.49	0.0000	427.87	25.6182
268.22	37.4448	366.42	0.0000	602.52	0.0000
269.46	37.4841	372.51	32.0113	604.72	14.4377
270.03	37.5025	375.05	23.5774	607.14	19.2715
271.23	37.5401	377.52	32.1178	609.32	18.2195
273.65	0.0000	356.01	36.9941	610.33	18.2278
276.40	44.7173	388.16	30.4388	614.28	20.9457
277.37	47.3851	388.63	0.0000	618.01	21.5194
277.60	52.6611	391.69	38.1348	620.36	18.3108
278.00	40.8256	264.66	31.6411	621.93	14.0125
279.20	40.8663	401.81	32.6235	630.19	0.0000
279.54	51.4267	402.40	29.7563	631.29	19.4832
279.70	51.4327	404.85	20.1882	633.25	8.6667
280.46	44.8668	410.95	36.6702	634.78	0.0000
283.69	33.0780	413.71	29.9663	635.95	20.6081
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	34.4487	423.72	0.0000	645.85	17.4297
285.90	0.0000	427.09	21.4396	657.76	21.3527
287.50	42.4707	427.87	30.2249	657.90	0.0000
290.67	38.5864	433.94	35.2273	661.66	27.9695
293.27	0.0000	439.40	31.4141	664.57	0.0000
351.93	38.7263	453.88	21.7793	666.33	0.0000
295.96	38.7493	463.37	21.8971	666.50	0.0000
879.38	29.4564	468.07	19.1609	667.71	0.0000
299.98	33.5098	473.00	0.0000	677.62	11.0429
300.09	33.5129	475.06	17.0315	685.70	0.0000
300.13	33.5144	476.78	18.0505	695.00	0.0000
301.36	33.5464	477.60	15.0488	696.49	14.4690
302.85	33.5854	482.18	21.1218	696.51	14.4690
256.23	33.6281	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	18.9272
306.78	36.3826	497.08	19.2648	697.49	22.2689
308.46	29.1430	505.52	18.3329	702.65	18.9687
311.90	36.0742	507.63	0.0000	706.68	16.7645
316.51	30.7696	511.00	20.4285	711.68	16.7987
319.41	0.0000	514.00	20.4606	720.70	0.0000
320.08	0.0000	514.00	20.4606	721.93	0.0000
321.04	36.3224	520.40	16.4232	722.78	25.3107
323.87	42.7687	520.69	0.0000	722.91	25.3125
325.23	51.0086	522.65	0.0000	723.31	25.3162
328.76	0.0000	527.90	0.0000	724.19	20.2603
333.37	35.7357	528.26	20.6120	727.33	19.1582
333.97	33.0015	529.59	24.7510	733.00	13.5542
334.37	31.6355	529.87	0.0000	735.93	18.0931
338.28	36.7814	531.02	0.0000	333.97	16.9727
338.32	36.7830	537.26	0.0000	739.50	0.0000
311.90	41.4441	546.56	0.0000	747.24	22.7165
340.48	41.4441	552.55	20.8643	748.06	9.0895
340.55	0.0000	563.25	17.8280	752.31	21.6232
344.28	35.0916	569.33	18.9324	753.82	0.0000
345.93	31.0646	946.00	18.9338	756.73	20.5203
351.06	36.1872	569.70	15.7794	756.80	20.5210
351.93	36.2086	583.19	25.4102	884.68	19.4342

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	28.6001	1274.44	14.8569	1620.50	3.2587
766.42	26.3186	1001.03	14.8789	1621.92	5.4327
766.84	21.7445	1002.74	19.5388	1678.03	0.0000
772.60	0.0000	1004.73	18.6200	1690.97	5.5096
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	3.3539
778.90	18.3952	1028.54	0.0000	1063.66	1.1192
783.70	0.0000	1037.84	11.2844	1771.35	3.3583
785.37	20.7451	1038.76	0.0000	1791.20	0.0000
792.07	26.5741	631.29	12.2573	1808.65	5.4117
794.95	18.5059	1048.07	0.0000	1810.72	0.0000
795.86	19.6694	1049.04	9.0580	1836.06	0.9066
810.06	16.2832	1050.41	13.5923		
810.29	16.2843	1063.66	12.3192		
344.28	20.9385	1077.00	0.0000		
810.76	20.9407	1077.34	14.2712		
815.77	0.0000	1085.87	11.4448		
1048.07	0.0000	1093.63	19.1174		
832.01	15.4747	1099.45	10.7242		
834.85	11.2656	1112.07	19.2188		
835.71	12.9126	1112.84	7.6890		
836.80	0.0000	1115.54	12.3117		
846.75	0.0000	1120.29	11.5576		
846.77	15.5563	1120.55	11.5591		
856.80	0.0000	1221.41	4.6245		
860.56	8.8815	1129.67	12.3609		
871.09	10.6967	1131.51	0.0000		
873.19	8.9203	1147.95	0.0000		
875.33	0.0000	1173.23	23.4565		
879.38	6.2577	1177.95	18.5930		
880.51	12.5200	1189.05	15.7041		
883.24	6.2658	1204.77	20.6988		
884.68	13.4335	1221.41	12.8699		
889.28	11.6602	1231.02	16.8713		
894.76	15.2766	1235.36	0.0000		
898.04	13.4944	1238.28	16.9035		
900.72	20.7097	1260.41	0.0000		
903.28	17.1225	1271.87	7.0205		
911.20	10.8431	1274.44	8.0288		
912.08	10.8461	1274.54	8.0288		
923.98	0.0000	1291.59	9.0714		
926.50	13.6226	1298.22	0.0000		
929.11	14.5430	1312.11	0.0000		
937.49	20.9631	1332.49	5.0909		
944.13	0.0000	1362.66	0.0000		
946.00	10.9673	1365.19	5.1312		
949.00	13.7224	1368.63	0.0000		
667.71	0.0000	1384.29	7.2166		
962.31	8.8198	1408.01	2.0734		
964.08	11.7664	1457.56	0.0000		
966.17	11.0383	1460.82	7.3452		
911.20	10.3117	1489.16	3.1681		
968.97	10.3117	1505.03	3.1793		
983.53	0.0000	1584.12	8.6240		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:58:59.00

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235022.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM18.CNF;511
Background date    : 2-OCT-2016 11:01:02.
Sample date       : 8-DEC-2015 13:43:00. Acquisition date : 3-OCT-2016 08:58:12.
Sample ID        : G405235022      Sample quantity  : 1.61105E+02 GRAM
Detector name    : GAM18      Detector geometry: CAN
Elapsed live time: 0 01:00:00.00   Elapsed real time: 0 01:00:01.02 0.0%
Energy tolerance : 1.50000 keV   Analyst Initials : MXR1
Abundance limit  : 75.00000      Sensitivity    : 3.00000
Batch ID        : 1596249      Detector SN#    :
Matrix Spike ID  :              LCS ID      : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	49.57	34	109	1.03	99.98	97	6	9.48E-03	51.4	
2	0	62.89*	53	191	2.02	126.58	122	9	1.47E-02	50.0	
3	2	74.91	129	187	1.14	150.61	146	15	3.59E-02	19.7	1.08E+00
4	2	77.20*	212	178	1.15	155.18	146	15	5.90E-02	12.9	
5	0	87.32	74	143	1.17	175.42	173	6	2.04E-02	28.3	
6	0	92.44*	192	306	1.65	185.63	179	15	5.33E-02	21.7	
7	0	129.60	52	285	4.07	259.90	252	15	1.44E-02	72.5	
8	0	143.83*	10	137	0.85	288.33	285	7	2.88E-03	194.1	
9	0	185.90*	71	201	1.52	372.40	366	12	1.97E-02	42.9	
10	0	208.76	49	105	1.53	418.09	415	7	1.35E-02	37.8	
11	3	238.82*	504	106	1.21	478.16	473	16	1.40E-01	5.7	9.60E-01
12	3	241.79	145	111	1.81	484.10	473	16	4.03E-02	16.9	
13	0	270.17	50	111	1.55	540.82	535	12	1.40E-02	44.1	
14	0	295.64*	152	141	1.37	591.71	585	12	4.23E-02	17.8	
15	0	300.66	39	89	1.47	601.75	597	10	1.08E-02	48.8	
16	0	338.90*	96	119	1.22	678.18	671	14	2.68E-02	26.7	
17	0	352.34*	346	102	1.48	705.04	697	16	9.61E-02	8.6	
18	0	453.32*	13	57	1.11	906.86	900	10	3.71E-03	113.0	
19	0	463.59	31	69	1.13	927.38	924	9	8.56E-03	51.5	
20	0	511.57*	103	85	2.85	1023.28	1015	23	2.85E-02	28.2	
21	0	571.35	24	50	2.91	1142.77	1135	14	6.58E-03	67.8	
22	0	583.63*	220	60	1.63	1167.31	1158	16	6.12E-02	10.6	
23	0	609.67*	270	82	1.72	1219.35	1211	18	7.51E-02	10.1	
24	0	641.46	25	19	3.12	1282.88	1275	13	6.86E-03	42.0	
25	0	662.21	364	68	1.55	1324.36	1316	16	1.01E-01	7.3	
26	0	667.87	39	17	0.89	1335.69	1331	13	1.08E-02	26.7	
27	0	683.97	25	12	1.33	1367.87	1363	9	6.87E-03	33.2	
28	0	708.81	24	55	4.85	1417.52	1408	17	6.54E-03	75.2	
29	0	728.24	62	28	1.68	1456.36	1449	16	1.73E-02	22.8	
30	0	769.01	26	32	2.53	1537.84	1532	11	7.19E-03	47.1	
31	0	863.01	25	35	1.35	1725.74	1716	14	7.02E-03	53.5	
32	0	912.06*	86	55	1.44	1823.79	1817	11	2.39E-02	18.1	
33	0	969.92*	85	31	2.05	1939.45	1933	13	2.35E-02	17.9	
34	0	997.10	8	25	0.55	1993.80	1983	12	2.28E-03	130.3	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1054.81	8	47	5.05	2109.15	2091	23	2.30E-03	215.8	
36	0	1062.39	9	15	1.04	2124.31	2116	11	2.48E-03	93.4	
37	0	1065.22	12	8	0.64	2129.97	2126	8	3.22E-03	51.7	
38	0	1121.22*	41	28	1.63	2241.92	2234	16	1.14E-02	33.8	
39	0	1188.16	15	18	0.54	2375.75	2368	14	4.23E-03	63.8	
40	0	1239.27	20	27	3.66	2477.93	2470	12	5.58E-03	56.3	
41	0	1270.17	37	11	8.03	2539.71	2529	21	1.01E-02	27.7	
42	0	1314.97	14	0	1.29	2629.29	2625	9	3.89E-03	26.7	
43	0	1337.14	11	18	0.96	2673.60	2663	16	2.96E-03	98.0	
44	0	1378.49	39	10	2.65	2756.28	2745	17	1.09E-02	23.6	
45	0	1406.28	6	17	1.31	2811.83	2801	17	1.67E-03	162.7	
46	0	1411.65	5	6	0.61	2822.57	2817	9	1.34E-03	106.2	
47	0	1461.65*	587	6	2.57	2922.55	2911	24	1.63E-01	4.3	
48	0	1503.19	7	8	0.70	3005.60	2998	12	1.82E-03	98.7	
49	0	1590.82	15	13	1.13	3180.82	3173	14	4.15E-03	58.8	
50	0	1765.46*	66	0	1.63	3530.04	3520	18	1.83E-02	13.2	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235022.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 8-DEC-2015 13:43:00 Acquisition date : 3-OCT-2016 08:58:12
Sample ID : G405235022 Sample quantity : 161.10 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA18 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.02 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.911E+00	1.305E+01	1.305E+01	8.61	OK
CD-109	88.03	3.70*	6.143E+00	1.288E+00	2.021E+00	89.80	OK
SN-126	64.28	9.60	3.037E+00	1.155E+00	1.155E+00	100.06	OK
	86.94	8.90	6.143E+00	5.354E-01	5.354E-01	89.80	OK
	87.57	37.00*	6.143E+00	1.288E-01	1.288E-01	89.80	OK
BA-137M	661.66	89.90*	3.370E+00	5.994E-01	6.109E-01	14.57	OK
CS-137	661.66	85.10*	3.370E+00	6.332E-01	6.453E-01	14.57	OK
TL-208	277.37	6.60	6.127E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	3.675E+00	3.568E-01	3.568E-01	21.15	OK
	860.56	12.50	2.814E+00	----- Line	Not Found	-----	Absent
BI-211	72.87	1.23	4.495E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	5.217E+00	6.331E-01	6.331E-01	140.40	OK
PB-212	74.82	10.28	4.764E+00	1.217E+00	1.217E+00	54.80	OK
	77.11	17.10	5.051E+00	1.533E+00	1.533E+00	25.72	OK
	238.63	43.60*	6.720E+00	9.605E-01	9.605E-01	11.41	OK
	300.09	3.30	5.811E+00	1.102E+00	1.102E+00	97.69	OK
BI-214	609.32	45.49*	3.566E+00	8.388E-01	8.391E-01	20.12	OK
	1120.29	14.92	2.335E+00	5.509E-01	5.511E-01	67.60	OK
	1764.49	15.30	1.633E+00	1.167E+00	1.168E+00	26.46	OK
PB-214	74.82	5.80	4.752E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	5.051E+00	2.703E+00	2.704E+00	25.72	OK
	87.09	3.41	6.121E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	6.668E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	5.877E+00	7.669E-01	7.672E-01	35.62	OK
	351.93	35.60*	5.221E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	3.566E+00	8.388E-01	8.391E-01	20.12	OK
	1120.29	14.92	2.335E+00	5.509E-01	5.511E-01	67.60	OK
	1764.49	15.30	1.633E+00	1.167E+00	1.168E+00	26.46	OK
RA-224	240.99	4.10*	6.671E+00	1.597E+00	1.597E+00	69.38	OK
RA-226	609.32	45.49*	3.566E+00	8.388E-01	8.391E-01	20.12	OK
	1120.29	14.92	2.335E+00	5.509E-01	5.511E-01	67.60	OK
	1764.49	15.30	1.633E+00	1.167E+00	1.168E+00	26.46	OK
AC-228	105.21	1.10	7.385E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	5.359E+00	8.573E-01	8.573E-01	53.48	OK
	794.95	4.25	2.973E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	2.872E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	2.703E+00	5.926E-01	5.926E-01	36.28	OK
	968.97	15.80	2.589E+00	9.865E-01	9.865E-01	35.85	OK
RA-228	105.21	1.10	7.385E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	5.359E+00	8.573E-01	8.573E-01	53.48	OK
	794.95	4.25	2.973E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	2.872E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	2.703E+00	5.926E-01	5.926E-01	36.28	OK
	968.97	15.80	2.589E+00	9.865E-01	9.865E-01	35.85	OK
TH-228	74.82	10.28	4.764E+00	1.217E+00	1.217E+00	54.80	OK
	77.11	17.10	5.051E+00	1.533E+00	1.533E+00	25.72	OK
	238.63	43.60*	6.720E+00	9.605E-01	9.605E-01	11.41	OK
	300.09	3.30	5.811E+00	1.102E+00	1.102E+00	97.69	OK
TH-230	609.32	45.49*	3.566E+00	8.388E-01	8.388E-01	20.12	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	1120.29	14.92	2.335E+00	5.509E-01	5.509E-01	67.60	OK
	1764.49	15.30	1.633E+00	1.167E+00	1.167E+00	26.46	OK
PA-231	283.69	1.70	6.038E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	5.811E+00	6.797E-01	6.797E-01	97.69	OK
TH-232	105.21	1.10	7.385E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	5.359E+00	8.573E-01	8.573E-01	53.48	OK
	835.71	1.61	2.872E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	2.703E+00	5.926E-01	5.926E-01	36.28	OK
	968.97	15.80	2.589E+00	9.865E-01	9.865E-01	35.85	OK
TH-234	63.29	3.70*	3.037E+00	2.996E+00	2.996E+00	100.06	OK
	92.59	4.23	6.582E+00	4.229E+00	4.229E+00	43.37	OK
U-234	609.32	45.49*	3.566E+00	8.388E-01	8.388E-01	20.12	OK
	1120.29	14.92	2.335E+00	5.509E-01	5.509E-01	67.60	OK
	1764.49	15.30	1.633E+00	1.167E+00	1.167E+00	26.46	OK
U-235	89.96	3.47	6.379E+00	----- Line	Not Found	-----	Absent
	93.35	5.60	6.582E+00	3.195E+00	3.195E+00	43.37	OK
	143.76	10.96*	8.086E+00	6.871E-02	6.871E-02	388.16	OK
	163.33	5.08	7.938E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	7.616E+00	9.318E-02	9.318E-02	85.87	OK
	205.31	5.01	7.289E+00	----- Line	Not Found	-----	Absent
U-238	63.29	3.70*	3.037E+00	2.996E+00	2.996E+00	100.06	OK
	92.59	4.23	6.582E+00	4.229E+00	4.229E+00	43.37	OK
AM-243	43.53	5.90	3.443E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	4.764E+00	1.862E-01	1.862E-01	54.80	OK
ANH-511	511.00	100.00*	4.026E+00	1.308E-01	1.308E-01	56.43	OK

Flag: "*" = Keyline

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235022.CNF;1
* Acquisition date   : 3-OCT-2016 08:58:12 Sensitivity      : 3.000
* Detector ID        : GAM18 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:01.02 Half life ratio : *****
* Sample date        : 8-DEC-2015 13:43:00 Analyst initials: MXR1
* Sample ID          : G405235022 Sample Quantity : 1.6110E+02 GRAM
* Batch Number       : 1596249 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 25-JUN-2016 08:25:19 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM18 CAN.CNF;10
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.305E+01	1.101E+00	3.806E-01
CD-109	2.021E+00	1.778E+00	1.651E+00
SN-126	1.288E-01	1.133E-01	1.097E-01
BA-137M	6.109E-01	8.723E-02	5.719E-02
CS-137	6.453E-01	9.215E-02	6.041E-02
TL-208	3.568E-01	7.397E-02	4.492E-02
BI-211	6.331E-01	8.711E-01	2.554E-01
PB-212	9.605E-01	1.074E-01	7.630E-02
BI-214	8.391E-01	1.655E-01	8.939E-02
PB-214	9.970E-01	1.682E-01	2.454E-01
RN-222	8.391E-01	1.655E-01	8.939E-02
RA-224	1.597E+00	1.086E+00	8.172E-01
RA-226	8.391E-01	1.655E-01	8.939E-02
AC-228	5.926E-01	2.107E-01	2.003E-01
RA-228	5.926E-01	2.107E-01	2.003E-01
TH-228	9.605E-01	1.074E-01	7.630E-02
TH-230	8.388E-01	1.654E-01	8.936E-02
PA-231	6.797E-01	6.507E-01	6.233E-01
TH-232	5.926E-01	2.107E-01	2.003E-01
TH-234	2.996E+00	2.938E+00	2.115E+00
U-234	8.388E-01	1.654E-01	8.936E-02
U-235	6.871E-02	2.614E-01	2.565E-01
U-238	2.996E+00	2.938E+00	2.115E+00
AM-243	1.862E-01	9.999E-02	8.044E-02
ANH-511	1.308E-01	7.232E-02	3.680E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-7.641E+00	1.071E+01	1.808E+01	NOT IDENT.
NA-22	3.943E-02	3.860E-02	7.597E-02	NOT IDENT.
NA-24	0.000E+00	1.779E+41	0.000E+00	SHORT HLIF
AL-26	-1.490E-02	2.491E-02	4.378E-02	NOT IDENT.
SC-46	6.926E-02	3.070E-01	5.862E-01	FAIL ABUN

V-48	0.000E+00	1.065E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.331E+02	0.000E+00	SHORT HLIF
MN-54	-3.136E-02	4.802E-02	8.224E-02	NOT IDENT.
CO-56	1.704E-02	3.528E-01	6.658E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-1.302E-02	3.740E-02	6.907E-02	NOT IDENT.
CO-58	-7.101E-02	3.817E-01	7.107E-01	NOT IDENT.
FE-59	-4.991E-01	4.655E+00	8.911E+00	NOT IDENT.
CO-60	2.140E-02	3.225E-02	6.121E-02	NOT IDENT.
ZN-65	1.107E-01	1.388E-01	2.641E-01	NOT IDENT.
GE-68	-1.237E-01	1.867E+00	3.553E+00	NOT IDENT.
AS-73	-1.057E+00	8.772E+00	1.794E+01	NOT IDENT.
AS-74	0.000E+00	4.756E+03	0.000E+00	SHORT HLIF
SE-75	1.514E-01	1.540E-01	2.998E-01	NOT IDENT.
BR-77	0.000E+00	1.917E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	5.434E+02	0.000E+00	SHORT HLIF
RB-83	-4.114E-02	5.068E-01	8.734E-01	NOT IDENT.
KR-85	1.121E+01	5.744E+00	1.269E+01	NOT IDENT.
SR-85	1.180E+00	6.063E-01	1.340E+00	NOT IDENT.
RB-86	0.000E+00	2.255E+04	0.000E+00	SHORT HLIF
Y-88	2.032E-02	1.233E-01	2.749E-01	NOT IDENT.
Y-91	2.861E+02	4.316E+02	8.710E+02	NOT IDENT.
NB-94	-1.750E-02	2.858E-02	4.325E-02	NOT IDENT.
NB-95	6.325E-01	6.446E-01	1.243E+00	NOT IDENT.
NB-95M	1.835E-01	1.983E+00	3.507E+00	NOT IDENT.
ZR-95	8.519E-02	1.015E+00	1.956E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.081E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.347E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	1.447E-02	2.823E-02	5.500E-02	NOT IDENT.
RH-102	1.531E-02	4.391E-02	8.780E-02	NOT IDENT.
RU-103	-8.813E-01	4.179E+00	7.984E+00	FAIL ABUN
RH-106	-2.326E-01	3.658E-01	6.570E-01	NOT IDENT.
RU-106	-2.326E-01	3.658E-01	6.570E-01	NOT IDENT.
AG-108M	-3.131E-03	2.150E-02	3.932E-02	NOT IDENT.
AG-110M	-2.253E-02	7.881E-02	1.412E-01	NOT IDENT.
SN-113	-5.019E-02	1.896E-01	3.448E-01	NOT IDENT.
CD-115	0.000E+00	2.304E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	8.166E+04	0.000E+00	SHORT HLIF
TE-123M	2.086E-03	1.104E-01	2.029E-01	NOT IDENT.
SB-124	-3.345E-01	1.404E+00	2.741E+00	NOT IDENT.
SB-125	-4.372E-02	8.373E-02	1.468E-01	FAIL ABUN
TE-125M	4.863E+01	2.185E+02	4.261E+02	NOT IDENT.
I-126	0.000E+00	4.917E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	9.456E+05	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.716E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	3.865E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	5.235E+40	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.748E+26	0.000E+00	SHORT HLIF
BA-133	8.277E-03	3.078E-02	5.433E-02	NOT IDENT.
I-133	0.000E+00	1.827E+41	0.000E+00	SHORT HLIF
CS-134	3.357E-02	4.044E-02	8.303E-02	NOT IDENT.
CS-135	8.114E-02	1.129E-01	2.107E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.278E+05	0.000E+00	SHORT HLIF
CE-139	-5.266E-02	9.230E-02	1.610E-01	NOT IDENT.
BA-140	0.000E+00	9.051E+05	0.000E+00	SHORT HLIF
LA-140	0.000E+00	3.185E+05	0.000E+00	SHORT HLIF
CE-141	-9.646E+00	2.254E+01	3.736E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	-9.676E-02	3.061E-01	5.139E-01	NOT IDENT.
PM-144	-2.033E-02	4.393E-02	7.904E-02	NOT IDENT.
PR-144	-1.740E+00	3.819E+00	6.876E+00	NOT IDENT.
PM-146	2.708E-02	5.998E-02	6.557E-02	FAIL ABUN
ND-147	0.000E+00	2.453E+07	0.000E+00	SHORT HLIF
PM-147	-5.706E+01	6.450E+02	1.218E+03	NOT IDENT.
PM-149	0.000E+00	3.512E+40	0.000E+00	SHORT HLIF
EU-150	1.750E-03	2.173E-02	3.718E-02	FAIL ABUN
EU-152	4.113E-02	8.247E-02	1.470E-01	NOT IDENT.
GD-153	4.647E-02	1.481E-01	2.739E-01	NOT IDENT.
EU-154	9.519E-02	9.444E-02	1.856E-01	FAIL ABUN
EU-155	6.081E-02	8.556E-02	1.733E-01	FAIL ABUN
TB-160	1.774E-01	1.284E+00	2.476E+00	FAIL ABUN
HO-166M	2.500E-02	5.246E-02	9.261E-02	FAIL ABUN
TM-171	-1.511E+00	2.280E+01	4.364E+01	NOT IDENT.
HF-172	-4.209E-02	2.115E-01	3.609E-01	FAIL ABUN
LU-172	3.188E-02	5.934E-02	1.209E-01	FAIL ABUN

LU-176	-2.564E-03	1.836E-02	3.478E-02	FAIL ABUN
HF-181	1.596E+00	3.138E+00	6.153E+00	NOT IDENT.
TA-182	5.369E-01	7.361E-01	1.495E+00	FAIL ABUN
RE-183	-1.204E+00	2.910E+00	5.768E+00	NOT IDENT.
RE-184	-1.555E+01	2.253E+01	3.786E+01	NOT IDENT.
W-188	-5.736E+01	9.789E+01	1.578E+02	FAIL ABUN
IR-192	-1.320E-01	3.467E-01	6.411E-01	FAIL ABUN
HG-203	1.057E+00	1.774E+00	3.582E+00	NOT IDENT.
BI-207	2.360E-02	4.321E-02	7.362E-02	FAIL ABUN
PB-210	-2.609E+00	4.585E+00	8.442E+00	NOT IDENT.
PB-211	-1.065E-01	5.620E-01	1.024E+00	NOT IDENT.
BI-212	0.000E+00	6.523E-01	9.123E-01	FAIL ABUN
RN-219	-1.002E-01	2.939E-01	5.301E-01	FAIL ABUN
RA-223	3.255E-01	4.306E-01	8.751E-01	FAIL ABUN
AC-227	-1.191E-01	1.771E-01	3.270E-01	FAIL ABUN
TH-227	-1.191E-01	1.771E-01	3.270E-01	FAIL ABUN
TH-229	2.710E-02	3.335E-01	6.695E-01	FAIL ABUN
TH-231	3.255E-01	4.306E-01	8.751E-01	FAIL ABUN
PA-233	3.015E-02	4.366E-02	8.856E-02	FAIL ABUN
PA-234	-5.054E-02	2.023E-01	3.845E-01	NOT IDENT.
PA-234M	2.969E+00	3.274E+00	6.539E+00	NOT IDENT.
NP-237	3.015E-02	4.366E-02	8.856E-02	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-6.413E-02	1.986E-01	3.688E-01	NOT IDENT.
PU-239	0.000E+00	8.641E+02	5.285E+02	FAIL ABUN
AM-241	3.422E-02	1.381E-01	2.661E-01	NOT IDENT.
CM-243	-5.287E-02	7.496E-02	1.370E-01	NOT IDENT.
BK-247	7.490E-02	5.094E-02	1.045E-01	NOT IDENT.
CM-247	1.157E-02	2.629E-02	5.127E-02	NOT IDENT.
CF-249	1.428E-02	2.762E-02	5.454E-02	NOT IDENT.
CF-251	4.262E-02	8.960E-02	1.697E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	570	10.66*	1.911E+00	1.305E+01	1.305E+01	8.61
CD-109	88.03	97	3.70*	6.143E+00	1.995E+00	3.129E+00	56.59
SN-126	64.28	72	9.60	3.037E+00	1.155E+00	1.155E+00	100.06
	86.94	97	8.90	6.143E+00	8.292E-01	8.292E-01	56.59
	87.57	97	37.00*	6.143E+00	1.995E-01	1.995E-01	56.59
BA-137M	661.66	390	89.90*	3.370E+00	5.994E-01	6.109E-01	14.57
CS-137	661.66	390	85.10*	3.370E+00	6.332E-01	6.453E-01	14.57
TL-208	277.37	-----	6.60	6.127E+00	-----	Line Not Found	-----
	583.19	239	85.00*	3.675E+00	3.568E-01	3.568E-01	21.15
	860.56	-----	12.50	2.814E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	4.495E+00	-----	Line Not Found	-----
	351.06	397	12.92*	5.217E+00	2.746E+00	2.746E+00	17.22
PB-212	74.82	173	10.28	4.764E+00	1.650E+00	1.650E+00	39.33
	77.11	284	17.10	5.051E+00	1.533E+00	1.533E+00	25.72
	238.63	604	43.60*	6.720E+00	9.605E-01	9.605E-01	11.41
	300.09	45	3.30	5.811E+00	1.102E+00	1.102E+00	97.69
BI-214	609.32	292	45.49*	3.566E+00	8.388E-01	8.391E-01	20.12
	1120.29	41	14.92	2.335E+00	5.509E-01	5.511E-01	67.60
	1764.49	63	15.30	1.633E+00	1.167E+00	1.168E+00	26.46
PB-214	74.82	173	5.80	4.764E+00	2.924E+00	2.925E+00	39.33
	77.11	284	9.70	5.051E+00	2.703E+00	2.704E+00	25.72
	87.09	97	3.41	6.143E+00	2.164E+00	2.165E+00	56.59
	242.00	173	7.25	6.671E+00	1.670E+00	1.670E+00	33.76
	295.22	178	18.42	5.877E+00	7.669E-01	7.672E-01	35.62
	351.93	397	35.60*	5.217E+00	9.966E-01	9.970E-01	17.22
RN-222	609.32	292	45.49*	3.566E+00	8.388E-01	8.391E-01	20.12
	1120.29	41	14.92	2.335E+00	5.509E-01	5.511E-01	67.60
	1764.49	63	15.30	1.633E+00	1.167E+00	1.168E+00	26.46
RA-224	240.99	173	4.10*	6.671E+00	2.953E+00	2.953E+00	33.76
RA-226	609.32	292	45.49*	3.566E+00	8.388E-01	8.391E-01	20.12
	1120.29	41	14.92	2.335E+00	5.509E-01	5.511E-01	67.60
	1764.49	63	15.30	1.633E+00	1.167E+00	1.168E+00	26.46
AC-228	105.21	-----	1.10	7.385E+00	-----	Line Not Found	-----
	338.32	111	11.27	5.359E+00	8.573E-01	8.573E-01	53.48
	794.95	-----	4.25	2.973E+00	-----	Line Not Found	-----
	835.71	-----	1.61	2.872E+00	-----	Line Not Found	-----
	911.20	89	25.80*	2.703E+00	5.926E-01	5.926E-01	36.28
	968.97	87	15.80	2.589E+00	9.865E-01	9.865E-01	35.85
RA-228	105.21	-----	1.10	7.385E+00	-----	Line Not Found	-----
	338.32	111	11.27	5.359E+00	8.573E-01	8.573E-01	53.48
	794.95	-----	4.25	2.973E+00	-----	Line Not Found	-----
	835.71	-----	1.61	2.872E+00	-----	Line Not Found	-----
	911.20	89	25.80*	2.703E+00	5.926E-01	5.926E-01	36.28
	968.97	87	15.80	2.589E+00	9.865E-01	9.865E-01	35.85
TH-228	74.82	173	10.28	4.764E+00	1.650E+00	1.650E+00	39.33
	77.11	284	17.10	5.051E+00	1.533E+00	1.533E+00	25.72
	238.63	604	43.60*	6.720E+00	9.605E-01	9.605E-01	11.41

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-230	300.09	45	3.30	5.811E+00	1.102E+00	1.102E+00	97.69
	609.32	292	45.49*	3.566E+00	8.388E-01	8.388E-01	20.12
	1120.29	41	14.92	2.335E+00	5.509E-01	5.509E-01	67.60
	1764.49	63	15.30	1.633E+00	1.167E+00	1.167E+00	26.46
PA-231	283.69	-----	1.70	6.038E+00	-----	Line Not Found	-----
	301.36	45	5.35*	5.811E+00	6.797E-01	6.797E-01	97.69
TH-232	105.21	-----	1.10	7.385E+00	-----	Line Not Found	-----
	338.32	111	11.27	5.359E+00	8.573E-01	8.573E-01	53.48
	835.71	-----	1.61	2.872E+00	-----	Line Not Found	-----
	911.20	89	25.80*	2.703E+00	5.926E-01	5.926E-01	36.28
TH-234	968.97	87	15.80	2.589E+00	9.865E-01	9.865E-01	35.85
	63.29	72	3.70*	3.037E+00	2.996E+00	2.996E+00	100.06
	92.59	253	4.23	6.582E+00	4.229E+00	4.229E+00	43.37
U-234	609.32	292	45.49*	3.566E+00	8.388E-01	8.388E-01	20.12
	1120.29	41	14.92	2.335E+00	5.509E-01	5.509E-01	67.60
	1764.49	63	15.30	1.633E+00	1.167E+00	1.167E+00	26.46
U-235	89.96	-----	3.47	6.379E+00	-----	Line Not Found	-----
	93.35	253	5.60	6.582E+00	3.195E+00	3.195E+00	43.37
	143.76	13	10.96*	8.086E+00	6.871E-02	6.871E-02	388.16
	163.33	-----	5.08	7.938E+00	-----	Line Not Found	-----
	185.72	87	57.20	7.616E+00	9.318E-02	9.318E-02	85.87
U-238	205.31	-----	5.01	7.289E+00	-----	Line Not Found	-----
	63.29	72	3.70*	3.037E+00	2.996E+00	2.996E+00	100.06
	92.59	253	4.23	6.582E+00	4.229E+00	4.229E+00	43.37
AM-243	43.53	-----	5.90	3.443E-01	-----	Line Not Found	-----
ANH-511	74.66	173	67.20*	4.764E+00	2.524E-01	2.524E-01	39.33
	511.00	113	100.00*	4.026E+00	1.308E-01	1.308E-01	56.43

Flag: "*" = Keyline

Total number of lines in spectrum 50
Number of unidentified lines 17
Number of lines tentatively identified by NID 33 66.00%

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	1.305E+01	1.305E+01	0.112E+01	8.61	
CD-109	461.40D	1.57	1.995E+00	3.129E+00	1.771E+00	56.59	
SN-126	2.30E+05Y	1.00	1.995E-01	1.995E-01	1.129E-01	56.59	
BA-137M	30.08Y	1.02	5.994E-01	6.109E-01	0.890E-01	14.57	
CS-137	30.08Y	1.02	6.332E-01	6.453E-01	0.940E-01	14.57	
TL-208	1.41E+10Y	1.00	3.568E-01	3.568E-01	0.755E-01	21.15	
BI-211	7.04E+08Y	1.00	2.746E+00	2.746E+00	0.473E+00	17.22	
PB-212	1.41E+10Y	1.00	9.605E-01	9.605E-01	1.096E-01	11.41	
BI-214	1600.00Y	1.00	8.388E-01	8.391E-01	1.689E-01	20.12	
PB-214	1600.00Y	1.00	9.966E-01	9.970E-01	1.717E-01	17.22	
RN-222	1600.00Y	1.00	8.388E-01	8.391E-01	1.689E-01	20.12	
RA-224	1.41E+10Y	1.00	2.953E+00	2.953E+00	0.997E+00	33.76	
RA-226	1600.00Y	1.00	8.388E-01	8.391E-01	1.689E-01	20.12	
AC-228	1.41E+10Y	1.00	5.926E-01	5.926E-01	2.150E-01	36.28	
RA-228	1.41E+10Y	1.00	5.926E-01	5.926E-01	2.150E-01	36.28	
TH-228	1.41E+10Y	1.00	9.605E-01	9.605E-01	1.096E-01	11.41	
TH-230	7.54E+04Y	1.00	8.388E-01	8.388E-01	1.688E-01	20.12	
PA-231	7.04E+08Y	1.00	6.797E-01	6.797E-01	6.640E-01	97.69	
TH-232	1.41E+10Y	1.00	5.926E-01	5.926E-01	2.150E-01	36.28	
TH-234	4.47E+09Y	1.00	2.996E+00	2.996E+00	2.998E+00	100.06	
U-234	2.45E+05Y	1.00	8.388E-01	8.388E-01	1.688E-01	20.12	
U-235	7.04E+08Y	1.00	6.871E-02	6.871E-02	26.67E-02	388.16	
U-238	4.47E+09Y	1.00	2.996E+00	2.996E+00	2.998E+00	100.06	
AM-243	7370.00Y	1.00	2.524E-01	2.524E-01	0.993E-01	39.33	
ANH-511	1.00E+09Y	1.00	1.308E-01	1.308E-01	0.738E-01	56.43	

Total Activity : 3.854E+01 3.970E+01

Grand Total Activity : 3.854E+01 3.970E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	49.57	48	152	1.03	99.98	97	6	9.48E-03	****	1.01E+00	T
0	129.60	66	363	4.07	259.90	252	15	1.44E-02	****	8.04E+00	T
0	208.76	59	127	1.53	418.09	415	7	1.35E-02	75.7	7.23E+00	
0	270.17	60	131	1.55	540.82	535	12	1.40E-02	88.3	6.23E+00	T
0	453.32	15	64	1.11	906.86	900	10	3.71E-03	****	4.38E+00	T
0	463.59	34	77	1.13	927.38	924	9	8.56E-03	****	4.31E+00	T
0	571.35	26	55	2.91	1142.77	1135	14	6.58E-03	****	3.73E+00	
0	641.46	27	21	3.12	1282.88	1275	13	6.86E-03	84.0	3.44E+00	
0	667.87	42	18	0.89	1335.69	1331	13	1.08E-02	53.4	3.35E+00	T
0	683.97	26	13	1.33	1367.87	1363	9	6.87E-03	66.4	3.30E+00	
0	708.81	25	59	4.85	1417.52	1408	17	6.54E-03	****	3.22E+00	
0	728.24	66	29	1.68	1456.36	1449	16	1.73E-02	45.5	3.16E+00	T
0	769.01	27	34	2.53	1537.84	1532	11	7.19E-03	94.3	3.04E+00	
0	863.01	26	36	1.35	1725.74	1716	14	7.02E-03	****	2.81E+00	
0	997.10	8	25	0.55	1993.80	1983	12	2.28E-03	****	2.54E+00	T
0	1054.81	8	47	5.05	2109.15	2091	23	2.30E-03	****	2.44E+00	
0	1062.39	9	15	1.04	2124.31	2116	11	2.48E-03	****	2.43E+00	T
0	1065.22	12	8	0.64	2129.97	2126	8	3.22E-03	****	2.42E+00	
0	1188.16	15	18	0.54	2375.75	2368	14	4.23E-03	****	2.24E+00	T
0	1239.27	20	27	3.66	2477.93	2470	12	5.58E-03	****	2.17E+00	T
0	1270.17	36	10	8.03	2539.71	2529	21	1.01E-02	55.4	2.13E+00	
0	1314.97	14	0	1.29	2629.29	2625	9	3.89E-03	53.5	2.07E+00	
0	1337.14	10	18	0.96	2673.60	2663	16	2.96E-03	****	2.05E+00	
0	1378.49	38	10	2.65	2756.28	2745	17	1.09E-02	47.2	2.00E+00	
0	1406.28	6	17	1.31	2811.83	2801	17	1.67E-03	****	1.97E+00	
0	1411.65	5	6	0.61	2822.57	2817	9	1.34E-03	****	1.96E+00	
0	1503.19	6	8	0.70	3005.60	2998	12	1.82E-03	****	1.87E+00	
0	1590.82	14	13	1.13	3180.82	3173	14	4.15E-03	****	1.78E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235022.CNF;1
* Acquisition date   : 3-OCT-2016 08:58:12 Sensitivity      : 3.000
* Detector ID        : GAM18 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit: 75.000
* Elapsed real time  : 0 01:00:01.02 Half life ratio : *****
* Sample date        : 8-DEC-2015 13:43:00 Nuclide Library : SOLID
* Sample ID          : G405235022 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.6110E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000
*                               Dry Weight      : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 25-JUN-2016 08:25:19 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM18 CAN.CNF;10
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.591E-01
CD-109	7.788E-01
SN-126	5.186E-02
BA-137M	2.641E-02
CS-137	2.790E-02
TL-208	2.037E-02
BI-211	1.179E-01
PB-212	3.588E-02
BI-214	4.068E-02
PB-214	1.192E-01
RN-222	4.068E-02
RA-224	3.843E-01
RA-226	4.068E-02
AC-228	9.093E-02
RA-228	9.093E-02
TH-228	3.588E-02
TH-230	4.067E-02
PA-231	2.903E-01
TH-232	9.093E-02
TH-234	9.973E-01
U-234	4.067E-02
U-235	1.206E-01
U-238	9.973E-01
AM-243	3.806E-02
ANH-511	1.678E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	8.300E+00	NOT IDENT.
NA-22	3.425E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.793E-02	NOT IDENT.
SC-46	2.651E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF

CR-51	0.000E+00	SHORT HLIF
MN-54	3.675E-02	NOT IDENT.
CO-56	2.994E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	3.239E-02	NOT IDENT.
CO-58	3.137E-01	NOT IDENT.
FE-59	3.945E+00	NOT IDENT.
CO-60	2.715E-02	NOT IDENT.
ZN-65	1.194E-01	NOT IDENT.
GE-68	1.599E+00	NOT IDENT.
AS-73	8.396E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.397E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	3.960E-01	NOT IDENT.
KR-85	5.952E+00	NOT IDENT.
SR-85	6.281E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.091E-01	NOT IDENT.
Y-91	3.969E+02	NOT IDENT.
NB-94	1.962E-02	NOT IDENT.
NB-95	5.670E-01	NOT IDENT.
NB-95M	1.651E+00	NOT IDENT.
ZR-95	8.787E-01	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.603E-02	NOT IDENT.
RH-102	4.002E-02	NOT IDENT.
RU-103	3.643E+00	FAIL ABUN
RH-106	2.959E-01	NOT IDENT.
RU-106	2.959E-01	NOT IDENT.
AG-108M	1.805E-02	NOT IDENT.
AG-110M	6.324E-02	NOT IDENT.
SN-113	1.597E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	9.573E-02	NOT IDENT.
SB-124	1.123E+00	NOT IDENT.
SB-125	6.747E-02	FAIL ABUN
TE-125M	2.006E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.499E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	3.817E-02	NOT IDENT.
CS-135	9.872E-02	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	7.568E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.765E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.413E-01	NOT IDENT.
PM-144	3.597E-02	NOT IDENT.
PR-144	3.130E+00	NOT IDENT.
PM-146	3.023E-02	FAIL ABUN
ND-147	0.000E+00	SHORT HLIF
PM-147	5.715E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.730E-02	FAIL ABUN
EU-152	6.862E-02	NOT IDENT.
GD-153	1.289E-01	NOT IDENT.
EU-154	8.364E-02	FAIL ABUN
EU-155	8.171E-02	FAIL ABUN
TB-160	1.101E+00	FAIL ABUN
HO-166M	4.257E-02	FAIL ABUN
TM-171	2.041E+01	NOT IDENT.
HF-172	1.703E-01	FAIL ABUN
LU-172	5.466E-02	FAIL ABUN
LU-176	1.615E-02	FAIL ABUN

HF-181	2.815E+00	NOT IDENT.
TA-182	6.811E-01	FAIL ABUN
RE-183	2.711E+00	NOT IDENT.
RE-184	1.673E+01	NOT IDENT.
W-188	7.344E+01	FAIL ABUN
IR-192	2.967E-01	FAIL ABUN
HG-203	1.676E+00	NOT IDENT.
BI-207	3.321E-02	FAIL ABUN
PB-210	3.958E+00	NOT IDENT.
PB-211	4.751E-01	NOT IDENT.
BI-212	4.255E-01	FAIL ABUN
RN-219	2.441E-01	FAIL ABUN
RA-223	4.076E-01	FAIL ABUN
AC-227	1.526E-01	FAIL ABUN
TH-227	1.526E-01	FAIL ABUN
TH-229	3.144E-01	FAIL ABUN
TH-231	4.076E-01	FAIL ABUN
PA-233	4.124E-02	FAIL ABUN
PA-234	1.719E-01	NOT IDENT.
PA-234M	2.968E+00	NOT IDENT.
NP-237	4.124E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.734E-01	NOT IDENT.
PU-239	2.509E+02	FAIL ABUN
AM-241	1.254E-01	NOT IDENT.
CM-243	6.396E-02	NOT IDENT.
BK-247	4.872E-02	NOT IDENT.
CM-247	2.371E-02	NOT IDENT.
CF-249	2.522E-02	NOT IDENT.
CF-251	7.986E-02	NOT IDENT.

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235022.CNF;1  *
* Acquisition date   : 3-OCT-2016 08:58:12 Sensitivity      : 3.000          *
* Detector ID        : GAM18 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:01.02 Half life ratio : *****      *
* Sample date       : 8-DEC-2015 13:43:00 Nuclide Library : SOLID      *
* Sample ID         : G405235022 Analyst initials: MXR1         *
* Batch Number      : 1596249 Sample Quantity : 1.6110E+02 GRAM      *
* Wet wt corr       : 1.00000 Quantity Err(%) : 1.2414E-03 %      *
* Wet Weight        : 0.00000 Wet Weight      : 0.00000          *
* Dry Weight        : 0.00000 Dry Weight      : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date    : 25-JUN-2016 08:25:19 Eff. Geometry   : CAN          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM18 CAN.CNF;10          *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.305E+01	1.295E+00	1.295E+00
CD-109	2.021E+00	1.791E+00	1.791E+00
SN-126	1.288E-01	1.140E-01	1.140E-01
BA-137M	6.109E-01	9.111E-02	9.111E-02
CS-137	6.453E-01	9.623E-02	9.623E-02
TL-208	3.568E-01	7.551E-02	7.551E-02
BI-211	6.331E-01	8.810E-01	8.810E-01
PB-212	9.605E-01	1.188E-01	1.188E-01
BI-214	8.391E-01	1.694E-01	1.694E-01
PB-214	9.970E-01	1.733E-01	1.733E-01
RN-222	8.391E-01	1.694E-01	1.694E-01
RA-224	1.597E+00	1.093E+00	1.093E+00
RA-226	8.391E-01	1.694E-01	1.694E-01
AC-228	5.926E-01	2.129E-01	2.129E-01
RA-228	5.926E-01	2.129E-01	2.129E-01
TH-228	9.605E-01	1.188E-01	1.188E-01
TH-230	8.388E-01	1.693E-01	1.693E-01
PA-231	6.797E-01	6.667E-01	6.667E-01
TH-232	5.926E-01	2.129E-01	2.129E-01
TH-234	2.996E+00	3.012E+00	3.012E+00
U-234	8.388E-01	1.693E-01	1.693E-01
U-235	6.871E-02	2.614E-01	2.614E-01
U-238	2.996E+00	3.012E+00	3.012E+00
AM-243	1.862E-01	1.010E-01	1.010E-01
ANH-511	1.308E-01	7.251E-02	7.251E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-7.641E+00	1.072E+01	1.126E+01	NOT IDENT.
NA-22	3.943E-02	3.863E-02	4.252E-02	NOT IDENT.
NA-24	1.000E+41	1.832E+41	0.000E+00	SHORT HLIF
AL-26	-1.490E-02	2.493E-02	2.582E-02	NOT IDENT.
SC-46	6.926E-02	3.070E-01	3.086E-01	FAIL ABUN

V-48	-1.740E+03	1.065E+04	1.068E+04	SHORT HLIF
CR-51	8.068E+01	3.331E+02	3.351E+02	SHORT HLIF
MN-54	-3.136E-02	4.804E-02	5.008E-02	NOT IDENT.
CO-56	1.704E-02	3.528E-01	3.529E-01	FAIL ABUN
MN-56	1.000E+41	1.861E+42	0.000E+00	SHORT HLIF
CO-57	-1.302E-02	3.741E-02	3.786E-02	NOT IDENT.
CO-58	-7.101E-02	3.817E-01	3.830E-01	NOT IDENT.
FE-59	-4.991E-01	4.655E+00	4.661E+00	NOT IDENT.
CO-60	2.140E-02	3.226E-02	3.367E-02	NOT IDENT.
ZN-65	1.107E-01	1.389E-01	1.476E-01	NOT IDENT.
GE-68	-1.237E-01	1.867E+00	1.868E+00	NOT IDENT.
AS-73	-1.057E+00	8.775E+00	8.788E+00	NOT IDENT.
AS-74	-4.091E+03	4.768E+03	5.113E+03	SHORT HLIF
SE-75	1.514E-01	1.542E-01	1.686E-01	NOT IDENT.
BR-77	1.714E+38	1.484E+39	0.000E+00	SHORT HLIF
SR-82	-2.549E+01	5.434E+02	5.435E+02	SHORT HLIF
RB-83	-4.114E-02	5.068E-01	5.072E-01	NOT IDENT.
KR-85	1.121E+01	5.762E+00	7.665E+00	NOT IDENT.
SR-85	1.180E+00	6.082E-01	8.080E-01	NOT IDENT.
RB-86	2.197E+03	2.255E+04	2.257E+04	SHORT HLIF
Y-88	2.032E-02	1.233E-01	1.237E-01	NOT IDENT.
Y-91	2.861E+02	4.317E+02	4.506E+02	NOT IDENT.
NB-94	-1.750E-02	2.859E-02	2.966E-02	NOT IDENT.
NB-95	6.325E-01	6.451E-01	7.053E-01	NOT IDENT.
NB-95M	1.835E-01	1.983E+00	1.985E+00	NOT IDENT.
ZR-95	8.519E-02	1.015E+00	1.016E+00	NOT IDENT.
NB-97	1.000E+41	3.265E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.082E+41	0.000E+00	SHORT HLIF
MO-99	-4.397E+31	1.347E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	7.343E+42	0.000E+00	SHORT HLIF
RH-101	1.447E-02	2.835E-02	2.910E-02	NOT IDENT.
RH-102	1.531E-02	4.392E-02	4.446E-02	NOT IDENT.
RU-103	-8.813E-01	4.179E+00	4.198E+00	FAIL ABUN
RH-106	-2.326E-01	3.661E-01	3.808E-01	NOT IDENT.
RU-106	-2.326E-01	3.661E-01	3.808E-01	NOT IDENT.
AG-108M	-3.131E-03	2.150E-02	2.155E-02	NOT IDENT.
AG-110M	-2.253E-02	7.881E-02	7.947E-02	NOT IDENT.
SN-113	-5.019E-02	1.896E-01	1.909E-01	NOT IDENT.
CD-115	1.684E+38	2.304E+39	0.000E+00	SHORT HLIF
SN-117M	1.624E+04	8.168E+04	8.201E+04	SHORT HLIF
TE-123M	2.086E-03	1.104E-01	1.104E-01	NOT IDENT.
SB-124	-3.345E-01	1.404E+00	1.412E+00	NOT IDENT.
SB-125	-4.372E-02	8.375E-02	8.604E-02	FAIL ABUN
TE-125M	4.863E+01	2.185E+02	2.196E+02	NOT IDENT.
I-126	1.560E+06	5.354E+05	8.839E+05	SHORT HLIF
SB-126	-1.240E+04	9.456E+05	9.456E+05	SHORT HLIF
SB-127	4.877E+21	1.843E+22	0.000E+00	SHORT HLIF
I-131	6.706E+08	3.865E+09	3.877E+09	SHORT HLIF
I-132	1.000E+41	1.849E+42	0.000E+00	SHORT HLIF
TE-132	-9.294E+25	2.774E+26	0.000E+00	SHORT HLIF
BA-133	8.277E-03	3.078E-02	3.101E-02	NOT IDENT.
I-133	1.000E+41	2.571E+41	0.000E+00	SHORT HLIF
CS-134	3.357E-02	4.047E-02	4.321E-02	NOT IDENT.
CS-135	8.114E-02	1.130E-01	1.188E-01	NOT IDENT.
I-135	-1.000E+41	7.385E+41	0.000E+00	SHORT HLIF
CS-136	1.520E+04	2.278E+05	2.279E+05	SHORT HLIF
CE-139	-5.266E-02	9.291E-02	9.589E-02	NOT IDENT.
BA-140	-2.767E+05	9.052E+05	9.137E+05	SHORT HLIF
LA-140	2.399E+05	3.187E+05	3.365E+05	SHORT HLIF
CE-141	-9.646E+00	2.255E+01	2.296E+01	NOT IDENT.
CE-143	1.000E+41	2.342E+41	0.000E+00	SHORT HLIF
CE-144	-9.676E-02	3.062E-01	3.093E-01	NOT IDENT.
PM-144	-2.033E-02	4.395E-02	4.490E-02	NOT IDENT.
PR-144	-1.740E+00	3.820E+00	3.900E+00	NOT IDENT.
PM-146	2.708E-02	6.001E-02	6.124E-02	FAIL ABUN
ND-147	7.700E+06	2.453E+07	2.478E+07	SHORT HLIF
PM-147	-5.706E+01	6.450E+02	6.455E+02	NOT IDENT.
PM-149	1.865E+39	3.512E+40	0.000E+00	SHORT HLIF
EU-150	1.750E-03	2.173E-02	2.174E-02	FAIL ABUN
EU-152	4.113E-02	8.250E-02	8.456E-02	NOT IDENT.
GD-153	4.647E-02	1.482E-01	1.496E-01	NOT IDENT.
EU-154	9.519E-02	9.451E-02	1.038E-01	FAIL ABUN
EU-155	6.081E-02	8.567E-02	8.995E-02	FAIL ABUN
TB-160	1.774E-01	1.284E+00	1.287E+00	FAIL ABUN
HO-166M	2.500E-02	5.248E-02	5.368E-02	FAIL ABUN
TM-171	-1.511E+00	2.280E+01	2.281E+01	NOT IDENT.
HF-172	-4.209E-02	2.116E-01	2.124E-01	FAIL ABUN
LU-172	3.188E-02	5.942E-02	6.114E-02	FAIL ABUN

LU-176	-2.564E-03	1.836E-02	1.840E-02	FAIL ABUN
HF-181	1.596E+00	3.139E+00	3.220E+00	NOT IDENT.
TA-182	5.369E-01	7.364E-01	7.751E-01	FAIL ABUN
RE-183	-1.204E+00	2.916E+00	2.966E+00	NOT IDENT.
RE-184	-1.555E+01	2.283E+01	2.389E+01	NOT IDENT.
W-188	-5.736E+01	9.810E+01	1.014E+02	FAIL ABUN
IR-192	-1.320E-01	3.467E-01	3.518E-01	FAIL ABUN
HG-203	1.057E+00	1.774E+00	1.837E+00	NOT IDENT.
BI-207	2.360E-02	4.322E-02	4.451E-02	FAIL ABUN
PB-210	-2.609E+00	4.591E+00	4.740E+00	NOT IDENT.
PB-211	-1.065E-01	5.620E-01	5.641E-01	NOT IDENT.
BI-212	1.461E+00	6.565E-01	9.301E-01	FAIL ABUN
RN-219	-1.002E-01	2.942E-01	2.976E-01	FAIL ABUN
RA-223	3.255E-01	4.310E-01	4.553E-01	FAIL ABUN
AC-227	-1.191E-01	1.778E-01	1.858E-01	FAIL ABUN
TH-227	-1.191E-01	1.778E-01	1.858E-01	FAIL ABUN
TH-229	2.710E-02	3.335E-01	3.337E-01	FAIL ABUN
TH-231	3.255E-01	4.310E-01	4.553E-01	FAIL ABUN
PA-233	3.015E-02	4.368E-02	4.575E-02	FAIL ABUN
PA-234	-5.054E-02	2.104E-01	2.116E-01	NOT IDENT.
PA-234M	2.969E+00	3.277E+00	3.540E+00	NOT IDENT.
NP-237	3.015E-02	4.368E-02	4.575E-02	FAIL ABUN
NP-238	-1.000E+41	3.092E+41	0.000E+00	SHORT HLIF
NP-239	-6.413E-02	1.987E-01	2.008E-01	NOT IDENT.
PU-239	6.081E+02	8.645E+02	9.069E+02	FAIL ABUN
AM-241	3.422E-02	1.381E-01	1.389E-01	NOT IDENT.
CM-243	-5.287E-02	7.512E-02	7.881E-02	NOT IDENT.
BK-247	7.490E-02	5.313E-02	6.295E-02	NOT IDENT.
CM-247	1.157E-02	2.636E-02	2.687E-02	NOT IDENT.
CF-249	1.428E-02	2.765E-02	2.839E-02	NOT IDENT.
CF-251	4.262E-02	8.973E-02	9.176E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	78.8835	87.09	99.2838	136.47	81.9702
45.60	78.9767	87.57	99.4423	140.51	0.0000
46.54	83.7918	88.03	92.3857	143.76	83.3391
49.72	0.0000	88.34	92.4803	144.24	83.4283
51.35	67.8268	88.47	92.5198	145.44	100.8383
51.87	63.4697	89.96	81.7622	152.43	89.5764
52.39	71.5876	1093.63	81.9426	153.25	0.0000
52.97	68.3734	91.11	0.0000	162.37	95.7522
53.44	74.5267	92.59	82.4554	156.02	0.0000
54.07	82.4875	93.35	82.6534	158.56	0.0000
57.36	0.0000	94.56	82.9681	159.00	91.9906
57.53	96.9429	94.65	82.9915	162.33	77.1796
57.98	91.8914	94.67	82.9965	162.66	0.0000
59.27	79.8124	94.87	83.0482	163.33	77.3343
59.32	79.8303	97.43	76.9550	165.86	98.0519
59.54	82.2595	98.43	88.3607	176.31	79.3060
60.96	92.2402	98.44	88.3634	176.60	0.0000
61.17	92.3251	99.53	77.4449	177.52	72.1493
62.93	91.2437	100.11	77.5789	181.07	0.0000
63.29	91.3844	102.03	76.9947	181.52	70.6317
63.58	91.4974	103.18	83.4336	184.41	76.7848
64.28	95.9678	103.37	82.4493	143.76	76.9664
66.73	93.3158	105.21	73.5633	193.51	78.0345
67.24	101.1002	105.31	73.5844	197.03	76.8220
125.81	110.4059	106.12	77.9102	198.01	82.8699
67.75	110.4372	106.47	85.2663	201.83	85.1095
69.67	99.3351	109.28	80.7016	203.43	92.1643
70.83	115.8046	111.00	89.5103	205.31	75.7603
72.81	115.4553	111.76	0.0000	210.85	90.7033
72.87	115.4818	114.06	100.8759	215.65	80.9578
74.66	103.1418	116.30	0.0000	222.11	67.7126
74.82	103.2039	116.74	91.9727	227.09	63.8013
74.97	103.2618	119.76	79.7649	227.38	50.5314
77.11	104.0834	121.12	80.0443	228.16	0.0000
78.74	104.7019	121.22	80.0647	228.18	72.7827
79.69	85.3210	121.78	85.5968	116.74	72.7827
80.12	84.1765	122.06	84.5734	235.69	84.8235
80.19	0.0000	122.92	86.9312	235.96	87.5510
80.57	90.6986	123.07	90.2253	238.63	82.9361
81.00	88.2778	265.00	87.0978	238.98	0.0000
81.07	88.2996	125.81	99.2372	240.99	83.2206
81.75	93.6419	127.23	88.9673	242.00	83.3422
83.79	86.2323	127.91	89.1169	244.70	66.8419
84.00	91.7885	129.30	89.4181	252.40	0.0000
85.43	116.9193	131.20	89.8297	252.80	59.7890
86.55	109.5365	133.02	84.6511	254.15	0.0000
86.79	109.6237	133.52	87.7258	256.23	81.3296
86.94	99.2336	136.00	86.3677	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	42.0667	355.39	0.0000	584.27	32.0203
264.80	42.0740	356.01	39.0137	595.83	0.0000
265.00	33.6680	364.49	0.0000	427.87	45.6958
268.22	56.3538	366.42	0.0000	602.52	0.0000
269.46	62.0912	372.51	43.3748	604.72	36.6539
270.03	62.1368	375.05	37.1206	607.14	41.3016
271.23	62.2349	377.52	55.2849	609.32	34.4663
273.65	0.0000	356.01	45.9998	610.33	34.4883
276.40	69.2989	388.16	40.8203	614.28	46.1016
277.37	71.2860	388.63	0.0000	618.01	35.2087
277.60	69.4058	391.69	58.2034	620.36	33.7460
278.00	62.7827	264.66	44.5668	621.93	37.6396
279.20	57.1619	401.81	52.2314	630.19	0.0000
279.54	68.6250	402.40	42.4611	631.29	30.0956
279.70	68.6382	404.85	60.0175	633.25	29.1605
280.46	60.1174	410.95	58.1596	634.78	0.0000
283.69	68.9854	413.71	47.3051	635.95	31.1563
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	50.8909	423.72	0.0000	645.85	43.8853
285.90	0.0000	427.09	50.1013	657.76	33.1529
287.50	65.4641	427.87	53.4785	657.90	0.0000
290.67	75.3871	433.94	44.8031	661.66	49.0551
293.27	0.0000	439.40	42.7639	664.57	0.0000
351.93	58.3142	453.88	46.1409	666.33	0.0000
295.96	58.3667	463.37	63.7292	666.50	0.0000
879.38	67.3337	468.07	44.9549	667.71	0.0000
299.98	61.5824	473.00	0.0000	677.62	27.3842
300.09	61.5901	475.06	42.8919	685.70	0.0000
300.13	61.5939	476.78	39.4681	695.00	0.0000
301.36	61.6849	477.60	56.9184	696.49	42.3935
302.85	52.9662	482.18	30.3116	696.51	42.3935
256.23	58.9673	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	38.3734
306.78	60.1114	497.08	33.6159	697.49	40.3979
308.46	54.3051	505.52	35.6146	702.65	38.8957
311.90	47.5840	507.63	0.0000	706.68	34.5178
316.51	59.7974	511.00	35.7629	711.68	34.2070
319.41	0.0000	514.00	35.8435	720.70	0.0000
320.08	0.0000	514.00	35.8435	721.93	0.0000
321.04	56.0991	520.40	33.1344	722.78	19.6682
323.87	46.2284	520.69	0.0000	722.91	26.2258
325.23	82.5322	522.65	0.0000	723.31	26.2320
328.76	0.0000	527.90	0.0000	724.19	37.7265
333.37	68.5533	528.26	36.2244	727.33	30.8084
333.97	57.9277	529.59	32.6338	733.00	26.3719
334.37	62.5285	529.87	0.0000	735.93	25.9424
338.28	58.1991	531.02	0.0000	333.97	30.9796
338.32	58.2026	537.26	0.0000	739.50	0.0000
311.90	58.3383	546.56	0.0000	747.24	30.1054
340.48	58.3383	552.55	31.3313	748.06	27.0029
340.55	0.0000	563.25	39.9214	752.31	30.1877
344.28	53.9505	569.33	37.2925	753.82	0.0000
345.93	60.2222	946.00	37.2961	756.73	25.0415
351.06	48.6457	569.70	37.3010	756.80	25.0422
351.93	48.6906	583.19	31.9974	884.68	21.7852

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	20.1293	1274.44	24.8932	1620.50	10.4983
766.42	25.1697	1001.03	16.0342	1621.92	10.5018
766.84	21.8188	1002.74	27.1436	1678.03	0.0000
772.60	0.0000	1004.73	26.2295	1690.97	8.7477
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	6.9294
778.90	26.3893	1028.54	0.0000	1063.66	5.0981
783.70	0.0000	1037.84	24.6835	1771.35	3.3997
785.37	27.5361	1038.76	0.0000	1791.20	0.0000
792.07	42.5085	631.29	17.4659	1808.65	12.0059
794.95	19.1569	1048.07	0.0000	1810.72	0.0000
795.86	24.4901	1049.04	19.0723	1836.06	4.0282
810.06	19.3035	1050.41	19.0820		
810.29	20.3783	1063.66	0.0000		
344.28	20.3794	1077.00	0.0000		
810.76	21.4557	1077.34	27.9606		
815.77	0.0000	1085.87	24.1833		
1048.07	0.0000	1093.63	22.3149		
832.01	32.5223	1099.45	21.3909		
834.85	33.6527	1112.07	18.4536		
835.71	35.8390	1112.84	19.5449		
836.80	0.0000	1115.54	17.9341		
846.75	0.0000	1120.29	24.4983		
846.77	26.2039	1120.55	24.5007		
856.80	0.0000	1221.41	24.5081		
860.56	20.8810	1129.67	31.6857		
871.09	15.4625	1131.51	0.0000		
873.19	22.1109	1147.95	0.0000		
875.33	0.0000	1173.23	29.9700		
879.38	19.9572	1177.95	22.0150		
880.51	25.5142	1189.05	26.7891		
883.24	29.9894	1204.77	25.2539		
884.68	28.8977	1221.41	24.3832		
889.28	26.7312	1231.02	29.1225		
894.76	27.9144	1235.36	0.0000		
898.04	20.1286	1238.28	31.6766		
900.72	17.9141	1260.41	0.0000		
903.28	29.1437	1271.87	20.6670		
911.20	32.6223	1274.44	13.7897		
912.08	39.0127	1274.54	13.7904		
923.98	0.0000	1291.59	20.8018		
926.50	21.7459	1298.22	0.0000		
929.11	21.7711	1312.11	0.0000		
937.49	25.4933	1332.49	12.2944		
944.13	0.0000	1362.66	0.0000		
946.00	27.4153	1365.19	10.6470		
949.00	21.9609	1368.63	0.0000		
667.71	0.0000	1384.29	19.6340		
962.31	32.2101	1408.01	10.7866		
964.08	30.6991	1457.56	0.0000		
966.17	35.3357	1460.82	8.7652		
911.20	35.0702	1489.16	17.4901		
968.97	35.0702	1505.03	11.0967		
983.53	0.0000	1584.12	16.2026		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:59:48.23

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235023.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM24.CNF;330
Background date    : 2-OCT-2016 11:01:18.
Sample date       : 2-DEC-2015 10:40:00. Acquisition date : 3-OCT-2016 08:58:40.
Sample ID        : G405235023 Sample quantity : 1.41404E+02 GRAM
Detector name     : GAM24 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:02.00 0.1%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1596249 Detector SN# :
Matrix Spike ID   : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.77*	16	158	1.35	93.59	89	9	4.37E-03	149.3	
2	2	63.47*	40	168	1.23	127.00	123	10	1.10E-02	58.5	3.93E+00
3	2	65.12*	12	159	0.94	130.30	123	10	3.29E-03	174.0	
4	2	73.16	37	230	1.25	146.38	143	22	1.02E-02	76.1	2.62E+00
5	2	75.05*	201	215	1.26	150.17	143	22	5.58E-02	14.6	
6	2	77.26*	268	140	1.04	154.58	143	22	7.45E-02	9.9	
7	4	84.43*	48	135	1.54	168.92	165	27	1.33E-02	44.0	8.15E-01
8	4	87.31	106	138	1.16	174.68	165	27	2.95E-02	21.0	
9	4	90.04	61	120	1.07	180.15	165	27	1.69E-02	31.1	
10	4	92.84*	111	144	1.19	185.75	165	27	3.07E-02	21.6	
11	0	110.08*	9	136	1.28	220.24	219	8	2.58E-03	222.1	
12	0	186.31*	92	137	1.07	372.73	368	10	2.56E-02	27.0	
13	0	209.29	27	91	0.83	418.71	416	7	7.47E-03	62.2	
14	5	238.71*	450	59	1.24	477.56	471	23	1.25E-01	5.6	1.69E+00
15	5	242.02	117	94	2.03	484.17	471	23	3.25E-02	24.1	
16	0	295.40	186	50	1.32	590.97	586	9	5.17E-02	10.0	
17	0	300.12	44	38	1.54	600.42	596	8	1.23E-02	28.5	
18	0	311.47	25	100	5.35	623.13	613	17	6.86E-03	95.7	
19	0	338.32	105	80	1.23	676.84	670	14	2.91E-02	20.6	
20	0	352.11*	306	56	1.47	704.43	699	13	8.49E-02	7.8	
21	0	464.13	19	67	1.15	928.53	923	12	5.23E-03	89.5	
22	0	511.80*	1	100	2.36	1023.91	1014	16	1.53E-04	****	
23	0	583.38*	139	36	1.35	1167.13	1161	11	3.87E-02	12.1	
24	0	609.68*	205	56	1.76	1219.74	1213	17	5.70E-02	11.2	
25	0	662.16	135	53	1.51	1324.74	1316	18	3.74E-02	15.4	
26	0	670.22	26	43	0.73	1340.86	1334	17	7.08E-03	61.8	
27	0	727.02*	33	32	3.34	1454.52	1447	16	9.29E-03	42.4	
28	0	768.38*	14	25	0.78	1537.26	1532	11	4.00E-03	73.0	
29	0	786.48	20	15	1.46	1573.47	1570	11	5.69E-03	41.7	
30	0	794.86*	29	12	1.56	1590.24	1584	10	8.15E-03	30.0	
31	0	809.16	10	11	0.91	1618.85	1614	8	2.84E-03	65.5	
32	0	860.47	17	21	0.90	1721.52	1718	9	4.69E-03	54.1	
33	0	873.29	25	35	10.38	1747.18	1733	28	7.03E-03	69.0	
34	0	911.42*	71	31	1.23	1823.47	1818	13	1.96E-02	20.8	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	964.51	33	6	2.25	1929.71	1925	9	9.06E-03	22.6	
36	0	968.92*	54	6	2.22	1938.53	1934	11	1.51E-02	17.1	
37	0	1053.71	18	6	1.85	2108.19	2104	10	5.08E-03	33.0	
38	0	1120.43*	41	19	2.21	2241.70	2236	11	1.13E-02	26.6	
39	0	1161.19	10	12	1.28	2323.27	2317	9	2.69E-03	74.7	
40	0	1169.26	15	17	0.96	2339.43	2331	14	4.05E-03	66.2	
41	0	1256.53	11	14	0.65	2514.06	2507	10	3.07E-03	71.6	
42	0	1281.19	14	11	1.80	2563.42	2557	10	3.81E-03	54.7	
43	0	1322.81	5	3	1.24	2646.70	2643	6	1.39E-03	70.7	
44	0	1353.65	7	0	0.73	2708.43	2705	6	1.94E-03	37.8	
45	0	1356.56	8	0	0.73	2714.25	2711	6	2.22E-03	35.4	
46	0	1377.81	22	3	2.85	2756.78	2751	11	6.19E-03	25.6	
47	0	1408.39	15	3	1.93	2817.97	2813	11	4.17E-03	33.6	
48	0	1460.82*	352	4	2.44	2922.89	2915	15	9.79E-02	5.5	
49	0	1588.14	12	2	1.87	3177.70	3173	9	3.30E-03	36.7	
50	0	1620.84	13	0	3.16	3243.15	3238	11	3.61E-03	27.7	
51	0	1764.52*	37	3	0.86	3530.73	3524	12	1.03E-02	20.0	

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

VMS Nuclide Identification Report V3.1 Generated 3-OCT-2016 09:59:50

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235023.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 2-DEC-2015 10:40:00 Acquisition date : 3-OCT-2016 08:58:40
 Sample ID : G405235023 Sample quantity : 141.40 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA24 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:02.00 0.1%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit. : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	87.09	TH-229	88.47
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.354E+00	1.243E+01	1.243E+01	11.03	OK
CD-109	88.03	3.70*	7.499E+00	1.317E+00	2.086E+00	80.27	OK
TE-125M	109.28	0.27*	7.981E+00	2.721E+00	1.095E+02	444.12	OK
SN-126	64.28	9.60	5.554E+00	4.883E-01	4.883E-01	116.90	OK
	86.94	8.90	7.499E+00	5.477E-01	5.477E-01	80.27	OK
	87.57	37.00*	7.499E+00	1.317E-01	1.317E-01	80.27	OK
BA-137M	661.66	89.90*	2.532E+00	3.236E-01	3.299E-01	30.82	OK
CS-137	661.66	85.10*	2.532E+00	3.419E-01	3.486E-01	30.82	OK
TL-208	277.37	6.60	5.023E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.790E+00	3.245E-01	3.245E-01	24.30	OK
	860.56	12.50	2.074E+00	3.480E-01	3.480E-01	108.30	OK
PB-210	46.54	4.25*	2.491E+00	9.993E-01	1.026E+00	298.62	OK
BI-212	727.33	6.67*	2.358E+00	1.153E+00	1.153E+00	84.77	OK
	785.37	1.10	2.221E+00	4.513E+00	4.513E+00	83.37	OK
	1620.50	1.47	1.233E+00	3.617E+00	3.617E+00	55.47	OK
PB-212	74.82	10.28	6.749E+00	1.184E+00	1.184E+00	48.04	OK
	77.11	17.10	6.918E+00	1.472E+00	1.472E+00	19.84	OK
	238.63	43.60*	5.637E+00	1.091E+00	1.091E+00	11.14	OK
	300.09	3.30	4.720E+00	1.656E+00	1.656E+00	56.97	OK
BI-214	609.32	45.49*	2.697E+00	9.213E-01	9.216E-01	22.32	OK
	1120.29	14.92	1.689E+00	8.435E-01	8.438E-01	53.28	OK
	1764.49	15.30	1.138E+00	1.066E+00	1.066E+00	39.91	OK
PB-214	74.82	5.80	6.730E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	6.918E+00	2.595E+00	2.596E+00	19.84	OK
	87.09	3.41	7.489E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	5.579E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.779E+00	1.238E+00	1.239E+00	20.01	OK
	351.93	35.60*	4.154E+00	1.193E+00	1.193E+00	15.55	OK
RN-222	609.32	45.49*	2.697E+00	9.213E-01	9.216E-01	22.32	OK
	1120.29	14.92	1.689E+00	8.435E-01	8.438E-01	53.28	OK
	1764.49	15.30	1.138E+00	1.066E+00	1.066E+00	39.91	OK
RA-224	240.99	4.10*	5.579E+00	8.509E-01	8.509E-01	179.75	OK
RA-226	609.32	45.49*	2.697E+00	9.213E-01	9.216E-01	22.32	OK
	1120.29	14.92	1.689E+00	8.435E-01	8.438E-01	53.28	OK
	1764.49	15.30	1.138E+00	1.066E+00	1.066E+00	39.91	OK
AC-228	105.21	1.10	7.950E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.289E+00	1.254E+00	1.254E+00	41.25	OK
	794.95	4.25	2.204E+00	1.687E+00	1.687E+00	60.00	OK
	835.71	1.61	2.121E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.985E+00	7.334E-01	7.334E-01	41.55	OK
	968.97	15.80	1.893E+00	9.598E-01	9.598E-01	34.24	OK
RA-228	105.21	1.10	7.950E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.289E+00	1.254E+00	1.254E+00	41.25	OK
	794.95	4.25	2.204E+00	1.687E+00	1.687E+00	60.00	OK
	835.71	1.61	2.121E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.985E+00	7.334E-01	7.334E-01	41.55	OK
	968.97	15.80	1.893E+00	9.598E-01	9.598E-01	34.24	OK
TH-228	74.82	10.28	6.749E+00	1.184E+00	1.184E+00	48.04	OK
	77.11	17.10	6.918E+00	1.472E+00	1.472E+00	19.84	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	238.63	43.60*	5.637E+00	1.091E+00	1.091E+00	11.14	OK
	300.09	3.30	4.720E+00	1.656E+00	1.656E+00	56.97	OK
TH-229	85.43	14.70	7.361E+00	2.859E-01	2.859E-01	87.98	OK
	88.47	24.00	7.499E+00	2.031E-01	2.031E-01	80.27	OK
	193.51	4.41*	6.531E+00	-----	Line Not Found	-----	Absent
	210.85	2.80	6.166E+00	-----	Line Not Found	-----	Absent
TH-230	609.32	45.49*	2.697E+00	9.213E-01	9.213E-01	22.32	OK
	1120.29	14.92	1.689E+00	8.435E-01	8.435E-01	53.28	OK
	1764.49	15.30	1.138E+00	1.066E+00	1.066E+00	39.91	OK
PA-231	283.69	1.70	4.935E+00	-----	Line Not Found	-----	Absent
	301.36	5.35*	4.720E+00	1.022E+00	1.022E+00	56.97	OK
TH-232	105.21	1.10	7.950E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.289E+00	1.254E+00	1.254E+00	41.25	OK
	835.71	1.61	2.121E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.985E+00	7.334E-01	7.334E-01	41.55	OK
	968.97	15.80	1.893E+00	9.598E-01	9.598E-01	34.24	OK
PA-233	300.13	6.63	4.720E+00	8.243E-01	8.243E-01	56.97	OK
	311.90	38.50*	4.582E+00	8.161E-02	8.161E-02	191.33	OK
	340.48	4.45	4.267E+00	-----	Line Not Found	-----	Absent
TH-234	63.29	3.70*	5.554E+00	1.267E+00	1.267E+00	116.90	OK
	92.59	4.23	7.706E+00	2.171E+00	2.171E+00	43.23	OK
U-234	609.32	45.49*	2.697E+00	9.213E-01	9.213E-01	22.32	OK
	1120.29	14.92	1.689E+00	8.435E-01	8.435E-01	53.28	OK
	1764.49	15.30	1.138E+00	1.066E+00	1.066E+00	39.91	OK
U-235	89.96	3.47	7.610E+00	1.480E+00	1.480E+00	62.13	OK
	93.35	5.60	7.706E+00	1.640E+00	1.640E+00	43.23	OK
	143.76	10.96*	7.620E+00	-----	Line Not Found	-----	Absent
	163.33	5.08	7.206E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	6.689E+00	1.465E-01	1.465E-01	54.04	OK
	205.31	5.01	6.280E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	5.554E+00	1.267E+00	1.267E+00	116.90	OK
	92.59	4.23	7.706E+00	2.171E+00	2.171E+00	43.23	OK
AM-243	43.53	5.90	1.694E+00	-----	Line Not Found	-----	Absent
	74.66	67.20*	6.749E+00	1.812E-01	1.812E-01	48.04	OK
ANH-511	511.00	100.00*	3.088E+00	9.971E-04	9.971E-04	8945.20	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235023.CNF;1  *
* Acquisition date   : 3-OCT-2016 08:58:40 Sensitivity      : 3.000          *
* Detector ID        : GAM24 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:02.00 Half life ratio : *****      *
* Sample date        : 2-DEC-2015 10:40:00 Analyst initials: MXR1      *
* Sample ID          : G405235023 Sample Quantity : 1.4140E+02 GRAM    *
* Batch Number       : 1596249 Wet Weight : 0.00000        *
* Wet wt corr        : 1.00000 Dry Weight : 0.00000         *
* Nuclide Library    : SOLID.NLB;6                                         *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date    : 17-JUN-2016 07:45:20 Eff. Geometry   : CAN        *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM24 CAN.CNF;7          *
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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.243E+01	1.344E+00	4.832E-01
CD-109	2.086E+00	1.641E+00	1.487E+00
TE-125M	1.095E+02	4.764E+02	4.587E+02
SN-126	1.317E-01	1.036E-01	9.410E-02
BA-137M	3.299E-01	9.966E-02	5.785E-02
CS-137	3.486E-01	1.053E-01	6.111E-02
TL-208	3.245E-01	7.726E-02	5.906E-02
PB-210	1.026E+00	3.002E+00	2.460E+00
BI-212	1.153E+00	9.578E-01	7.389E-01
PB-212	1.091E+00	1.192E-01	8.285E-02
BI-214	9.216E-01	2.016E-01	1.125E-01
PB-214	1.193E+00	1.819E-01	1.075E-01
RN-222	9.216E-01	2.016E-01	1.125E-01
RA-224	8.509E-01	1.499E+00	8.882E-01
RA-226	9.216E-01	2.016E-01	1.125E-01
AC-228	7.334E-01	2.986E-01	2.451E-01
RA-228	7.334E-01	2.986E-01	2.451E-01
TH-228	1.091E+00	1.192E-01	8.285E-02
TH-229	4.141E-01	4.432E-01	8.579E-01
TH-230	9.213E-01	2.015E-01	1.124E-01
PA-231	1.022E+00	5.703E-01	7.210E-01
TH-232	7.334E-01	2.986E-01	2.451E-01
PA-233	8.161E-02	1.530E-01	9.713E-02
TH-234	1.267E+00	1.451E+00	1.385E+00
U-234	9.213E-01	2.015E-01	1.124E-01
U-235	-7.143E-02	1.739E-01	3.090E-01
U-238	1.267E+00	1.451E+00	1.385E+00
AM-243	1.812E-01	8.530E-02	6.331E-02
ANH-511	9.971E-04	8.741E-02	5.169E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-4.962E+00	1.228E+01	2.252E+01	NOT IDENT.

NA-22	1.243E-02	5.037E-02	9.585E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	7.081E-03	2.274E-02	5.523E-02	NOT IDENT.
SC-46	-5.738E-01	3.732E-01	4.987E-01	FAIL ABUN
V-48	0.000E+00	1.642E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.118E+02	0.000E+00	SHORT HLIF
MN-54	-3.323E-02	6.726E-02	1.157E-01	NOT IDENT.
CO-56	7.905E-02	4.295E-01	8.435E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	7.259E-03	4.035E-02	7.560E-02	NOT IDENT.
CO-58	2.659E-01	3.646E-01	8.222E-01	NOT IDENT.
FE-59	-5.545E+00	6.252E+00	1.070E+01	NOT IDENT.
CO-60	7.350E-03	2.885E-02	6.330E-02	NOT IDENT.
ZN-65	1.056E-01	1.649E-01	3.299E-01	NOT IDENT.
GE-68	-2.103E-01	1.881E+00	3.763E+00	NOT IDENT.
AS-73	3.431E+00	4.973E+00	9.828E+00	NOT IDENT.
AS-74	0.000E+00	7.107E+03	0.000E+00	SHORT HLIF
SE-75	-9.210E-02	1.883E-01	3.549E-01	NOT IDENT.
BR-77	0.000E+00	1.270E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	7.798E+02	0.000E+00	SHORT HLIF
RB-83	5.320E-02	6.081E-01	1.188E+00	NOT IDENT.
KR-85	4.224E+00	7.385E+00	1.359E+01	NOT IDENT.
SR-85	4.720E-01	8.315E-01	1.529E+00	NOT IDENT.
RB-86	0.000E+00	2.780E+04	0.000E+00	SHORT HLIF
Y-88	2.103E-02	2.149E-01	4.626E-01	NOT IDENT.
Y-91	2.930E+01	4.811E+02	9.673E+02	NOT IDENT.
NB-94	5.166E-03	2.952E-02	5.700E-02	NOT IDENT.
NB-95	-3.463E-01	9.430E-01	1.461E+00	NOT IDENT.
NB-95M	-1.482E-01	2.294E+00	4.049E+00	NOT IDENT.
ZR-95	-5.707E-01	1.552E+00	2.757E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	6.430E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-1.290E-02	3.143E-02	5.562E-02	NOT IDENT.
RH-102	2.100E-02	5.312E-02	1.073E-01	NOT IDENT.
RU-103	-1.115E-01	6.133E+00	1.173E+01	FAIL ABUN
RH-106	-2.431E-01	4.526E-01	7.994E-01	NOT IDENT.
RU-106	-2.431E-01	4.526E-01	7.994E-01	NOT IDENT.
AG-108M	6.719E-03	2.650E-02	5.237E-02	NOT IDENT.
AG-110M	-5.599E-02	9.755E-02	1.651E-01	NOT IDENT.
SN-113	2.579E-02	2.076E-01	4.091E-01	NOT IDENT.
CD-115	0.000E+00	1.904E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.176E+05	0.000E+00	SHORT HLIF
TE-123M	5.449E-02	1.229E-01	2.315E-01	NOT IDENT.
SB-124	1.875E+00	2.188E+00	5.319E+00	NOT IDENT.
SB-125	2.521E-02	9.217E-02	1.840E-01	FAIL ABUN
I-126	0.000E+00	1.484E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.467E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	6.558E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	7.131E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.275E+27	0.000E+00	SHORT HLIF
BA-133	6.630E-03	3.279E-02	6.031E-02	NOT IDENT.
I-133	0.000E+00	1.431E+41	0.000E+00	SHORT HLIF
CS-134	1.111E-01	6.531E-02	1.171E-01	FAIL ABUN
CS-135	-1.159E-01	1.189E-01	2.139E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.586E+05	0.000E+00	SHORT HLIF
CE-139	2.532E-02	1.080E-01	1.988E-01	NOT IDENT.
BA-140	0.000E+00	1.622E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.622E+05	0.000E+00	SHORT HLIF
CE-141	7.869E+00	2.563E+01	4.766E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	-6.451E-02	3.266E-01	5.875E-01	NOT IDENT.
PM-144	1.707E-03	4.896E-02	9.367E-02	NOT IDENT.
PR-144	1.488E-01	4.267E+00	8.163E+00	NOT IDENT.
PM-146	2.504E-02	3.878E-02	8.043E-02	NOT IDENT.
ND-147	0.000E+00	4.673E+07	0.000E+00	SHORT HLIF
PM-147	3.721E+02	6.950E+02	1.340E+03	NOT IDENT.
PM-149	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
EU-150	-8.459E-03	2.594E-02	4.347E-02	FAIL ABUN
EU-152	-1.209E-02	8.335E-02	1.531E-01	FAIL ABUN
GD-153	-1.662E-02	1.647E-01	2.796E-01	NOT IDENT.
EU-154	2.611E-02	1.224E-01	2.318E-01	FAIL ABUN
EU-155	7.348E-02	8.533E-02	1.696E-01	FAIL ABUN
TB-160	1.838E-01	2.302E+00	3.875E+00	FAIL ABUN
HO-166M	-9.090E-03	5.178E-02	9.582E-02	FAIL ABUN

TM-171	1.848E+00	1.052E+01	2.043E+01	NOT IDENT.
HF-172	2.587E-02	1.950E-01	3.630E-01	FAIL ABUN
LU-172	3.856E-02	7.593E-02	1.599E-01	FAIL ABUN
LU-176	-7.838E-03	2.299E-02	3.883E-02	FAIL ABUN
HF-181	-8.063E-01	4.423E+00	8.338E+00	NOT IDENT.
TA-182	9.328E-01	8.809E-01	1.972E+00	FAIL ABUN
RE-183	5.395E-01	1.747E+00	3.407E+00	NOT IDENT.
RE-184	3.575E+01	3.237E+01	7.099E+01	NOT IDENT.
W-188	-1.181E+02	1.134E+02	1.740E+02	FAIL ABUN
IR-192	1.622E-01	4.426E-01	8.208E-01	FAIL ABUN
HG-203	-1.083E-01	2.290E+00	4.467E+00	FAIL ABUN
BI-207	-3.287E-03	3.269E-02	6.685E-02	FAIL ABUN
BI-211	0.000E+00	5.009E-01	7.826E-01	FAIL ABUN
PB-211	3.499E-01	5.572E-01	1.158E+00	NOT IDENT.
RN-219	-6.484E-02	3.377E-01	6.414E-01	NOT IDENT.
RA-223	1.260E-01	5.033E-01	1.007E+00	FAIL ABUN
AC-227	2.015E-01	2.012E-01	4.251E-01	FAIL ABUN
TH-227	2.015E-01	2.012E-01	4.251E-01	FAIL ABUN
TH-231	1.260E-01	5.033E-01	1.007E+00	FAIL ABUN
PA-234	-1.091E-01	2.326E-01	4.105E-01	FAIL ABUN
PA-234M	1.210E+00	3.722E+00	7.801E+00	NOT IDENT.
NP-237	8.161E-02	1.530E-01	9.516E-02	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	7.289E-02	2.051E-01	3.896E-01	NOT IDENT.
PU-239	1.216E+02	3.023E+02	5.660E+02	NOT IDENT.
AM-241	-1.082E-02	8.487E-02	1.480E-01	NOT IDENT.
CM-243	-1.628E-03	7.335E-02	1.369E-01	NOT IDENT.
BK-247	-2.981E-02	6.259E-02	1.181E-01	FAIL ABUN
CM-247	1.744E-02	2.802E-02	5.858E-02	NOT IDENT.
CF-249	3.766E-03	3.437E-02	6.724E-02	NOT IDENT.
CF-251	1.701E-02	1.069E-01	1.953E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	338	10.66*	1.354E+00	1.243E+01	1.243E+01	11.03
CD-109	88.03	128	3.70*	7.499E+00	2.459E+00	3.893E+00	42.00
TE-125M	109.28	11	0.27*	7.981E+00	2.721E+00	1.095E+02	444.12
SN-126	64.28	49	9.60	5.554E+00	4.883E-01	4.883E-01	116.90
	86.94	128	8.90	7.499E+00	1.022E+00	1.022E+00	42.00
	87.57	128	37.00*	7.499E+00	2.459E-01	2.459E-01	42.00
BA-137M	661.66	139	89.90*	2.532E+00	3.236E-01	3.299E-01	30.82
CS-137	661.66	139	85.10*	2.532E+00	3.419E-01	3.486E-01	30.82
TL-208	277.37	-----	6.60	5.023E+00	-----	Line Not Found	-----
	583.19	145	85.00*	2.790E+00	3.245E-01	3.245E-01	24.30
	860.56	17	12.50	2.074E+00	3.480E-01	3.480E-01	108.30
PB-210	46.54	20	4.25*	2.491E+00	9.993E-01	1.026E+00	298.62
BI-211	72.87	45	1.23	6.591E+00	2.940E+00	2.940E+00	152.14
	351.06	332	12.92*	4.154E+00	3.287E+00	3.287E+00	15.55
BI-212	727.33	34	6.67*	2.358E+00	1.153E+00	1.153E+00	84.77
	785.37	21	1.10	2.221E+00	4.513E+00	4.513E+00	83.37
	1620.50	12	1.47	1.233E+00	3.617E+00	3.617E+00	55.47
PB-212	74.82	246	10.28	6.749E+00	1.883E+00	1.883E+00	29.29
	77.11	328	17.10	6.918E+00	1.472E+00	1.472E+00	19.84
	238.63	505	43.60*	5.637E+00	1.091E+00	1.091E+00	11.14
	300.09	49	3.30	4.720E+00	1.656E+00	1.656E+00	56.97
BI-214	609.32	213	45.49*	2.697E+00	9.213E-01	9.216E-01	22.32
	1120.29	40	14.92	1.689E+00	8.435E-01	8.438E-01	53.28
	1764.49	35	15.30	1.138E+00	1.066E+00	1.066E+00	39.91
PB-214	74.82	246	5.80	6.749E+00	3.337E+00	3.338E+00	29.29
	77.11	328	9.70	6.918E+00	2.595E+00	2.596E+00	19.84
	87.09	128	3.41	7.499E+00	2.668E+00	2.669E+00	42.00
	242.00	131	7.25	5.579E+00	1.719E+00	1.720E+00	48.20
	295.22	205	18.42	4.779E+00	1.238E+00	1.239E+00	20.01
	351.93	332	35.60*	4.154E+00	1.193E+00	1.193E+00	15.55
RN-222	609.32	213	45.49*	2.697E+00	9.213E-01	9.216E-01	22.32
	1120.29	40	14.92	1.689E+00	8.435E-01	8.438E-01	53.28
	1764.49	35	15.30	1.138E+00	1.066E+00	1.066E+00	39.91
RA-224	240.99	131	4.10*	5.579E+00	3.040E+00	3.040E+00	48.20
RA-226	609.32	213	45.49*	2.697E+00	9.213E-01	9.216E-01	22.32
	1120.29	40	14.92	1.689E+00	8.435E-01	8.438E-01	53.28
	1764.49	35	15.30	1.138E+00	1.066E+00	1.066E+00	39.91
AC-228	105.21	-----	1.10	7.950E+00	-----	Line Not Found	-----
	338.32	114	11.27	4.289E+00	1.254E+00	1.254E+00	41.25
	794.95	30	4.25	2.204E+00	1.687E+00	1.687E+00	60.00
	835.71	-----	1.61	2.121E+00	-----	Line Not Found	-----
	911.20	71	25.80*	1.985E+00	7.334E-01	7.334E-01	41.55
	968.97	54	15.80	1.893E+00	9.598E-01	9.598E-01	34.24
RA-228	105.21	-----	1.10	7.950E+00	-----	Line Not Found	-----
	338.32	114	11.27	4.289E+00	1.254E+00	1.254E+00	41.25
	794.95	30	4.25	2.204E+00	1.687E+00	1.687E+00	60.00
	835.71	-----	1.61	2.121E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	71	25.80*	1.985E+00	7.334E-01	7.334E-01	41.55
	968.97	54	15.80	1.893E+00	9.598E-01	9.598E-01	34.24
	74.82	246	10.28	6.749E+00	1.883E+00	1.883E+00	29.29
	77.11	328	17.10	6.918E+00	1.472E+00	1.472E+00	19.84
	238.63	505	43.60*	5.637E+00	1.091E+00	1.091E+00	11.14
TH-229	300.09	49	3.30	4.720E+00	1.656E+00	1.656E+00	56.97
	85.43	58	14.70	7.361E+00	2.859E-01	2.859E-01	87.98
	88.47	128	24.00	7.499E+00	3.790E-01	3.791E-01	42.00
	193.51	-----	4.41*	6.531E+00	-----	Line Not Found	-----
	210.85	-----	2.80	6.166E+00	-----	Line Not Found	-----
TH-230	609.32	213	45.49*	2.697E+00	9.213E-01	9.213E-01	22.32
	1120.29	40	14.92	1.689E+00	8.435E-01	8.435E-01	53.28
	1764.49	35	15.30	1.138E+00	1.066E+00	1.066E+00	39.91
	283.69	-----	1.70	4.935E+00	-----	Line Not Found	-----
TH-232	301.36	49	5.35*	4.720E+00	1.022E+00	1.022E+00	56.97
	105.21	-----	1.10	7.950E+00	-----	Line Not Found	-----
	338.32	114	11.27	4.289E+00	1.254E+00	1.254E+00	41.25
	835.71	-----	1.61	2.121E+00	-----	Line Not Found	-----
PA-233	911.20	71	25.80*	1.985E+00	7.334E-01	7.334E-01	41.55
	968.97	54	15.80	1.893E+00	9.598E-01	9.598E-01	34.24
	300.13	49	6.63	4.720E+00	8.243E-01	8.243E-01	56.97
	311.90	27	38.50*	4.582E+00	8.161E-02	8.161E-02	191.33
	340.48	-----	4.45	4.267E+00	-----	Line Not Found	-----
TH-234	63.29	49	3.70*	5.554E+00	1.267E+00	1.267E+00	116.90
	92.59	133	4.23	7.706E+00	2.171E+00	2.171E+00	43.23
	609.32	213	45.49*	2.697E+00	9.213E-01	9.213E-01	22.32
U-234	1120.29	40	14.92	1.689E+00	8.435E-01	8.435E-01	53.28
	1764.49	35	15.30	1.138E+00	1.066E+00	1.066E+00	39.91
	89.96	74	3.47	7.610E+00	1.480E+00	1.480E+00	62.13
U-235	93.35	133	5.60	7.706E+00	1.640E+00	1.640E+00	43.23
	143.76	-----	10.96*	7.620E+00	-----	Line Not Found	-----
	163.33	-----	5.08	7.206E+00	-----	Line Not Found	-----
	185.72	106	57.20	6.689E+00	1.465E-01	1.465E-01	54.04
	205.31	-----	5.01	6.280E+00	-----	Line Not Found	-----
U-238	63.29	49	3.70*	5.554E+00	1.267E+00	1.267E+00	116.90
	92.59	133	4.23	7.706E+00	2.171E+00	2.171E+00	43.23
	43.53	-----	5.90	1.694E+00	-----	Line Not Found	-----
AM-243	74.66	246	67.20*	6.749E+00	2.880E-01	2.881E-01	29.29
	511.00	1	100.00*	3.088E+00	9.971E-04	9.971E-04	8945.20

Flag: "*" = Keyline

Total number of lines in spectrum 51
Number of unidentified lines 14
Number of lines tentatively identified by NID 37 72.55%

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	1.243E+01	1.243E+01	0.137E+01	11.03	
CD-109	461.40D	1.58	2.459E+00	3.893E+00	1.635E+00	42.00	
TE-125M	57.40D	40.2	2.721E+00	1.095E+02	4.862E+02	444.12	
SN-126	2.30E+05Y	1.00	2.459E-01	2.459E-01	1.033E-01	42.00	
BA-137M	30.08Y	1.02	3.236E-01	3.299E-01	1.017E-01	30.82	
CS-137	30.08Y	1.02	3.419E-01	3.486E-01	1.074E-01	30.82	
TL-208	1.41E+10Y	1.00	3.245E-01	3.245E-01	0.788E-01	24.30	
PB-210	22.20Y	1.03	9.993E-01	1.026E+00	3.063E+00	298.62	
BI-211	7.04E+08Y	1.00	3.287E+00	3.287E+00	0.511E+00	15.55	
BI-212	1.41E+10Y	1.00	1.153E+00	1.153E+00	0.977E+00	84.77	
PB-212	1.41E+10Y	1.00	1.091E+00	1.091E+00	0.122E+00	11.14	
BI-214	1600.00Y	1.00	9.213E-01	9.216E-01	2.057E-01	22.32	
PB-214	1600.00Y	1.00	1.193E+00	1.193E+00	0.186E+00	15.55	
RN-222	1600.00Y	1.00	9.213E-01	9.216E-01	2.057E-01	22.32	
RA-224	1.41E+10Y	1.00	3.040E+00	3.040E+00	1.465E+00	48.20	
RA-226	1600.00Y	1.00	9.213E-01	9.216E-01	2.057E-01	22.32	
AC-228	1.41E+10Y	1.00	7.334E-01	7.334E-01	3.047E-01	41.55	
RA-228	1.41E+10Y	1.00	7.334E-01	7.334E-01	3.047E-01	41.55	
TH-228	1.41E+10Y	1.00	1.091E+00	1.091E+00	0.122E+00	11.14	
TH-229	7340.00Y	1.00	3.790E-01	3.791E-01	1.592E-01	42.00	K
TH-230	7.54E+04Y	1.00	9.213E-01	9.213E-01	2.056E-01	22.32	
PA-231	7.04E+08Y	1.00	1.022E+00	1.022E+00	0.582E+00	56.97	
TH-232	1.41E+10Y	1.00	7.334E-01	7.334E-01	3.047E-01	41.55	
PA-233	2.14E+06Y	1.00	8.161E-02	8.161E-02	15.61E-02	191.33	
TH-234	4.47E+09Y	1.00	1.267E+00	1.267E+00	1.481E+00	116.90	
U-234	2.45E+05Y	1.00	9.213E-01	9.213E-01	2.056E-01	22.32	
U-235	7.04E+08Y	1.00	1.465E-01	1.465E-01	0.792E-01	54.04	K
U-238	4.47E+09Y	1.00	1.267E+00	1.267E+00	1.481E+00	116.90	
AM-243	7370.00Y	1.00	2.880E-01	2.881E-01	0.844E-01	29.29	
ANH-511	1.00E+09Y	1.00	9.971E-04	9.971E-04	891.9E-04	8945.20	

Total Activity : 4.196E+01 1.502E+02

Grand Total Activity : 4.196E+01 1.502E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	65.12	15	197	0.94	130.30	123	10	3.29E-03	****	5.76E+00	
0	209.29	30	103	0.83	418.71	416	7	7.47E-03	****	6.20E+00	
0	464.13	20	71	1.15	928.53	923	12	5.23E-03	****	3.33E+00	T
0	670.22	26	44	0.73	1340.86	1334	17	7.08E-03	****	2.51E+00	
0	768.38	15	25	0.78	1537.26	1532	11	4.00E-03	****	2.26E+00	
0	809.16	10	11	0.91	1618.85	1614	8	2.84E-03	****	2.17E+00	T
0	873.29	25	35	10.38	1747.18	1733	28	7.03E-03	****	2.05E+00	T
0	964.51	32	6	2.25	1929.71	1925	9	9.06E-03	45.1	1.90E+00	T
0	1053.71	18	6	1.85	2108.19	2104	10	5.08E-03	66.1	1.77E+00	
0	1161.19	9	12	1.28	2323.27	2317	9	2.69E-03	****	1.64E+00	
0	1169.26	14	17	0.96	2339.43	2331	14	4.05E-03	****	1.63E+00	
0	1256.53	11	14	0.65	2514.06	2507	10	3.07E-03	****	1.54E+00	
0	1281.19	13	11	1.80	2563.42	2557	10	3.81E-03	****	1.51E+00	
0	1322.81	5	3	1.24	2646.70	2643	6	1.39E-03	****	1.47E+00	
0	1353.65	7	0	0.73	2708.43	2705	6	1.94E-03	75.6	1.45E+00	
0	1356.56	8	0	0.73	2714.25	2711	6	2.22E-03	70.7	1.44E+00	
0	1377.81	21	3	2.85	2756.78	2751	11	6.19E-03	51.2	1.42E+00	
0	1408.39	14	3	1.93	2817.97	2813	11	4.17E-03	67.3	1.40E+00	T
0	1588.14	11	2	1.87	3177.70	3173	9	3.30E-03	73.4	1.26E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235023.CNF;1  *
* Acquisition date   : 3-OCT-2016 08:58:40 Sensitivity      : 3.000          *
* Detector ID        : GAM24 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:02.00 Half life ratio : *****      *
* Sample date        : 2-DEC-2015 10:40:00 Nuclide Library : SOLID      *
* Sample ID          : G405235023 Analyst initials: MXR1         *
* Batch Number       : 1596249 Sample Quantity : 1.4140E+02 GRAM    *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000        *
*                               Dry Weight      : 0.00000        *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 17-JUN-2016 07:45:20 Eff. Geometry  : CAN      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM24 CAN.CNF;7      *
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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.917E-01
CD-109	7.002E-01
TE-125M	2.152E+02
SN-126	4.432E-02
BA-137M	2.565E-02
CS-137	2.710E-02
TL-208	2.644E-02
PB-210	1.154E+00
BI-212	3.230E-01
PB-212	3.839E-02
BI-214	5.027E-02
PB-214	4.876E-02
RN-222	5.027E-02
RA-224	4.116E-01
RA-226	5.027E-02
AC-228	1.084E-01
RA-228	1.084E-01
TH-228	3.839E-02
TH-229	4.030E-01
TH-230	5.026E-02
PA-231	3.310E-01
TH-232	1.084E-01
PA-233	4.435E-02
TH-234	6.551E-01
U-234	5.026E-02
U-235	1.455E-01
U-238	6.551E-01
AM-243	2.997E-02
ANH-511	2.347E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.010E+01	NOT IDENT.
NA-22	4.199E-02	NOT IDENT.

NA-24	0.000E+00	SHORT HLIF
AL-26	2.114E-02	NOT IDENT.
SC-46	2.041E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.110E-02	NOT IDENT.
CO-56	3.677E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	3.538E-02	NOT IDENT.
CO-58	3.437E-01	NOT IDENT.
FE-59	4.470E+00	NOT IDENT.
CO-60	2.615E-02	NOT IDENT.
ZN-65	1.448E-01	NOT IDENT.
GE-68	1.599E+00	NOT IDENT.
AS-73	4.651E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.632E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.311E-01	NOT IDENT.
KR-85	6.214E+00	NOT IDENT.
SR-85	6.993E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.830E-01	NOT IDENT.
Y-91	4.182E+02	NOT IDENT.
NB-94	2.547E-02	NOT IDENT.
NB-95	6.421E-01	NOT IDENT.
NB-95M	1.880E+00	NOT IDENT.
ZR-95	1.218E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.614E-02	NOT IDENT.
RH-102	4.784E-02	NOT IDENT.
RU-103	5.298E+00	FAIL ABUN
RH-106	3.506E-01	NOT IDENT.
RU-106	3.506E-01	NOT IDENT.
AG-108M	2.386E-02	NOT IDENT.
AG-110M	7.102E-02	NOT IDENT.
SN-113	1.857E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.085E-01	NOT IDENT.
SB-124	2.228E+00	NOT IDENT.
SB-125	8.342E-02	FAIL ABUN
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.709E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.344E-02	FAIL ABUN
CS-135	9.791E-02	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.327E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.243E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.755E-01	NOT IDENT.
PM-144	4.143E-02	NOT IDENT.
PR-144	3.610E+00	NOT IDENT.
PM-146	3.651E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	6.282E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.993E-02	FAIL ABUN
EU-152	6.966E-02	FAIL ABUN
GD-153	1.317E-01	NOT IDENT.
EU-154	1.014E-01	FAIL ABUN
EU-155	7.971E-02	FAIL ABUN
TB-160	1.715E+00	FAIL ABUN
HO-166M	4.228E-02	FAIL ABUN
TM-171	9.628E+00	NOT IDENT.

HF-172	1.700E-01	FAIL ABUN
LU-172	7.084E-02	FAIL ABUN
LU-176	1.771E-02	FAIL ABUN
HF-181	3.748E+00	NOT IDENT.
TA-182	8.778E-01	FAIL ABUN
RE-183	1.607E+00	NOT IDENT.
RE-184	3.168E+01	NOT IDENT.
W-188	7.904E+01	FAIL ABUN
IR-192	3.754E-01	FAIL ABUN
HG-203	2.061E+00	FAIL ABUN
BI-207	2.780E-02	FAIL ABUN
BI-211	3.777E-01	FAIL ABUN
PB-211	5.266E-01	NOT IDENT.
RN-219	2.907E-01	NOT IDENT.
RA-223	4.616E-01	FAIL ABUN
AC-227	1.979E-01	FAIL ABUN
TH-227	1.979E-01	FAIL ABUN
TH-231	4.616E-01	FAIL ABUN
PA-234	1.738E-01	FAIL ABUN
PA-234M	3.433E+00	NOT IDENT.
NP-237	4.337E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.829E-01	NOT IDENT.
PU-239	2.678E+02	NOT IDENT.
AM-241	6.973E-02	NOT IDENT.
CM-243	6.380E-02	NOT IDENT.
BK-247	5.431E-02	FAIL ABUN
CM-247	2.654E-02	NOT IDENT.
CF-249	3.070E-02	NOT IDENT.
CF-251	9.136E-02	NOT IDENT.

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235023.CNF;1
* Acquisition date   : 3-OCT-2016 08:58:40 Sensitivity      : 3.000
* Detector ID        : GAM24 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:02.00 Half life ratio : *****
* Sample date        : 2-DEC-2015 10:40:00 Nuclide Library : SOLID
* Sample ID          : G405235023 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.4140E+02 GRAM
*                               Quantity Err(%) : 1.4144E-03 %
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000
*                               Dry Weight      : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 17-JUN-2016 07:45:20 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM24 CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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----- Identified Nuclides -----
Nuclide      Activity      Act Error      TPU
              (pCi/GRAM )    (1.96-sigma)   (1.96-sigma)
K-40         1.243E+01      1.492E+00      1.492E+00
CD-109       2.086E+00      1.665E+00      1.665E+00
TE-125M      1.095E+02      4.765E+02      4.765E+02
SN-126       1.317E-01      1.049E-01      1.049E-01
BA-137M      3.299E-01      1.007E-01      1.007E-01
CS-137       3.486E-01      1.063E-01      1.063E-01
TL-208       3.245E-01      7.848E-02      7.848E-02
PB-210       1.026E+00      3.003E+00      3.003E+00
BI-212       1.153E+00      9.596E-01      9.596E-01
PB-212       1.091E+00      1.323E-01      1.323E-01
BI-214       9.216E-01      2.054E-01      2.054E-01
PB-214       1.193E+00      1.884E-01      1.884E-01
RN-222       9.216E-01      2.054E-01      2.054E-01
RA-224       8.509E-01      1.506E+00      1.506E+00
RA-226       9.216E-01      2.054E-01      2.054E-01
AC-228       7.334E-01      3.009E-01      3.009E-01
RA-228       7.334E-01      3.009E-01      3.009E-01
TH-228       1.091E+00      1.323E-01      1.323E-01
TH-229       4.141E-01      4.436E-01      4.436E-01
TH-230       9.213E-01      2.053E-01      2.053E-01
PA-231       1.022E+00      6.106E-01      6.106E-01
TH-232       7.334E-01      3.009E-01      3.009E-01
PA-233       8.161E-02      1.531E-01      1.531E-01
TH-234       1.267E+00      1.478E+00      1.478E+00
U-234        9.213E-01      2.053E-01      2.053E-01
U-235       -7.143E-02      1.739E-01      1.739E-01
U-238        1.267E+00      1.478E+00      1.478E+00
AM-243       1.812E-01      8.708E-02      8.708E-02
ANH-511      9.971E-04      8.741E-02      8.741E-02

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

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Nuclide      Key-Line      K.L Act error      TPU
              Activity      (1.96-sigma)       (1.96-sigma)
              (pCi/GRAM )
BE-7         -4.962E+00      1.228E+01      1.248E+01 NOT IDENT.

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NA-22	1.243E-02	5.037E-02	5.069E-02	NOT IDENT.
NA-24	-1.000E+41	2.535E+41	0.000E+00	SHORT HLIF
AL-26	7.081E-03	2.274E-02	2.296E-02	NOT IDENT.
SC-46	-5.738E-01	3.740E-01	4.547E-01	FAIL ABUN
V-48	-1.990E+03	1.642E+04	1.644E+04	SHORT HLIF
CR-51	-3.344E+02	4.120E+02	4.387E+02	SHORT HLIF
MN-54	-3.323E-02	6.727E-02	6.892E-02	NOT IDENT.
CO-56	7.905E-02	4.295E-01	4.310E-01	NOT IDENT.
MN-56	1.000E+41	3.373E+41	0.000E+00	SHORT HLIF
CO-57	7.259E-03	4.035E-02	4.048E-02	NOT IDENT.
CO-58	2.659E-01	3.648E-01	3.840E-01	NOT IDENT.
FE-59	-5.545E+00	6.265E+00	6.745E+00	NOT IDENT.
CO-60	7.350E-03	2.885E-02	2.904E-02	NOT IDENT.
ZN-65	1.056E-01	1.650E-01	1.717E-01	NOT IDENT.
GE-68	-2.103E-01	1.881E+00	1.884E+00	NOT IDENT.
AS-73	3.431E+00	5.023E+00	5.256E+00	NOT IDENT.
AS-74	-2.915E+03	7.111E+03	7.232E+03	SHORT HLIF
SE-75	-9.210E-02	1.883E-01	1.928E-01	NOT IDENT.
BR-77	1.163E+39	1.027E+40	0.000E+00	SHORT HLIF
SR-82	6.237E+02	7.804E+02	8.295E+02	SHORT HLIF
RB-83	5.320E-02	6.082E-01	6.087E-01	NOT IDENT.
KR-85	4.224E+00	7.386E+00	7.628E+00	NOT IDENT.
SR-85	4.720E-01	8.317E-01	8.585E-01	NOT IDENT.
RB-86	-3.932E+03	2.780E+04	2.786E+04	SHORT HLIF
Y-88	2.103E-02	2.149E-01	2.152E-01	NOT IDENT.
Y-91	2.930E+01	4.811E+02	4.813E+02	NOT IDENT.
NB-94	5.166E-03	2.952E-02	2.961E-02	NOT IDENT.
NB-95	-3.463E-01	9.431E-01	9.559E-01	NOT IDENT.
NB-95M	-1.482E-01	2.295E+00	2.295E+00	NOT IDENT.
ZR-95	-5.707E-01	1.552E+00	1.573E+00	NOT IDENT.
NB-97	-1.000E+41	4.064E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	2.321E+41	0.000E+00	SHORT HLIF
MO-99	-6.949E+32	6.450E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	3.406E+41	0.000E+00	SHORT HLIF
RH-101	-1.290E-02	3.152E-02	3.205E-02	NOT IDENT.
RH-102	2.100E-02	5.315E-02	5.399E-02	NOT IDENT.
RU-103	-1.115E-01	6.133E+00	6.133E+00	FAIL ABUN
RH-106	-2.431E-01	4.528E-01	4.659E-01	NOT IDENT.
RU-106	-2.431E-01	4.528E-01	4.659E-01	NOT IDENT.
AG-108M	6.719E-03	2.650E-02	2.667E-02	NOT IDENT.
AG-110M	-5.599E-02	9.759E-02	1.008E-01	NOT IDENT.
SN-113	2.579E-02	2.076E-01	2.079E-01	NOT IDENT.
CD-115	8.801E+38	1.904E+40	0.000E+00	SHORT HLIF
SN-117M	2.188E+04	1.177E+05	1.181E+05	SHORT HLIF
TE-123M	5.449E-02	1.229E-01	1.254E-01	NOT IDENT.
SB-124	1.875E+00	2.190E+00	2.348E+00	NOT IDENT.
SB-125	2.521E-02	9.218E-02	9.288E-02	FAIL ABUN
I-126	1.099E+06	1.492E+06	1.572E+06	SHORT HLIF
SB-126	6.407E+05	1.472E+06	1.500E+06	SHORT HLIF
SB-127	2.035E+21	6.564E+22	0.000E+00	SHORT HLIF
I-131	-5.209E+08	7.131E+09	7.135E+09	SHORT HLIF
I-132	1.000E+41	1.897E+42	0.000E+00	SHORT HLIF
TE-132	9.883E+26	1.339E+27	0.000E+00	SHORT HLIF
BA-133	6.630E-03	3.279E-02	3.293E-02	NOT IDENT.
I-133	-1.000E+41	2.336E+41	0.000E+00	SHORT HLIF
CS-134	1.111E-01	6.548E-02	8.243E-02	FAIL ABUN
CS-135	-1.159E-01	1.191E-01	1.301E-01	NOT IDENT.
I-135	1.000E+41	1.020E+42	0.000E+00	SHORT HLIF
CS-136	4.103E+05	3.614E+05	4.060E+05	SHORT HLIF
CE-139	2.532E-02	1.081E-01	1.087E-01	NOT IDENT.
BA-140	-8.149E+05	1.622E+06	1.663E+06	SHORT HLIF
LA-140	2.849E+05	4.624E+05	4.799E+05	SHORT HLIF
CE-141	7.869E+00	2.563E+01	2.587E+01	NOT IDENT.
CE-143	1.000E+41	2.129E+41	0.000E+00	SHORT HLIF
CE-144	-6.451E-02	3.266E-01	3.279E-01	NOT IDENT.
PM-144	1.707E-03	4.896E-02	4.897E-02	NOT IDENT.
PR-144	1.488E-01	4.267E+00	4.267E+00	NOT IDENT.
PM-146	2.504E-02	3.883E-02	4.043E-02	NOT IDENT.
ND-147	7.057E+06	4.673E+07	4.684E+07	SHORT HLIF
PM-147	3.721E+02	6.952E+02	7.151E+02	NOT IDENT.
PM-149	1.000E+41	2.219E+41	0.000E+00	SHORT HLIF
EU-150	-8.459E-03	2.595E-02	2.622E-02	FAIL ABUN
EU-152	-1.209E-02	8.335E-02	8.353E-02	FAIL ABUN
GD-153	-1.662E-02	1.647E-01	1.649E-01	NOT IDENT.
EU-154	2.611E-02	1.224E-01	1.230E-01	FAIL ABUN
EU-155	7.348E-02	8.549E-02	9.168E-02	FAIL ABUN
TB-160	1.838E-01	2.302E+00	2.304E+00	FAIL ABUN
HO-166M	-9.090E-03	5.179E-02	5.195E-02	FAIL ABUN

TM-171	1.848E+00	1.052E+01	1.055E+01	NOT IDENT.
HF-172	2.587E-02	1.951E-01	1.954E-01	FAIL ABUN
LU-172	3.856E-02	7.603E-02	7.799E-02	FAIL ABUN
LU-176	-7.838E-03	2.299E-02	2.326E-02	FAIL ABUN
HF-181	-8.063E-01	4.424E+00	4.439E+00	NOT IDENT.
TA-182	9.328E-01	8.816E-01	9.768E-01	FAIL ABUN
RE-183	5.395E-01	1.749E+00	1.766E+00	NOT IDENT.
RE-184	3.575E+01	3.352E+01	3.719E+01	NOT IDENT.
W-188	-1.181E+02	1.142E+02	1.260E+02	FAIL ABUN
IR-192	1.622E-01	4.427E-01	4.487E-01	FAIL ABUN
HG-203	-1.083E-01	2.290E+00	2.290E+00	FAIL ABUN
BI-207	-3.287E-03	3.269E-02	3.273E-02	FAIL ABUN
BI-211	3.287E+00	5.218E-01	1.571E+00	FAIL ABUN
PB-211	3.499E-01	5.574E-01	5.793E-01	NOT IDENT.
RN-219	-6.484E-02	3.378E-01	3.391E-01	NOT IDENT.
RA-223	1.260E-01	5.034E-01	5.066E-01	FAIL ABUN
AC-227	2.015E-01	2.030E-01	2.224E-01	FAIL ABUN
TH-227	2.015E-01	2.030E-01	2.224E-01	FAIL ABUN
TH-231	1.260E-01	5.034E-01	5.066E-01	FAIL ABUN
PA-234	-1.091E-01	2.640E-01	2.685E-01	FAIL ABUN
PA-234M	1.210E+00	3.722E+00	3.762E+00	NOT IDENT.
NP-237	8.161E-02	1.531E-01	1.574E-01	FAIL ABUN
NP-238	1.000E+41	5.725E+41	0.000E+00	SHORT HLIF
NP-239	7.289E-02	2.052E-01	2.078E-01	NOT IDENT.
PU-239	1.216E+02	3.023E+02	3.073E+02	NOT IDENT.
AM-241	-1.082E-02	8.488E-02	8.502E-02	NOT IDENT.
CM-243	-1.628E-03	7.335E-02	7.336E-02	NOT IDENT.
BK-247	-2.981E-02	6.287E-02	6.429E-02	FAIL ABUN
CM-247	1.744E-02	2.817E-02	2.925E-02	NOT IDENT.
CF-249	3.766E-03	3.437E-02	3.441E-02	NOT IDENT.
CF-251	1.701E-02	1.069E-01	1.072E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	77.8223	87.09	87.6782	136.47	70.4387
45.60	76.2650	87.57	87.7463	140.51	0.0000
46.54	76.4388	88.03	87.8113	143.76	90.5337
49.72	0.0000	88.34	87.8554	144.24	88.2910
51.35	83.2463	88.47	87.8737	145.44	78.0803
51.87	96.2426	89.96	88.0831	152.43	68.2890
52.39	84.4345	1093.63	88.1783	153.25	0.0000
52.97	78.5760	91.11	0.0000	323.87	69.5856
53.44	82.6403	92.59	88.4489	156.02	0.0000
54.07	87.7402	93.35	88.5530	158.56	0.0000
57.36	0.0000	94.56	88.7188	159.00	64.1250
57.53	86.3865	94.65	91.5938	162.33	73.7176
57.98	83.4515	94.67	91.5964	162.66	0.0000
59.27	92.7493	94.87	91.6244	163.33	76.1401
59.32	92.7591	97.43	91.9824	165.86	71.6473
59.54	92.8012	98.43	83.1249	176.31	68.8679
60.96	86.3271	98.44	83.1261	176.60	0.0000
61.17	86.3639	99.53	73.5299	177.52	66.5752
62.93	102.5824	100.11	76.8399	181.07	0.0000
63.29	102.6558	102.03	64.0339	181.52	77.9841
63.58	102.7151	103.18	68.4900	184.41	84.5928
64.28	102.8571	103.37	63.0715	143.76	75.5133
66.73	124.1539	105.21	64.3300	193.51	57.9697
67.24	140.6631	105.31	61.0676	197.03	59.3756
125.81	129.8470	106.12	61.1385	198.01	65.4953
67.75	125.7635	106.47	66.6303	201.83	69.3809
69.67	112.5006	109.28	77.4965	203.43	60.9512
70.83	141.6166	111.00	84.6447	205.31	61.0565
72.81	104.8742	111.76	0.0000	210.85	67.0921
72.87	104.8858	114.06	89.7849	215.65	59.1636
74.66	105.2252	116.30	0.0000	222.11	60.7401
74.82	105.2553	116.74	69.7993	227.09	62.2467
74.97	105.2832	119.76	76.7543	227.38	62.2620
77.11	105.6829	121.12	63.5192	228.16	0.0000
78.74	105.9836	121.22	63.5275	228.18	41.1211
79.69	106.1568	121.78	63.5740	116.74	41.1211
80.12	106.2356	122.06	66.9447	235.69	57.6846
80.19	0.0000	122.92	71.4873	235.96	57.6972
80.57	106.3168	123.07	71.5015	238.63	53.6354
81.00	106.3949	265.00	71.5576	238.98	0.0000
81.07	106.4073	125.81	69.5116	240.99	53.7396
81.75	79.8976	127.23	92.1005	242.00	53.7845
83.79	87.2039	127.91	94.4285	244.70	53.9030
84.00	87.2342	129.30	92.3413	252.40	0.0000
85.43	87.4404	131.20	99.3330	252.80	60.1886
86.55	87.6012	133.02	82.5873	254.15	0.0000
86.79	87.6353	133.52	80.3744	256.23	41.6518
86.94	87.6567	136.00	77.2118	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	53.0492	355.39	0.0000	584.27	29.2097
264.80	53.0542	356.01	23.2386	595.83	0.0000
265.00	52.2072	364.49	0.0000	427.87	35.0902
268.22	57.4841	366.42	0.0000	602.52	0.0000
269.46	48.0908	372.51	35.9023	604.72	31.0156
270.03	38.6618	375.05	37.8010	607.14	21.7332
271.23	34.3970	377.52	26.7769	609.32	23.8254
273.65	0.0000	356.01	37.9996	610.33	23.8348
276.40	44.8906	388.16	35.3080	614.28	23.3551
277.37	47.5140	388.63	0.0000	618.01	22.8719
277.60	49.2511	391.69	30.7253	620.36	16.6504
278.00	50.1293	264.66	31.8204	621.93	23.9499
279.20	48.4440	401.81	34.6514	630.19	0.0000
279.54	43.2648	402.40	22.4839	631.29	17.7706
279.70	43.2699	404.85	24.3914	633.25	26.1536
280.46	41.5625	410.95	32.0064	634.78	0.0000
283.69	39.9253	413.71	33.9419	635.95	24.0875
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	33.0235	423.72	0.0000	645.85	17.8750
285.90	0.0000	427.09	37.9923	657.76	23.7708
287.50	34.8140	427.87	27.5563	657.90	0.0000
290.67	53.6498	433.94	31.4605	661.66	20.6331
293.27	0.0000	439.40	30.5964	664.57	0.0000
351.93	38.0714	453.88	23.1235	666.33	0.0000
295.96	26.2695	463.37	27.1102	666.50	0.0000
879.38	18.4229	468.07	33.4843	667.71	0.0000
299.98	27.6618	473.00	0.0000	677.62	19.1646
300.09	27.6638	475.06	17.5320	685.70	0.0000
300.13	27.6644	476.78	25.3462	695.00	0.0000
301.36	42.1924	477.60	31.2083	696.49	19.3037
302.85	35.6369	482.18	29.3250	696.51	19.3037
256.23	27.7496	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	27.8916
306.78	42.3516	497.08	29.5410	697.49	22.5295
308.46	37.1012	505.52	29.6625	702.65	21.4982
311.90	37.1884	507.63	0.0000	706.68	21.5308
316.51	31.9761	511.00	32.7140	711.68	18.3350
319.41	0.0000	514.00	28.2936	720.70	0.0000
320.08	0.0000	514.00	28.2936	721.93	0.0000
321.04	35.6380	520.40	22.9027	722.78	14.6206
323.87	36.5982	520.69	0.0000	722.91	14.6212
325.23	50.0334	522.65	0.0000	723.31	14.6234
328.76	0.0000	527.90	0.0000	724.19	14.6277
333.37	48.5057	528.26	20.9889	727.33	16.2720
333.97	47.1765	529.59	27.0022	733.00	17.9361
334.37	51.2330	529.87	0.0000	735.93	9.7939
338.28	39.6494	531.02	0.0000	333.97	6.5330
338.32	39.6503	537.26	0.0000	739.50	0.0000
311.90	35.1938	546.56	0.0000	747.24	13.1118
340.48	35.1938	552.55	23.2443	748.06	16.3947
340.55	0.0000	563.25	23.3566	752.31	19.7036
344.28	36.9078	569.33	30.5469	753.82	0.0000
345.93	28.0717	946.00	30.5493	756.73	24.1198
351.06	31.7971	569.70	24.4414	756.80	24.1207
351.93	31.8142	583.19	24.5859	884.68	16.4874

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:00:36.81

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235024.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM29.CNF;354
Background date    : Z-OCT-2016 11:01:41.
Sample date       : 8-DEC-2015 14:13:00. Acquisition date : 3-OCT-2016 08:59:12.
Sample ID        : G405235024 Sample quantity : 1.38962E+02 GRAM
Detector name     : GAM29 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:01.43 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1596249 Detector SN# :
Matrix Spike ID   : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.35*	17	148	0.70	126.67	124	7	4.76E-03	126.2	
2	2	72.24	48	66	1.21	144.42	143	23	1.32E-02	24.4	2.62E+00
3	2	74.74*	139	152	1.22	149.42	143	23	3.86E-02	17.6	
4	2	77.19*	219	150	1.22	154.32	143	23	6.08E-02	11.8	
5	0	87.06	68	170	1.17	174.02	172	7	1.89E-02	34.1	
6	5	90.00	53	73	0.95	179.90	178	13	1.48E-02	26.2	9.81E-01
7	5	92.91*	111	170	1.47	185.71	178	13	3.07E-02	24.5	
8	0	128.68	41	175	0.89	257.14	253	9	1.15E-02	59.6	
9	0	185.79*	90	180	1.44	371.21	366	13	2.51E-02	33.4	
10	1	208.71	53	79	1.16	417.00	413	12	1.48E-02	31.5	3.60E+00
11	1	210.22	26	78	1.16	420.00	413	12	7.31E-03	62.0	
12	3	238.69*	404	91	1.14	476.89	472	26	1.12E-01	6.3	2.81E+00
13	3	241.95	88	107	1.59	483.39	472	26	2.45E-02	26.3	
14	3	243.51	24	93	1.44	486.50	472	26	6.56E-03	88.0	
15	0	270.38	36	83	1.43	540.20	536	9	1.00E-02	48.5	
16	0	295.21*	178	93	1.30	589.79	582	15	4.95E-02	14.1	
17	0	300.42	35	51	2.04	600.19	596	8	9.85E-03	38.4	
18	0	327.86	50	89	2.44	655.01	650	13	1.38E-02	41.6	
19	0	338.30*	92	42	0.88	675.88	673	7	2.56E-02	15.8	
20	0	352.07*	256	98	1.42	703.39	697	11	7.11E-02	9.8	
21	0	438.11	13	38	0.67	875.32	872	8	3.61E-03	89.5	
22	0	462.81	36	62	1.93	924.67	918	12	9.87E-03	47.7	
23	0	471.19	4	32	0.53	941.41	939	6	1.22E-03	210.9	
24	0	480.06	69	128	7.12	959.14	944	34	1.91E-02	52.1	
25	0	511.21*	33	64	1.92	1021.39	1013	14	9.27E-03	62.0	
26	0	533.31	19	27	2.54	1065.57	1059	11	5.24E-03	58.5	
27	0	583.44*	115	56	1.43	1165.76	1160	14	3.20E-02	17.2	
28	0	603.29	8	38	0.64	1205.44	1199	9	2.23E-03	143.5	
29	0	609.37*	209	63	1.50	1217.59	1209	18	5.80E-02	11.4	
30	0	651.41	23	15	2.54	1301.62	1298	8	6.52E-03	35.6	
31	0	661.67	296	49	1.48	1322.13	1315	14	8.22E-02	7.7	
32	0	727.72	35	9	0.97	1454.18	1449	9	9.71E-03	22.9	
33	3	795.15	26	9	2.04	1588.99	1582	19	7.19E-03	34.3	1.08E+00
34	3	799.26	14	4	2.04	1597.21	1582	19	3.90E-03	38.4	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	835.84	12	17	2.48	1670.35	1664	10	3.41E-03	69.5	
36	0	860.94	14	22	0.90	1720.54	1716	10	3.84E-03	69.5	
37	0	911.32*	86	27	1.45	1821.29	1816	13	2.40E-02	16.6	
38	0	933.01	12	16	1.37	1864.68	1859	9	3.19E-03	68.7	
39	0	954.17	17	30	6.47	1907.01	1892	20	4.67E-03	83.5	
40	0	965.07	26	13	1.94	1928.80	1924	9	7.14E-03	32.4	
41	0	969.22*	51	19	1.50	1937.09	1933	12	1.41E-02	22.7	
42	0	1000.45*	16	15	0.88	1999.57	1993	14	4.48E-03	57.5	
43	0	1052.34	6	23	1.50	2103.36	2097	12	1.63E-03	163.1	
44	0	1093.39	13	11	2.16	2185.47	2179	12	3.66E-03	58.8	
45	0	1120.44*	44	6	1.61	2239.59	2234	11	1.23E-02	19.2	
46	0	1148.58	9	13	0.92	2295.89	2288	10	2.61E-03	77.6	
47	0	1151.13	11	13	1.35	2300.99	2298	8	3.15E-03	61.1	
48	0	1300.05	10	2	3.25	2598.97	2594	9	2.73E-03	42.0	
49	0	1352.11	10	4	1.16	2703.17	2698	9	2.74E-03	49.8	
50	0	1378.52*	9	12	0.88	2756.02	2747	16	2.59E-03	91.3	
51	0	1425.60	16	0	4.00	2850.25	2845	11	4.44E-03	25.0	
52	0	1460.87*	360	13	1.77	2920.86	2912	14	1.00E-01	5.7	
53	0	1508.11	10	3	0.64	3015.41	3009	10	2.84E-03	42.9	
54	0	1729.99	12	2	1.93	3459.68	3454	9	3.40E-03	35.6	
55	0	1764.73*	37	0	1.36	3529.26	3524	10	1.03E-02	18.1	
56	0	1871.53	6	0	0.99	3743.17	3739	7	1.67E-03	40.8	

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

VMS Nuclide Identification Report V3.1 Generated 3-OCT-2016 10:00:38

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235024.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 8-DEC-2015 14:13:00 Acquisition date : 3-OCT-2016 08:59:12
Sample ID : G405235024 Sample quantity : 138.96 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA29 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.43 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.347E+00	1.298E+01	1.298E+01	11.35	OK
MN-54	834.85	99.98*	2.116E+00	3.152E-02	6.135E-02	138.96	OK
CD-109	88.03	3.70*	6.255E+00	7.744E-01	1.215E+00	172.03	OK
SN-126	64.28	9.60	3.603E+00	3.278E-01	3.278E-01	252.49	OK
	86.94	8.90	6.255E+00	3.219E-01	3.219E-01	172.03	OK
	87.57	37.00*	6.255E+00	7.744E-02	7.744E-02	172.03	OK
CS-134	563.25	8.34	2.846E+00	----- Line	Not Found	-----	Absent
	569.33	15.37	2.823E+00	----- Line	Not Found	-----	Absent
	604.72	97.62	2.703E+00	1.695E-02	2.231E-02	286.91	OK
	795.86	85.46*	2.197E+00	7.517E-02	9.896E-02	68.70	OK
	801.95	8.69	2.183E+00	----- Line	Not Found	-----	Absent
	1365.19	3.02	1.430E+00	----- Line	Not Found	-----	Absent
BA-137M	661.66	89.90*	2.522E+00	7.232E-01	7.370E-01	15.36	OK
CS-137	661.66	85.10*	2.522E+00	7.640E-01	7.785E-01	15.36	OK
TL-208	277.37	6.60	4.914E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.772E+00	2.734E-01	2.734E-01	34.39	OK
	860.56	12.50	2.069E+00	2.895E-01	2.895E-01	139.00	OK
PB-212	74.82	10.28	5.094E+00	1.050E+00	1.050E+00	60.99	OK
	77.11	17.10	5.365E+00	1.557E+00	1.557E+00	23.57	OK
	238.63	43.60*	5.495E+00	1.013E+00	1.013E+00	12.55	OK
	300.09	3.30	4.622E+00	1.373E+00	1.373E+00	76.89	OK
BI-214	609.32	45.49*	2.683E+00	9.538E-01	9.541E-01	22.80	OK
	1120.29	14.92	1.685E+00	9.323E-01	9.326E-01	38.48	OK
	1764.49	15.30	1.129E+00	1.090E+00	1.091E+00	36.10	OK
PB-214	74.82	5.80	5.103E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	5.365E+00	2.745E+00	2.746E+00	23.57	OK
	87.09	3.41	6.257E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	5.441E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.685E+00	1.219E+00	1.220E+00	28.25	OK
	351.93	35.60*	4.086E+00	1.026E+00	1.026E+00	19.69	OK
RN-222	609.32	45.49*	2.683E+00	9.538E-01	9.541E-01	22.80	OK
	1120.29	14.92	1.685E+00	9.323E-01	9.326E-01	38.48	OK
	1764.49	15.30	1.129E+00	1.090E+00	1.091E+00	36.10	OK
RA-224	240.99	4.10*	5.441E+00	2.178E-01	2.178E-01	638.47	OK
RA-226	609.32	45.49*	2.683E+00	9.538E-01	9.541E-01	22.80	OK
	1120.29	14.92	1.685E+00	9.323E-01	9.326E-01	38.48	OK
	1764.49	15.30	1.129E+00	1.090E+00	1.091E+00	36.10	OK
AC-228	105.21	1.10	7.155E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.215E+00	1.134E+00	1.134E+00	31.65	OK
	794.95	4.25	2.197E+00	1.512E+00	1.512E+00	68.70	OK
	835.71	1.61	2.116E+00	1.957E+00	1.957E+00	138.96	OK
	911.20	25.80*	1.981E+00	9.123E-01	9.123E-01	33.21	OK
	968.97	15.80	1.889E+00	9.088E-01	9.088E-01	45.33	OK
RA-228	105.21	1.10	7.155E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.215E+00	1.134E+00	1.134E+00	31.65	OK
	794.95	4.25	2.197E+00	1.512E+00	1.512E+00	68.70	OK
	835.71	1.61	2.116E+00	1.957E+00	1.957E+00	138.96	OK
	911.20	25.80*	1.981E+00	9.123E-01	9.123E-01	33.21	OK
	968.97	15.80	1.889E+00	9.088E-01	9.088E-01	45.33	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-228	74.82	10.28	5.094E+00	1.050E+00	1.050E+00	60.99	OK
	77.11	17.10	5.365E+00	1.557E+00	1.557E+00	23.57	OK
	238.63	43.60*	5.495E+00	1.013E+00	1.013E+00	12.55	OK
	300.09	3.30	4.622E+00	1.373E+00	1.373E+00	76.89	OK
TH-230	609.32	45.49*	2.683E+00	9.538E-01	9.538E-01	22.80	OK
	1120.29	14.92	1.685E+00	9.323E-01	9.323E-01	38.48	OK
	1764.49	15.30	1.129E+00	1.090E+00	1.090E+00	36.10	OK
	283.69	1.70	4.831E+00	----- Line	Not Found	-----	Absent
TH-232	301.36	5.35*	4.622E+00	8.467E-01	8.467E-01	76.89	OK
	105.21	1.10	7.155E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.215E+00	1.134E+00	1.134E+00	31.65	OK
	835.71	1.61	2.116E+00	1.957E+00	1.957E+00	138.96	OK
TH-234	911.20	25.80*	1.981E+00	9.123E-01	9.123E-01	33.21	OK
	968.97	15.80	1.889E+00	9.088E-01	9.088E-01	45.33	OK
	63.29	3.70*	3.603E+00	8.506E-01	8.506E-01	252.49	OK
	92.59	4.23	6.639E+00	2.536E+00	2.536E+00	48.92	OK
U-234	609.32	45.49*	2.683E+00	9.538E-01	9.538E-01	22.80	OK
	1120.29	14.92	1.685E+00	9.323E-01	9.323E-01	38.48	OK
	1764.49	15.30	1.129E+00	1.090E+00	1.090E+00	36.10	OK
	89.96	3.47	6.460E+00	1.538E+00	1.538E+00	52.32	OK
U-235	93.35	5.60	6.639E+00	1.916E+00	1.916E+00	48.92	OK
	143.76	10.96*	7.247E+00	----- Line	Not Found	-----	Absent
	163.33	5.08	6.922E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	6.480E+00	1.493E-01	1.493E-01	66.77	OK
U-238	205.31	5.01	6.095E+00	----- Line	Not Found	-----	Absent
	63.29	3.70*	3.603E+00	8.506E-01	8.506E-01	252.49	OK
	92.59	4.23	6.639E+00	2.536E+00	2.536E+00	48.92	OK
	43.53	5.90	7.707E-01	----- Line	Not Found	-----	Absent
AM-243	74.66	67.20*	5.094E+00	1.607E-01	1.607E-01	60.99	OK
	511.00	100.00*	3.064E+00	6.163E-02	6.163E-02	123.96	OK

Flag: "*" = Keyline


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*****
*                               GEL Laboratories,LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235024.CNF;1
* Acquisition date   : 3-OCT-2016 08:59:12 Sensitivity      : 3.000
* Detector ID        : GAM29 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:01.43 Half life ratio : *****
* Sample date        : 8-DEC-2015 14:13:00 Analyst initials: MXR1
* Sample ID          : G405235024 Sample Quantity : 1.3896E+02 GRAM
* Batch Number       : 1596249 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 25-JUN-2016 09:55:57 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM29 CAN.CNF;10
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.298E+01	1.444E+00	6.781E-01
MN-54	6.135E-02	8.355E-02	1.027E-01
CD-109	1.215E+00	2.048E+00	2.117E+00
SN-126	7.744E-02	1.306E-01	1.356E-01
CS-134	9.896E-02	6.662E-02	7.303E-02
BA-137M	7.370E-01	1.109E-01	5.493E-02
CS-137	7.785E-01	1.172E-01	5.803E-02
TL-208	2.734E-01	9.212E-02	6.244E-02
PB-212	1.013E+00	1.246E-01	8.337E-02
BI-214	9.541E-01	2.132E-01	1.065E-01
PB-214	1.026E+00	1.980E-01	1.278E-01
RN-222	9.541E-01	2.132E-01	1.065E-01
RA-224	2.178E-01	1.363E+00	8.935E-01
RA-226	9.541E-01	2.132E-01	1.065E-01
AC-228	9.123E-01	2.969E-01	2.203E-01
RA-228	9.123E-01	2.969E-01	2.203E-01
TH-228	1.013E+00	1.246E-01	8.337E-02
TH-230	9.538E-01	2.132E-01	1.064E-01
PA-231	8.467E-01	6.380E-01	8.399E-01
TH-232	9.123E-01	2.969E-01	2.203E-01
TH-234	8.506E-01	2.105E+00	1.985E+00
U-234	9.538E-01	2.132E-01	1.064E-01
U-235	3.851E-02	1.724E-01	3.178E-01
U-238	8.506E-01	2.105E+00	1.985E+00
AM-243	1.607E-01	9.604E-02	8.528E-02
ANH-511	6.163E-02	7.487E-02	5.255E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	9.431E+00	1.239E+01	2.423E+01	NOT IDENT.
NA-22	7.646E-03	3.797E-02	7.704E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	2.291E-02	2.462E-02	6.743E-02	NOT IDENT.

SC-46	-2.693E-01	3.440E-01	5.743E-01	FAIL ABUN
V-48	0.000E+00	1.129E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.959E+02	0.000E+00	SHORT HLIF
CO-56	-2.534E-01	3.559E-01	6.065E-01	NOT IDENT.
MN-56	0.000E+00	1.395E+41	0.000E+00	SHORT HLIF
CO-57	1.558E-02	4.338E-02	8.298E-02	NOT IDENT.
CO-58	2.225E-01	5.020E-01	1.047E+00	NOT IDENT.
FE-59	2.115E+00	4.555E+00	1.006E+01	NOT IDENT.
CO-60	1.120E-02	4.075E-02	8.128E-02	NOT IDENT.
ZN-65	1.345E-01	1.373E-01	3.010E-01	NOT IDENT.
GE-68	-1.424E-02	2.313E+00	4.389E+00	NOT IDENT.
AS-73	8.773E+00	8.373E+00	1.723E+01	NOT IDENT.
AS-74	0.000E+00	5.409E+03	0.000E+00	SHORT HLIF
SE-75	-8.318E-02	2.192E-01	3.769E-01	NOT IDENT.
BR-77	0.000E+00	2.210E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	4.547E+02	0.000E+00	SHORT HLIF
RB-83	6.235E-01	5.286E-01	1.200E+00	NOT IDENT.
KR-85	3.208E+00	6.712E+00	1.261E+01	NOT IDENT.
SR-85	3.371E-01	7.086E-01	1.331E+00	NOT IDENT.
RB-86	0.000E+00	2.726E+04	0.000E+00	SHORT HLIF
Y-88	-4.574E-02	2.182E-01	4.409E-01	NOT IDENT.
Y-91	-3.038E+02	4.663E+02	7.730E+02	NOT IDENT.
NB-94	-1.188E-02	3.102E-02	5.650E-02	NOT IDENT.
NB-95	-7.194E-01	7.903E-01	1.315E+00	NOT IDENT.
NB-95M	1.462E+00	2.276E+00	4.075E+00	NOT IDENT.
ZR-95	1.729E+00	1.232E+00	2.873E+00	NOT IDENT.
NB-97	0.000E+00	1.040E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.444E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	6.146E-02	7.180E-02	6.150E-02	FAIL ABUN
RH-102	-2.658E-03	5.395E-02	1.045E-01	NOT IDENT.
RU-103	-1.204E+00	4.498E+00	8.645E+00	FAIL ABUN
RH-106	2.714E-01	3.874E-01	8.462E-01	NOT IDENT.
RU-106	2.714E-01	3.874E-01	8.462E-01	NOT IDENT.
AG-108M	2.457E-03	2.876E-02	5.137E-02	NOT IDENT.
AG-110M	8.045E-03	8.857E-02	1.747E-01	NOT IDENT.
SN-113	-5.652E-02	2.109E-01	4.040E-01	NOT IDENT.
CD-115	0.000E+00	2.793E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	9.367E+04	0.000E+00	SHORT HLIF
TE-123M	1.418E-02	1.339E-01	2.462E-01	NOT IDENT.
SB-124	4.256E-01	1.338E+00	3.388E+00	NOT IDENT.
SB-125	-4.288E-03	1.060E-01	2.054E-01	FAIL ABUN
TE-125M	-2.771E+02	2.477E+02	4.197E+02	NOT IDENT.
I-126	0.000E+00	8.877E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	8.696E+05	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.022E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	5.128E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.771E+26	0.000E+00	SHORT HLIF
BA-133	-6.492E-03	4.293E-02	7.464E-02	NOT IDENT.
I-133	0.000E+00	9.586E+40	0.000E+00	SHORT HLIF
CS-135	-2.064E-02	1.533E-01	2.480E-01	NOT IDENT.
I-135	0.000E+00	1.675E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.467E+05	0.000E+00	SHORT HLIF
CE-139	-8.108E-02	1.058E-01	1.805E-01	NOT IDENT.
BA-140	0.000E+00	1.274E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	3.585E+05	0.000E+00	SHORT HLIF
CE-141	3.964E+00	2.230E+01	4.161E+01	NOT IDENT.
CE-143	0.000E+00	8.562E+40	0.000E+00	SHORT HLIF
CE-144	4.415E-03	3.617E-01	6.655E-01	NOT IDENT.
PM-144	2.748E-02	5.811E-02	1.165E-01	NOT IDENT.
PR-144	2.387E+00	5.048E+00	1.012E+01	NOT IDENT.
PM-146	2.273E-02	4.257E-02	8.737E-02	NOT IDENT.
ND-147	0.000E+00	3.268E+07	0.000E+00	SHORT HLIF
PM-147	-2.367E+02	7.745E+02	1.403E+03	NOT IDENT.
PM-149	0.000E+00	4.543E+40	0.000E+00	SHORT HLIF
EU-150	1.741E-02	2.574E-02	4.919E-02	FAIL ABUN
EU-152	-7.064E-02	8.836E-02	1.612E-01	FAIL ABUN
GD-153	6.911E-03	1.562E-01	2.942E-01	NOT IDENT.
EU-154	1.656E-02	9.259E-02	1.872E-01	NOT IDENT.
EU-155	1.163E-01	1.025E-01	2.067E-01	FAIL ABUN
TB-160	-1.887E-03	1.843E+00	3.530E+00	FAIL ABUN
HO-166M	-1.095E-02	4.703E-02	8.884E-02	FAIL ABUN
TM-171	-6.546E+00	1.997E+01	3.758E+01	NOT IDENT.
HF-172	1.328E-01	2.274E-01	4.114E-01	FAIL ABUN
LU-172	8.750E-02	1.009E-01	1.382E-01	FAIL ABUN
LU-176	1.356E-02	2.450E-02	4.642E-02	FAIL ABUN

HF-181	-1.184E+00	3.796E+00	6.425E+00	NOT IDENT.
TA-182	-1.535E-01	8.010E-01	1.468E+00	FAIL ABUN
RE-183	-1.494E-01	2.816E+00	5.376E+00	NOT IDENT.
RE-184	1.433E+01	2.680E+01	5.620E+01	NOT IDENT.
W-188	-4.208E+01	1.163E+02	1.819E+02	FAIL ABUN
IR-192	1.969E-01	5.028E-01	9.290E-01	FAIL ABUN
HG-203	-1.693E+00	2.470E+00	4.085E+00	FAIL ABUN
BI-207	-1.873E-02	5.148E-02	9.119E-02	FAIL ABUN
PB-210	-3.241E-01	3.128E+00	6.038E+00	NOT IDENT.
BI-211	0.000E+00	5.453E-01	8.020E-01	FAIL ABUN
PB-211	1.292E-01	6.637E-01	1.316E+00	NOT IDENT.
BI-212	0.000E+00	5.512E-01	1.133E+00	FAIL ABUN
RN-219	-1.207E-01	3.592E-01	6.807E-01	FAIL ABUN
RA-223	3.231E-01	5.187E-01	1.008E+00	FAIL ABUN
AC-227	-1.829E-01	2.270E-01	3.725E-01	FAIL ABUN
TH-227	-1.829E-01	2.270E-01	3.725E-01	FAIL ABUN
TH-229	3.173E-03	4.456E-01	8.095E-01	FAIL ABUN
TH-231	3.231E-01	5.187E-01	1.008E+00	FAIL ABUN
PA-233	-2.598E-02	6.275E-02	1.058E-01	FAIL ABUN
PA-234	-1.214E-01	2.758E-01	4.254E-01	NOT IDENT.
PA-234M	5.576E+00	6.280E+00	8.564E+00	FAIL ABUN
NP-237	-2.598E-02	6.275E-02	1.058E-01	FAIL ABUN
NP-238	0.000E+00	1.244E+41	0.000E+00	SHORT HLIF
NP-239	4.189E-02	2.277E-01	4.292E-01	NOT IDENT.
PU-239	5.574E+02	6.512E+02	6.596E+02	FAIL ABUN
AM-241	1.625E-02	1.317E-01	2.537E-01	NOT IDENT.
CM-243	-6.249E-02	9.406E-02	1.667E-01	NOT IDENT.
BK-247	-8.779E-03	7.529E-02	1.332E-01	NOT IDENT.
CM-247	2.728E-02	3.317E-02	6.974E-02	NOT IDENT.
CF-249	-9.112E-03	3.637E-02	6.950E-02	NOT IDENT.
CF-251	8.050E-03	1.058E-01	1.946E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	345	10.66*	1.347E+00	1.298E+01	1.298E+01	11.35
MN-54	834.85	12	99.98*	2.116E+00	3.152E-02	6.135E-02	138.96
CD-109	88.03	81	3.70*	6.255E+00	1.898E+00	2.978E+00	68.17
SN-126	64.28	21	9.60	3.603E+00	3.278E-01	3.278E-01	252.49
	86.94	81	8.90	6.255E+00	7.890E-01	7.890E-01	68.17
	87.57	81	37.00*	6.255E+00	1.898E-01	1.898E-01	68.17
CS-134	563.25	-----	8.34	2.846E+00	-----	Line Not Found	-----
	569.33	-----	15.37	2.823E+00	-----	Line Not Found	-----
	604.72	8	97.62	2.703E+00	1.695E-02	2.231E-02	286.91
	795.86	26	85.46*	2.197E+00	7.517E-02	9.896E-02	68.70
	801.95	-----	8.69	2.183E+00	-----	Line Not Found	-----
	1365.19	-----	3.02	1.430E+00	-----	Line Not Found	-----
BA-137M	661.66	303	89.90*	2.522E+00	7.232E-01	7.370E-01	15.36
CS-137	661.66	303	85.10*	2.522E+00	7.640E-01	7.785E-01	15.36
TL-208	277.37	-----	6.60	4.914E+00	-----	Line Not Found	-----
	583.19	119	85.00*	2.772E+00	2.734E-01	2.734E-01	34.39
	860.56	14	12.50	2.069E+00	2.895E-01	2.895E-01	139.00
BI-211	72.87	58	1.23	4.798E+00	5.284E+00	5.284E+00	48.75
	351.06	276	12.92*	4.086E+00	2.826E+00	2.826E+00	19.69
PB-212	74.82	168	10.28	5.094E+00	1.738E+00	1.738E+00	35.12
	77.11	264	17.10	5.365E+00	1.557E+00	1.557E+00	23.57
	238.63	449	43.60*	5.495E+00	1.013E+00	1.013E+00	12.55
	300.09	39	3.30	4.622E+00	1.373E+00	1.373E+00	76.89
BI-214	609.32	215	45.49*	2.683E+00	9.538E-01	9.541E-01	22.80
	1120.29	43	14.92	1.685E+00	9.323E-01	9.326E-01	38.48
	1764.49	35	15.30	1.129E+00	1.090E+00	1.091E+00	36.10
PB-214	74.82	168	5.80	5.094E+00	3.081E+00	3.082E+00	35.12
	77.11	264	9.70	5.365E+00	2.745E+00	2.746E+00	23.57
	87.09	81	3.41	6.255E+00	2.059E+00	2.060E+00	68.17
	242.00	98	7.25	5.441E+00	1.342E+00	1.343E+00	52.67
	295.22	195	18.42	4.685E+00	1.219E+00	1.220E+00	28.25
	351.93	276	35.60*	4.086E+00	1.026E+00	1.026E+00	19.69
RN-222	609.32	215	45.49*	2.683E+00	9.538E-01	9.541E-01	22.80
	1120.29	43	14.92	1.685E+00	9.323E-01	9.326E-01	38.48
	1764.49	35	15.30	1.129E+00	1.090E+00	1.091E+00	36.10
RA-224	240.99	98	4.10*	5.441E+00	2.374E+00	2.374E+00	52.67
RA-226	609.32	215	45.49*	2.683E+00	9.538E-01	9.541E-01	22.80
	1120.29	43	14.92	1.685E+00	9.323E-01	9.326E-01	38.48
	1764.49	35	15.30	1.129E+00	1.090E+00	1.091E+00	36.10
AC-228	105.21	-----	1.10	7.155E+00	-----	Line Not Found	-----
	338.32	100	11.27	4.215E+00	1.134E+00	1.134E+00	31.65
	794.95	26	4.25	2.197E+00	1.512E+00	1.512E+00	68.70
	835.71	12	1.61	2.116E+00	1.957E+00	1.957E+00	138.96
	911.20	86	25.80*	1.981E+00	9.123E-01	9.123E-01	33.21
	968.97	50	15.80	1.889E+00	9.088E-01	9.088E-01	45.33
RA-228	105.21	-----	1.10	7.155E+00	-----	Line Not Found	-----
	338.32	100	11.27	4.215E+00	1.134E+00	1.134E+00	31.65

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	794.95	26	4.25	2.197E+00	1.512E+00	1.512E+00	68.70
	835.71	12	1.61	2.116E+00	1.957E+00	1.957E+00	138.96
	911.20	86	25.80*	1.981E+00	9.123E-01	9.123E-01	33.21
	968.97	50	15.80	1.889E+00	9.088E-01	9.088E-01	45.33
TH-228	74.82	168	10.28	5.094E+00	1.738E+00	1.738E+00	35.12
	77.11	264	17.10	5.365E+00	1.557E+00	1.557E+00	23.57
	238.63	449	43.60*	5.495E+00	1.013E+00	1.013E+00	12.55
	300.09	39	3.30	4.622E+00	1.373E+00	1.373E+00	76.89
TH-230	609.32	215	45.49*	2.683E+00	9.538E-01	9.538E-01	22.80
	1120.29	43	14.92	1.685E+00	9.323E-01	9.323E-01	38.48
	1764.49	35	15.30	1.129E+00	1.090E+00	1.090E+00	36.10
PA-231	283.69	-----	1.70	4.831E+00	-----	Line Not Found	-----
	301.36	39	5.35*	4.622E+00	8.467E-01	8.467E-01	76.89
TH-232	105.21	-----	1.10	7.155E+00	-----	Line Not Found	-----
	338.32	100	11.27	4.215E+00	1.134E+00	1.134E+00	31.65
	835.71	12	1.61	2.116E+00	1.957E+00	1.957E+00	138.96
	911.20	86	25.80*	1.981E+00	9.123E-01	9.123E-01	33.21
	968.97	50	15.80	1.889E+00	9.088E-01	9.088E-01	45.33
TH-234	63.29	21	3.70*	3.603E+00	8.506E-01	8.506E-01	252.49
	92.59	132	4.23	6.639E+00	2.536E+00	2.536E+00	48.92
U-234	609.32	215	45.49*	2.683E+00	9.538E-01	9.538E-01	22.80
	1120.29	43	14.92	1.685E+00	9.323E-01	9.323E-01	38.48
	1764.49	35	15.30	1.129E+00	1.090E+00	1.090E+00	36.10
U-235	89.96	64	3.47	6.460E+00	1.538E+00	1.538E+00	52.32
	93.35	132	5.60	6.639E+00	1.916E+00	1.916E+00	48.92
	143.76	-----	10.96*	7.247E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.922E+00	-----	Line Not Found	-----
	185.72	102	57.20	6.480E+00	1.493E-01	1.493E-01	66.77
	205.31	-----	5.01	6.095E+00	-----	Line Not Found	-----
U-238	63.29	21	3.70*	3.603E+00	8.506E-01	8.506E-01	252.49
	92.59	132	4.23	6.639E+00	2.536E+00	2.536E+00	48.92
AM-243	43.53	-----	5.90	7.707E-01	-----	Line Not Found	-----
	74.66	168	67.20*	5.094E+00	2.659E-01	2.659E-01	35.12
ANH-511	511.00	35	100.00*	3.064E+00	6.163E-02	6.163E-02	123.96

Flag: "*" = Keyline

Total number of lines in spectrum 56
Number of unidentified lines 16
Number of lines tentatively identified by NID 40 71.43%

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	1.298E+01	1.298E+01	0.147E+01	11.35	
MN-54	312.05D	1.95	3.152E-02	6.135E-02	8.525E-02	138.96	
CD-109	461.40D	1.57	1.898E+00	2.978E+00	2.030E+00	68.17	
SN-126	2.30E+05Y	1.00	1.898E-01	1.898E-01	1.294E-01	68.17	
CS-134	2.07Y	1.32	7.517E-02	9.896E-02	6.798E-02	68.70	
BA-137M	30.08Y	1.02	7.232E-01	7.370E-01	1.132E-01	15.36	
CS-137	30.08Y	1.02	7.640E-01	7.785E-01	1.196E-01	15.36	
TL-208	1.41E+10Y	1.00	2.734E-01	2.734E-01	0.940E-01	34.39	
BI-211	7.04E+08Y	1.00	2.826E+00	2.826E+00	0.556E+00	19.69	
PB-212	1.41E+10Y	1.00	1.013E+00	1.013E+00	0.127E+00	12.55	
BI-214	1600.00Y	1.00	9.538E-01	9.541E-01	2.176E-01	22.80	
PB-214	1600.00Y	1.00	1.026E+00	1.026E+00	0.202E+00	19.69	
RN-222	1600.00Y	1.00	9.538E-01	9.541E-01	2.176E-01	22.80	
RA-224	1.41E+10Y	1.00	2.374E+00	2.374E+00	1.250E+00	52.67	
RA-226	1600.00Y	1.00	9.538E-01	9.541E-01	2.176E-01	22.80	
AC-228	1.41E+10Y	1.00	9.123E-01	9.123E-01	3.029E-01	33.21	
RA-228	1.41E+10Y	1.00	9.123E-01	9.123E-01	3.029E-01	33.21	
TH-228	1.41E+10Y	1.00	1.013E+00	1.013E+00	0.127E+00	12.55	
TH-230	7.54E+04Y	1.00	9.538E-01	9.538E-01	2.175E-01	22.80	
PA-231	7.04E+08Y	1.00	8.467E-01	8.467E-01	6.510E-01	76.89	
TH-232	1.41E+10Y	1.00	9.123E-01	9.123E-01	3.029E-01	33.21	
TH-234	4.47E+09Y	1.00	8.506E-01	8.506E-01	21.48E-01	252.49	
U-234	2.45E+05Y	1.00	9.538E-01	9.538E-01	2.175E-01	22.80	
U-235	7.04E+08Y	1.00	1.493E-01	1.493E-01	0.997E-01	66.77	K
U-238	4.47E+09Y	1.00	8.506E-01	8.506E-01	21.48E-01	252.49	
AM-243	7370.00Y	1.00	2.659E-01	2.659E-01	0.934E-01	35.12	
ANH-511	1.00E+09Y	1.00	6.163E-02	6.163E-02	7.640E-02	123.96	

Total Activity : 3.572E+01 3.689E+01

Grand Total Activity : 3.572E+01 3.689E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.68	48	203	0.89	257.14	253	9	1.15E-02	****	7.39E+00	T
1	208.71	60	89	1.16	417.00	413	12	1.48E-02	63.0	6.03E+00	
1	210.22	30	87	1.16	420.00	413	12	7.31E-03	****	6.00E+00	T
3	243.51	26	103	1.44	486.50	472	26	6.56E-03	****	5.42E+00	T
0	270.38	40	91	1.43	540.20	536	9	1.00E-02	97.0	5.01E+00	T
0	327.86	54	97	2.44	655.01	650	13	1.38E-02	83.2	4.32E+00	T
0	438.11	14	40	0.67	875.32	872	8	3.61E-03	****	3.45E+00	T
0	462.81	38	66	1.93	924.67	918	12	9.87E-03	95.3	3.31E+00	T
0	471.19	5	33	0.53	941.41	939	6	1.22E-03	****	3.26E+00	
0	480.06	72	135	7.12	959.14	944	34	1.91E-02	****	3.21E+00	
0	533.31	20	28	2.54	1065.57	1059	11	5.24E-03	****	2.97E+00	
0	651.41	24	15	2.54	1301.62	1298	8	6.52E-03	71.3	2.55E+00	
0	727.72	36	9	0.97	1454.18	1449	9	9.71E-03	45.9	2.35E+00	T
3	799.26	14	4	2.04	1597.21	1582	19	3.90E-03	76.7	2.19E+00	
0	933.01	11	15	1.37	1864.68	1859	9	3.19E-03	****	1.95E+00	
0	954.17	17	30	6.47	1907.01	1892	20	4.67E-03	****	1.91E+00	T
0	965.07	26	13	1.94	1928.80	1924	9	7.14E-03	64.8	1.90E+00	T
0	1000.45	16	15	0.88	1999.57	1993	14	4.48E-03	****	1.84E+00	T
0	1052.34	6	23	1.50	2103.36	2097	12	1.63E-03	****	1.77E+00	
0	1093.39	13	11	2.16	2185.47	2179	12	3.66E-03	****	1.72E+00	T
0	1148.58	9	12	0.92	2295.89	2288	10	2.61E-03	****	1.65E+00	T
0	1151.13	11	12	1.35	2300.99	2298	8	3.15E-03	****	1.65E+00	
0	1300.05	10	2	3.25	2598.97	2594	9	2.73E-03	84.0	1.49E+00	
0	1352.11	10	4	1.16	2703.17	2698	9	2.74E-03	99.7	1.44E+00	
0	1378.52	9	11	0.88	2756.02	2747	16	2.59E-03	****	1.42E+00	
0	1425.60	15	0	4.00	2850.25	2845	11	4.44E-03	50.0	1.38E+00	
0	1508.11	10	3	0.64	3015.41	3009	10	2.84E-03	85.8	1.31E+00	
0	1729.99	12	2	1.93	3459.68	3454	9	3.40E-03	71.3	1.15E+00	
0	1871.53	6	0	0.99	3743.17	3739	7	1.67E-03	81.6	1.06E+00	

Flags: "T" = Tentatively associated

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*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                          *
*                               Charleston, SC 29407                     *
*                               *****                                  *
*                               *                                         *
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235024.CNF;1 *
* Acquisition date   : 3-OCT-2016 08:59:12 Sensitivity      : 3.000        *
* Detector ID        : GAM29 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 01:00:01.43 Half life ratio : *****        *
* Sample date        : 8-DEC-2015 14:13:00 Nuclide Library : SOLID        *
* Sample ID          : G405235024 Analyst initials: MXR1         *
* Batch Number       : 1596249 Sample Quantity : 1.3896E+02 GRAM      *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000        *
*                               Dry Weight      : 0.00000        *
*                               *****                                  *
*                               *                                         *
*                               CALIBRATION INFORMATION                   *
*                               *                                         *
* Eff. Cal. date     : 25-JUN-2016 09:55:57 Eff. Geometry   : CAN        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM29 CAN.CNF;10      *
*                               *****                                  *

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.881E-01
MN-54	4.454E-02
CD-109	1.007E+00
SN-126	6.452E-02
CS-134	3.132E-02
BA-137M	2.412E-02
CS-137	2.548E-02
TL-208	2.806E-02
PB-212	3.853E-02
BI-214	4.714E-02
PB-214	5.875E-02
RN-222	4.714E-02
RA-224	4.129E-01
RA-226	4.714E-02
AC-228	9.568E-02
RA-228	9.568E-02
TH-228	3.853E-02
TH-230	4.712E-02
PA-231	3.894E-01
TH-232	9.568E-02
TH-234	9.342E-01
U-234	4.712E-02
U-235	1.493E-01
U-238	9.342E-01
AM-243	4.039E-02
ANH-511	2.384E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.101E+01	NOT IDENT.
NA-22	3.249E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.707E-02	NOT IDENT.
SC-46	2.434E-01	FAIL ABUN

V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
CO-56	2.511E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	3.889E-02	NOT IDENT.
CO-58	4.590E-01	NOT IDENT.
FE-59	4.218E+00	NOT IDENT.
CO-60	3.504E-02	NOT IDENT.
ZN-65	1.303E-01	NOT IDENT.
GE-68	1.911E+00	NOT IDENT.
AS-73	8.142E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.742E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.388E-01	NOT IDENT.
KR-85	5.708E+00	NOT IDENT.
SR-85	6.025E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.729E-01	NOT IDENT.
Y-91	3.244E+02	NOT IDENT.
NB-94	2.517E-02	NOT IDENT.
NB-95	5.733E-01	NOT IDENT.
NB-95M	1.896E+00	NOT IDENT.
ZR-95	1.283E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.895E-02	FAIL ABUN
RH-102	4.632E-02	NOT IDENT.
RU-103	3.800E+00	FAIL ABUN
RH-106	3.735E-01	NOT IDENT.
RU-106	3.735E-01	NOT IDENT.
AG-108M	2.330E-02	NOT IDENT.
AG-110M	7.581E-02	NOT IDENT.
SN-113	1.833E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.157E-01	NOT IDENT.
SB-124	1.282E+00	NOT IDENT.
SB-125	9.389E-02	FAIL ABUN
TE-125M	1.952E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.417E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-135	1.147E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	8.398E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.950E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.134E-01	NOT IDENT.
PM-144	5.283E-02	NOT IDENT.
PR-144	4.589E+00	NOT IDENT.
PM-146	3.988E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	6.563E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.273E-02	FAIL ABUN
EU-152	7.354E-02	FAIL ABUN
GD-153	1.380E-01	NOT IDENT.
EU-154	7.882E-02	NOT IDENT.
EU-155	9.764E-02	FAIL ABUN
TB-160	1.551E+00	FAIL ABUN
HO-166M	3.867E-02	FAIL ABUN
TM-171	1.766E+01	NOT IDENT.
HF-172	1.933E-01	FAIL ABUN
LU-172	5.989E-02	FAIL ABUN
LU-176	2.144E-02	FAIL ABUN
HF-181	2.822E+00	NOT IDENT.

TA-182	6.275E-01	FAIL ABUN
RE-183	2.531E+00	NOT IDENT.
RE-184	2.466E+01	NOT IDENT.
W-188	8.316E+01	FAIL ABUN
IR-192	4.303E-01	FAIL ABUN
HG-203	1.879E+00	FAIL ABUN
BI-207	3.988E-02	FAIL ABUN
PB-210	2.854E+00	NOT IDENT.
BI-211	3.869E-01	FAIL ABUN
PB-211	6.039E-01	NOT IDENT.
BI-212	5.190E-01	FAIL ABUN
RN-219	3.095E-01	FAIL ABUN
RA-223	4.607E-01	FAIL ABUN
AC-227	1.710E-01	FAIL ABUN
TH-227	1.710E-01	FAIL ABUN
TH-229	3.776E-01	FAIL ABUN
TH-231	4.607E-01	FAIL ABUN
PA-233	4.856E-02	FAIL ABUN
PA-234	1.807E-01	NOT IDENT.
PA-234M	3.806E+00	FAIL ABUN
NP-237	4.856E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.015E-01	NOT IDENT.
PU-239	3.134E+02	FAIL ABUN
AM-241	1.197E-01	NOT IDENT.
CM-243	7.807E-02	NOT IDENT.
BK-247	6.165E-02	NOT IDENT.
CM-247	3.205E-02	NOT IDENT.
CF-249	3.175E-02	NOT IDENT.
CF-251	9.068E-02	NOT IDENT.

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*****
*
*               GEL Laboratories LLC
*               2040 Savage Road
*               Charleston, SC 29407
*
*****
*
*               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235024.CNF;1
* Acquisition date   : 3-OCT-2016 08:59:12 Sensitivity      : 3.000
* Detector ID        : GAM29 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:01.43 Half life ratio  : *****
* Sample date        : 8-DEC-2015 14:13:00 Nuclide Library : SOLID
* Sample ID          : G405235024 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.3896E+02 GRAM
*                    : Quantity Err(%) : 1.4392E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                    : Dry Weight : 0.00000
*****
*
*               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 25-JUN-2016 09:55:57 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF_GAM29_CAN.CNF;10
*****

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NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.298E+01	1.596E+00	1.596E+00
MN-54	6.135E-02	8.359E-02	8.359E-02
CD-109	1.215E+00	2.062E+00	2.062E+00
SN-126	7.744E-02	1.314E-01	1.314E-01
CS-134	9.896E-02	6.675E-02	6.675E-02
BA-137M	7.370E-01	1.154E-01	1.154E-01
CS-137	7.785E-01	1.219E-01	1.219E-01
TL-208	2.734E-01	9.285E-02	9.285E-02
PB-212	1.013E+00	1.356E-01	1.356E-01
BI-214	9.541E-01	2.171E-01	2.171E-01
PB-214	1.026E+00	2.025E-01	2.025E-01
RN-222	9.541E-01	2.171E-01	2.171E-01
RA-224	2.178E-01	1.370E+00	1.370E+00
RA-226	9.541E-01	2.171E-01	2.171E-01
AC-228	9.123E-01	3.006E-01	3.006E-01
RA-228	9.123E-01	3.006E-01	3.006E-01
TH-228	1.013E+00	1.356E-01	1.356E-01
TH-230	9.538E-01	2.171E-01	2.171E-01
PA-231	8.467E-01	6.631E-01	6.631E-01
TH-232	9.123E-01	3.006E-01	3.006E-01
TH-234	8.506E-01	2.113E+00	2.113E+00
U-234	9.538E-01	2.171E-01	2.171E-01
U-235	3.851E-02	1.724E-01	1.724E-01
U-238	8.506E-01	2.113E+00	2.113E+00
AM-243	1.607E-01	9.746E-02	9.746E-02
ANH-511	6.163E-02	7.491E-02	7.491E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	9.431E+00	1.240E+01	1.310E+01	NOT IDENT.
NA-22	7.646E-03	3.797E-02	3.813E-02	NOT IDENT.
NA-24	1.000E+41	4.382E+41	0.000E+00	SHORT HLIF
AL-26	2.291E-02	2.466E-02	2.674E-02	NOT IDENT.

SC-46	-2.693E-01	3.442E-01	3.650E-01	FAIL ABUN
V-48	-9.055E+03	1.129E+04	1.201E+04	SHORT HLIF
CR-51	-3.470E+02	3.961E+02	4.259E+02	SHORT HLIF
CO-56	-2.534E-01	3.561E-01	3.739E-01	NOT IDENT.
MN-56	-1.000E+41	1.396E+41	0.000E+00	SHORT HLIF
CO-57	1.558E-02	4.339E-02	4.395E-02	NOT IDENT.
CO-58	2.225E-01	5.021E-01	5.120E-01	NOT IDENT.
FE-59	2.115E+00	4.558E+00	4.657E+00	NOT IDENT.
CO-60	1.120E-02	4.076E-02	4.107E-02	NOT IDENT.
ZN-65	1.345E-01	1.374E-01	1.501E-01	NOT IDENT.
GE-68	-1.424E-02	2.313E+00	2.313E+00	NOT IDENT.
AS-73	8.773E+00	8.566E+00	9.434E+00	NOT IDENT.
AS-74	-3.451E+03	5.416E+03	5.635E+03	SHORT HLIF
SE-75	-8.318E-02	2.192E-01	2.224E-01	NOT IDENT.
BR-77	1.798E+38	1.556E+39	0.000E+00	SHORT HLIF
SR-82	-2.266E+01	4.547E+02	4.548E+02	SHORT HLIF
RB-83	6.235E-01	5.355E-01	6.047E-01	NOT IDENT.
KR-85	3.208E+00	6.713E+00	6.867E+00	NOT IDENT.
SR-85	3.371E-01	7.088E-01	7.249E-01	NOT IDENT.
RB-86	-3.282E+03	2.726E+04	2.730E+04	SHORT HLIF
Y-88	-4.574E-02	2.182E-01	2.192E-01	NOT IDENT.
Y-91	-3.038E+02	4.664E+02	4.861E+02	NOT IDENT.
NB-94	-1.188E-02	3.103E-02	3.149E-02	NOT IDENT.
NB-95	-7.194E-01	7.909E-01	8.548E-01	NOT IDENT.
NB-95M	1.462E+00	2.279E+00	2.372E+00	NOT IDENT.
ZR-95	1.729E+00	1.235E+00	1.460E+00	NOT IDENT.
NB-97	-1.000E+41	1.041E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	2.148E+41	0.000E+00	SHORT HLIF
MO-99	-3.130E+31	1.445E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	3.986E+41	0.000E+00	SHORT HLIF
RH-101	6.146E-02	7.266E-02	7.776E-02	FAIL ABUN
RH-102	-2.658E-03	5.395E-02	5.397E-02	NOT IDENT.
RU-103	-1.204E+00	4.498E+00	4.531E+00	FAIL ABUN
RH-106	2.714E-01	3.877E-01	4.066E-01	NOT IDENT.
RU-106	2.714E-01	3.877E-01	4.066E-01	NOT IDENT.
AG-108M	2.457E-03	2.876E-02	2.878E-02	NOT IDENT.
AG-110M	8.045E-03	8.857E-02	8.865E-02	NOT IDENT.
SN-113	-5.652E-02	2.109E-01	2.125E-01	NOT IDENT.
CD-115	1.278E+38	2.793E+39	0.000E+00	SHORT HLIF
SN-117M	2.248E+04	9.371E+04	9.426E+04	SHORT HLIF
TE-123M	1.418E-02	1.339E-01	1.340E-01	NOT IDENT.
SB-124	4.256E-01	1.338E+00	1.352E+00	NOT IDENT.
SB-125	-4.288E-03	1.060E-01	1.060E-01	FAIL ABUN
TE-125M	-2.771E+02	2.482E+02	2.779E+02	NOT IDENT.
I-126	-9.604E+04	8.878E+05	8.889E+05	SHORT HLIF
SB-126	6.220E+04	8.697E+05	8.701E+05	SHORT HLIF
SB-127	-1.280E+22	2.680E+22	0.000E+00	SHORT HLIF
I-131	6.239E+09	5.136E+09	5.855E+09	SHORT HLIF
I-132	1.000E+41	1.898E+42	0.000E+00	SHORT HLIF
TE-132	1.837E+26	3.844E+26	0.000E+00	SHORT HLIF
BA-133	-6.492E-03	4.293E-02	4.303E-02	NOT IDENT.
I-133	-1.000E+41	2.047E+41	0.000E+00	SHORT HLIF
CS-135	-2.064E-02	1.533E-01	1.536E-01	NOT IDENT.
I-135	1.000E+41	6.978E+41	0.000E+00	SHORT HLIF
CS-136	2.233E+05	2.479E+05	2.676E+05	SHORT HLIF
CE-139	-8.108E-02	1.071E-01	1.132E-01	NOT IDENT.
BA-140	2.003E+05	1.274E+06	1.277E+06	SHORT HLIF
LA-140	3.376E+04	3.585E+05	3.589E+05	SHORT HLIF
CE-141	3.964E+00	2.230E+01	2.237E+01	NOT IDENT.
CE-143	1.000E+41	8.622E+40	0.000E+00	SHORT HLIF
CE-144	4.415E-03	3.617E-01	3.617E-01	NOT IDENT.
PM-144	2.748E-02	5.813E-02	5.944E-02	NOT IDENT.
PR-144	2.387E+00	5.049E+00	5.162E+00	NOT IDENT.
PM-146	2.273E-02	4.260E-02	4.381E-02	NOT IDENT.
ND-147	6.708E+06	3.269E+07	3.282E+07	SHORT HLIF
PM-147	-2.367E+02	7.746E+02	7.819E+02	NOT IDENT.
PM-149	-4.743E+40	4.661E+40	0.000E+00	SHORT HLIF
EU-150	1.741E-02	2.575E-02	2.692E-02	FAIL ABUN
EU-152	-7.064E-02	8.845E-02	9.401E-02	FAIL ABUN
GD-153	6.911E-03	1.562E-01	1.562E-01	NOT IDENT.
EU-154	1.656E-02	9.259E-02	9.289E-02	NOT IDENT.
EU-155	1.163E-01	1.029E-01	1.155E-01	FAIL ABUN
TB-160	-1.887E-03	1.843E+00	1.843E+00	FAIL ABUN
HO-166M	-1.095E-02	4.704E-02	4.729E-02	FAIL ABUN
TM-171	-6.546E+00	1.998E+01	2.020E+01	NOT IDENT.
HF-172	1.328E-01	2.284E-01	2.361E-01	FAIL ABUN
LU-172	8.750E-02	1.013E-01	1.087E-01	FAIL ABUN
LU-176	1.356E-02	2.450E-02	2.525E-02	FAIL ABUN

HF-181	-1.184E+00	3.796E+00	3.834E+00	NOT IDENT.
TA-182	-1.535E-01	8.010E-01	8.040E-01	FAIL ABUN
RE-183	-1.494E-01	2.816E+00	2.817E+00	NOT IDENT.
RE-184	1.433E+01	2.701E+01	2.778E+01	NOT IDENT.
W-188	-4.208E+01	1.164E+02	1.180E+02	FAIL ABUN
IR-192	1.969E-01	5.029E-01	5.106E-01	FAIL ABUN
HG-203	-1.693E+00	2.471E+00	2.586E+00	FAIL ABUN
BI-207	-1.873E-02	5.149E-02	5.218E-02	FAIL ABUN
PB-210	-3.241E-01	3.128E+00	3.131E+00	NOT IDENT.
BI-211	2.826E+00	5.597E-01	1.392E+00	FAIL ABUN
PB-211	1.292E-01	6.637E-01	6.662E-01	NOT IDENT.
BI-212	1.226E+00	5.547E-01	7.831E-01	FAIL ABUN
RN-219	-1.207E-01	3.595E-01	3.636E-01	FAIL ABUN
RA-223	3.231E-01	5.190E-01	5.391E-01	FAIL ABUN
AC-227	-1.829E-01	2.282E-01	2.427E-01	FAIL ABUN
TH-227	-1.829E-01	2.282E-01	2.427E-01	FAIL ABUN
TH-229	3.173E-03	4.456E-01	4.456E-01	FAIL ABUN
TH-231	3.231E-01	5.190E-01	5.391E-01	FAIL ABUN
PA-233	-2.598E-02	6.276E-02	6.384E-02	FAIL ABUN
PA-234	-1.214E-01	3.088E-01	3.136E-01	NOT IDENT.
PA-234M	5.576E+00	6.285E+00	6.769E+00	FAIL ABUN
NP-237	-2.598E-02	6.276E-02	6.384E-02	FAIL ABUN
NP-238	-1.000E+41	1.245E+41	0.000E+00	SHORT HLIF
NP-239	4.189E-02	2.277E-01	2.285E-01	NOT IDENT.
PU-239	5.574E+02	6.517E+02	6.985E+02	FAIL ABUN
AM-241	1.625E-02	1.318E-01	1.320E-01	NOT IDENT.
CM-243	-6.249E-02	9.424E-02	9.836E-02	NOT IDENT.
BK-247	-8.779E-03	7.531E-02	7.542E-02	NOT IDENT.
CM-247	2.728E-02	3.349E-02	3.567E-02	NOT IDENT.
CF-249	-9.112E-03	3.637E-02	3.661E-02	NOT IDENT.
CF-251	8.050E-03	1.058E-01	1.058E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	93.1266	87.09	126.8845	136.47	79.2768
45.60	75.3984	87.57	126.9696	140.51	0.0000
46.54	85.1069	88.03	127.0510	143.76	66.7467
49.72	0.0000	88.34	53.3025	144.24	72.2530
51.35	99.4402	88.47	53.3120	145.44	70.1484
51.87	94.7076	89.96	95.8847	152.43	84.9860
52.39	88.9976	1093.63	78.1500	153.25	0.0000
52.97	81.3484	91.11	0.0000	153.87	59.7044
53.44	71.7276	92.59	78.3567	156.02	0.0000
54.07	78.6056	93.35	78.4365	158.56	0.0000
57.36	0.0000	94.56	70.2936	159.00	78.8631
57.53	86.9195	94.65	70.3019	162.33	76.8838
57.98	87.9672	94.67	70.3040	162.66	0.0000
59.27	96.0067	94.87	67.5644	163.33	69.1483
59.32	91.1165	97.43	74.7098	165.86	78.2555
59.54	91.1520	98.43	78.9630	176.31	59.8159
60.96	90.3965	98.44	78.9641	176.60	0.0000
61.17	90.4295	99.53	80.1153	177.52	61.0096
62.93	85.7740	100.11	83.2990	181.07	0.0000
63.29	85.8270	102.03	84.5466	181.52	58.9570
63.58	85.8691	103.18	76.3071	184.41	65.9253
64.28	77.7359	103.37	89.9171	143.76	65.9996
66.73	88.6375	105.21	67.0693	193.51	64.1467
67.24	104.6004	105.31	68.1257	197.03	75.8241
125.81	99.3759	106.12	82.8815	198.01	79.3348
67.75	99.3866	106.47	78.7193	201.83	70.3563
69.67	94.3792	109.28	86.3624	203.43	63.5182
70.83	117.1937	111.00	81.2650	205.31	50.8918
72.81	106.2046	111.76	0.0000	210.85	55.7644
72.87	106.2143	114.06	92.1537	215.65	62.9723
74.66	106.5095	116.30	0.0000	222.11	66.8030
74.82	106.5354	116.74	74.3798	227.09	52.9383
74.97	106.5596	119.76	69.3080	227.38	54.1266
77.11	106.9074	121.12	77.9590	228.16	0.0000
78.74	107.1686	121.22	77.9674	228.18	60.0466
79.69	107.3190	121.78	83.3606	116.74	60.0466
80.12	107.3869	122.06	66.2823	235.69	45.7798
80.19	0.0000	122.92	66.3466	235.96	45.7886
80.57	107.4581	123.07	65.2872	238.63	49.8333
81.00	107.5260	265.00	83.5391	238.98	0.0000
81.07	107.5374	125.81	65.8452	240.99	49.9186
81.75	107.6433	127.23	86.0193	242.00	49.9551
83.79	101.8501	127.91	94.6924	244.70	50.0519
84.00	85.5797	129.30	94.8361	252.40	0.0000
85.43	119.7834	131.20	96.4720	252.80	57.5317
86.55	113.1557	133.02	96.2994	254.15	0.0000
86.79	113.1937	133.52	86.6077	256.23	58.8709
86.94	126.8580	136.00	93.3486	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	58.0034	355.39	0.0000	584.27	26.4950
264.80	58.0093	356.01	42.1674	595.83	0.0000
265.00	54.3906	364.49	0.0000	427.87	29.9952
268.22	53.2987	366.42	0.0000	602.52	0.0000
269.46	38.7949	372.51	37.8215	604.72	22.8896
270.03	38.8096	375.05	46.4799	607.14	20.0464
271.23	38.8408	377.52	49.1270	609.32	20.0626
273.65	0.0000	356.01	30.2668	610.33	20.0703
276.40	43.8464	388.16	41.6016	614.28	18.6645
277.37	42.6552	388.63	0.0000	618.01	15.3359
277.60	42.6616	391.69	36.4689	620.36	23.0244
278.00	42.6733	264.66	37.5095	621.93	11.5190
279.20	58.5688	401.81	39.2770	630.19	0.0000
279.54	57.3616	402.40	29.6850	631.29	21.1908
279.70	57.3673	404.85	38.4633	633.25	12.5308
280.46	47.6265	410.95	28.9361	634.78	0.0000
283.69	40.3839	413.71	32.4887	635.95	19.2977
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	37.9790	423.72	0.0000	645.85	26.1453
285.90	0.0000	427.09	39.7742	657.76	27.7161
287.50	40.4836	427.87	38.9055	657.90	0.0000
290.67	45.8919	433.94	30.5946	661.66	17.5291
293.27	0.0000	439.40	28.0079	664.57	0.0000
351.93	32.8743	453.88	28.6471	666.33	0.0000
295.96	32.8898	463.37	29.6726	666.50	0.0000
879.38	19.7666	468.07	25.2309	667.71	0.0000
299.98	37.9187	473.00	0.0000	677.62	21.5452
300.09	37.9215	475.06	21.6953	685.70	0.0000
300.13	37.9225	476.78	21.7124	695.00	0.0000
301.36	54.4521	477.60	21.7202	696.49	24.6440
302.85	39.6377	482.18	21.7651	696.51	24.6440
256.23	44.6385	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	28.5953
306.78	38.4927	497.08	20.9958	697.49	27.6104
308.46	44.7473	505.52	27.4866	702.65	27.6593
311.90	47.3318	507.63	0.0000	706.68	10.8809
316.51	44.9659	511.00	32.1432	711.68	17.8352
319.41	0.0000	514.00	23.4487	720.70	0.0000
320.08	0.0000	514.00	23.4487	721.93	0.0000
321.04	47.5928	520.40	11.9870	722.78	10.4427
323.87	27.6000	520.69	0.0000	722.91	17.9026
325.23	35.1555	522.65	0.0000	723.31	17.9048
328.76	0.0000	527.90	0.0000	724.19	14.9249
333.37	39.1076	528.26	16.6523	727.33	9.9605
333.97	36.5969	529.59	16.6611	733.00	12.9725
334.37	36.6058	529.87	0.0000	735.93	13.9840
338.28	43.0136	531.02	0.0000	333.97	8.9941
338.32	43.0146	537.26	0.0000	739.50	0.0000
311.90	40.5342	546.56	0.0000	747.24	19.0487
340.48	40.5342	552.55	19.6226	748.06	17.0477
340.55	0.0000	563.25	23.4609	752.31	16.0671
344.28	49.9313	569.33	20.6957	753.82	0.0000
345.93	40.6602	946.00	23.5199	756.73	8.0452
351.06	43.3259	569.70	23.5209	756.80	8.0452
351.93	43.3477	583.19	26.4836	884.68	19.1515

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	27.2318	1274.44	12.9336	1620.50	6.4706
766.42	25.2187	1001.03	12.9497	1621.92	3.6985
766.84	25.2228	1002.74	14.5750	1678.03	0.0000
772.60	0.0000	1004.73	12.9624	1690.97	1.8718
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	0.9477
778.90	10.1278	1028.54	0.0000	1063.66	0.0000
783.70	0.0000	1037.84	18.5204	1771.35	0.9488
785.37	20.2962	1038.76	0.0000	1791.20	0.0000
792.07	16.7793	631.29	13.1016	1808.65	0.9547
794.95	12.2144	1048.07	0.0000	1810.72	0.0000
795.86	12.2178	1049.04	4.9160	1836.06	5.7539
810.06	10.2258	1050.41	11.4750		
810.29	10.2266	1063.66	20.8338		
344.28	12.2725	1077.00	0.0000		
810.76	12.2739	1077.34	15.4025		
815.77	0.0000	1085.87	18.7432		
1048.07	0.0000	1093.63	9.9412		
832.01	18.5295	1099.45	5.5310		
834.85	14.4238	1112.07	16.6431		
835.71	14.4278	1112.84	17.7565		
836.80	0.0000	1115.54	4.9969		
846.75	0.0000	1120.29	8.8939		
846.77	14.4751	1120.55	8.8945		
856.80	0.0000	1221.41	10.0078		
860.56	14.5338	1129.67	12.2568		
871.09	17.7028	1131.51	0.0000		
873.19	15.6293	1147.95	0.0000		
875.33	0.0000	1173.23	15.7591		
879.38	17.7450	1177.95	15.7762		
880.51	18.7947	1189.05	9.0378		
883.24	14.6295	1204.77	15.8730		
884.68	13.5903	1221.41	13.6563		
889.28	18.8423	1231.02	19.3879		
894.76	18.8716	1235.36	0.0000		
898.04	14.6916	1238.28	20.5620		
900.72	17.8529	1260.41	0.0000		
903.28	10.5094	1271.87	11.5072		
911.20	14.7463	1274.44	8.0596		
912.08	14.7497	1274.54	8.0601		
923.98	0.0000	1291.59	10.4011		
926.50	5.2889	1298.22	0.0000		
929.11	12.7026	1312.11	0.0000		
937.49	17.8247	1332.49	10.4912		
944.13	0.0000	1362.66	0.0000		
946.00	15.9515	1365.19	10.5630		
949.00	13.8363	1368.63	0.0000		
667.71	0.0000	1384.29	8.4832		
962.31	12.8179	1408.01	8.8788		
964.08	9.6178	1457.56	0.0000		
966.17	6.4155	1460.82	10.7666		
911.20	14.4459	1489.16	4.5105		
968.97	14.4459	1505.03	2.8955		
983.53	0.0000	1584.12	8.2645		
984.45	0.0000	1596.21	0.0000		


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*****
*                                     GEL Laboratories LLC                               *
*                                     2040 Savage Road                               *
*                                     Charleston, SC 29407                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235025.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM02.CNF;493
Sample date       : 8-DEC-2015 13:38:00. Background date   : 2-OCT-2016 11:00:01.
Sample ID        : G405235025. Acquisition date          : 3-OCT-2016 09:01:15.
Detector name    : GAM02. Sample quantity               : 1.38244E+02 GRAM
Elapsed live time: 0 01:00:00.00 Detector geometry     : CAN
Energy tolerance : 1.50000 keV Elapsed real time        : 0 01:00:00.48 0.0%
Abundance limit  : 75.00000 Analyst Initials           : MXR1
Batch ID         : 1596249 Sensitivity              : 3.00000
Matrix Spike ID  : LCS ID                               : 1556
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	72.58*	8	75	1.14	144.66	143	15	2.19E-03	162.1	2.95E+00
2	3	74.86*	86	183	1.14	149.21	143	15	2.40E-02	29.3	
3	3	77.02	165	168	0.95	153.52	143	15	4.59E-02	14.3	
4	0	87.50	30	232	0.94	174.46	169	8	8.38E-03	89.8	
5	0	92.77*	60	244	1.33	185.00	181	10	1.68E-02	54.2	
6	0	185.73*	76	182	1.47	370.75	366	11	2.10E-02	38.3	
7	0	238.46*	324	189	1.11	476.11	471	10	9.01E-02	9.8	
8	0	242.28	79	134	1.24	483.75	481	9	2.20E-02	29.9	
9	0	270.66	69	180	3.44	540.46	531	16	1.93E-02	45.3	
10	0	278.10	28	154	1.63	555.32	550	11	7.78E-03	87.9	
11	0	295.35	148	169	1.13	589.79	583	13	4.12E-02	19.8	
12	0	299.97	27	91	1.41	599.04	596	8	7.40E-03	65.2	
13	0	338.51*	88	105	1.56	676.04	672	12	2.45E-02	25.6	
14	0	351.90*	200	103	1.36	702.80	697	10	5.55E-02	12.0	
15	0	457.37	40	63	1.75	913.56	910	9	1.11E-02	38.6	
16	0	462.66	41	72	2.74	924.15	920	8	1.14E-02	39.1	
17	0	517.62	40	66	2.35	1033.97	1029	13	1.11E-02	44.5	
18	0	583.23*	90	62	1.50	1165.09	1158	14	2.50E-02	21.7	
19	0	609.31*	161	51	1.59	1217.22	1210	15	4.48E-02	12.8	
20	0	661.52*	1629	34	1.56	1321.56	1313	15	4.52E-01	2.6	
21	0	709.24	14	23	5.22	1416.93	1409	15	3.75E-03	81.3	
22	0	727.23	37	21	2.30	1452.88	1448	11	1.02E-02	29.5	
23	0	769.76	17	34	2.83	1537.87	1527	15	4.74E-03	78.1	
24	0	891.86	11	12	3.64	1781.91	1775	12	3.06E-03	69.8	
25	0	911.10*	83	14	2.19	1820.35	1815	11	2.30E-02	14.5	
26	0	941.84	17	19	3.94	1881.79	1874	16	4.64E-03	64.5	
27	0	965.23*	10	27	0.66	1928.54	1921	12	2.86E-03	108.1	
28	0	968.88*	33	15	1.54	1935.83	1932	11	9.21E-03	28.7	
29	0	1120.15*	34	18	1.42	2238.18	2229	14	9.43E-03	32.5	
30	0	1228.04	7	23	2.58	2453.83	2443	12	1.90E-03	153.8	
31	0	1258.08	25	23	4.37	2513.88	2501	24	7.03E-03	54.8	
32	0	1460.57*	306	11	2.50	2918.62	2911	15	8.51E-02	6.3	
33	0	1764.70*	25	3	2.33	3526.57	3520	12	6.90E-03	27.5	

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Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235025.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 8-DEC-2015 13:38:00 Acquisition date : 3-OCT-2016 09:01:15
Sample ID : G405235025 Sample quantity : 138.24 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA2 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.48 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
TL-208	277.37	HG-203	279.20
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.060E+00	1.410E+01	1.410E+01	12.62	OK
BA-137M	661.66	89.90*	2.016E+00	4.997E+00	5.092E+00	5.22	OK
CS-137	661.66	85.10*	2.016E+00	5.279E+00	5.379E+00	5.22	OK
HG-203	70.83	3.69	3.355E+00	----- Line	Not Found	-----	Absent
	72.87	6.19	3.544E+00	2.360E-01	2.043E+01	324.14	OK
	279.20	81.56*	4.164E+00	2.751E-02	2.381E+00	315.48	OK
TL-208	277.37	6.60	4.173E+00	----- Line	Not Found	-----	<<INT Reject
	583.19	85.00*	2.233E+00	2.666E-01	2.666E-01	43.48	OK
	860.56	12.50	1.634E+00	----- Line	Not Found	-----	Absent
PB-212	74.82	10.28	3.779E+00	7.765E-01	7.765E-01	115.07	OK
	77.11	17.10	3.992E+00	1.584E+00	1.584E+00	28.65	OK
	238.63	43.60*	4.703E+00	9.530E-01	9.530E-01	19.57	OK
	300.09	3.30	3.911E+00	1.222E+00	1.222E+00	130.41	OK
BI-214	609.32	45.49*	2.154E+00	9.207E-01	9.210E-01	25.70	OK
	1120.29	14.92	1.323E+00	9.153E-01	9.156E-01	64.96	OK
	1764.49	15.30	8.930E-01	9.290E-01	9.293E-01	55.03	OK
PB-214	74.82	5.80	3.775E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.992E+00	2.792E+00	2.793E+00	28.65	OK
	87.09	3.41	4.866E+00	1.178E+00	1.178E+00	179.68	OK
	242.00	7.25	4.651E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	3.962E+00	1.206E+00	1.206E+00	39.65	OK
	351.93	35.60*	3.416E+00	9.612E-01	9.615E-01	23.99	OK
RN-222	609.32	45.49*	2.154E+00	9.207E-01	9.210E-01	25.70	OK
	1120.29	14.92	1.323E+00	9.153E-01	9.156E-01	64.96	OK
	1764.49	15.30	8.930E-01	9.290E-01	9.293E-01	55.03	OK
RA-224	240.99	4.10*	4.647E+00	3.704E-01	3.704E-01	464.33	OK
RA-226	609.32	45.49*	2.154E+00	9.207E-01	9.210E-01	25.70	OK
	1120.29	14.92	1.323E+00	9.153E-01	9.156E-01	64.96	OK
	1764.49	15.30	8.930E-01	9.290E-01	9.293E-01	55.03	OK
AC-228	105.21	1.10	5.776E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.531E+00	1.301E+00	1.301E+00	51.16	OK
	794.95	4.25	1.740E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.672E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.561E+00	1.114E+00	1.114E+00	28.98	OK
	968.97	15.80	1.487E+00	7.606E-01	7.606E-01	57.36	OK
RA-228	105.21	1.10	5.776E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.531E+00	1.301E+00	1.301E+00	51.16	OK
	794.95	4.25	1.740E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.672E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.561E+00	1.114E+00	1.114E+00	28.98	OK
	968.97	15.80	1.487E+00	7.606E-01	7.606E-01	57.36	OK
TH-228	74.82	10.28	3.779E+00	7.765E-01	7.765E-01	115.07	OK
	77.11	17.10	3.992E+00	1.584E+00	1.584E+00	28.65	OK
	238.63	43.60*	4.703E+00	9.530E-01	9.530E-01	19.57	OK
	300.09	3.30	3.911E+00	1.222E+00	1.222E+00	130.41	OK
TH-230	609.32	45.49*	2.154E+00	9.207E-01	9.207E-01	25.70	OK
	1120.29	14.92	1.323E+00	9.153E-01	9.153E-01	64.96	OK
	1764.49	15.30	8.930E-01	9.290E-01	9.290E-01	55.03	OK
PA-231	283.69	1.70	4.097E+00	----- Line	Not Found	-----	Absent

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	301.36	5.35*	3.911E+00	7.540E-01	7.540E-01	130.41	OK
TH-232	105.21	1.10	5.776E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.531E+00	1.301E+00	1.301E+00	51.16	OK
	835.71	1.61	1.672E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.561E+00	1.114E+00	1.114E+00	28.98	OK
	968.97	15.80	1.487E+00	7.606E-01	7.606E-01	57.36	OK
U-234	609.32	45.49*	2.154E+00	9.207E-01	9.207E-01	25.70	OK
	1120.29	14.92	1.323E+00	9.153E-01	9.153E-01	64.96	OK
	1764.49	15.30	8.930E-01	9.290E-01	9.290E-01	55.03	OK
AM-243	43.53	5.90	2.878E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.779E+00	1.188E-01	1.188E-01	115.07	OK

Flag: "*" = Keyline

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235025.CNF;1
* Acquisition date   : 3-OCT-2016 09:01:15 Sensitivity      : 3.000
* Detector ID        : GAM02 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.48 Half life ratio : *****
* Sample date       : 8-DEC-2015 13:38:00 Analyst initials: MXR1
* Sample ID         : G405235025 Sample Quantity : 1.3824E+02 GRAM
* Batch Number      : 1596249 Wet Weight      : 0.00000
* Wet wt corr       : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 22-AUG-2016 09:02:05 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM02 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.410E+01	1.743E+00	7.327E-01
BA-137M	5.092E+00	2.603E-01	8.412E-02
CS-137	5.379E+00	2.750E-01	8.887E-02
HG-203	2.381E+00	7.361E+00	6.196E+00
TL-208	2.666E-01	1.136E-01	7.886E-02
PB-212	9.530E-01	1.828E-01	1.378E-01
BI-214	9.210E-01	2.320E-01	1.646E-01
PB-214	9.615E-01	2.261E-01	1.913E-01
RN-222	9.210E-01	2.320E-01	1.646E-01
RA-224	3.704E-01	1.686E+00	1.667E+00
RA-226	9.210E-01	2.320E-01	1.646E-01
AC-228	1.114E+00	3.165E-01	3.234E-01
RA-228	1.114E+00	3.165E-01	3.234E-01
TH-228	9.530E-01	1.828E-01	1.378E-01
TH-230	9.207E-01	2.319E-01	1.645E-01
PA-231	7.540E-01	9.636E-01	1.125E+00
TH-232	1.114E+00	3.165E-01	3.234E-01
U-234	9.207E-01	2.319E-01	1.645E-01
AM-243	1.188E-01	1.340E-01	1.270E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	1.116E+01	2.205E+01	4.168E+01	NOT IDENT.
NA-22	2.517E-02	5.260E-02	1.115E-01	NOT IDENT.
NA-24	0.000E+00	7.426E+40	0.000E+00	SHORT HLIF
AL-26	-1.146E-02	3.389E-02	6.708E-02	NOT IDENT.
SC-46	7.694E-02	4.747E-01	8.380E-01	FAIL ABUN
V-48	0.000E+00	1.589E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	5.855E+02	0.000E+00	SHORT HLIF
MN-54	8.808E-03	7.637E-02	1.515E-01	NOT IDENT.
CO-56	-2.099E-01	5.713E-01	1.061E+00	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-5.256E-02	6.336E-02	1.059E-01	NOT IDENT.

CO-58	6.041E-02	6.614E-01	1.327E+00	NOT IDENT.
FE-59	1.134E+00	7.697E+00	1.540E+01	NOT IDENT.
CO-60	2.904E-03	5.003E-02	9.793E-02	NOT IDENT.
ZN-65	8.404E-02	2.056E-01	3.882E-01	NOT IDENT.
GE-68	-5.071E-01	2.600E+00	4.934E+00	NOT IDENT.
AS-73	2.324E+00	1.603E+01	3.032E+01	NOT IDENT.
AS-74	0.000E+00	8.622E+03	0.000E+00	SHORT HLIF
SE-75	-2.396E-01	3.288E-01	5.183E-01	FAIL ABUN
BR-77	0.000E+00	3.268E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	8.797E+02	0.000E+00	SHORT HLIF
RB-83	2.277E-01	1.076E+00	1.813E+00	NOT IDENT.
KR-85	-4.606E+01	1.729E+01	1.942E+01	NOT IDENT.
SR-85	-4.867E+00	1.827E+00	2.052E+00	NOT IDENT.
RB-86	0.000E+00	3.100E+04	0.000E+00	SHORT HLIF
Y-88	5.231E-02	1.540E-01	4.248E-01	NOT IDENT.
Y-91	-3.265E+02	6.188E+02	1.080E+03	NOT IDENT.
NB-94	1.383E-02	3.938E-02	7.290E-02	NOT IDENT.
NB-95	-5.155E-01	1.065E+00	1.735E+00	NOT IDENT.
NB-95M	-5.541E-01	3.365E+00	5.660E+00	NOT IDENT.
ZR-95	-4.858E-02	1.638E+00	3.231E+00	NOT IDENT.
NB-97	0.000E+00	1.364E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	7.813E+40	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.977E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-1.347E-02	4.720E-02	8.212E-02	NOT IDENT.
RH-102	-5.587E-02	7.999E-02	1.320E-01	NOT IDENT.
RU-103	5.291E+00	8.698E+00	1.691E+01	FAIL ABUN
RH-106	3.664E-01	6.435E-01	1.277E+00	NOT IDENT.
RU-106	3.664E-01	6.435E-01	1.277E+00	NOT IDENT.
AG-108M	-1.789E-02	4.639E-02	8.208E-02	NOT IDENT.
CD-109	1.703E+00	2.999E+00	2.952E+00	FAIL ABUN
AG-110M	3.027E-02	1.070E-01	2.175E-01	NOT IDENT.
SN-113	3.862E-01	3.802E-01	7.527E-01	NOT IDENT.
CD-115	0.000E+00	4.476E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.285E+05	0.000E+00	SHORT HLIF
TE-123M	-3.518E-02	1.753E-01	3.357E-01	NOT IDENT.
SB-124	-5.349E-01	1.858E+00	3.847E+00	NOT IDENT.
SB-125	1.483E-01	1.868E-01	3.607E-01	FAIL ABUN
TE-125M	8.963E+01	3.866E+02	7.050E+02	NOT IDENT.
I-126	0.000E+00	1.165E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.430E+06	0.000E+00	SHORT HLIF
SN-126	1.086E-01	1.912E-01	1.943E-01	FAIL ABUN
SB-127	0.000E+00	2.622E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	7.924E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	5.277E+26	0.000E+00	SHORT HLIF
BA-133	1.067E-03	6.629E-02	1.106E-01	NOT IDENT.
I-133	0.000E+00	1.258E+41	0.000E+00	SHORT HLIF
CS-134	6.142E-02	5.941E-02	1.307E-01	NOT IDENT.
CS-135	1.531E-01	1.950E-01	3.867E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	4.086E+05	0.000E+00	SHORT HLIF
CE-139	2.862E-02	1.241E-01	2.455E-01	NOT IDENT.
BA-140	0.000E+00	1.987E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	5.069E+05	0.000E+00	SHORT HLIF
CE-141	-4.192E+01	3.231E+01	5.107E+01	NOT IDENT.
CE-143	0.000E+00	1.280E+41	0.000E+00	SHORT HLIF
CE-144	-2.177E-01	4.719E-01	8.085E-01	NOT IDENT.
PM-144	1.131E-02	6.551E-02	1.314E-01	NOT IDENT.
PR-144	9.825E-01	5.690E+00	1.141E+01	NOT IDENT.
PM-146	-3.209E-03	8.445E-02	1.366E-01	NOT IDENT.
ND-147	0.000E+00	4.732E+07	0.000E+00	SHORT HLIF
PM-147	3.119E+02	1.017E+03	1.873E+03	NOT IDENT.
PM-149	0.000E+00	6.279E+40	0.000E+00	SHORT HLIF
EU-150	1.919E-02	4.046E-02	7.085E-02	FAIL ABUN
EU-152	2.596E-02	1.421E-01	2.429E-01	FAIL ABUN
GD-153	-5.715E-02	2.777E-01	4.591E-01	NOT IDENT.
EU-154	6.448E-02	1.295E-01	2.751E-01	NOT IDENT.
EU-155	7.081E-02	1.415E-01	2.650E-01	FAIL ABUN
TB-160	1.360E+00	2.113E+00	4.563E+00	FAIL ABUN
HO-166M	-1.342E-02	6.223E-02	1.058E-01	FAIL ABUN
TM-171	-1.346E+01	3.933E+01	7.211E+01	NOT IDENT.
HF-172	-2.579E-02	3.085E-01	5.465E-01	NOT IDENT.
LU-172	2.066E-02	9.199E-02	1.848E-01	FAIL ABUN
LU-176	-9.477E-03	3.347E-02	6.151E-02	FAIL ABUN
HF-181	1.524E+00	7.273E+00	1.350E+01	NOT IDENT.
TA-182	-3.884E-01	1.341E+00	2.081E+00	FAIL ABUN
RE-183	-1.506E+00	5.135E+00	9.379E+00	NOT IDENT.

RE-184	8.722E+00	3.298E+01	6.799E+01	NOT IDENT.
W-188	9.662E+01	1.655E+02	2.960E+02	NOT IDENT.
IR-192	-3.103E-02	6.270E-01	1.174E+00	FAIL ABUN
BI-207	1.700E-02	4.652E-02	9.940E-02	FAIL ABUN
PB-210	1.178E+00	6.676E+00	1.269E+01	NOT IDENT.
BI-211	0.000E+00	6.228E-01	9.734E-01	FAIL ABUN
PB-211	-4.126E-01	1.098E+00	1.953E+00	NOT IDENT.
BI-212	0.000E+00	9.447E-01	1.529E+00	FAIL ABUN
RN-219	-1.423E-01	6.267E-01	1.129E+00	FAIL ABUN
RA-223	3.427E-01	8.308E-01	1.603E+00	FAIL ABUN
AC-227	3.517E-02	2.972E-01	5.691E-01	FAIL ABUN
TH-227	3.517E-02	2.972E-01	5.691E-01	FAIL ABUN
TH-229	-3.194E-01	6.313E-01	1.173E+00	FAIL ABUN
TH-231	3.427E-01	8.308E-01	1.603E+00	FAIL ABUN
PA-233	-5.642E-02	7.810E-02	1.381E-01	FAIL ABUN
PA-234	-1.635E-01	3.451E-01	5.308E-01	NOT IDENT.
PA-234M	-5.196E+00	5.090E+00	8.894E+00	NOT IDENT.
TH-234	1.896E+00	1.987E+00	4.038E+00	FAIL ABUN
U-235	5.759E-02	2.464E-01	4.461E-01	FAIL ABUN
NP-237	-5.642E-02	7.810E-02	1.381E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
U-238	1.896E+00	1.987E+00	4.038E+00	FAIL ABUN
NP-239	1.878E-01	3.205E-01	5.998E-01	FAIL ABUN
PU-239	-2.524E+01	4.323E+02	7.636E+02	NOT IDENT.
AM-241	-3.896E-02	2.244E-01	4.127E-01	NOT IDENT.
CM-243	4.668E-02	1.316E-01	2.440E-01	FAIL ABUN
BK-247	-7.946E-02	1.143E-01	1.809E-01	NOT IDENT.
CM-247	4.401E-03	5.597E-02	1.036E-01	FAIL ABUN
CF-249	-4.305E-02	5.805E-02	1.004E-01	NOT IDENT.
CF-251	-7.255E-02	1.350E-01	2.527E-01	NOT IDENT.
ANH-511	-3.056E-02	6.123E-02	1.218E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	293	10.66*	1.060E+00	1.410E+01	1.410E+01	12.62
CD-109	88.03	36	3.70*	4.866E+00	1.086E+00	1.703E+00	179.68
SN-126	64.28	-----	9.60	2.600E+00	-----	Line Not Found	-----
	86.94	36	8.90	4.866E+00	4.513E-01	4.513E-01	179.68
	87.57	36	37.00*	4.866E+00	1.086E-01	1.086E-01	179.68
BA-137M	661.66	1667	89.90*	2.016E+00	4.997E+00	5.092E+00	5.22
CS-137	661.66	1667	85.10*	2.016E+00	5.279E+00	5.379E+00	5.22
HG-203	70.83	-----	3.69	3.355E+00	-----	Line Not Found	-----
	72.87	10	6.19	3.544E+00	2.360E-01	2.043E+01	324.14
	279.20	31	81.56*	4.164E+00	4.909E-02	4.248E+00	175.76
TL-208	277.37	31	6.60	4.164E+00	6.066E-01	6.066E-01	175.76
	583.19	93	85.00*	2.233E+00	2.666E-01	2.666E-01	43.48
	860.56	-----	12.50	1.634E+00	-----	Line Not Found	-----
BI-211	72.87	10	1.23	3.544E+00	1.188E+00	1.188E+00	324.14
	351.06	215	12.92*	3.416E+00	2.648E+00	2.648E+00	23.99
PB-212	74.82	104	10.28	3.779E+00	1.456E+00	1.456E+00	58.65
	77.11	199	17.10	3.992E+00	1.584E+00	1.584E+00	28.65
	238.63	360	43.60*	4.703E+00	9.530E-01	9.530E-01	19.57
	300.09	29	3.30	3.911E+00	1.222E+00	1.222E+00	130.41
BI-214	609.32	166	45.49*	2.154E+00	9.207E-01	9.210E-01	25.70
	1120.29	33	14.92	1.323E+00	9.153E-01	9.156E-01	64.96
	1764.49	23	15.30	8.930E-01	9.290E-01	9.293E-01	55.03
PB-214	74.82	104	5.80	3.779E+00	2.581E+00	2.581E+00	58.65
	77.11	199	9.70	3.992E+00	2.792E+00	2.793E+00	28.65
	87.09	36	3.41	4.866E+00	1.178E+00	1.178E+00	179.68
	242.00	88	7.25	4.647E+00	1.415E+00	1.416E+00	59.86
	295.22	162	18.42	3.962E+00	1.206E+00	1.206E+00	39.65
	351.93	215	35.60*	3.416E+00	9.612E-01	9.615E-01	23.99
RN-222	609.32	166	45.49*	2.154E+00	9.207E-01	9.210E-01	25.70
	1120.29	33	14.92	1.323E+00	9.153E-01	9.156E-01	64.96
	1764.49	23	15.30	8.930E-01	9.290E-01	9.293E-01	55.03
RA-224	240.99	88	4.10*	4.647E+00	2.502E+00	2.502E+00	59.86
RA-226	609.32	166	45.49*	2.154E+00	9.207E-01	9.210E-01	25.70
	1120.29	33	14.92	1.323E+00	9.153E-01	9.156E-01	64.96
	1764.49	23	15.30	8.930E-01	9.290E-01	9.293E-01	55.03
AC-228	105.21	-----	1.10	5.776E+00	-----	Line Not Found	-----
	338.32	95	11.27	3.531E+00	1.301E+00	1.301E+00	51.16
	794.95	-----	4.25	1.740E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.672E+00	-----	Line Not Found	-----
	911.20	83	25.80*	1.561E+00	1.114E+00	1.114E+00	28.98
	968.97	33	15.80	1.487E+00	7.606E-01	7.606E-01	57.36
RA-228	105.21	-----	1.10	5.776E+00	-----	Line Not Found	-----
	338.32	95	11.27	3.531E+00	1.301E+00	1.301E+00	51.16
	794.95	-----	4.25	1.740E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.672E+00	-----	Line Not Found	-----
	911.20	83	25.80*	1.561E+00	1.114E+00	1.114E+00	28.98
	968.97	33	15.80	1.487E+00	7.606E-01	7.606E-01	57.36

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	104	10.28	3.779E+00	1.456E+00	1.456E+00	58.65
	77.11	199	17.10	3.992E+00	1.584E+00	1.584E+00	28.65
	238.63	360	43.60*	4.703E+00	9.530E-01	9.530E-01	19.57
	300.09	29	3.30	3.911E+00	1.222E+00	1.222E+00	130.41
TH-230	609.32	166	45.49*	2.154E+00	9.207E-01	9.207E-01	25.70
	1120.29	33	14.92	1.323E+00	9.153E-01	9.153E-01	64.96
	1764.49	23	15.30	8.930E-01	9.290E-01	9.290E-01	55.03
PA-231	283.69	-----	1.70	4.097E+00	-----	Line Not Found	-----
	301.36	29	5.35*	3.911E+00	7.540E-01	7.540E-01	130.41
TH-232	105.21	-----	1.10	5.776E+00	-----	Line Not Found	-----
	338.32	95	11.27	3.531E+00	1.301E+00	1.301E+00	51.16
	835.71	-----	1.61	1.672E+00	-----	Line Not Found	-----
	911.20	83	25.80*	1.561E+00	1.114E+00	1.114E+00	28.98
	968.97	33	15.80	1.487E+00	7.606E-01	7.606E-01	57.36
U-234	609.32	166	45.49*	2.154E+00	9.207E-01	9.207E-01	25.70
	1120.29	33	14.92	1.323E+00	9.153E-01	9.153E-01	64.96
	1764.49	23	15.30	8.930E-01	9.290E-01	9.290E-01	55.03
AM-243	43.53	-----	5.90	2.878E-01	-----	Line Not Found	-----
	74.66	104	67.20*	3.779E+00	2.227E-01	2.227E-01	58.65

Flag: "*" = Keyline

Total number of lines in spectrum 33
Number of unidentified lines 8
Number of lines tentatively identified by NID 25 75.76%

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	1.410E+01	1.410E+01	0.178E+01	12.62	
CD-109	461.40D	1.57	1.086E+00	1.703E+00	3.060E+00	179.68	
SN-126	2.30E+05Y	1.00	1.086E-01	1.086E-01	1.951E-01	179.68	
BA-137M	30.08Y	1.02	4.997E+00	5.092E+00	0.266E+00	5.22	
CS-137	30.08Y	1.02	5.279E+00	5.379E+00	0.281E+00	5.22	
HG-203	46.59D	86.6	4.909E-02	4.248E+00	7.467E+00	175.76	
TL-208	1.41E+10Y	1.00	2.666E-01	2.666E-01	1.159E-01	43.48	
BI-211	7.04E+08Y	1.00	2.648E+00	2.648E+00	0.635E+00	23.99	
PB-212	1.41E+10Y	1.00	9.530E-01	9.530E-01	1.865E-01	19.57	
BI-214	1600.00Y	1.00	9.207E-01	9.210E-01	2.367E-01	25.70	
PB-214	1600.00Y	1.00	9.612E-01	9.615E-01	2.307E-01	23.99	
RN-222	1600.00Y	1.00	9.207E-01	9.210E-01	2.367E-01	25.70	
RA-224	1.41E+10Y	1.00	2.502E+00	2.502E+00	1.498E+00	59.86	
RA-226	1600.00Y	1.00	9.207E-01	9.210E-01	2.367E-01	25.70	
AC-228	1.41E+10Y	1.00	1.114E+00	1.114E+00	0.323E+00	28.98	
RA-228	1.41E+10Y	1.00	1.114E+00	1.114E+00	0.323E+00	28.98	
TH-228	1.41E+10Y	1.00	9.530E-01	9.530E-01	1.865E-01	19.57	
TH-230	7.54E+04Y	1.00	9.207E-01	9.207E-01	2.366E-01	25.70	
PA-231	7.04E+08Y	1.00	7.540E-01	7.540E-01	9.833E-01	130.41	
TH-232	1.41E+10Y	1.00	1.114E+00	1.114E+00	0.323E+00	28.98	
U-234	2.45E+05Y	1.00	9.207E-01	9.207E-01	2.366E-01	25.70	
AM-243	7370.00Y	1.00	2.227E-01	2.227E-01	1.306E-01	58.65	

Total Activity : 4.283E+01 4.784E+01

Grand Total Activity : 4.283E+01 4.784E+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	92.77	72	290	1.33	185.00	181	10	1.68E-02	****	5.21E+00	T
0	185.73	86	206	1.47	370.75	366	11	2.10E-02	76.6	5.56E+00	T
0	270.66	76	197	3.44	540.46	531	16	1.93E-02	90.5	4.26E+00	T
0	457.37	42	66	1.75	913.56	910	9	1.11E-02	77.2	2.73E+00	
0	462.66	43	76	2.74	924.15	920	8	1.14E-02	78.2	2.71E+00	T
0	517.62	42	69	2.35	1033.97	1029	13	1.11E-02	88.9	2.46E+00	
0	709.24	14	23	5.22	1416.93	1409	15	3.75E-03	****	1.91E+00	
0	727.23	37	21	2.30	1452.88	1448	11	1.02E-02	59.1	1.87E+00	T
0	769.76	17	34	2.83	1537.87	1527	15	4.74E-03	****	1.79E+00	
0	891.86	11	12	3.64	1781.91	1775	12	3.06E-03	****	1.59E+00	
0	941.84	17	19	3.94	1881.79	1874	16	4.64E-03	****	1.52E+00	
0	965.23	10	27	0.66	1928.54	1921	12	2.86E-03	****	1.49E+00	T
0	1228.04	7	22	2.58	2453.83	2443	12	1.90E-03	****	1.23E+00	
0	1258.08	25	22	4.37	2513.88	2501	24	7.03E-03	****	1.20E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235025.CNF;1
* Acquisition date   : 3-OCT-2016 09:01:15 Sensitivity      : 3.000
* Detector ID        : GAM02 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.48 Half life ratio : *****
* Sample date        : 8-DEC-2015 13:38:00 Nuclide Library : SOLID
* Sample ID          : G405235025 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.3824E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 22-AUG-2016 09:02:05 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM02 CAN.CNF;15
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	3.012E-01
BA-137M	3.786E-02
CS-137	4.000E-02
HG-203	2.905E+00
TL-208	3.549E-02
PB-212	6.521E-02
BI-214	7.465E-02
PB-214	8.946E-02
RN-222	7.465E-02
RA-224	7.941E-01
RA-226	7.465E-02
AC-228	1.433E-01
RA-228	1.433E-01
TH-228	6.521E-02
TH-230	7.463E-02
PA-231	5.264E-01
TH-232	1.433E-01
U-234	7.463E-02
AM-243	6.046E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.949E+01	NOT IDENT.
NA-22	4.802E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.511E-02	NOT IDENT.
SC-46	3.633E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	6.712E-02	NOT IDENT.
CO-56	4.642E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.982E-02	NOT IDENT.
CO-58	5.814E-01	NOT IDENT.

FE-59	6.660E+00	NOT IDENT.
CO-60	4.180E-02	NOT IDENT.
ZN-65	1.683E-01	NOT IDENT.
GE-68	2.104E+00	NOT IDENT.
AS-73	1.437E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	2.423E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	8.308E-01	NOT IDENT.
KR-85	8.978E+00	NOT IDENT.
SR-85	9.483E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.520E-01	NOT IDENT.
Y-91	4.607E+02	NOT IDENT.
NB-94	3.256E-02	NOT IDENT.
NB-95	7.606E-01	NOT IDENT.
NB-95M	2.664E+00	NOT IDENT.
ZR-95	1.421E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.889E-02	NOT IDENT.
RH-102	5.860E-02	NOT IDENT.
RU-103	7.810E+00	FAIL ABUN
RH-106	5.762E-01	NOT IDENT.
RU-106	5.762E-01	NOT IDENT.
AG-108M	3.813E-02	NOT IDENT.
CD-109	1.410E+00	FAIL ABUN
AG-110M	9.403E-02	NOT IDENT.
SN-113	3.538E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.592E-01	NOT IDENT.
SB-124	1.399E+00	NOT IDENT.
SB-125	1.697E-01	FAIL ABUN
TE-125M	3.345E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SN-126	9.289E-02	FAIL ABUN
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	5.149E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.876E-02	NOT IDENT.
CS-135	1.823E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.154E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.399E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.810E-01	NOT IDENT.
PM-144	5.882E-02	NOT IDENT.
PR-144	5.109E+00	NOT IDENT.
PM-146	6.367E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	8.819E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	3.320E-02	FAIL ABUN
EU-152	1.130E-01	FAIL ABUN
GD-153	2.180E-01	NOT IDENT.
EU-154	1.186E-01	NOT IDENT.
EU-155	1.254E-01	FAIL ABUN
TB-160	2.009E+00	FAIL ABUN
HO-166M	4.563E-02	FAIL ABUN
TM-171	3.411E+01	NOT IDENT.
HF-172	2.583E-01	NOT IDENT.
LU-172	8.060E-02	FAIL ABUN
LU-176	2.865E-02	FAIL ABUN
HF-181	6.270E+00	NOT IDENT.
TA-182	9.043E-01	FAIL ABUN
RE-183	4.448E+00	NOT IDENT.
RE-184	2.960E+01	NOT IDENT.

W-188	1.388E+02	NOT IDENT.
IR-192	5.462E-01	FAIL ABUN
BI-207	4.238E-02	FAIL ABUN
PB-210	5.988E+00	NOT IDENT.
BI-211	4.698E-01	FAIL ABUN
PB-211	9.107E-01	NOT IDENT.
BI-212	7.049E-01	FAIL ABUN
RN-219	5.273E-01	FAIL ABUN
RA-223	7.501E-01	FAIL ABUN
AC-227	2.666E-01	FAIL ABUN
TH-227	2.666E-01	FAIL ABUN
TH-229	5.548E-01	FAIL ABUN
TH-231	7.501E-01	FAIL ABUN
PA-233	6.388E-02	FAIL ABUN
PA-234	2.246E-01	NOT IDENT.
PA-234M	3.838E+00	NOT IDENT.
TH-234	1.935E+00	FAIL ABUN
U-235	2.117E-01	FAIL ABUN
NP-237	6.388E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	1.935E+00	FAIL ABUN
NP-239	2.840E-01	FAIL ABUN
PU-239	3.621E+02	NOT IDENT.
AM-241	1.956E-01	NOT IDENT.
CM-243	1.154E-01	FAIL ABUN
BK-247	8.460E-02	NOT IDENT.
CM-247	4.836E-02	FAIL ABUN
CF-249	4.657E-02	NOT IDENT.
CF-251	1.186E-01	NOT IDENT.
ANH-511	5.790E-02	NOT IDENT.

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235025.CNF;1
* Acquisition date   : 3-OCT-2016 09:01:15 Sensitivity      : 3.000
* Detector ID        : GAM02 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.48 Half life ratio : *****
* Sample date       : 8-DEC-2015 13:38:00 Nuclide Library : SOLID
* Sample ID         : G405235025 Analyst initials: MXR1
* Batch Number      : 1596249 Sample Quantity : 1.3824E+02 GRAM
*                               Quantity Err(%) : 1.4467E-03 %
* Wet wt corr       : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 22-AUG-2016 09:02:05 Eff. Geometry : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM02 CAN.CNF;15
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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
             (pCi/GRAM )   (1.96-sigma)  (1.96-sigma)
K-40         1.410E+01      1.892E+00      1.892E+00
BA-137M      5.092E+00      3.404E-01      3.404E-01
CS-137       5.379E+00      3.592E-01      3.592E-01
HG-203       2.381E+00      7.365E+00      7.365E+00
TL-208       2.666E-01      1.142E-01      1.142E-01
PB-212       9.530E-01      1.897E-01      1.897E-01
BI-214       9.210E-01      2.353E-01      2.353E-01
PB-214       9.615E-01      2.296E-01      2.296E-01
RN-222       9.210E-01      2.353E-01      2.353E-01
RA-224       3.704E-01      1.692E+00      1.692E+00
RA-226       9.210E-01      2.353E-01      2.353E-01
AC-228       1.114E+00      3.216E-01      3.216E-01
RA-228       1.114E+00      3.216E-01      3.216E-01
TH-228       9.530E-01      1.897E-01      1.897E-01
TH-230       9.207E-01      2.352E-01      2.352E-01
PA-231       7.540E-01      9.770E-01      9.770E-01
TH-232       1.114E+00      3.216E-01      3.216E-01
U-234        9.207E-01      2.352E-01      2.352E-01
AM-243       1.188E-01      1.348E-01      1.348E-01

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

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Nuclide      Key-Line      K.L Act error      TPU
             Activity      (1.96-sigma)      (1.96-sigma)
             (pCi/GRAM )
BE-7         1.116E+01      2.205E+01      2.262E+01 NOT IDENT.
NA-22        2.517E-02      5.261E-02      5.382E-02 NOT IDENT.
NA-24        -1.000E+41      8.612E+40      0.000E+00 SHORT HLIF
AL-26        -1.146E-02      3.390E-02      3.429E-02 NOT IDENT.
SC-46        7.694E-02      4.747E-01      4.760E-01 FAIL ABUN
V-48         -6.158E+03      1.590E+04      1.614E+04 SHORT HLIF
CR-51        8.994E+01      5.855E+02      5.869E+02 SHORT HLIF
MN-54        8.808E-03      7.638E-02      7.648E-02 NOT IDENT.
CO-56        -2.099E-01      5.714E-01      5.792E-01 NOT IDENT.
MN-56        -1.000E+41      2.750E+41      0.000E+00 SHORT HLIF
CO-57        -5.256E-02      6.340E-02      6.769E-02 NOT IDENT.

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CO-58	6.041E-02	6.614E-01	6.619E-01	NOT IDENT.
FE-59	1.134E+00	7.697E+00	7.714E+00	NOT IDENT.
CO-60	2.904E-03	5.003E-02	5.005E-02	NOT IDENT.
ZN-65	8.404E-02	2.056E-01	2.091E-01	NOT IDENT.
GE-68	-5.071E-01	2.600E+00	2.610E+00	NOT IDENT.
AS-73	2.324E+00	1.604E+01	1.607E+01	NOT IDENT.
AS-74	-3.375E+03	8.626E+03	8.759E+03	SHORT HLIF
SE-75	-2.396E-01	3.290E-01	3.463E-01	FAIL ABUN
BR-77	1.704E+38	1.475E+39	0.000E+00	SHORT HLIF
SR-82	2.385E+02	8.798E+02	8.864E+02	SHORT HLIF
RB-83	2.277E-01	1.077E+00	1.081E+00	NOT IDENT.
KR-85	-4.606E+01	1.740E+01	2.709E+01	NOT IDENT.
SR-85	-4.867E+00	1.838E+00	2.862E+00	NOT IDENT.
RB-86	-8.835E+02	3.100E+04	3.100E+04	SHORT HLIF
Y-88	5.231E-02	1.540E-01	1.558E-01	NOT IDENT.
Y-91	-3.265E+02	6.189E+02	6.362E+02	NOT IDENT.
NB-94	1.383E-02	3.939E-02	3.988E-02	NOT IDENT.
NB-95	-5.155E-01	1.065E+00	1.090E+00	NOT IDENT.
NB-95M	-5.541E-01	3.366E+00	3.375E+00	NOT IDENT.
ZR-95	-4.858E-02	1.638E+00	1.638E+00	NOT IDENT.
NB-97	1.000E+41	1.365E+41	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	7.823E+40	0.000E+00	SHORT HLIF
MO-99	5.166E+31	1.977E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	2.763E+41	0.000E+00	SHORT HLIF
RH-101	-1.347E-02	4.726E-02	4.765E-02	NOT IDENT.
RH-102	-5.587E-02	8.012E-02	8.399E-02	NOT IDENT.
RU-103	5.291E+00	8.701E+00	9.022E+00	FAIL ABUN
RH-106	3.664E-01	6.439E-01	6.647E-01	NOT IDENT.
RU-106	3.664E-01	6.439E-01	6.647E-01	NOT IDENT.
AG-108M	-1.789E-02	4.640E-02	4.709E-02	NOT IDENT.
CD-109	1.703E+00	3.002E+00	3.099E+00	FAIL ABUN
AG-110M	3.027E-02	1.070E-01	1.078E-01	NOT IDENT.
SN-113	3.862E-01	3.805E-01	4.185E-01	NOT IDENT.
CD-115	-1.930E+39	4.489E+39	0.000E+00	SHORT HLIF
SN-117M	-1.162E+04	1.285E+05	1.286E+05	SHORT HLIF
TE-123M	-3.518E-02	1.753E-01	1.760E-01	NOT IDENT.
SB-124	-5.349E-01	1.859E+00	1.874E+00	NOT IDENT.
SB-125	1.483E-01	1.869E-01	1.985E-01	FAIL ABUN
TE-125M	8.963E+01	3.866E+02	3.887E+02	NOT IDENT.
I-126	7.253E+05	1.169E+06	1.214E+06	SHORT HLIF
SB-126	5.661E+05	1.434E+06	1.457E+06	SHORT HLIF
SN-126	1.086E-01	1.913E-01	1.974E-01	FAIL ABUN
SB-127	-2.502E+21	2.644E+22	0.000E+00	SHORT HLIF
I-131	-1.906E+08	7.924E+09	7.925E+09	SHORT HLIF
I-132	1.000E+41	1.906E+42	0.000E+00	SHORT HLIF
TE-132	-2.869E+26	5.404E+26	0.000E+00	SHORT HLIF
BA-133	1.067E-03	6.629E-02	6.629E-02	NOT IDENT.
I-133	-1.000E+41	2.203E+41	0.000E+00	SHORT HLIF
CS-134	6.142E-02	5.947E-02	6.560E-02	NOT IDENT.
CS-135	1.531E-01	1.952E-01	2.071E-01	NOT IDENT.
I-135	-1.000E+41	9.774E+41	0.000E+00	SHORT HLIF
CS-136	-4.679E+04	4.086E+05	4.091E+05	SHORT HLIF
CE-139	2.862E-02	1.242E-01	1.249E-01	NOT IDENT.
BA-140	-2.192E+05	1.987E+06	1.990E+06	SHORT HLIF
LA-140	-3.699E+04	5.069E+05	5.072E+05	SHORT HLIF
CE-141	-4.192E+01	3.236E+01	3.748E+01	NOT IDENT.
CE-143	1.000E+41	1.284E+41	0.000E+00	SHORT HLIF
CE-144	-2.177E-01	4.721E-01	4.822E-01	NOT IDENT.
PM-144	1.131E-02	6.551E-02	6.571E-02	NOT IDENT.
PR-144	9.825E-01	5.690E+00	5.708E+00	NOT IDENT.
PM-146	-3.209E-03	8.445E-02	8.446E-02	NOT IDENT.
ND-147	-2.152E+07	4.733E+07	4.832E+07	SHORT HLIF
PM-147	3.119E+02	1.017E+03	1.027E+03	NOT IDENT.
PM-149	2.724E+40	6.307E+40	0.000E+00	SHORT HLIF
EU-150	1.919E-02	4.047E-02	4.138E-02	FAIL ABUN
EU-152	2.596E-02	1.421E-01	1.426E-01	FAIL ABUN
GD-153	-5.715E-02	2.777E-01	2.789E-01	NOT IDENT.
EU-154	6.448E-02	1.296E-01	1.328E-01	NOT IDENT.
EU-155	7.081E-02	1.416E-01	1.452E-01	FAIL ABUN
TB-160	1.360E+00	2.115E+00	2.202E+00	FAIL ABUN
HO-166M	-1.342E-02	6.223E-02	6.253E-02	FAIL ABUN
TM-171	-1.346E+01	3.935E+01	3.981E+01	NOT IDENT.
HF-172	-2.579E-02	3.085E-01	3.087E-01	NOT IDENT.
LU-172	2.066E-02	9.201E-02	9.248E-02	FAIL ABUN
LU-176	-9.477E-03	3.348E-02	3.375E-02	FAIL ABUN
HF-181	1.524E+00	7.273E+00	7.305E+00	NOT IDENT.
TA-182	-3.884E-01	1.341E+00	1.353E+00	FAIL ABUN
RE-183	-1.506E+00	5.140E+00	5.185E+00	NOT IDENT.

RE-184	8.722E+00	3.304E+01	3.327E+01	NOT IDENT.
W-188	9.662E+01	1.659E+02	1.715E+02	NOT IDENT.
IR-192	-3.103E-02	6.270E-01	6.272E-01	FAIL ABUN
BI-207	1.700E-02	4.653E-02	4.715E-02	FAIL ABUN
PB-210	1.178E+00	6.676E+00	6.698E+00	NOT IDENT.
BI-211	2.648E+00	6.340E-01	1.352E+00	FAIL ABUN
PB-211	-4.126E-01	1.098E+00	1.114E+00	NOT IDENT.
BI-212	1.632E+00	9.483E-01	1.200E+00	FAIL ABUN
RN-219	-1.423E-01	6.270E-01	6.303E-01	FAIL ABUN
RA-223	3.427E-01	8.310E-01	8.453E-01	FAIL ABUN
AC-227	3.517E-02	2.973E-01	2.977E-01	FAIL ABUN
TH-227	3.517E-02	2.973E-01	2.977E-01	FAIL ABUN
TH-229	-3.194E-01	6.315E-01	6.477E-01	FAIL ABUN
TH-231	3.427E-01	8.310E-01	8.453E-01	FAIL ABUN
PA-233	-5.642E-02	7.815E-02	8.218E-02	FAIL ABUN
PA-234	-1.635E-01	3.925E-01	3.994E-01	NOT IDENT.
PA-234M	-5.196E+00	5.095E+00	5.608E+00	NOT IDENT.
TH-234	1.896E+00	2.031E+00	2.204E+00	FAIL ABUN
U-235	5.759E-02	2.464E-01	2.478E-01	FAIL ABUN
NP-237	-5.642E-02	7.815E-02	8.218E-02	FAIL ABUN
NP-238	-5.579E+40	5.144E+41	0.000E+00	SHORT HLIF
U-238	1.896E+00	2.031E+00	2.204E+00	FAIL ABUN
NP-239	1.878E-01	3.209E-01	3.319E-01	FAIL ABUN
PU-239	-2.524E+01	4.323E+02	4.325E+02	NOT IDENT.
AM-241	-3.896E-02	2.244E-01	2.251E-01	NOT IDENT.
CM-243	4.668E-02	1.317E-01	1.333E-01	FAIL ABUN
BK-247	-7.946E-02	1.155E-01	1.209E-01	NOT IDENT.
CM-247	4.401E-03	5.598E-02	5.601E-02	FAIL ABUN
CF-249	-4.305E-02	5.816E-02	6.131E-02	NOT IDENT.
CF-251	-7.255E-02	1.353E-01	1.392E-01	NOT IDENT.
ANH-511	-3.056E-02	6.124E-02	6.277E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	91.4849	87.09	139.2739	136.47	93.5441
45.60	82.8264	87.57	148.3922	140.51	0.0000
46.54	84.0705	88.03	154.5189	143.76	93.2419
49.72	0.0000	88.34	154.6079	144.24	76.1140
51.35	94.5186	88.47	132.8742	145.44	118.0415
51.87	110.2482	89.96	124.2040	152.43	107.9469
52.39	112.4799	1093.63	133.4018	153.25	0.0000
52.97	110.5624	91.11	0.0000	323.87	103.2168
53.44	105.4741	92.59	133.8708	156.02	0.0000
54.07	103.5515	93.35	134.0527	158.56	0.0000
57.36	0.0000	94.56	92.5958	159.00	116.7635
57.53	107.6116	94.65	92.6107	162.33	91.2813
57.98	121.4591	94.67	92.6138	162.66	0.0000
59.27	114.4208	94.87	92.6461	163.33	99.7768
59.32	114.4344	97.43	114.4188	165.86	76.5332
59.54	115.5547	98.43	99.7156	176.31	83.4392
60.96	145.7276	98.44	99.7176	176.60	0.0000
61.17	144.7350	99.53	101.0518	177.52	91.2282
62.93	97.2415	100.11	120.6917	181.07	0.0000
63.29	98.3912	102.03	110.7048	181.52	79.6532
63.58	118.7903	103.18	97.0526	184.41	92.8004
64.28	129.6987	103.37	92.4603	143.76	92.9355
66.73	101.3129	105.21	89.2633	193.51	115.4266
67.24	116.5331	105.31	89.2780	197.03	114.1199
125.81	119.8861	106.12	106.8116	198.01	112.4944
67.75	119.9039	106.47	91.7711	201.83	106.8195
69.67	131.6160	109.28	107.3577	203.43	108.7510
70.83	121.7933	111.00	119.3530	205.31	91.3883
72.81	128.8554	111.76	0.0000	210.85	119.3033
72.87	128.8716	114.06	89.3576	215.65	103.0092
74.66	129.3515	116.30	0.0000	222.11	90.2624
74.82	129.3938	116.74	88.5469	227.09	97.8831
74.97	129.4343	119.76	86.5811	227.38	97.9097
77.11	129.9988	121.12	78.4384	228.16	0.0000
78.74	113.4760	121.22	78.4500	228.18	93.4904
79.69	126.9782	121.78	105.8769	116.74	93.4904
80.12	118.2194	122.06	107.1112	235.69	90.9882
80.19	0.0000	122.92	85.7977	235.96	91.0117
80.57	109.4493	123.07	85.8170	238.63	103.4934
81.00	118.4237	265.00	90.6657	238.98	0.0000
81.07	118.4399	125.81	101.7189	240.99	133.7436
81.75	110.0721	127.23	115.1180	242.00	133.8677
83.79	122.0399	127.91	98.4273	244.70	75.3162
84.00	122.0883	129.30	114.2577	252.40	0.0000
85.43	135.8557	131.20	121.8023	252.80	81.8441
86.55	139.1339	133.02	96.7249	254.15	0.0000
86.79	139.1963	133.52	102.8415	256.23	71.0243
86.94	139.2351	136.00	94.6971	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	89.2012	355.39	0.0000	584.27	27.2334
264.80	89.2129	356.01	61.3036	595.83	0.0000
265.00	89.2285	364.49	0.0000	427.87	37.7346
268.22	71.7661	366.42	0.0000	602.52	0.0000
269.46	71.8413	372.51	70.5640	604.72	34.3689
270.03	71.8757	375.05	76.7422	607.14	39.5692
271.23	71.9494	377.52	61.6962	609.32	32.1460
273.65	0.0000	356.01	54.8438	610.33	32.1608
276.40	76.9551	388.16	71.2946	614.28	31.0682
277.37	75.1383	388.63	0.0000	618.01	31.1210
277.60	75.1530	391.69	58.1863	620.36	31.1539
278.00	75.1774	264.66	57.4936	621.93	20.7847
279.20	75.2523	401.81	71.9198	630.19	0.0000
279.54	71.9802	402.40	64.7509	631.29	31.3077
279.70	71.9896	404.85	73.0859	633.25	18.5690
280.46	81.9218	410.95	61.9983	634.78	0.0000
283.69	67.9775	413.71	71.4202	635.95	32.5345
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	67.1273	423.72	0.0000	645.85	24.5077
285.90	0.0000	427.09	70.9620	657.76	23.9312
287.50	80.5003	427.87	64.7322	657.90	0.0000
290.67	61.2417	433.94	66.0146	661.66	27.3208
293.27	0.0000	439.40	68.3312	664.57	0.0000
351.93	75.7589	453.88	63.6096	666.33	0.0000
295.96	75.8042	463.37	71.9508	666.50	0.0000
879.38	68.7949	468.07	66.2635	667.71	0.0000
299.98	61.6970	473.00	0.0000	677.62	20.4086
300.09	61.7023	475.06	72.9611	685.70	0.0000
300.13	61.7036	476.78	64.4385	695.00	0.0000
301.36	70.3822	477.60	58.0210	696.49	22.3587
302.85	67.5869	482.18	52.7823	696.51	22.3587
256.23	57.5952	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	21.4717
306.78	68.2742	497.08	38.0078	697.49	19.6837
308.46	56.8081	505.52	45.8153	702.65	18.6494
311.90	61.7852	507.63	0.0000	706.68	22.9914
316.51	61.0338	511.00	59.0762	711.68	15.8388
319.41	0.0000	514.00	136.4188	720.70	0.0000
320.08	0.0000	514.00	136.4188	721.93	0.0000
321.04	80.6832	520.40	36.2791	722.78	24.5877
323.87	61.3696	520.69	0.0000	722.91	28.9287
325.23	85.8104	522.65	0.0000	723.31	28.9336
328.76	0.0000	527.90	0.0000	724.19	24.6019
333.37	60.0333	528.26	41.9460	727.33	19.0178
333.97	61.8259	529.59	35.3477	733.00	14.5229
334.37	61.8439	529.87	0.0000	735.93	23.6268
338.28	61.0350	531.02	0.0000	333.97	19.0947
338.32	61.0363	537.26	0.0000	739.50	0.0000
311.90	61.1309	546.56	0.0000	747.24	16.4301
340.48	61.1309	552.55	40.2275	748.06	13.6958
340.55	0.0000	563.25	42.6866	752.31	24.6937
344.28	54.8699	569.33	42.8134	753.82	0.0000
345.93	60.5762	946.00	42.8165	756.73	18.3228
351.06	69.5372	569.70	38.3136	756.80	19.2395
351.93	69.5785	583.19	27.2197	884.68	14.6992

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	19.1229	1274.44	12.9381	1620.50	3.7273
766.42	20.2309	1001.03	17.9407	1621.92	3.7285
766.84	20.2336	1002.74	15.9561	1678.03	0.0000
772.60	0.0000	1004.73	10.9765	1690.97	3.7814
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	0.9591
778.90	19.4030	1028.54	0.0000	1063.66	9.6021
783.70	0.0000	1037.84	19.1508	1771.35	1.9208
785.37	17.5980	1038.76	0.0000	1791.20	0.0000
792.07	18.5706	631.29	12.1274	1808.65	4.8364
794.95	19.5202	1048.07	0.0000	1810.72	0.0000
795.86	13.9476	1049.04	21.2384	1836.06	0.9723
810.06	16.8250	1050.41	22.2592		
810.29	15.8918	1063.66	8.1260		
344.28	15.8929	1077.00	0.0000		
810.76	15.8944	1077.34	13.2579		
815.77	0.0000	1085.87	11.2457		
1048.07	0.0000	1093.63	13.3206		
832.01	18.8440	1099.45	12.3164		
834.85	18.8635	1112.07	15.1071		
835.71	23.5863	1112.84	18.1328		
836.80	0.0000	1115.54	9.8982		
846.75	0.0000	1120.29	16.5195		
846.77	20.8378	1120.55	16.5205		
856.80	0.0000	1221.41	9.9141		
860.56	7.6143	1129.67	10.3516		
871.09	18.1500	1131.51	0.0000		
873.19	19.1193	1147.95	0.0000		
875.33	0.0000	1173.23	10.4767		
879.38	11.4961	1177.95	17.8332		
880.51	18.2091	1189.05	12.6262		
883.24	10.5518	1204.77	16.9063		
884.68	10.9685	1221.41	18.6785		
889.28	10.7659	1231.02	18.7258		
894.76	24.6539	1235.36	0.0000		
898.04	9.9166	1238.28	15.9897		
900.72	15.4395	1260.41	0.0000		
903.28	12.5557	1271.87	18.2783		
911.20	20.3361	1274.44	8.6074		
912.08	24.7977	1274.54	8.6074		
923.98	0.0000	1291.59	8.6445		
926.50	15.5728	1298.22	0.0000		
929.11	16.5601	1312.11	0.0000		
937.49	15.6289	1332.49	10.9161		
944.13	0.0000	1362.66	0.0000		
946.00	15.6724	1365.19	4.4011		
949.00	16.9948	1368.63	0.0000		
667.71	0.0000	1384.29	6.6317		
962.31	18.9053	1408.01	11.1151		
964.08	26.7982	1457.56	0.0000		
966.17	0.0000	1460.82	7.2008		
911.20	12.6305	1489.16	4.5293		
968.97	12.6305	1505.03	5.4542		
983.53	0.0000	1584.12	9.2476		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:02:27.59

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235026.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM30.CNF;300
Background date    : Z-OCT-2016 11:01:47.
Sample date       : 8-DEC-2015 10:15:00. Acquisition date : 3-OCT-2016 09:01:37.
Sample ID        : G405235026 Sample quantity : 1.55202E+02 GRAM
Detector name     : GAM30 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:01.46 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1596249 Detector SN# :
Matrix Spike ID   : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.60*	33	153	1.01	126.92	124	8	9.21E-03	68.8	
2	2	74.83	152	174	1.19	149.38	145	14	4.23E-02	16.4	1.79E+00
3	2	77.11*	193	156	0.93	153.94	145	14	5.35E-02	12.7	
4	4	84.35*	31	183	1.47	168.43	163	28	8.48E-03	77.1	1.85E+00
5	4	87.28	109	125	1.10	174.28	163	28	3.04E-02	19.1	
6	4	89.75	59	96	1.07	179.22	163	28	1.65E-02	29.5	
7	4	92.88*	91	120	1.49	185.49	163	28	2.53E-02	27.8	
8	5	140.12*	28	52	1.03	279.98	278	16	7.68E-03	42.6	1.77E+00
9	5	143.67*	36	120	1.75	287.07	278	16	9.91E-03	62.0	
10	0	164.59	20	126	1.55	328.92	320	11	5.61E-03	111.0	
11	0	186.09*	57	131	1.05	371.92	366	11	1.58E-02	42.3	
12	0	209.99	29	150	1.30	419.73	414	13	8.18E-03	89.0	
13	5	238.66*	378	83	1.09	477.07	472	25	1.05E-01	6.6	1.34E+00
14	5	241.78	80	96	1.57	483.31	472	25	2.21E-02	25.9	
15	1	269.13	21	33	1.21	538.00	535	13	5.92E-03	44.1	3.06E+00
16	1	270.63	42	42	1.21	541.00	535	13	1.16E-02	31.0	
17	0	277.77	28	63	1.21	555.29	550	9	7.70E-03	55.1	
18	0	290.40	19	24	1.33	580.56	578	5	5.15E-03	46.5	
19	0	295.09*	146	65	1.37	589.93	583	13	4.07E-02	14.2	
20	4	300.23	32	52	1.82	600.22	596	24	8.96E-03	45.8	1.51E+00
21	4	307.04	22	69	1.83	613.84	596	24	6.08E-03	74.9	
22	0	338.45*	91	49	1.16	676.66	672	11	2.54E-02	18.3	
23	0	352.13*	224	79	1.06	704.02	699	11	6.21E-02	10.2	
24	0	412.99	29	9	0.92	825.76	823	8	7.93E-03	26.7	
25	0	486.39	19	32	3.61	972.59	966	11	5.29E-03	62.5	
26	0	511.00*	22	59	2.58	1021.81	1016	13	5.99E-03	89.1	
27	0	565.29	12	27	4.36	1130.42	1122	13	3.28E-03	98.1	
28	0	583.49*	130	33	1.67	1166.83	1161	10	3.61E-02	12.3	
29	0	609.62*	157	47	1.36	1219.10	1214	13	4.37E-02	12.3	
30	0	648.41	19	20	3.48	1296.69	1290	12	5.36E-03	52.3	
31	0	661.77	64	20	1.68	1323.42	1318	13	1.76E-02	19.1	
32	0	723.15	12	10	1.37	1446.22	1443	7	3.43E-03	53.3	
33	0	727.63	65	11	1.67	1455.17	1450	14	1.80E-02	16.4	
34	0	764.91	4	15	0.56	1529.75	1522	10	1.11E-03	187.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	767.85	23	7	1.19	1535.64	1531	9	6.44E-03	29.0	
36	0	795.50	19	28	2.00	1590.95	1582	14	5.28E-03	63.4	
37	0	860.66	24	19	1.23	1721.31	1714	13	6.54E-03	43.8	
38	0	911.55	99	35	1.49	1823.13	1815	14	2.75E-02	16.2	
39	0	956.30	22	8	3.97	1912.65	1906	15	5.97E-03	35.2	
40	0	966.07*	5	18	1.33	1932.21	1926	10	1.48E-03	164.5	
41	0	969.48*	61	10	1.64	1939.03	1935	10	1.70E-02	16.4	
42	0	1015.29	7	20	3.21	2030.68	2019	16	1.85E-03	155.6	
43	0	1072.58	15	7	1.22	2145.31	2140	10	4.29E-03	41.3	
44	0	1120.76*	39	17	0.87	2241.70	2237	10	1.09E-02	26.1	
45	0	1363.20	11	0	0.66	2726.82	2721	11	3.06E-03	30.2	
46	0	1373.89	6	2	0.80	2748.20	2745	7	1.68E-03	54.9	
47	0	1461.18*	371	0	1.70	2922.88	2916	14	1.03E-01	5.2	
48	0	1509.43	8	3	3.81	3019.44	3012	11	2.23E-03	53.6	
49	0	1589.74	10	6	1.03	3180.15	3172	12	2.78E-03	58.3	
50	0	1765.19*	41	0	1.21	3531.27	3525	13	1.14E-02	16.6	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235026.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 8-DEC-2015 10:15:00   Acquisition date : 3-OCT-2016 09:01:37
Sample ID        : G405235026             Sample quantity  : 155.20 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA30               Detector geometry: CAN
Elapsed live time: 0 01:00:00.00          Elapsed real time: 0 01:00:01.46   0.0%
Energy tolerance : 1.50 keV              Half life ratio  : 10.00
Errors propagated: No                    Systematic Error : 0.00 %
Efficiency type  : Empirical              Efficiencies at  : Peak Energy
Abundance limit  : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	87.09	TH-229	88.47
TL-208	277.37	HG-203	279.20
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.307E+00	1.245E+01	1.245E+01	10.48	OK
NB-95	765.81	99.81*	2.266E+00	8.910E-03	2.292E-01	375.83	OK
CD-109	88.03	3.70*	6.554E+00	1.930E+00	3.028E+00	57.12	OK
SN-126	64.28	9.60	3.928E+00	5.635E-01	5.636E-01	137.56	OK
	86.94	8.90	6.554E+00	8.022E-01	8.022E-01	57.12	OK
	87.57	37.00*	6.554E+00	1.930E-01	1.930E-01	57.12	OK
CS-135	268.22	16.00*	4.925E+00	1.519E-01	1.519E-01	88.27	OK
BA-137M	661.66	89.90*	2.541E+00	1.423E-01	1.450E-01	38.11	OK
CS-137	661.66	85.10*	2.541E+00	1.503E-01	1.532E-01	38.11	OK
CE-139	165.86	80.00*	6.725E+00	2.208E-02	1.000E-01	221.95	OK
HG-203	70.83	3.69	4.957E+00	-----	Line Not Found	-----	Absent
	72.87	6.19	5.213E+00	-----	Line Not Found	-----	Absent
	279.20	81.56*	4.815E+00	1.615E-02	1.400E+00	271.55	OK
TL-208	277.37	6.60	4.820E+00	-----	Line Not Found	-----	<<INT Reject
	583.19	85.00*	2.799E+00	2.834E-01	2.834E-01	24.60	OK
	860.56	12.50	2.058E+00	4.553E-01	4.553E-01	87.56	OK
PB-212	74.82	10.28	5.442E+00	1.179E+00	1.179E+00	49.56	OK
	77.11	17.10	5.691E+00	1.248E+00	1.248E+00	25.50	OK
	238.63	43.60*	5.357E+00	9.204E-01	9.204E-01	13.13	OK
	300.09	3.30	4.554E+00	1.192E+00	1.192E+00	91.66	OK
BI-214	609.32	45.49*	2.707E+00	6.600E-01	6.602E-01	24.57	OK
	1120.29	14.92	1.645E+00	7.714E-01	7.717E-01	52.15	OK
	1764.49	15.30	1.121E+00	1.092E+00	1.093E+00	33.24	OK
PB-214	74.82	5.80	5.442E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	5.691E+00	2.200E+00	2.201E+00	25.50	OK
	87.09	3.41	6.542E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	5.305E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	4.611E+00	9.588E-01	9.591E-01	28.38	OK
	351.93	35.60*	4.059E+00	8.465E-01	8.468E-01	20.43	OK
RN-222	609.32	45.49*	2.707E+00	6.600E-01	6.602E-01	24.57	OK
	1120.29	14.92	1.645E+00	7.714E-01	7.717E-01	52.15	OK
	1764.49	15.30	1.121E+00	1.092E+00	1.093E+00	33.24	OK
RA-224	240.99	4.10*	5.309E+00	3.817E-01	3.817E-01	308.85	OK
RA-226	609.32	45.49*	2.707E+00	6.600E-01	6.602E-01	24.57	OK
	1120.29	14.92	1.645E+00	7.714E-01	7.717E-01	52.15	OK
	1764.49	15.30	1.121E+00	1.092E+00	1.093E+00	33.24	OK
AC-228	105.21	1.10	7.278E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.177E+00	1.064E+00	1.064E+00	36.57	OK
	794.95	4.25	2.196E+00	1.021E+00	1.021E+00	126.75	OK
	835.71	1.61	2.109E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.962E+00	9.663E-01	9.663E-01	32.35	OK
	968.97	15.80	1.863E+00	1.019E+00	1.019E+00	32.73	OK
RA-228	105.21	1.10	7.278E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.177E+00	1.064E+00	1.064E+00	36.57	OK
	794.95	4.25	2.196E+00	1.021E+00	1.021E+00	126.75	OK
	835.71	1.61	2.109E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.962E+00	9.663E-01	9.663E-01	32.35	OK
	968.97	15.80	1.863E+00	1.019E+00	1.019E+00	32.73	OK
TH-228	74.82	10.28	5.442E+00	1.179E+00	1.179E+00	49.56	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	77.11	17.10	5.691E+00	1.248E+00	1.248E+00	25.50	OK
	238.63	43.60*	5.357E+00	9.204E-01	9.204E-01	13.13	OK
	300.09	3.30	4.554E+00	1.192E+00	1.192E+00	91.66	OK
TH-229	85.43	14.70	6.345E+00	2.049E-01	2.049E-01	154.20	OK
	88.47	24.00	6.554E+00	2.975E-01	2.975E-01	57.12	OK
	193.51	4.41*	6.145E+00	-----	Line Not Found	-----	Absent
	210.85	2.80	5.837E+00	1.036E+00	1.036E+00	177.94	OK
TH-230	609.32	45.49*	2.707E+00	6.600E-01	6.600E-01	24.57	OK
	1120.29	14.92	1.645E+00	7.714E-01	7.714E-01	52.15	OK
	1764.49	15.30	1.121E+00	1.092E+00	1.092E+00	33.24	OK
PA-231	283.69	1.70	4.743E+00	-----	Line Not Found	-----	Absent
	301.36	5.35*	4.554E+00	7.353E-01	7.353E-01	91.66	OK
TH-232	105.21	1.10	7.278E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.177E+00	1.064E+00	1.064E+00	36.57	OK
	835.71	1.61	2.109E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.962E+00	9.663E-01	9.663E-01	32.35	OK
	968.97	15.80	1.863E+00	1.019E+00	1.019E+00	32.73	OK
TH-234	63.29	3.70*	3.928E+00	1.462E+00	1.462E+00	137.56	OK
	92.59	4.23	6.875E+00	1.939E+00	1.939E+00	55.61	OK
U-234	609.32	45.49*	2.707E+00	6.600E-01	6.600E-01	24.57	OK
	1120.29	14.92	1.645E+00	7.714E-01	7.714E-01	52.15	OK
	1764.49	15.30	1.121E+00	1.092E+00	1.092E+00	33.24	OK
U-235	89.96	3.47	6.708E+00	1.584E+00	1.584E+00	58.92	OK
	93.35	5.60	6.875E+00	1.465E+00	1.465E+00	55.61	OK
	143.76	10.96*	7.122E+00	2.726E-01	2.726E-01	123.99	OK
	163.33	5.08	6.725E+00	3.477E-01	3.477E-01	221.95	OK
	185.72	57.20	6.291E+00	9.212E-02	9.212E-02	84.53	OK
	205.31	5.01	5.922E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	3.928E+00	1.462E+00	1.462E+00	137.56	OK
	92.59	4.23	6.875E+00	1.939E+00	1.939E+00	55.61	OK
AM-243	43.53	5.90	8.765E-01	-----	Line Not Found	-----	Absent
	74.66	67.20*	5.442E+00	1.804E-01	1.804E-01	49.56	OK
ANH-511	511.00	100.00*	3.091E+00	3.668E-02	3.668E-02	178.21	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235026.CNF;1
* Acquisition date   : 3-OCT-2016 09:01:37 Sensitivity      : 3.000
* Detector ID       : GAM30 Energy tolerance: 1.500
* Elapsed live time : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time : 0 01:00:01.46 Half life ratio : *****
* Sample date       : 8-DEC-2015 10:15:00 Analyst initials: MXR1
* Sample ID         : G405235026 Sample Quantity : 1.5520E+02 GRAM
* Batch Number      : 1596249 Wet Weight : 0.00000
* Wet wt corr       : 1.00000 Dry Weight : 0.00000
* Nuclide Library   : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 11-MAR-2016 05:58:49 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM30 CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.245E+01	1.278E+00	3.163E-01
NB-95	2.292E-01	8.440E-01	1.532E-01
CD-109	3.028E+00	1.695E+00	1.577E+00
SN-126	1.930E-01	1.080E-01	1.009E-01
CS-135	1.519E-01	1.314E-01	2.124E-01
BA-137M	1.450E-01	5.415E-02	4.720E-02
CS-137	1.532E-01	5.720E-02	4.986E-02
CE-139	1.000E-01	2.175E-01	1.662E-01
HG-203	1.400E+00	3.727E+00	4.277E+00
TL-208	2.834E-01	6.830E-02	5.062E-02
PB-212	9.204E-01	1.185E-01	8.444E-02
BI-214	6.602E-01	1.590E-01	9.413E-02
PB-214	8.468E-01	1.695E-01	1.073E-01
RN-222	6.602E-01	1.590E-01	9.413E-02
RA-224	3.817E-01	1.155E+00	9.046E-01
RA-226	6.602E-01	1.590E-01	9.413E-02
AC-228	9.663E-01	3.064E-01	1.963E-01
RA-228	9.663E-01	3.064E-01	1.963E-01
TH-228	9.204E-01	1.185E-01	8.444E-02
TH-229	-2.684E-01	4.158E-01	7.241E-01
TH-230	6.600E-01	1.589E-01	9.409E-02
PA-231	7.353E-01	6.605E-01	5.885E-01
TH-232	9.663E-01	3.064E-01	1.963E-01
TH-234	1.462E+00	1.971E+00	1.588E+00
U-234	6.600E-01	1.589E-01	9.409E-02
U-235	2.726E-01	3.313E-01	2.892E-01
U-238	1.462E+00	1.971E+00	1.588E+00
AM-243	1.804E-01	8.762E-02	6.903E-02
ANH-511	3.668E-02	6.406E-02	4.362E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-4.614E+00	8.882E+00	1.663E+01	NOT IDENT.

NA-22	1.327E-02	3.109E-02	7.054E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	1.336E-02	2.580E-02	6.224E-02	NOT IDENT.
SC-46	8.247E-02	2.832E-01	5.857E-01	FAIL ABUN
V-48	0.000E+00	1.349E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.244E+02	0.000E+00	SHORT HLIF
MN-54	4.931E-03	4.362E-02	8.809E-02	NOT IDENT.
CO-56	6.270E-02	3.105E-01	6.442E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	9.927E-03	3.585E-02	7.029E-02	NOT IDENT.
CO-58	2.969E-01	4.248E-01	9.347E-01	NOT IDENT.
FE-59	-1.656E-01	5.760E+00	1.096E+01	NOT IDENT.
CO-60	-2.654E-02	2.919E-02	4.943E-02	NOT IDENT.
ZN-65	-1.207E-01	1.907E-01	2.716E-01	NOT IDENT.
GE-68	1.598E-01	1.561E+00	3.032E+00	NOT IDENT.
AS-73	1.152E+00	5.597E+00	1.145E+01	NOT IDENT.
AS-74	0.000E+00	4.379E+03	0.000E+00	SHORT HLIF
SE-75	-1.264E-01	1.845E-01	3.115E-01	NOT IDENT.
BR-77	0.000E+00	2.207E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	5.523E+02	0.000E+00	SHORT HLIF
RB-83	-3.046E-01	5.354E-01	9.842E-01	NOT IDENT.
KR-85	1.452E+00	6.449E+00	1.169E+01	NOT IDENT.
SR-85	1.519E-01	6.820E-01	1.236E+00	NOT IDENT.
RB-86	0.000E+00	1.887E+04	0.000E+00	SHORT HLIF
Y-88	-4.737E-02	1.700E-01	3.548E-01	NOT IDENT.
Y-91	3.774E+01	4.010E+02	7.854E+02	NOT IDENT.
NB-94	1.287E-02	2.468E-02	5.133E-02	NOT IDENT.
NB-95M	-1.045E+00	2.239E+00	3.605E+00	NOT IDENT.
ZR-95	-7.945E-01	1.065E+00	1.829E+00	FAIL ABUN
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.434E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.054E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	8.347E+40	0.000E+00	SHORT HLIF
RH-101	-2.137E-02	2.686E-02	4.761E-02	NOT IDENT.
RH-102	3.756E-02	4.175E-02	9.383E-02	FAIL ABUN
RU-103	-2.637E+00	3.888E+00	7.093E+00	FAIL ABUN
RH-106	3.137E-01	3.596E-01	8.013E-01	NOT IDENT.
RU-106	3.137E-01	3.596E-01	8.013E-01	NOT IDENT.
AG-108M	5.223E-04	1.928E-02	3.910E-02	FAIL ABUN
AG-110M	-2.162E-02	7.255E-02	1.353E-01	FAIL ABUN
SN-113	-7.688E-02	1.636E-01	3.126E-01	NOT IDENT.
CD-115	0.000E+00	2.473E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	8.694E+04	0.000E+00	SHORT HLIF
TE-123M	-5.563E-02	1.164E-01	1.911E-01	NOT IDENT.
SB-124	-5.007E-01	1.075E+00	2.113E+00	FAIL ABUN
SB-125	-3.335E-03	7.016E-02	1.414E-01	NOT IDENT.
TE-125M	1.695E+02	2.106E+02	4.239E+02	NOT IDENT.
I-126	0.000E+00	7.471E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.062E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.328E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	3.850E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.058E+26	0.000E+00	SHORT HLIF
BA-133	-1.023E-02	3.653E-02	6.349E-02	FAIL ABUN
I-133	0.000E+00	1.294E+41	0.000E+00	SHORT HLIF
CS-134	6.688E-02	8.308E-02	9.467E-02	FAIL ABUN
I-135	0.000E+00	1.057E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.083E+05	0.000E+00	SHORT HLIF
BA-140	0.000E+00	9.168E+05	0.000E+00	SHORT HLIF
LA-140	0.000E+00	2.511E+05	0.000E+00	SHORT HLIF
CE-141	1.269E+00	2.115E+01	3.988E+01	NOT IDENT.
CE-143	0.000E+00	7.451E+40	0.000E+00	SHORT HLIF
CE-144	-2.300E-01	2.824E-01	4.997E-01	NOT IDENT.
PM-144	-2.303E-02	4.145E-02	7.676E-02	NOT IDENT.
PR-144	-2.013E+00	3.599E+00	6.661E+00	NOT IDENT.
PM-146	6.808E-03	3.245E-02	6.656E-02	NOT IDENT.
ND-147	0.000E+00	2.604E+07	0.000E+00	SHORT HLIF
PM-147	-5.319E+02	6.518E+02	1.157E+03	NOT IDENT.
PM-149	0.000E+00	4.001E+40	0.000E+00	SHORT HLIF
EU-150	1.286E-02	1.963E-02	3.896E-02	FAIL ABUN
EU-152	-9.259E-02	6.418E-02	1.086E-01	NOT IDENT.
GD-153	-2.272E-01	1.255E-01	2.007E-01	NOT IDENT.
EU-154	3.051E-02	7.569E-02	1.714E-01	FAIL ABUN
EU-155	8.181E-02	7.943E-02	1.657E-01	FAIL ABUN
TB-160	1.600E-01	1.668E+00	3.253E+00	FAIL ABUN
HO-166M	-2.302E-02	4.155E-02	7.466E-02	NOT IDENT.
TM-171	-6.472E+00	1.393E+01	2.693E+01	NOT IDENT.
HF-172	-8.490E-03	1.795E-01	3.407E-01	FAIL ABUN

LU-172	1.469E-03	7.094E-02	1.347E-01	FAIL ABUN
LU-176	2.891E-02	4.244E-02	4.162E-02	FAIL ABUN
HF-181	1.970E+00	3.380E+00	6.703E+00	NOT IDENT.
TA-182	-4.880E-01	6.779E-01	1.222E+00	FAIL ABUN
RE-183	-8.280E-01	2.007E+00	3.871E+00	NOT IDENT.
RE-184	-1.644E+01	2.388E+01	4.063E+01	NOT IDENT.
W-188	1.085E+02	9.881E+01	1.811E+02	FAIL ABUN
IR-192	-8.973E-02	3.174E-01	6.287E-01	FAIL ABUN
BI-207	-4.942E-03	3.758E-02	7.097E-02	FAIL ABUN
PB-210	8.066E-01	1.978E+00	4.133E+00	NOT IDENT.
BI-211	0.000E+00	4.669E-01	6.745E-01	FAIL ABUN
PB-211	2.926E-02	4.865E-01	9.838E-01	NOT IDENT.
BI-212	0.000E+00	6.702E-01	1.233E+00	FAIL ABUN
RN-219	6.479E-02	2.920E-01	5.973E-01	FAIL ABUN
RA-223	-5.056E-02	4.101E-01	8.231E-01	FAIL ABUN
AC-227	9.580E-03	2.097E-01	3.847E-01	FAIL ABUN
TH-227	9.580E-03	2.097E-01	3.847E-01	FAIL ABUN
TH-231	-5.056E-02	4.101E-01	8.231E-01	FAIL ABUN
PA-233	-2.204E-02	4.683E-02	8.043E-02	FAIL ABUN
PA-234	-1.747E-01	2.018E-01	3.248E-01	NOT IDENT.
PA-234M	1.140E+00	2.777E+00	5.945E+00	FAIL ABUN
NP-237	-2.204E-02	4.683E-02	8.043E-02	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	1.059E-01	1.852E-01	3.714E-01	FAIL ABUN
PU-239	-8.761E+00	2.558E+02	4.846E+02	FAIL ABUN
AM-241	2.073E-02	9.276E-02	1.876E-01	NOT IDENT.
CM-243	-2.230E-02	7.324E-02	1.378E-01	FAIL ABUN
BK-247	-3.012E-02	6.189E-02	1.072E-01	FAIL ABUN
CM-247	4.372E-03	2.660E-02	5.413E-02	FAIL ABUN
CF-249	2.169E-02	2.702E-02	5.900E-02	NOT IDENT.
CF-251	-7.413E-02	9.965E-02	1.731E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	359	10.66*	1.307E+00	1.245E+01	1.245E+01	10.48
NB-95	765.81	4	99.81*	2.266E+00	8.910E-03	2.292E-01	375.83
CD-109	88.03	141	3.70*	6.554E+00	2.813E+00	4.415E+00	38.15
SN-126	64.28	44	9.60	3.928E+00	5.635E-01	5.636E-01	137.56
	86.94	141	8.90	6.554E+00	1.170E+00	1.170E+00	38.15
	87.57	141	37.00*	6.554E+00	2.813E-01	2.813E-01	38.15
CS-135	268.22	25	16.00*	4.925E+00	1.519E-01	1.519E-01	88.27
BA-137M	661.66	67	89.90*	2.541E+00	1.423E-01	1.450E-01	38.11
CS-137	661.66	67	85.10*	2.541E+00	1.503E-01	1.532E-01	38.11
CE-139	165.86	25	80.00*	6.725E+00	2.208E-02	1.000E-01	221.95
HG-203	70.83	-----	3.69	4.957E+00	-----	Line Not Found	-----
	72.87	-----	6.19	5.213E+00	-----	Line Not Found	-----
	279.20	32	81.56*	4.815E+00	3.949E-02	3.425E+00	110.14
TL-208	277.37	32	6.60	4.815E+00	4.880E-01	4.880E-01	110.14
	583.19	139	85.00*	2.799E+00	2.834E-01	2.834E-01	24.60
	860.56	24	12.50	2.058E+00	4.553E-01	4.553E-01	87.56
BI-211	72.87	-----	1.23	5.213E+00	-----	Line Not Found	-----
	351.06	253	12.92*	4.059E+00	2.332E+00	2.332E+00	20.43
PB-212	74.82	199	10.28	5.442E+00	1.720E+00	1.720E+00	32.78
	77.11	251	17.10	5.691E+00	1.248E+00	1.248E+00	25.50
	238.63	444	43.60*	5.357E+00	9.204E-01	9.204E-01	13.13
	300.09	37	3.30	4.554E+00	1.192E+00	1.192E+00	91.66
BI-214	609.32	168	45.49*	2.707E+00	6.600E-01	6.602E-01	24.57
	1120.29	39	14.92	1.645E+00	7.714E-01	7.717E-01	52.15
	1764.49	39	15.30	1.121E+00	1.092E+00	1.093E+00	33.24
PB-214	74.82	199	5.80	5.442E+00	3.049E+00	3.050E+00	32.78
	77.11	251	9.70	5.691E+00	2.200E+00	2.201E+00	25.50
	87.09	141	3.41	6.554E+00	3.052E+00	3.054E+00	38.15
	242.00	93	7.25	5.309E+00	1.175E+00	1.175E+00	51.81
	295.22	168	18.42	4.611E+00	9.588E-01	9.591E-01	28.38
	351.93	253	35.60*	4.059E+00	8.465E-01	8.468E-01	20.43
RN-222	609.32	168	45.49*	2.707E+00	6.600E-01	6.602E-01	24.57
	1120.29	39	14.92	1.645E+00	7.714E-01	7.717E-01	52.15
	1764.49	39	15.30	1.121E+00	1.092E+00	1.093E+00	33.24
RA-224	240.99	93	4.10*	5.309E+00	2.077E+00	2.077E+00	51.81
RA-226	609.32	168	45.49*	2.707E+00	6.600E-01	6.602E-01	24.57
	1120.29	39	14.92	1.645E+00	7.714E-01	7.717E-01	52.15
	1764.49	39	15.30	1.121E+00	1.092E+00	1.093E+00	33.24
AC-228	105.21	-----	1.10	7.278E+00	-----	Line Not Found	-----
	338.32	104	11.27	4.177E+00	1.064E+00	1.064E+00	36.57
	794.95	20	4.25	2.196E+00	1.021E+00	1.021E+00	126.75
	835.71	-----	1.61	2.109E+00	-----	Line Not Found	-----
	911.20	101	25.80*	1.962E+00	9.663E-01	9.663E-01	32.35
	968.97	62	15.80	1.863E+00	1.019E+00	1.019E+00	32.73
RA-228	105.21	-----	1.10	7.278E+00	-----	Line Not Found	-----
	338.32	104	11.27	4.177E+00	1.064E+00	1.064E+00	36.57
	794.95	20	4.25	2.196E+00	1.021E+00	1.021E+00	126.75

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	835.71	-----	1.61	2.109E+00	-----	Line Not Found	-----
	911.20	101	25.80*	1.962E+00	9.663E-01	9.663E-01	32.35
	968.97	62	15.80	1.863E+00	1.019E+00	1.019E+00	32.73
TH-228	74.82	199	10.28	5.442E+00	1.720E+00	1.720E+00	32.78
	77.11	251	17.10	5.691E+00	1.248E+00	1.248E+00	25.50
	238.63	444	43.60*	5.357E+00	9.204E-01	9.204E-01	13.13
	300.09	37	3.30	4.554E+00	1.192E+00	1.192E+00	91.66
TH-229	85.43	40	14.70	6.345E+00	2.049E-01	2.049E-01	154.20
	88.47	141	24.00	6.554E+00	4.337E-01	4.337E-01	38.15
	193.51	-----	4.41*	6.145E+00	-----	Line Not Found	-----
	210.85	35	2.80	5.837E+00	1.036E+00	1.036E+00	177.94
TH-230	609.32	168	45.49*	2.707E+00	6.600E-01	6.600E-01	24.57
	1120.29	39	14.92	1.645E+00	7.714E-01	7.714E-01	52.15
	1764.49	39	15.30	1.121E+00	1.092E+00	1.092E+00	33.24
PA-231	283.69	-----	1.70	4.743E+00	-----	Line Not Found	-----
	301.36	37	5.35*	4.554E+00	7.353E-01	7.353E-01	91.66
TH-232	105.21	-----	1.10	7.278E+00	-----	Line Not Found	-----
	338.32	104	11.27	4.177E+00	1.064E+00	1.064E+00	36.57
	835.71	-----	1.61	2.109E+00	-----	Line Not Found	-----
	911.20	101	25.80*	1.962E+00	9.663E-01	9.663E-01	32.35
	968.97	62	15.80	1.863E+00	1.019E+00	1.019E+00	32.73
TH-234	63.29	44	3.70*	3.928E+00	1.462E+00	1.462E+00	137.56
	92.59	117	4.23	6.875E+00	1.939E+00	1.939E+00	55.61
U-234	609.32	168	45.49*	2.707E+00	6.600E-01	6.600E-01	24.57
	1120.29	39	14.92	1.645E+00	7.714E-01	7.714E-01	52.15
	1764.49	39	15.30	1.121E+00	1.092E+00	1.092E+00	33.24
U-235	89.96	76	3.47	6.708E+00	1.584E+00	1.584E+00	58.92
	93.35	117	5.60	6.875E+00	1.465E+00	1.465E+00	55.61
	143.76	44	10.96*	7.122E+00	2.726E-01	2.726E-01	123.99
	163.33	25	5.08	6.725E+00	3.477E-01	3.477E-01	221.95
	185.72	69	57.20	6.291E+00	9.212E-02	9.212E-02	84.53
	205.31	-----	5.01	5.922E+00	-----	Line Not Found	-----
U-238	63.29	44	3.70*	3.928E+00	1.462E+00	1.462E+00	137.56
	92.59	117	4.23	6.875E+00	1.939E+00	1.939E+00	55.61
AM-243	43.53	-----	5.90	8.765E-01	-----	Line Not Found	-----
	74.66	199	67.20*	5.442E+00	2.631E-01	2.632E-01	32.78
ANH-511	511.00	23	100.00*	3.091E+00	3.668E-02	3.668E-02	178.21

Flag: "*" = Keyline

Total number of lines in spectrum 50
Number of unidentified lines 8
Number of lines tentatively identified by NID 42 84.00%

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	1.245E+01	1.245E+01	0.130E+01	10.48	
NB-95	64.03D	25.7	8.910E-03	2.292E-01	8.613E-01	375.83	
CD-109	461.40D	1.57	2.813E+00	4.415E+00	1.684E+00	38.15	
SN-126	2.30E+05Y	1.00	2.813E-01	2.813E-01	1.073E-01	38.15	
CS-135	2.30E+06Y	1.00	1.519E-01	1.519E-01	1.341E-01	88.27	
BA-137M	30.08Y	1.02	1.423E-01	1.450E-01	0.553E-01	38.11	
CS-137	30.08Y	1.02	1.503E-01	1.532E-01	0.584E-01	38.11	
CE-139	137.64D	4.53	2.208E-02	1.000E-01	2.220E-01	221.95	
HG-203	46.59D	86.7	3.949E-02	3.425E+00	3.772E+00	110.14	
TL-208	1.41E+10Y	1.00	2.834E-01	2.834E-01	0.697E-01	24.60	
BI-211	7.04E+08Y	1.00	2.332E+00	2.332E+00	0.476E+00	20.43	
PB-212	1.41E+10Y	1.00	9.204E-01	9.204E-01	1.209E-01	13.13	
BI-214	1600.00Y	1.00	6.600E-01	6.602E-01	1.622E-01	24.57	
PB-214	1600.00Y	1.00	8.465E-01	8.468E-01	1.730E-01	20.43	
RN-222	1600.00Y	1.00	6.600E-01	6.602E-01	1.622E-01	24.57	
RA-224	1.41E+10Y	1.00	2.077E+00	2.077E+00	1.076E+00	51.81	
RA-226	1600.00Y	1.00	6.600E-01	6.602E-01	1.622E-01	24.57	
AC-228	1.41E+10Y	1.00	9.663E-01	9.663E-01	3.127E-01	32.35	
RA-228	1.41E+10Y	1.00	9.663E-01	9.663E-01	3.127E-01	32.35	
TH-228	1.41E+10Y	1.00	9.204E-01	9.204E-01	1.209E-01	13.13	
TH-229	7340.00Y	1.00	4.337E-01	4.337E-01	1.655E-01	38.15	K
TH-230	7.54E+04Y	1.00	6.600E-01	6.600E-01	1.622E-01	24.57	
PA-231	7.04E+08Y	1.00	7.353E-01	7.353E-01	6.740E-01	91.66	
TH-232	1.41E+10Y	1.00	9.663E-01	9.663E-01	3.127E-01	32.35	
TH-234	4.47E+09Y	1.00	1.462E+00	1.462E+00	2.011E+00	137.56	
U-234	2.45E+05Y	1.00	6.600E-01	6.600E-01	1.622E-01	24.57	
U-235	7.04E+08Y	1.00	2.726E-01	2.726E-01	3.380E-01	123.99	
U-238	4.47E+09Y	1.00	1.462E+00	1.462E+00	2.011E+00	137.56	
AM-243	7370.00Y	1.00	2.631E-01	2.632E-01	0.863E-01	32.78	
ANH-511	1.00E+09Y	1.00	3.668E-02	3.668E-02	6.537E-02	178.21	

Total Activity : 3.430E+01 3.959E+01

Grand Total Activity : 3.430E+01 3.959E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	140.12	34	65	1.03	279.98	278	16	7.68E-03	85.2	7.18E+00	T
1	270.63	48	49	1.21	541.00	535	13	1.16E-02	62.1	4.91E+00	T
0	290.40	21	28	1.33	580.56	578	5	5.15E-03	92.9	4.66E+00	T
4	307.04	25	79	1.83	613.84	596	24	6.08E-03	****	4.48E+00	T
0	412.99	32	10	0.92	825.76	823	8	7.93E-03	53.3	3.61E+00	T
0	486.39	21	35	3.61	972.59	966	11	5.29E-03	****	3.21E+00	T
0	565.29	13	29	4.36	1130.42	1122	13	3.28E-03	****	2.87E+00	
0	648.41	20	21	3.48	1296.69	1290	12	5.36E-03	****	2.58E+00	
0	723.15	13	10	1.37	1446.22	1443	7	3.43E-03	****	2.37E+00	T
0	727.63	68	12	1.67	1455.17	1450	14	1.80E-02	32.8	2.36E+00	T
0	767.85	24	7	1.19	1535.64	1531	9	6.44E-03	58.0	2.26E+00	T
0	956.30	22	8	3.97	1912.65	1906	15	5.97E-03	70.3	1.88E+00	
0	966.07	5	18	1.33	1932.21	1926	10	1.48E-03	****	1.87E+00	T
0	1015.29	7	21	3.21	2030.68	2019	16	1.85E-03	****	1.79E+00	
0	1072.58	16	7	1.22	2145.31	2140	10	4.29E-03	82.6	1.71E+00	
0	1363.20	11	0	0.66	2726.82	2721	11	3.06E-03	60.3	1.39E+00	T
0	1373.89	6	2	0.80	2748.20	2745	7	1.68E-03	****	1.38E+00	
0	1509.43	8	3	3.81	3019.44	3012	11	2.23E-03	****	1.27E+00	
0	1589.74	10	6	1.03	3180.15	3172	12	2.78E-03	****	1.22E+00	

Flags: "T" = Tentatively associated


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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235026.CNF;1  *
* Acquisition date   : 3-OCT-2016 09:01:37 Sensitivity      : 3.000          *
* Detector ID       : GAM30 Energy tolerance: 1.500        *
* Elapsed live time : 0 01:00:00.00 Abundance limit : 75.000    *
* Elapsed real time : 0 01:00:01.46 Half life ratio : *****          *
* Sample date       : 8-DEC-2015 10:15:00 Nuclide Library : SOLID          *
* Sample ID         : G405235026 Analyst initials: MXR1         *
* Batch Number      : 1596249 Sample Quantity : 1.5520E+02 GRAM  *
* Wet wt corr       : 1.00000 Wet Weight      : 0.00000        *
*                   : Dry Weight      : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date    : 11-MAR-2016 05:58:49 Eff. Geometry   : CAN          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM30 CAN.CNF;7          *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
K-40	1.108E-01
NB-95	0.000E+00
CD-109	7.432E-01
SN-126	4.756E-02
CS-135	9.751E-02
BA-137M	2.060E-02
CS-137	2.176E-02
CE-139	7.722E-02
HG-203	1.987E+00
TL-208	2.248E-02
PB-212	3.927E-02
BI-214	4.159E-02
PB-214	4.891E-02
RN-222	4.159E-02
RA-224	4.208E-01
RA-226	4.159E-02
AC-228	8.499E-02
RA-228	8.499E-02
TH-228	3.927E-02
TH-229	3.365E-01
TH-230	4.158E-02
PA-231	2.660E-01
TH-232	8.499E-02
TH-234	7.444E-01
U-234	4.158E-02
U-235	1.357E-01
U-238	7.444E-01
AM-243	3.258E-02
ANH-511	1.962E-02

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

Nuclide	^{Lc} (pCi/GRAM)	
BE-7	7.320E+00	NOT IDENT.
NA-22	2.967E-02	NOT IDENT.

NA-24	0.000E+00	SHORT HLIF
AL-26	2.515E-02	NOT IDENT.
SC-46	2.530E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	3.787E-02	NOT IDENT.
CO-56	2.747E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	3.276E-02	NOT IDENT.
CO-58	4.088E-01	NOT IDENT.
FE-59	4.727E+00	NOT IDENT.
CO-60	1.951E-02	NOT IDENT.
ZN-65	1.172E-01	NOT IDENT.
GE-68	1.255E+00	NOT IDENT.
AS-73	5.324E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.425E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.371E-01	NOT IDENT.
KR-85	5.311E+00	NOT IDENT.
SR-85	5.615E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.348E-01	NOT IDENT.
Y-91	3.351E+02	NOT IDENT.
NB-94	2.289E-02	NOT IDENT.
NB-95M	1.670E+00	NOT IDENT.
ZR-95	7.756E-01	FAIL ABUN
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.214E-02	NOT IDENT.
RH-102	4.160E-02	FAIL ABUN
RU-103	3.075E+00	FAIL ABUN
RH-106	3.562E-01	NOT IDENT.
RU-106	3.562E-01	NOT IDENT.
AG-108M	1.739E-02	FAIL ABUN
AG-110M	5.716E-02	FAIL ABUN
SN-113	1.393E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	8.863E-02	NOT IDENT.
SB-124	6.794E-01	FAIL ABUN
SB-125	6.271E-02	NOT IDENT.
TE-125M	1.987E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.886E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	4.264E-02	FAIL ABUN
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.872E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.319E-01	NOT IDENT.
PM-144	3.348E-02	NOT IDENT.
PR-144	2.904E+00	NOT IDENT.
PM-146	2.985E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	5.373E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.777E-02	FAIL ABUN
EU-152	4.778E-02	NOT IDENT.
GD-153	9.219E-02	NOT IDENT.
EU-154	7.196E-02	FAIL ABUN
EU-155	7.769E-02	FAIL ABUN
TB-160	1.432E+00	FAIL ABUN
HO-166M	3.216E-02	NOT IDENT.
TM-171	1.250E+01	NOT IDENT.
HF-172	1.590E-01	FAIL ABUN
LU-172	5.883E-02	FAIL ABUN

LU-176	1.918E-02	FAIL ABUN
HF-181	2.999E+00	NOT IDENT.
TA-182	5.123E-01	FAIL ABUN
RE-183	1.802E+00	NOT IDENT.
RE-184	1.716E+01	NOT IDENT.
W-188	8.333E+01	FAIL ABUN
IR-192	2.828E-01	FAIL ABUN
BI-207	3.022E-02	FAIL ABUN
PB-210	1.928E+00	NOT IDENT.
BI-211	3.244E-01	FAIL ABUN
PB-211	4.428E-01	NOT IDENT.
BI-212	5.742E-01	FAIL ABUN
RN-219	2.707E-01	FAIL ABUN
RA-223	3.718E-01	FAIL ABUN
AC-227	1.781E-01	FAIL ABUN
TH-227	1.781E-01	FAIL ABUN
TH-231	3.718E-01	FAIL ABUN
PA-233	3.620E-02	FAIL ABUN
PA-234	1.332E-01	NOT IDENT.
PA-234M	2.535E+00	FAIL ABUN
NP-237	3.620E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.738E-01	FAIL ABUN
PU-239	2.272E+02	FAIL ABUN
AM-241	8.774E-02	NOT IDENT.
CM-243	6.415E-02	FAIL ABUN
BK-247	4.899E-02	FAIL ABUN
CM-247	2.450E-02	FAIL ABUN
CF-249	2.676E-02	NOT IDENT.
CF-251	8.032E-02	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
*                               DETECTOR AND SAMPLE DATA                *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235026.CNF;1
* Acquisition date   : 3-OCT-2016 09:01:37 Sensitivity      : 3.000
* Detector ID        : GAM30 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:01.46 Half life ratio : *****
* Sample date        : 8-DEC-2015 10:15:00 Nuclide Library : SOLID
* Sample ID          : G405235026 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.5520E+02 GRAM
*                               Quantity Err(%) : 1.2886E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                  *
*
* Eff. Cal. date     : 11-MAR-2016 05:58:49 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM30 CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.245E+01	1.693E+00	1.693E+00
NB-95	2.292E-01	8.443E-01	8.443E-01
CD-109	3.028E+00	1.733E+00	1.733E+00
SN-126	1.930E-01	1.099E-01	1.099E-01
CS-135	1.519E-01	1.322E-01	1.322E-01
BA-137M	1.450E-01	5.533E-02	5.533E-02
CS-137	1.532E-01	5.845E-02	5.845E-02
CE-139	1.000E-01	2.185E-01	2.185E-01
HG-203	1.397E+00	3.740E+00	3.740E+00
TL-208	2.834E-01	7.214E-02	7.214E-02
PB-212	9.204E-01	1.404E-01	1.404E-01
BI-214	6.602E-01	1.678E-01	1.678E-01
PB-214	8.468E-01	1.834E-01	1.834E-01
RN-222	6.602E-01	1.678E-01	1.678E-01
RA-224	3.817E-01	1.172E+00	1.172E+00
RA-226	6.602E-01	1.678E-01	1.678E-01
AC-228	9.663E-01	3.348E-01	3.348E-01
RA-228	9.663E-01	3.348E-01	3.348E-01
TH-228	9.204E-01	1.404E-01	1.404E-01
TH-229	-2.684E-01	4.162E-01	4.162E-01
TH-230	6.600E-01	1.677E-01	1.677E-01
PA-231	7.353E-01	6.809E-01	6.809E-01
TH-232	9.663E-01	3.348E-01	3.348E-01
TH-234	1.462E+00	1.998E+00	1.998E+00
U-234	6.600E-01	1.677E-01	1.677E-01
U-235	2.726E-01	3.319E-01	3.319E-01
U-238	1.462E+00	1.998E+00	1.998E+00
AM-243	1.804E-01	8.950E-02	8.950E-02
ANH-511	3.668E-02	6.413E-02	6.413E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)
BE-7	-4.614E+00	8.891E+00	9.131E+00 NOT IDENT.

NA-22	1.327E-02	3.111E-02	3.168E-02	NOT IDENT.
NA-24	-1.000E+41	9.771E+41	0.000E+00	SHORT HLIF
AL-26	1.336E-02	2.581E-02	2.651E-02	NOT IDENT.
SC-46	8.247E-02	2.834E-01	2.858E-01	FAIL ABUN
V-48	1.525E+03	1.349E+04	1.351E+04	SHORT HLIF
CR-51	2.408E+02	3.250E+02	3.427E+02	SHORT HLIF
MN-54	4.931E-03	4.363E-02	4.368E-02	NOT IDENT.
CO-56	6.270E-02	3.106E-01	3.119E-01	NOT IDENT.
MN-56	1.000E+41	4.953E+41	0.000E+00	SHORT HLIF
CO-57	9.927E-03	3.586E-02	3.614E-02	NOT IDENT.
CO-58	2.969E-01	4.260E-01	4.466E-01	NOT IDENT.
FE-59	-1.656E-01	5.760E+00	5.761E+00	NOT IDENT.
CO-60	-2.654E-02	2.927E-02	3.163E-02	NOT IDENT.
ZN-65	-1.207E-01	1.922E-01	1.997E-01	NOT IDENT.
GE-68	1.598E-01	1.561E+00	1.563E+00	NOT IDENT.
AS-73	1.152E+00	5.602E+00	5.626E+00	NOT IDENT.
AS-74	-4.053E+02	4.379E+03	4.383E+03	SHORT HLIF
SE-75	-1.264E-01	1.848E-01	1.934E-01	NOT IDENT.
BR-77	1.715E+38	1.485E+39	0.000E+00	SHORT HLIF
SR-82	-2.361E+02	5.529E+02	5.630E+02	SHORT HLIF
RB-83	-3.046E-01	5.375E-01	5.548E-01	NOT IDENT.
KR-85	1.452E+00	6.450E+00	6.483E+00	NOT IDENT.
SR-85	1.519E-01	6.821E-01	6.856E-01	NOT IDENT.
RB-86	1.932E+03	1.887E+04	1.889E+04	SHORT HLIF
Y-88	-4.737E-02	1.701E-01	1.714E-01	NOT IDENT.
Y-91	3.774E+01	4.010E+02	4.013E+02	NOT IDENT.
NB-94	1.287E-02	2.471E-02	2.538E-02	NOT IDENT.
NB-95M	-1.045E+00	2.241E+00	2.290E+00	NOT IDENT.
ZR-95	-7.945E-01	1.067E+00	1.126E+00	FAIL ABUN
NB-97	1.000E+41	9.568E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.437E+41	0.000E+00	SHORT HLIF
MO-99	7.432E+31	1.057E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	8.421E+40	0.000E+00	SHORT HLIF
RH-101	-2.137E-02	2.716E-02	2.882E-02	NOT IDENT.
RH-102	3.756E-02	4.194E-02	4.523E-02	FAIL ABUN
RU-103	-2.637E+00	3.895E+00	4.072E+00	FAIL ABUN
RH-106	3.137E-01	3.607E-01	3.875E-01	NOT IDENT.
RU-106	3.137E-01	3.607E-01	3.875E-01	NOT IDENT.
AG-108M	5.223E-04	1.928E-02	1.928E-02	FAIL ABUN
AG-110M	-2.162E-02	7.261E-02	7.326E-02	FAIL ABUN
SN-113	-7.688E-02	1.637E-01	1.673E-01	NOT IDENT.
CD-115	-1.509E+38	2.473E+39	0.000E+00	SHORT HLIF
SN-117M	-3.098E+04	8.704E+04	8.815E+04	SHORT HLIF
TE-123M	-5.563E-02	1.165E-01	1.191E-01	NOT IDENT.
SB-124	-5.007E-01	1.076E+00	1.099E+00	FAIL ABUN
SB-125	-3.335E-03	7.016E-02	7.018E-02	NOT IDENT.
TE-125M	1.695E+02	2.110E+02	2.244E+02	NOT IDENT.
I-126	-5.215E+05	7.512E+05	7.871E+05	SHORT HLIF
SB-126	2.268E+05	1.063E+06	1.068E+06	SHORT HLIF
SB-127	3.067E+21	1.394E+22	0.000E+00	SHORT HLIF
I-131	-1.018E+09	3.851E+09	3.879E+09	SHORT HLIF
I-132	-1.000E+41	1.892E+42	0.000E+00	SHORT HLIF
TE-132	-1.218E+26	3.099E+26	0.000E+00	SHORT HLIF
BA-133	-1.023E-02	3.653E-02	3.682E-02	FAIL ABUN
I-133	1.000E+41	2.226E+41	0.000E+00	SHORT HLIF
CS-134	6.688E-02	8.339E-02	8.867E-02	FAIL ABUN
I-135	-1.000E+41	6.860E+41	0.000E+00	SHORT HLIF
CS-136	-3.178E+04	2.084E+05	2.089E+05	SHORT HLIF
BA-140	8.059E+05	9.192E+05	9.884E+05	SHORT HLIF
LA-140	-4.952E+04	2.511E+05	2.521E+05	SHORT HLIF
CE-141	1.269E+00	2.115E+01	2.115E+01	NOT IDENT.
CE-143	1.000E+41	7.553E+40	0.000E+00	SHORT HLIF
CE-144	-2.300E-01	2.830E-01	3.014E-01	NOT IDENT.
PM-144	-2.303E-02	4.151E-02	4.279E-02	NOT IDENT.
PR-144	-2.013E+00	3.603E+00	3.715E+00	NOT IDENT.
PM-146	6.808E-03	3.246E-02	3.261E-02	NOT IDENT.
ND-147	1.454E+07	2.607E+07	2.688E+07	SHORT HLIF
PM-147	-5.319E+02	6.529E+02	6.955E+02	NOT IDENT.
PM-149	-3.301E+40	4.073E+40	0.000E+00	SHORT HLIF
EU-150	1.286E-02	1.966E-02	2.050E-02	FAIL ABUN
EU-152	-9.259E-02	6.473E-02	7.702E-02	NOT IDENT.
GD-153	-2.272E-01	1.267E-01	1.629E-01	NOT IDENT.
EU-154	3.051E-02	7.574E-02	7.698E-02	FAIL ABUN
EU-155	8.181E-02	7.973E-02	8.785E-02	FAIL ABUN
TB-160	1.600E-01	1.668E+00	1.670E+00	FAIL ABUN
HO-166M	-2.302E-02	4.161E-02	4.288E-02	NOT IDENT.
TM-171	-6.472E+00	1.394E+01	1.425E+01	NOT IDENT.
HF-172	-8.490E-03	1.795E-01	1.795E-01	FAIL ABUN

LU-172	1.469E-03	7.094E-02	7.095E-02	FAIL ABUN
LU-176	2.891E-02	4.251E-02	4.446E-02	FAIL ABUN
HF-181	1.970E+00	3.384E+00	3.498E+00	NOT IDENT.
TA-182	-4.880E-01	6.794E-01	7.142E-01	FAIL ABUN
RE-183	-8.280E-01	2.011E+00	2.045E+00	NOT IDENT.
RE-184	-1.644E+01	2.430E+01	2.540E+01	NOT IDENT.
W-188	1.085E+02	9.984E+01	1.112E+02	FAIL ABUN
IR-192	-8.973E-02	3.175E-01	3.201E-01	FAIL ABUN
BI-207	-4.942E-03	3.759E-02	3.766E-02	FAIL ABUN
PB-210	8.066E-01	1.979E+00	2.012E+00	NOT IDENT.
BI-211	2.332E+00	5.065E-01	1.167E+00	FAIL ABUN
PB-211	2.926E-02	4.865E-01	4.866E-01	NOT IDENT.
BI-212	2.085E+00	6.993E-01	1.172E+00	FAIL ABUN
RN-219	6.479E-02	2.922E-01	2.936E-01	FAIL ABUN
RA-223	-5.056E-02	4.102E-01	4.108E-01	FAIL ABUN
AC-227	9.580E-03	2.097E-01	2.098E-01	FAIL ABUN
TH-227	9.580E-03	2.097E-01	2.098E-01	FAIL ABUN
TH-231	-5.056E-02	4.102E-01	4.108E-01	FAIL ABUN
PA-233	-2.204E-02	4.687E-02	4.791E-02	FAIL ABUN
PA-234	-1.747E-01	2.851E-01	2.958E-01	NOT IDENT.
PA-234M	1.140E+00	2.783E+00	2.831E+00	FAIL ABUN
NP-237	-2.204E-02	4.687E-02	4.791E-02	FAIL ABUN
NP-238	1.000E+41	2.741E+41	0.000E+00	SHORT HLIF
NP-239	1.059E-01	1.855E-01	1.915E-01	FAIL ABUN
PU-239	-8.761E+00	2.558E+02	2.559E+02	FAIL ABUN
AM-241	2.073E-02	9.278E-02	9.325E-02	NOT IDENT.
CM-243	-2.230E-02	7.328E-02	7.397E-02	FAIL ABUN
BK-247	-3.012E-02	6.222E-02	6.368E-02	FAIL ABUN
CM-247	4.372E-03	2.661E-02	2.668E-02	FAIL ABUN
CF-249	2.169E-02	2.712E-02	2.883E-02	NOT IDENT.
CF-251	-7.413E-02	1.001E-01	1.055E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	49.1170	87.09	89.5969	136.47	69.9026
45.60	67.0512	87.57	89.6634	140.51	0.0000
46.54	50.3978	88.03	89.7272	143.76	76.9943
49.72	0.0000	88.34	89.7700	144.24	77.0366
51.35	49.0542	88.47	89.7883	145.44	77.1395
51.87	60.4421	89.96	89.9934	152.43	59.1218
52.39	66.1823	1093.63	90.0864	153.25	0.0000
52.97	51.1179	91.11	0.0000	323.87	81.1746
53.44	54.0115	92.59	90.3519	156.02	0.0000
54.07	70.2134	93.35	90.4545	158.56	0.0000
57.36	0.0000	94.56	66.5202	159.00	66.1533
57.53	70.7147	94.65	66.5291	162.33	60.8511
57.98	69.8221	94.67	66.5311	162.66	0.0000
59.27	65.2073	94.87	52.9688	163.33	60.9141
59.32	65.2138	97.43	78.7289	165.86	57.7415
59.54	65.2421	98.43	59.3877	176.31	60.5934
60.96	76.9696	98.44	59.3886	176.60	0.0000
61.17	77.0010	99.53	47.1750	177.52	73.0228
62.93	75.3307	100.11	64.6626	181.07	0.0000
63.29	75.3825	102.03	67.9260	181.52	58.6452
63.58	75.4238	103.18	68.0358	184.41	58.8079
64.28	75.5238	103.37	68.0539	143.76	58.8809
66.73	75.2205	105.21	52.7214	193.51	72.9990
67.24	75.2913	105.31	52.7288	197.03	62.9358
125.81	74.0523	106.12	63.1380	198.01	53.8295
67.75	74.0616	106.47	79.7370	201.83	51.7168
69.67	89.9659	109.28	54.0541	203.43	50.6393
70.83	78.3929	111.00	64.5978	205.31	70.7061
72.81	93.0885	111.76	0.0000	210.85	57.9216
72.87	93.0979	114.06	72.1817	215.65	56.9987
74.66	93.7157	116.30	0.0000	222.11	50.2942
74.82	93.7410	116.74	57.7372	227.09	54.0263
74.97	93.7650	119.76	56.9066	227.38	62.2630
77.11	94.1063	121.12	74.9500	228.16	0.0000
78.74	98.0050	121.22	74.9597	228.18	44.6710
79.69	109.4335	121.78	64.4472	116.74	44.6710
80.12	97.5641	122.06	57.0718	235.69	59.9262
80.19	0.0000	122.92	67.7134	235.96	59.9394
80.57	97.6366	123.07	70.9007	238.63	59.2773
81.00	109.6685	265.00	61.4232	238.98	0.0000
81.07	109.6811	125.81	65.8320	240.99	59.3887
81.75	97.1588	127.23	77.6466	242.00	59.4360
83.79	89.1317	127.91	58.5495	244.70	59.5627
84.00	89.1616	129.30	72.5104	252.40	0.0000
85.43	89.3640	131.20	68.4004	252.80	43.1554
86.55	89.5215	133.02	74.9753	254.15	0.0000
86.79	89.5548	133.52	70.7333	256.23	51.6819
86.94	89.5758	136.00	68.7891	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	52.0113	355.39	0.0000	584.27	15.8474
264.80	47.1778	356.01	38.5675	595.83	0.0000
265.00	47.1849	364.49	0.0000	427.87	20.3070
268.22	42.0416	366.42	0.0000	602.52	0.0000
269.46	35.2013	372.51	34.6191	604.72	17.4353
270.03	35.2163	375.05	22.5358	607.14	18.9073
271.23	35.2473	377.52	29.5120	609.32	19.4092
273.65	0.0000	356.01	29.6200	610.33	19.4173
276.40	37.8200	388.16	20.9595	614.28	11.6689
277.37	37.8456	388.63	0.0000	618.01	19.4775
277.60	37.8522	391.69	28.8763	620.36	19.4954
278.00	37.8636	264.66	27.2625	621.93	11.7051
279.20	57.0473	401.81	28.1602	630.19	0.0000
279.54	57.0616	402.40	28.1693	631.29	10.7695
279.70	39.1318	404.85	26.4441	633.25	19.5964
280.46	42.4161	410.95	21.2261	634.78	0.0000
283.69	34.3378	413.71	33.6582	635.95	18.6359
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	40.5189	423.72	0.0000	645.85	17.7239
285.90	0.0000	427.09	21.4106	657.76	16.3221
287.50	29.5115	427.87	21.4194	657.90	0.0000
290.67	22.1830	433.94	21.4878	661.66	15.8509
293.27	0.0000	439.40	19.7531	664.57	0.0000
351.93	19.7803	453.88	22.6140	666.33	0.0000
295.96	19.7905	463.37	26.3574	666.50	0.0000
879.38	27.2603	468.07	24.5967	667.71	0.0000
299.98	29.7671	473.00	0.0000	677.62	14.9506
300.09	29.7693	475.06	18.2825	685.70	0.0000
300.13	29.7700	476.78	28.3618	695.00	0.0000
301.36	29.7949	477.60	24.7121	696.49	18.0674
302.85	29.8250	482.18	16.5114	696.51	18.0674
256.23	29.8586	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	17.0685
306.78	29.9041	497.08	22.1729	697.49	17.0699
308.46	29.9377	505.52	16.6959	702.65	15.0897
311.90	35.0077	507.63	0.0000	706.68	19.1423
316.51	30.9335	511.00	26.9677	711.68	19.1770
319.41	0.0000	514.00	29.3326	720.70	0.0000
320.08	0.0000	514.00	29.3326	721.93	0.0000
321.04	30.1868	520.40	28.9528	722.78	21.2803
323.87	31.0817	520.69	0.0000	722.91	21.2811
325.23	49.6072	522.65	0.0000	723.31	19.7642
328.76	0.0000	527.90	0.0000	724.19	3.0416
333.37	23.3268	528.26	24.3697	727.33	4.5674
333.97	25.3644	529.59	18.7573	733.00	6.1023
334.37	31.7139	529.87	0.0000	735.93	19.3440
338.28	28.8245	531.02	0.0000	333.97	8.1491
338.32	28.8252	537.26	0.0000	739.50	0.0000
311.90	30.5618	546.56	0.0000	747.24	17.3763
340.48	30.5618	552.55	28.4241	748.06	10.2242
340.55	0.0000	563.25	15.2305	752.31	16.3828
344.28	38.2928	569.33	15.7474	753.82	0.0000
345.93	27.2578	946.00	18.6121	756.73	18.4592
351.06	35.8887	569.70	18.6137	756.80	19.4855
351.93	35.9075	583.19	21.1200	884.68	12.3369

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:08:36.16

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235027.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM08.CNF;320
Background date    : Z-OCT-2016 11:00:23.
Sample date       : 8-DEC-2015 10:19:00. Acquisition date : 3-OCT-2016 09:08:01.
Sample ID        : G405235027 Sample quantity : 1.58553E+02 GRAM
Detector name    : GAM08 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.68 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596249 Detector SN# :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	74.88*	97	130	1.18	150.02	146	12	2.71E-02	22.2	9.93E-01
2	1	76.98*	150	111	1.04	154.22	146	12	4.17E-02	14.4	
3	0	83.55*	49	147	1.67	167.36	165	8	1.37E-02	45.1	
4	0	87.08*	47	90	0.91	174.43	172	5	1.31E-02	34.2	
5	0	92.62*	24	216	1.16	185.52	181	10	6.60E-03	123.0	
6	0	129.17	33	96	1.54	258.64	255	8	9.21E-03	54.3	
7	0	185.97*	85	66	1.66	372.30	367	11	2.36E-02	23.1	
8	0	209.64	39	74	1.01	419.67	416	8	1.08E-02	41.6	
9	3	238.61*	312	54	1.16	477.63	472	29	8.66E-02	7.0	1.55E+00
10	3	241.91	74	66	1.79	484.23	472	29	2.05E-02	28.4	
11	0	295.39*	119	46	1.31	591.23	587	9	3.31E-02	14.2	
12	0	300.66	32	69	1.07	601.77	597	11	8.95E-03	52.2	
13	0	328.15	37	31	1.86	656.77	653	9	1.03E-02	31.1	
14	0	338.63*	67	76	1.43	677.75	672	13	1.85E-02	30.3	
15	0	351.96*	158	47	1.16	704.42	699	12	4.38E-02	12.1	
16	0	384.53	53	76	9.77	769.59	759	23	1.47E-02	44.7	
17	0	406.41	57	75	10.03	813.36	801	27	1.59E-02	44.0	
18	0	468.34	11	24	0.93	937.28	931	8	3.07E-03	82.4	
19	0	511.08*	52	66	2.48	1022.78	1014	22	1.45E-02	46.0	
20	0	576.94	8	14	0.59	1154.56	1150	8	2.18E-03	90.2	
21	0	583.60*	119	24	1.84	1167.88	1161	17	3.30E-02	13.5	
22	0	609.17*	148	26	1.68	1219.03	1211	15	4.11E-02	11.4	
23	0	628.44	9	14	1.01	1257.59	1254	6	2.60E-03	70.4	
24	0	663.83	29	24	5.39	1328.40	1319	17	8.17E-03	43.2	
25	0	669.11	14	4	0.58	1338.96	1336	8	3.89E-03	36.4	
26	0	727.14*	32	23	1.27	1455.07	1449	13	8.92E-03	36.8	
27	0	797.54	5	32	1.21	1595.91	1589	10	1.43E-03	210.7	
28	0	829.90	20	0	1.99	1660.65	1656	11	5.56E-03	22.4	
29	0	859.90*	21	10	2.66	1720.67	1713	14	5.83E-03	40.9	
30	0	911.33*	65	30	1.62	1823.57	1815	15	1.80E-02	22.6	
31	0	961.41*	5	6	0.94	1923.75	1921	6	1.39E-03	98.6	
32	0	969.81*	39	32	1.03	1940.57	1930	19	1.08E-02	39.3	
33	0	994.04	10	7	2.90	1989.03	1979	13	2.81E-03	61.0	
34	0	1001.96*	11	13	1.86	2004.89	1999	10	2.98E-03	72.8	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1071.27	13	8	1.78	2143.54	2138	11	3.63E-03	50.6	
36	0	1120.39*	26	25	2.18	2241.82	2231	17	7.19E-03	49.4	
37	0	1150.35	7	4	1.24	2301.74	2297	9	2.02E-03	63.2	
38	0	1154.66	16	2	1.98	2310.36	2306	9	4.35E-03	30.7	
39	0	1173.23	12	2	1.50	2347.51	2344	8	3.26E-03	36.1	
40	0	1302.27	4	6	0.81	2605.66	2600	8	1.10E-03	118.7	
41	0	1460.80	315	4	2.30	2922.80	2915	14	8.75E-02	5.8	
42	0	1728.85	19	0	1.76	3459.00	3452	12	5.28E-03	22.9	
43	0	1764.94*	19	4	1.68	3531.20	3523	13	5.22E-03	33.6	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235027.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 8-DEC-2015 10:19:00 Acquisition date : 3-OCT-2016 09:08:01
 Sample ID : G405235027 Sample quantity : 158.55 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA8 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.68 0.0% ,
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	9.671E-01	1.404E+01	1.404E+01	11.55	OK
CD-109	88.03	3.70*	4.287E+00	9.133E-01	1.433E+00	141.09	OK
SN-126	64.28	9.60	2.248E+00	----- Line	Not Found	-----	Absent
	86.94	8.90	4.287E+00	3.797E-01	3.797E-01	141.09	OK
	87.57	37.00*	4.287E+00	9.133E-02	9.134E-02	141.09	OK
TL-208	277.37	6.60	3.710E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.006E+00	3.567E-01	3.567E-01	27.01	OK
	860.56	12.50	1.479E+00	5.555E-01	5.555E-01	81.86	OK
PB-212	74.82	10.28	3.324E+00	1.222E+00	1.222E+00	66.34	OK
	77.11	17.10	3.513E+00	1.567E+00	1.567E+00	28.77	OK
	238.63	43.60*	4.174E+00	9.631E-01	9.631E-01	14.09	OK
	300.09	3.30	3.474E+00	1.544E+00	1.544E+00	104.34	OK
BI-214	609.32	45.49*	1.938E+00	8.533E-01	8.536E-01	22.78	OK
	1120.29	14.92	1.202E+00	6.847E-01	6.850E-01	98.80	OK
	1764.49	15.30	8.178E-01	6.740E-01	6.743E-01	67.14	OK
PB-214	74.82	5.80	3.318E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.513E+00	2.762E+00	2.763E+00	28.77	OK
	87.09	3.41	4.288E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.130E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	3.524E+00	1.009E+00	1.009E+00	28.32	OK
	351.93	35.60*	3.045E+00	7.856E-01	7.858E-01	24.22	OK
RN-222	609.32	45.49*	1.938E+00	8.533E-01	8.536E-01	22.78	OK
	1120.29	14.92	1.202E+00	6.847E-01	6.850E-01	98.80	OK
	1764.49	15.30	8.178E-01	6.740E-01	6.743E-01	67.14	OK
RA-224	240.99	4.10*	4.131E+00	6.650E-01	6.650E-01	222.68	OK
RA-226	609.32	45.49*	1.938E+00	8.533E-01	8.536E-01	22.78	OK
	1120.29	14.92	1.202E+00	6.847E-01	6.850E-01	98.80	OK
	1764.49	15.30	8.178E-01	6.740E-01	6.743E-01	67.14	OK
AC-228	105.21	1.10	5.138E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.146E+00	1.020E+00	1.020E+00	60.55	OK
	794.95	4.25	1.572E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.512E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.414E+00	8.645E-01	8.645E-01	45.16	OK
	968.97	15.80	1.347E+00	8.811E-01	8.811E-01	78.68	OK
RA-228	105.21	1.10	5.138E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.146E+00	1.020E+00	1.020E+00	60.55	OK
	794.95	4.25	1.572E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.512E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.414E+00	8.645E-01	8.645E-01	45.16	OK
	968.97	15.80	1.347E+00	8.811E-01	8.811E-01	78.68	OK
TH-228	74.82	10.28	3.324E+00	1.222E+00	1.222E+00	66.34	OK
	77.11	17.10	3.513E+00	1.567E+00	1.567E+00	28.77	OK
	238.63	43.60*	4.174E+00	9.631E-01	9.631E-01	14.09	OK
	300.09	3.30	3.474E+00	1.544E+00	1.544E+00	104.34	OK
TH-230	609.32	45.49*	1.938E+00	8.533E-01	8.533E-01	22.78	OK
	1120.29	14.92	1.202E+00	6.847E-01	6.847E-01	98.80	OK
	1764.49	15.30	8.178E-01	6.740E-01	6.740E-01	67.14	OK
PA-231	283.69	1.70	3.643E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	3.474E+00	9.521E-01	9.521E-01	104.34	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-232	105.21	1.10	5.138E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.146E+00	1.020E+00	1.020E+00	60.55	OK
	835.71	1.61	1.512E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.414E+00	8.645E-01	8.645E-01	45.16	OK
	968.97	15.80	1.347E+00	8.811E-01	8.811E-01	78.68	OK
U-234	609.32	45.49*	1.938E+00	8.533E-01	8.533E-01	22.78	OK
	1120.29	14.92	1.202E+00	6.847E-01	6.847E-01	98.80	OK
	1764.49	15.30	8.178E-01	6.740E-01	6.740E-01	67.14	OK
AM-243	43.53	5.90	2.327E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.324E+00	1.870E-01	1.870E-01	66.34	OK
ANH-511	511.00	100.00*	2.233E+00	1.215E-01	1.215E-01	91.93	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235027.CNF;1
* Acquisition date   : 3-OCT-2016 09:08:01 Sensitivity      : 3.000
* Detector ID        : GAM08 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.68 Half life ratio : *****
* Sample date       : 8-DEC-2015 10:19:00 Analyst initials: MXR1
* Sample ID         : G405235027 Sample Quantity : 1.5855E+02 GRAM
* Batch Number      : 1596249 Wet Weight      : 0.00000
* Wet wt corr       : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 21-JUL-2016 06:09:19 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM08 CAN.CNF;14
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.404E+01	1.589E+00	7.692E-01
CD-109	1.433E+00	1.982E+00	2.309E+00
SN-126	9.134E-02	1.263E-01	1.579E-01
TL-208	3.567E-01	9.441E-02	6.442E-02
PB-212	9.631E-01	1.330E-01	1.031E-01
BI-214	8.536E-01	1.906E-01	1.144E-01
PB-214	7.858E-01	1.865E-01	1.262E-01
RN-222	8.536E-01	1.906E-01	1.144E-01
RA-224	6.650E-01	1.451E+00	1.106E+00
RA-226	8.536E-01	1.906E-01	1.144E-01
AC-228	8.645E-01	3.826E-01	2.701E-01
RA-228	8.645E-01	3.826E-01	2.701E-01
TH-228	9.631E-01	1.330E-01	1.031E-01
TH-230	8.533E-01	1.905E-01	1.143E-01
PA-231	9.521E-01	9.735E-01	8.617E-01
TH-232	8.645E-01	3.826E-01	2.701E-01
U-234	8.533E-01	1.905E-01	1.143E-01
AM-243	1.870E-01	1.216E-01	1.125E-01
ANH-511	1.215E-01	1.095E-01	5.481E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	6.504E+00		1.145E+01	2.425E+01	NOT IDENT.
NA-22	4.213E-02		4.337E-02	1.038E-01	NOT IDENT.
NA-24	0.000E+00		1.960E+41	0.000E+00	SHORT HLIF
AL-26	2.021E-02		3.844E-02	9.064E-02	NOT IDENT.
SC-46	-2.279E-01		3.905E-01	7.114E-01	FAIL ABUN
V-48	0.000E+00		1.140E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00		4.416E+02	0.000E+00	SHORT HLIF
MN-54	2.085E-02		6.875E-02	1.308E-01	NOT IDENT.
CO-56	2.340E-01		4.575E-01	1.002E+00	NOT IDENT.
MN-56	0.000E+00		1.941E+41	0.000E+00	SHORT HLIF
CO-57	-1.607E-02		5.053E-02	9.168E-02	NOT IDENT.

CO-58	2.274E-01	5.281E-01	1.163E+00	NOT IDENT.
FE-59	-8.323E-01	6.966E+00	1.358E+01	NOT IDENT.
CO-60	-2.168E-02	4.226E-02	7.539E-02	FAIL ABUN
ZN-65	-1.915E-02	2.638E-01	4.365E-01	NOT IDENT.
GE-68	1.983E+00	2.631E+00	5.691E+00	NOT IDENT.
AS-73	-6.587E+00	1.307E+01	2.458E+01	NOT IDENT.
AS-74	0.000E+00	7.045E+03	0.000E+00	SHORT HLIF
SE-75	1.870E-01	2.150E-01	4.561E-01	NOT IDENT.
BR-77	0.000E+00	2.479E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.164E+02	0.000E+00	SHORT HLIF
RB-83	4.196E-01	7.599E-01	1.501E+00	NOT IDENT.
KR-85	3.660E+00	7.482E+00	1.513E+01	NOT IDENT.
SR-85	3.810E-01	7.908E-01	1.598E+00	NOT IDENT.
RB-86	0.000E+00	3.471E+04	0.000E+00	SHORT HLIF
Y-88	-8.357E-02	2.283E-01	4.508E-01	NOT IDENT.
Y-91	-2.909E+02	5.701E+02	1.012E+03	NOT IDENT.
NB-94	2.014E-02	3.428E-02	7.343E-02	NOT IDENT.
NB-95	-8.599E-01	9.997E-01	1.764E+00	NOT IDENT.
NB-95M	-2.035E+00	2.808E+00	4.596E+00	NOT IDENT.
ZR-95	2.936E-01	1.234E+00	2.664E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.306E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.891E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	9.131E-03	3.689E-02	6.517E-02	NOT IDENT.
RH-102	1.055E-02	6.795E-02	1.197E-01	NOT IDENT.
RU-103	4.992E-01	5.610E+00	1.108E+01	FAIL ABUN
RH-106	-8.768E-02	5.710E-01	1.056E+00	NOT IDENT.
RU-106	-8.768E-02	5.710E-01	1.056E+00	NOT IDENT.
AG-108M	6.716E-03	2.641E-02	5.349E-02	NOT IDENT.
AG-110M	-3.887E-02	8.707E-02	1.649E-01	NOT IDENT.
SN-113	1.470E-01	2.612E-01	4.943E-01	NOT IDENT.
CD-115	0.000E+00	3.789E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.062E+05	0.000E+00	SHORT HLIF
TE-123M	-9.638E-03	1.360E-01	2.481E-01	NOT IDENT.
SB-124	7.086E-02	1.721E+00	4.004E+00	NOT IDENT.
SB-125	-3.865E-02	1.081E-01	2.002E-01	NOT IDENT.
TE-125M	1.640E+01	3.259E+02	6.058E+02	NOT IDENT.
I-126	0.000E+00	7.697E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.382E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.081E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	5.044E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	7.139E+40	0.000E+00	SHORT HLIF
TE-132	0.000E+00	4.310E+26	0.000E+00	SHORT HLIF
BA-133	8.272E-03	4.338E-02	7.863E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	6.493E-02	6.034E-02	1.336E-01	NOT IDENT.
CS-135	1.302E-02	1.510E-01	2.983E-01	NOT IDENT.
I-135	0.000E+00	1.050E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.149E+05	0.000E+00	SHORT HLIF
BA-137M	5.530E-02	4.183E-02	8.721E-02	NOT IDENT.
CS-137	5.842E-02	4.419E-02	9.213E-02	NOT IDENT.
CE-139	4.175E-02	1.267E-01	2.372E-01	NOT IDENT.
BA-140	0.000E+00	1.417E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.892E+05	0.000E+00	SHORT HLIF
CE-141	-8.205E+00	2.795E+01	4.990E+01	NOT IDENT.
CE-143	0.000E+00	1.864E+41	0.000E+00	SHORT HLIF
CE-144	7.581E-03	3.674E-01	6.760E-01	NOT IDENT.
PM-144	9.004E-03	6.253E-02	1.271E-01	NOT IDENT.
PR-144	7.316E-01	5.425E+00	1.102E+01	NOT IDENT.
PM-146	-4.860E-02	4.515E-02	7.404E-02	NOT IDENT.
ND-147	0.000E+00	3.516E+07	0.000E+00	SHORT HLIF
PM-147	1.708E+02	8.258E+02	1.581E+03	NOT IDENT.
PM-149	0.000E+00	5.024E+40	0.000E+00	SHORT HLIF
EU-150	-3.078E-03	2.875E-02	4.961E-02	FAIL ABUN
EU-152	-2.251E-02	9.157E-02	1.560E-01	NOT IDENT.
GD-153	-2.881E-02	1.927E-01	3.602E-01	NOT IDENT.
EU-154	1.033E-01	1.063E-01	2.544E-01	NOT IDENT.
EU-155	1.347E-01	1.234E-01	2.515E-01	FAIL ABUN
TB-160	-8.125E-01	1.959E+00	3.684E+00	FAIL ABUN
HO-166M	-2.912E-02	4.958E-02	9.285E-02	NOT IDENT.
TM-171	-3.054E+00	3.295E+01	6.422E+01	NOT IDENT.
HF-172	-5.277E-02	2.759E-01	4.622E-01	FAIL ABUN
LU-172	-1.452E-02	8.554E-02	1.670E-01	FAIL ABUN
LU-176	-1.481E-03	2.347E-02	4.603E-02	FAIL ABUN
HF-181	-3.218E-01	4.122E+00	7.960E+00	NOT IDENT.
TA-182	-1.921E-02	9.545E-01	1.863E+00	FAIL ABUN
RE-183	-2.253E+00	3.904E+00	7.300E+00	NOT IDENT.

RE-184	-2.091E+01	3.319E+01	5.698E+01	NOT IDENT.
W-188	-1.239E+02	1.328E+02	2.051E+02	NOT IDENT.
IR-192	-5.255E-01	4.755E-01	8.214E-01	FAIL ABUN
HG-203	-9.311E-01	2.515E+00	4.758E+00	NOT IDENT.
BI-207	-2.076E-02	4.967E-02	9.162E-02	FAIL ABUN
PB-210	3.177E+00	6.242E+00	1.286E+01	NOT IDENT.
BI-211	0.000E+00	5.137E-01	7.917E-01	FAIL ABUN
PB-211	5.463E-01	6.832E-01	1.447E+00	NOT IDENT.
BI-212	1.426E+00	1.028E+00	1.486E+00	FAIL ABUN
RN-219	1.594E-01	3.681E-01	7.573E-01	NOT IDENT.
RA-223	2.525E-01	6.153E-01	1.135E+00	FAIL ABUN
AC-227	5.033E-02	2.330E-01	4.692E-01	FAIL ABUN
TH-227	5.033E-02	2.330E-01	4.692E-01	FAIL ABUN
TH-229	-1.659E-01	4.541E-01	8.847E-01	FAIL ABUN
TH-231	2.525E-01	6.153E-01	1.135E+00	FAIL ABUN
PA-233	1.298E-02	5.757E-02	1.162E-01	FAIL ABUN
PA-234	-3.659E-02	2.617E-01	5.191E-01	NOT IDENT.
PA-234M	4.681E+00	6.678E+00	1.131E+01	FAIL ABUN
TH-234	-8.951E-01	1.646E+00	3.154E+00	FAIL ABUN
U-235	-1.495E-02	2.094E-01	3.874E-01	FAIL ABUN
NP-237	1.298E-02	5.757E-02	1.162E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+01	0.000E+00	SHORT HLIF
U-238	-8.951E-01	1.646E+00	3.154E+00	FAIL ABUN
NP-239	4.169E-02	2.647E-01	5.019E-01	NOT IDENT.
PU-239	5.725E+02	6.099E+02	7.002E+02	FAIL ABUN
AM-241	1.133E-01	1.732E-01	3.575E-01	NOT IDENT.
CM-243	-7.545E-02	1.075E-01	1.904E-01	NOT IDENT.
BK-247	5.725E-02	7.294E-02	1.542E-01	FAIL ABUN
CM-247	2.614E-02	3.534E-02	7.457E-02	NOT IDENT.
CF-249	1.604E-02	4.279E-02	8.566E-02	NOT IDENT.
CF-251	-1.970E-02	1.169E-01	2.321E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	306	10.66*	9.671E-01	1.404E+01	1.404E+01	11.55
CD-109	88.03	62	3.70*	4.287E+00	1.843E+00	2.892E+00	68.45
SN-126	64.28	-----	9.60	2.248E+00	-----	Line Not Found	-----
	86.94	62	8.90	4.287E+00	7.662E-01	7.662E-01	68.45
	87.57	62	37.00*	4.287E+00	1.843E-01	1.843E-01	68.45
TL-208	277.37	-----	6.60	3.710E+00	-----	Line Not Found	-----
	583.19	128	85.00*	2.006E+00	3.567E-01	3.567E-01	27.01
	860.56	22	12.50	1.479E+00	5.555E-01	5.555E-01	81.86
BI-211	72.87	-----	1.23	3.135E+00	-----	Line Not Found	-----
	351.06	180	12.92*	3.045E+00	2.165E+00	2.165E+00	24.22
PB-212	74.82	129	10.28	3.324E+00	1.791E+00	1.791E+00	44.36
	77.11	199	17.10	3.513E+00	1.567E+00	1.567E+00	28.77
	238.63	370	43.60*	4.174E+00	9.631E-01	9.631E-01	14.09
	300.09	37	3.30	3.474E+00	1.544E+00	1.544E+00	104.34
BI-214	609.32	159	45.49*	1.938E+00	8.533E-01	8.533E-01	22.78
	1120.29	26	14.92	1.202E+00	6.847E-01	6.850E-01	98.80
	1764.49	18	15.30	8.178E-01	6.740E-01	6.743E-01	67.14
PB-214	74.82	129	5.80	3.324E+00	3.175E+00	3.176E+00	44.36
	77.11	199	9.70	3.513E+00	2.762E+00	2.763E+00	28.77
	87.09	62	3.41	4.287E+00	2.000E+00	2.000E+00	68.45
	242.00	88	7.25	4.131E+00	1.385E+00	1.385E+00	56.85
	295.22	138	18.42	3.524E+00	1.009E+00	1.009E+00	28.32
	351.93	180	35.60*	3.045E+00	7.856E-01	7.858E-01	24.22
RN-222	609.32	159	45.49*	1.938E+00	8.533E-01	8.536E-01	22.78
	1120.29	26	14.92	1.202E+00	6.847E-01	6.850E-01	98.80
	1764.49	18	15.30	8.178E-01	6.740E-01	6.743E-01	67.14
RA-224	240.99	88	4.10*	4.131E+00	2.449E+00	2.449E+00	56.85
RA-226	609.32	159	45.49*	1.938E+00	8.533E-01	8.536E-01	22.78
	1120.29	26	14.92	1.202E+00	6.847E-01	6.850E-01	98.80
	1764.49	18	15.30	8.178E-01	6.740E-01	6.743E-01	67.14
AC-228	105.21	-----	1.10	5.138E+00	-----	Line Not Found	-----
	338.32	76	11.27	3.146E+00	1.020E+00	1.020E+00	60.55
	794.95	-----	4.25	1.572E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.512E+00	-----	Line Not Found	-----
	911.20	67	25.80*	1.414E+00	8.645E-01	8.645E-01	45.16
	968.97	40	15.80	1.347E+00	8.811E-01	8.811E-01	78.68
RA-228	105.21	-----	1.10	5.138E+00	-----	Line Not Found	-----
	338.32	76	11.27	3.146E+00	1.020E+00	1.020E+00	60.55
	794.95	-----	4.25	1.572E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.512E+00	-----	Line Not Found	-----
	911.20	67	25.80*	1.414E+00	8.645E-01	8.645E-01	45.16
	968.97	40	15.80	1.347E+00	8.811E-01	8.811E-01	78.68
TH-228	74.82	129	10.28	3.324E+00	1.791E+00	1.791E+00	44.36
	77.11	199	17.10	3.513E+00	1.567E+00	1.567E+00	28.77
	238.63	370	43.60*	4.174E+00	9.631E-01	9.631E-01	14.09
	300.09	37	3.30	3.474E+00	1.544E+00	1.544E+00	104.34
TH-230	609.32	159	45.49*	1.938E+00	8.533E-01	8.533E-01	22.78

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	1120.29	26	14.92	1.202E+00	6.847E-01	6.847E-01	98.80
	1764.49	18	15.30	8.178E-01	6.740E-01	6.740E-01	67.14
PA-231	283.69	-----	1.70	3.643E+00	-----	Line Not Found	-----
	301.36	37	5.35*	3.474E+00	9.521E-01	9.521E-01	104.34
TH-232	105.21	-----	1.10	5.138E+00	-----	Line Not Found	-----
	338.32	76	11.27	3.146E+00	1.020E+00	1.020E+00	60.55
	835.71	-----	1.61	1.512E+00	-----	Line Not Found	-----
	911.20	67	25.80*	1.414E+00	8.645E-01	8.645E-01	45.16
	968.97	40	15.80	1.347E+00	8.811E-01	8.811E-01	78.68
U-234	609.32	159	45.49*	1.938E+00	8.533E-01	8.533E-01	22.78
	1120.29	26	14.92	1.202E+00	6.847E-01	6.847E-01	98.80
	1764.49	18	15.30	8.178E-01	6.740E-01	6.740E-01	67.14
AM-243	43.53	-----	5.90	2.327E-01	-----	Line Not Found	-----
	74.66	129	67.20*	3.324E+00	2.740E-01	2.740E-01	44.36
ANH-511	511.00	57	100.00*	2.233E+00	1.215E-01	1.215E-01	91.93

Flag: "*" = Keyline

Total number of lines in spectrum 43
Number of unidentified lines 11
Number of lines tentatively identified by NID 32 74.42%

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	1.404E+01	1.404E+01	0.162E+01	11.55	
CD-109	461.40D	1.57	1.843E+00	2.892E+00	1.980E+00	68.45	
SN-126	2.30E+05Y	1.00	1.843E-01	1.843E-01	1.261E-01	68.45	
TL-208	1.41E+10Y	1.00	3.567E-01	3.567E-01	0.963E-01	27.01	
BI-211	7.04E+08Y	1.00	2.165E+00	2.165E+00	0.524E+00	24.22	
PB-212	1.41E+10Y	1.00	9.631E-01	9.631E-01	1.357E-01	14.09	
BI-214	1600.00Y	1.00	8.533E-01	8.536E-01	1.945E-01	22.78	
PB-214	1600.00Y	1.00	7.856E-01	7.858E-01	1.903E-01	24.22	
RN-222	1600.00Y	1.00	8.533E-01	8.536E-01	1.945E-01	22.78	
RA-224	1.41E+10Y	1.00	2.449E+00	2.449E+00	1.392E+00	56.85	
RA-226	1600.00Y	1.00	8.533E-01	8.536E-01	1.945E-01	22.78	
AC-228	1.41E+10Y	1.00	8.645E-01	8.645E-01	3.904E-01	45.16	
RA-228	1.41E+10Y	1.00	8.645E-01	8.645E-01	3.904E-01	45.16	
TH-228	1.41E+10Y	1.00	9.631E-01	9.631E-01	1.357E-01	14.09	
TH-230	7.54E+04Y	1.00	8.533E-01	8.533E-01	1.944E-01	22.78	
PA-231	7.04E+08Y	1.00	9.521E-01	9.521E-01	9.934E-01	104.34	
TH-232	1.41E+10Y	1.00	8.645E-01	8.645E-01	3.904E-01	45.16	
U-234	2.45E+05Y	1.00	8.533E-01	8.533E-01	1.944E-01	22.78	
AM-243	7370.00Y	1.00	2.740E-01	2.740E-01	1.216E-01	44.36	
ANH-511	1.00E+09Y	1.00	1.215E-01	1.215E-01	1.117E-01	91.93	

Total Activity : 3.195E+01 3.300E+01

Grand Total Activity : 3.195E+01 3.300E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	83.55	65	194	1.67	167.36	165	8	1.37E-02	90.3	4.04E+00	T
0	92.62	31	281	1.16	185.52	181	10	6.60E-03	****	4.62E+00	T
0	129.17	42	121	1.54	258.64	255	8	9.21E-03	****	5.48E+00	T
0	185.97	104	80	1.66	372.30	367	11	2.36E-02	46.3	4.93E+00	T
0	209.64	47	89	1.01	419.67	416	8	1.08E-02	83.3	4.58E+00	T
0	328.15	43	35	1.86	656.77	653	9	1.03E-02	62.2	3.23E+00	T
0	384.53	60	86	9.77	769.59	759	23	1.47E-02	89.3	2.83E+00	T
0	406.41	64	84	10.03	813.36	801	27	1.59E-02	88.0	2.70E+00	
0	468.34	12	26	0.93	937.28	931	8	3.07E-03	****	2.40E+00	T
0	576.94	8	15	0.59	1154.56	1150	8	2.18E-03	****	2.02E+00	
0	628.44	10	15	1.01	1257.59	1254	6	2.60E-03	****	1.89E+00	
0	663.83	31	25	5.39	1328.40	1319	17	8.17E-03	86.4	1.81E+00	T
0	669.11	15	4	0.58	1338.96	1336	8	3.89E-03	72.8	1.80E+00	T
0	727.14	34	24	1.27	1455.07	1449	13	8.92E-03	73.6	1.69E+00	T
0	797.54	5	33	1.21	1595.91	1589	10	1.43E-03	****	1.57E+00	
0	829.90	21	0	1.99	1660.65	1656	11	5.56E-03	44.7	1.52E+00	
0	961.41	5	6	0.94	1923.75	1921	6	1.39E-03	****	1.36E+00	T
0	994.04	10	7	2.90	1989.03	1979	13	2.81E-03	****	1.32E+00	
0	1001.96	11	13	1.86	2004.89	1999	10	2.98E-03	****	1.31E+00	T
0	1071.27	13	8	1.78	2143.54	2138	11	3.63E-03	****	1.25E+00	
0	1150.35	7	4	1.24	2301.74	2297	9	2.02E-03	****	1.18E+00	
0	1154.66	16	2	1.98	2310.36	2306	9	4.35E-03	61.3	1.17E+00	
0	1173.23	12	2	1.50	2347.51	2344	8	3.26E-03	72.2	1.16E+00	T
0	1302.27	4	6	0.81	2605.66	2600	8	1.10E-03	****	1.06E+00	
0	1728.85	18	0	1.76	3459.00	3452	12	5.28E-03	45.9	8.34E-01	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235027.CNF;1
* Acquisition date   : 3-OCT-2016 09:08:01 Sensitivity      : 3.000
* Detector ID        : GAM08 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.68 Half life ratio : *****
* Sample date        : 8-DEC-2015 10:19:00 Nuclide Library : SOLID
* Sample ID          : G405235027 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.5855E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 21-JUL-2016 06:09:19 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM08 CAN.CNF;14
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	3.220E-01
CD-109	1.087E+00
SN-126	7.460E-02
TL-208	2.833E-02
PB-212	4.785E-02
BI-214	4.968E-02
PB-214	5.694E-02
RN-222	4.968E-02
RA-224	5.131E-01
RA-226	4.968E-02
AC-228	1.171E-01
RA-228	1.171E-01
TH-228	4.785E-02
TH-230	4.966E-02
PA-231	3.946E-01
TH-232	1.171E-01
U-234	4.966E-02
AM-243	5.314E-02
ANH-511	2.443E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.078E+01	NOT IDENT.
NA-22	4.445E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	3.727E-02	NOT IDENT.
SC-46	3.013E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.699E-02	NOT IDENT.
CO-56	4.363E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.267E-02	NOT IDENT.
CO-58	5.015E-01	NOT IDENT.

FE-59	5.782E+00	NOT IDENT.
CO-60	3.078E-02	FAIL ABUN
ZN-65	1.933E-01	NOT IDENT.
GE-68	2.495E+00	NOT IDENT.
AS-73	1.144E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	2.112E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.756E-01	NOT IDENT.
KR-85	6.840E+00	NOT IDENT.
SR-85	7.223E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.677E-01	NOT IDENT.
Y-91	4.292E+02	NOT IDENT.
NB-94	3.291E-02	NOT IDENT.
NB-95	7.773E-01	NOT IDENT.
NB-95M	2.131E+00	NOT IDENT.
ZR-95	1.141E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.039E-02	NOT IDENT.
RH-102	5.256E-02	NOT IDENT.
RU-103	4.899E+00	FAIL ABUN
RH-106	4.669E-01	NOT IDENT.
RU-106	4.669E-01	NOT IDENT.
AG-108M	2.386E-02	NOT IDENT.
AG-110M	6.812E-02	NOT IDENT.
SN-113	2.247E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.152E-01	NOT IDENT.
SB-124	1.499E+00	NOT IDENT.
SB-125	8.945E-02	NOT IDENT.
TE-125M	2.847E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.553E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	6.039E-02	NOT IDENT.
CS-135	1.381E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.949E-02	NOT IDENT.
CS-137	4.172E-02	NOT IDENT.
CE-139	1.112E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.339E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.146E-01	NOT IDENT.
PM-144	5.683E-02	NOT IDENT.
PR-144	4.925E+00	NOT IDENT.
PM-146	3.240E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.353E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.257E-02	FAIL ABUN
EU-152	6.952E-02	NOT IDENT.
GD-153	1.684E-01	NOT IDENT.
EU-154	1.090E-01	NOT IDENT.
EU-155	1.186E-01	FAIL ABUN
TB-160	1.576E+00	FAIL ABUN
HO-166M	3.931E-02	NOT IDENT.
TM-171	3.001E+01	NOT IDENT.
HF-172	2.161E-01	FAIL ABUN
LU-172	7.206E-02	FAIL ABUN
LU-176	2.091E-02	FAIL ABUN
HF-181	3.504E+00	NOT IDENT.
TA-182	7.998E-01	FAIL ABUN
RE-183	3.393E+00	NOT IDENT.
RE-184	2.420E+01	NOT IDENT.

W-188	9.332E+01	NOT IDENT.
IR-192	3.699E-01	FAIL ABUN
HG-203	2.185E+00	NOT IDENT.
BI-207	3.872E-02	FAIL ABUN
PB-210	6.036E+00	NOT IDENT.
BI-211	3.790E-01	FAIL ABUN
PB-211	6.584E-01	NOT IDENT.
BI-212	6.844E-01	FAIL ABUN
RN-219	3.415E-01	NOT IDENT.
RA-223	5.161E-01	FAIL ABUN
AC-227	2.166E-01	FAIL ABUN
TH-227	2.166E-01	FAIL ABUN
TH-229	4.103E-01	FAIL ABUN
TH-231	5.161E-01	FAIL ABUN
PA-233	5.293E-02	FAIL ABUN
PA-234	2.198E-01	NOT IDENT.
PA-234M	5.067E+00	FAIL ABUN
TH-234	1.489E+00	FAIL ABUN
U-235	1.822E-01	FAIL ABUN
NP-237	5.293E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	1.489E+00	FAIL ABUN
NP-239	2.348E-01	NOT IDENT.
PU-239	3.303E+02	FAIL ABUN
AM-241	1.674E-01	NOT IDENT.
CM-243	8.855E-02	NOT IDENT.
BK-247	7.124E-02	FAIL ABUN
CM-247	3.388E-02	NOT IDENT.
CF-249	3.921E-02	NOT IDENT.
CF-251	1.082E-01	NOT IDENT.

[illegible]

CO-58	2.274E-01	5.282E-01	5.381E-01	NOT IDENT.
FE-59	-8.323E-01	6.966E+00	6.976E+00	NOT IDENT.
CO-60	-2.168E-02	4.227E-02	4.338E-02	FAIL ABUN
ZN-65	-1.915E-02	2.638E-01	2.639E-01	NOT IDENT.
GE-68	1.983E+00	2.632E+00	2.780E+00	NOT IDENT.
AS-73	-6.587E+00	1.314E+01	1.347E+01	NOT IDENT.
AS-74	-7.177E+02	7.045E+03	7.053E+03	SHORT HLIF
SE-75	1.870E-01	2.152E-01	2.311E-01	NOT IDENT.
BR-77	1.795E+38	1.554E+39	0.000E+00	SHORT HLIF
SR-82	1.349E+02	6.165E+02	6.195E+02	SHORT HLIF
RB-83	4.196E-01	7.621E-01	7.852E-01	NOT IDENT.
KR-85	3.660E+00	7.484E+00	7.664E+00	NOT IDENT.
SR-85	3.810E-01	7.909E-01	8.094E-01	NOT IDENT.
RB-86	1.391E+04	3.471E+04	3.527E+04	SHORT HLIF
Y-88	-8.357E-02	2.284E-01	2.315E-01	NOT IDENT.
Y-91	-2.909E+02	5.702E+02	5.851E+02	NOT IDENT.
NB-94	2.014E-02	3.429E-02	3.547E-02	NOT IDENT.
NB-95	-8.599E-01	1.000E+00	1.073E+00	NOT IDENT.
NB-95M	-2.035E+00	2.813E+00	2.959E+00	NOT IDENT.
ZR-95	2.936E-01	1.234E+00	1.241E+00	NOT IDENT.
NB-97	-1.000E+41	4.063E+42	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.307E+41	0.000E+00	SHORT HLIF
MO-99	-1.083E+32	1.892E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	2.129E+41	0.000E+00	SHORT HLIF
RH-101	9.131E-03	3.693E-02	3.716E-02	NOT IDENT.
RH-102	1.055E-02	6.795E-02	6.812E-02	NOT IDENT.
RU-103	4.992E-01	5.610E+00	5.615E+00	FAIL ABUN
RH-106	-8.768E-02	5.711E-01	5.724E-01	NOT IDENT.
RU-106	-8.768E-02	5.711E-01	5.724E-01	NOT IDENT.
AG-108M	6.716E-03	2.641E-02	2.658E-02	NOT IDENT.
AG-110M	-3.887E-02	8.709E-02	8.884E-02	NOT IDENT.
SN-113	1.470E-01	2.613E-01	2.695E-01	NOT IDENT.
CD-115	-1.921E+39	3.805E+39	0.000E+00	SHORT HLIF
SN-117M	-7.708E+04	1.066E+05	1.121E+05	SHORT HLIF
TE-123M	-9.638E-03	1.360E-01	1.361E-01	NOT IDENT.
SB-124	7.086E-02	1.721E+00	1.721E+00	NOT IDENT.
SB-125	-3.865E-02	1.082E-01	1.096E-01	NOT IDENT.
TE-125M	1.640E+01	3.259E+02	3.260E+02	NOT IDENT.
I-126	8.055E+05	7.774E+05	8.580E+05	SHORT HLIF
SB-126	1.356E+06	1.405E+06	1.533E+06	SHORT HLIF
SB-127	-1.779E+22	3.212E+22	0.000E+00	SHORT HLIF
I-131	2.690E+09	5.045E+09	5.189E+09	SHORT HLIF
I-132	1.000E+41	1.850E+42	0.000E+00	SHORT HLIF
TE-132	2.099E+26	4.394E+26	0.000E+00	SHORT HLIF
BA-133	8.272E-03	4.338E-02	4.354E-02	FAIL ABUN
I-133	-1.000E+41	7.469E+41	0.000E+00	SHORT HLIF
CS-134	6.493E-02	6.040E-02	6.712E-02	NOT IDENT.
CS-135	1.302E-02	1.510E-01	1.511E-01	NOT IDENT.
I-135	-1.000E+41	6.858E+41	0.000E+00	SHORT HLIF
CS-136	8.062E+04	3.150E+05	3.171E+05	SHORT HLIF
BA-137M	5.530E-02	4.190E-02	4.875E-02	NOT IDENT.
CS-137	5.842E-02	4.426E-02	5.150E-02	NOT IDENT.
CE-139	4.175E-02	1.270E-01	1.284E-01	NOT IDENT.
BA-140	1.265E+06	1.418E+06	1.529E+06	SHORT HLIF
LA-140	-4.856E+05	4.898E+05	5.365E+05	SHORT HLIF
CE-141	-8.205E+00	2.795E+01	2.819E+01	NOT IDENT.
CE-143	1.000E+41	1.867E+41	0.000E+00	SHORT HLIF
CE-144	7.581E-03	3.674E-01	3.674E-01	NOT IDENT.
PM-144	9.004E-03	6.254E-02	6.267E-02	NOT IDENT.
PR-144	7.316E-01	5.425E+00	5.435E+00	NOT IDENT.
PM-146	-4.860E-02	4.529E-02	5.031E-02	NOT IDENT.
ND-147	1.296E+07	3.517E+07	3.565E+07	SHORT HLIF
PM-147	1.708E+02	8.259E+02	8.294E+02	NOT IDENT.
PM-149	-4.055E+40	5.102E+40	0.000E+00	SHORT HLIF
EU-150	-3.078E-03	2.875E-02	2.878E-02	FAIL ABUN
EU-152	-2.251E-02	9.158E-02	9.214E-02	NOT IDENT.
GD-153	-2.881E-02	1.927E-01	1.931E-01	NOT IDENT.
EU-154	1.033E-01	1.064E-01	1.161E-01	NOT IDENT.
EU-155	1.347E-01	1.237E-01	1.378E-01	FAIL ABUN
TB-160	-8.125E-01	1.960E+00	1.994E+00	FAIL ABUN
HO-166M	-2.912E-02	4.960E-02	5.131E-02	NOT IDENT.
TM-171	-3.054E+00	3.295E+01	3.298E+01	NOT IDENT.
HF-172	-5.277E-02	2.761E-01	2.771E-01	FAIL ABUN
LU-172	-1.452E-02	8.555E-02	8.580E-02	FAIL ABUN
LU-176	-1.481E-03	2.347E-02	2.348E-02	FAIL ABUN
HF-181	-3.218E-01	4.122E+00	4.124E+00	NOT IDENT.
TA-182	-1.921E-02	9.545E-01	9.546E-01	FAIL ABUN
RE-183	-2.253E+00	3.920E+00	4.050E+00	NOT IDENT.

RE-184	-2.091E+01	3.356E+01	3.486E+01	NOT IDENT.
W-188	-1.239E+02	1.335E+02	1.447E+02	NOT IDENT.
IR-192	-5.255E-01	4.760E-01	5.317E-01	FAIL ABUN
HG-203	-9.311E-01	2.516E+00	2.550E+00	NOT IDENT.
BI-207	-2.076E-02	4.968E-02	5.055E-02	FAIL ABUN
PB-210	3.177E+00	6.249E+00	6.411E+00	NOT IDENT.
BI-211	2.165E+00	5.227E-01	1.107E+00	FAIL ABUN
PB-211	5.463E-01	6.838E-01	7.268E-01	NOT IDENT.
BI-212	1.426E+00	1.031E+00	1.215E+00	FAIL ABUN
RN-219	1.594E-01	3.687E-01	3.756E-01	NOT IDENT.
RA-223	2.525E-01	6.155E-01	6.259E-01	FAIL ABUN
AC-227	5.033E-02	2.331E-01	2.342E-01	FAIL ABUN
TH-227	5.033E-02	2.331E-01	2.342E-01	FAIL ABUN
TH-229	-1.659E-01	4.541E-01	4.603E-01	FAIL ABUN
TH-231	2.525E-01	6.155E-01	6.259E-01	FAIL ABUN
PA-233	1.298E-02	5.757E-02	5.787E-02	FAIL ABUN
PA-234	-3.659E-02	2.651E-01	2.656E-01	NOT IDENT.
PA-234M	4.681E+00	6.681E+00	7.007E+00	FAIL ABUN
TH-234	-8.951E-01	1.658E+00	1.707E+00	FAIL ABUN
U-235	-1.495E-02	2.094E-01	2.095E-01	FAIL ABUN
NP-237	1.298E-02	5.757E-02	5.787E-02	FAIL ABUN
NP-238	1.000E+41	3.059E+41	0.000E+00	SHORT HLIF
U-238	-8.951E-01	1.658E+00	1.707E+00	FAIL ABUN
NP-239	4.169E-02	2.647E-01	2.654E-01	NOT IDENT.
PU-239	5.725E+02	6.104E+02	6.628E+02	FAIL ABUN
AM-241	1.133E-01	1.734E-01	1.807E-01	NOT IDENT.
CM-243	-7.545E-02	1.078E-01	1.130E-01	NOT IDENT.
BK-247	5.725E-02	7.384E-02	7.822E-02	FAIL ABUN
CM-247	2.614E-02	3.561E-02	3.751E-02	NOT IDENT.
CF-249	1.604E-02	4.281E-02	4.342E-02	NOT IDENT.
CF-251	-1.970E-02	1.170E-01	1.173E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	48.7462	87.09	107.2032	136.47	64.4216
45.60	68.0586	87.57	98.4812	140.51	0.0000
46.54	66.2352	88.03	86.0623	143.76	74.7101
49.72	0.0000	88.34	86.1123	144.24	71.1410
51.35	68.1366	88.47	86.1331	145.44	82.1248
51.87	71.2863	89.96	86.3730	152.43	63.3821
52.39	65.2659	1093.63	90.1777	153.25	0.0000
52.97	68.4295	91.11	0.0000	323.87	70.8574
53.44	66.4684	92.59	99.0311	156.02	0.0000
54.07	68.6258	93.35	99.1683	158.56	0.0000
57.36	0.0000	94.56	68.4899	159.00	58.9988
57.53	77.4974	94.65	68.5007	162.33	77.7589
57.98	71.3771	94.67	68.5035	162.66	0.0000
59.27	58.1129	94.87	68.5278	163.33	63.0255
59.32	58.1202	97.43	72.9554	165.86	66.9405
59.54	58.1512	98.43	68.5859	176.31	62.7602
60.96	87.5264	98.44	68.5873	176.60	0.0000
61.17	90.6978	99.53	68.7176	177.52	67.8766
62.93	78.5145	100.11	75.5524	181.07	0.0000
63.29	89.0581	102.03	74.6705	181.52	58.0889
63.58	83.8760	103.18	72.5488	184.41	63.3484
64.28	86.1129	103.37	75.9741	143.76	63.4422
66.73	89.7652	105.21	64.8352	193.51	62.2866
67.24	91.9828	105.31	63.7084	197.03	59.9562
125.81	85.7238	106.12	66.0726	198.01	60.0195
67.75	81.5029	106.47	75.2299	201.83	67.1526
69.67	80.7883	109.28	73.2876	203.43	64.6797
70.83	93.7813	111.00	67.7502	205.31	71.2887
72.81	88.4735	111.76	0.0000	210.85	56.0563
72.87	88.4848	114.06	68.0819	215.65	61.1354
74.66	95.6258	116.30	0.0000	222.11	60.6537
74.82	95.6578	116.74	67.2099	227.09	64.4847
74.97	95.6876	119.76	57.0462	227.38	63.6196
77.11	96.1134	121.12	54.8311	228.16	0.0000
78.74	85.2374	121.22	54.8397	228.18	54.8258
79.69	88.2962	121.78	58.3893	116.74	54.8258
80.12	67.3655	122.06	67.7603	235.69	72.1464
80.19	0.0000	122.92	69.0182	235.96	64.1470
80.57	67.4265	123.07	65.5233	238.63	55.3771
81.00	82.7226	265.00	67.9258	238.98	0.0000
81.07	89.9916	125.81	73.6240	240.99	55.5000
81.75	82.8455	127.23	58.0801	242.00	55.5524
83.79	97.7704	127.91	73.8515	244.70	55.6918
84.00	97.8106	129.30	63.7666	252.40	0.0000
85.43	83.4416	131.20	50.5221	252.80	45.6083
86.55	95.3570	133.02	55.4024	254.15	0.0000
86.79	95.4000	133.52	57.0264	256.23	44.4780
86.94	95.4277	136.00	60.8030	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	36.5804	355.39	0.0000	584.27	17.9180
264.80	39.3283	356.01	26.5155	595.83	0.0000
265.00	35.6762	364.49	0.0000	427.87	25.9574
268.22	50.4536	366.42	0.0000	602.52	0.0000
269.46	39.4875	372.51	32.7784	604.72	11.8732
270.03	44.1016	375.05	31.8405	607.14	14.7165
271.23	43.2268	377.52	26.9099	609.32	14.7313
273.65	0.0000	356.01	33.0289	610.33	14.7387
276.40	30.4850	388.16	33.1229	614.28	8.5184
277.37	40.6798	388.63	0.0000	618.01	15.9283
277.60	45.3114	391.69	24.1450	620.36	20.5020
278.00	42.5513	264.66	18.2142	621.93	21.6564
279.20	40.7424	401.81	22.2784	630.19	0.0000
279.54	41.6803	402.40	22.2865	631.29	15.4528
279.70	46.3175	404.85	22.3214	633.25	13.7480
280.46	40.7854	410.95	22.4078	634.78	0.0000
283.69	29.7422	413.71	18.3655	635.95	24.0881
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	46.5383	423.72	0.0000	645.85	27.6514
285.90	0.0000	427.09	28.8061	657.76	15.6357
287.50	41.0244	427.87	28.8197	657.90	0.0000
290.67	53.2833	433.94	19.6285	661.66	12.1821
293.27	0.0000	439.40	19.6927	664.57	0.0000
351.93	28.1476	453.88	31.3611	666.33	0.0000
295.96	28.1641	463.37	25.2271	666.50	0.0000
879.38	22.5786	468.07	30.0377	667.71	0.0000
299.98	39.5570	473.00	0.0000	677.62	17.5226
300.09	39.5604	475.06	22.2211	685.70	0.0000
300.13	39.5613	476.78	16.9466	695.00	0.0000
301.36	39.6006	477.60	14.8351	696.49	22.0787
302.85	38.2308	482.18	19.1224	696.51	22.0795
256.23	46.7879	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	26.5036
306.78	34.0884	497.08	17.1377	697.49	26.5054
308.46	37.9256	505.52	11.2981	702.65	17.7087
311.90	31.3726	507.63	0.0000	706.68	20.3987
316.51	45.7949	511.00	22.6626	711.68	15.9972
319.41	0.0000	514.00	22.6987	720.70	0.0000
320.08	0.0000	514.00	22.6987	721.93	0.0000
321.04	38.2943	520.40	19.5220	722.78	25.7115
323.87	24.4650	520.69	0.0000	722.91	25.7133
325.23	17.2870	522.65	0.0000	723.31	25.7177
328.76	0.0000	527.90	0.0000	724.19	20.0095
333.37	36.7162	528.26	25.0468	727.33	15.2050
333.97	36.2488	529.59	23.9748	733.00	24.3835
334.37	42.0610	529.87	0.0000	735.93	16.1554
338.28	39.7580	531.02	0.0000	333.97	14.3691
338.32	39.7588	537.26	0.0000	739.50	0.0000
311.90	39.8214	546.56	0.0000	747.24	19.8348
340.48	39.8214	552.55	19.8464	748.06	18.0371
340.55	0.0000	563.25	18.8442	752.31	11.7440
344.28	26.2958	569.33	25.5708	753.82	0.0000
345.93	30.2274	946.00	25.5736	756.73	9.9543
351.06	28.3805	569.70	23.3516	756.80	9.9547
351.93	28.3982	583.19	17.9089	884.68	13.6125

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	29.9687	1274.44	3.9359	1620.50	3.6908
766.42	21.8005	1001.03	10.8399	1621.92	0.0000
766.84	19.9872	1002.74	18.9305	1678.03	0.0000
772.60	0.0000	1004.73	17.3637	1690.97	2.8085
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	2.8500
778.90	13.6913	1028.54	0.0000	1063.66	12.3633
783.70	0.0000	1037.84	13.9530	1771.35	2.8538
785.37	11.8947	1038.76	0.0000	1791.20	0.0000
792.07	14.6772	631.29	4.9966	1808.65	3.8324
794.95	17.6314	1048.07	0.0000	1810.72	0.0000
795.86	15.6169	1049.04	13.0008	1836.06	4.8157
810.06	12.0058	1050.41	14.0068		
810.29	10.1594	1063.66	14.0624		
344.28	10.1601	1077.00	0.0000		
810.76	9.2374	1077.34	9.2204		
815.77	0.0000	1085.87	12.1326		
1048.07	0.0000	1093.63	13.1730		
832.01	16.3851	1099.45	12.1802		
834.85	11.9289	1112.07	17.9298		
835.71	14.9155	1112.84	22.8252		
836.80	0.0000	1115.54	21.2113		
846.75	0.0000	1120.29	15.3168		
846.77	10.2954	1120.55	15.3177		
856.80	0.0000	1221.41	14.7085		
860.56	9.4055	1129.67	10.2386		
871.09	13.2164	1131.51	0.0000		
873.19	18.8947	1147.95	0.0000		
875.33	0.0000	1173.23	10.3638		
879.38	16.0947	1177.95	13.2828		
880.51	11.3654	1189.05	9.3675		
883.24	12.3244	1204.77	15.6793		
884.68	11.3818	1221.41	12.5991		
889.28	16.1502	1231.02	15.7892		
894.76	18.0839	1235.36	0.0000		
898.04	11.4342	1238.28	8.4370		
900.72	14.3060	1260.41	0.0000		
903.28	17.4548	1271.87	9.5746		
911.20	14.3568	1274.44	4.2583		
912.08	14.3610	1274.54	4.2583		
923.98	0.0000	1291.59	9.6229		
926.50	8.6583	1298.22	0.0000		
929.11	14.4429	1312.11	0.0000		
937.49	13.5176	1332.49	9.7224		
944.13	0.0000	1362.66	0.0000		
946.00	11.6191	1365.19	5.4446		
949.00	12.5997	1368.63	0.0000		
667.71	0.0000	1384.29	6.5636		
962.31	11.6807	1408.01	7.7007		
964.08	15.5830	1457.56	0.0000		
966.17	20.7917	1460.82	8.9097		
911.20	16.7228	1489.16	2.2418		
968.97	16.7228	1505.03	2.2498		
983.53	0.0000	1584.12	14.6500		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:09:27.24

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235028.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM09.CNF;335
Background date    : 2-OCT-2016 11:00:29.
Sample date       : 23-NOV-2015 14:50:00 Acquisition date : 3-OCT-2016 09:08:29.
Sample ID        : G405235028 Sample quantity : 1.25516E+02 GRAM
Detector name    : GAM09 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.50 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596249 Detector SN# :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	5	63.45*	46	60	1.18	126.57	124	13	1.26E-02	31.4	1.14E+00
2	5	66.17*	22	106	1.34	132.01	124	13	6.21E-03	85.3	
3	2	75.00	99	123	1.03	149.68	146	14	2.74E-02	19.9	2.89E+00
4	2	77.13	148	96	0.90	153.94	146	14	4.11E-02	12.9	
5	0	87.01	36	162	1.27	173.71	171	7	9.87E-03	61.6	
6	0	92.87*	71	126	0.94	185.45	182	8	1.96E-02	32.1	
7	0	106.39	23	48	1.36	212.49	210	5	6.35E-03	51.1	
8	0	119.81	17	78	1.33	239.35	236	7	4.81E-03	87.5	
9	0	129.51	25	115	0.56	258.74	254	10	6.94E-03	82.7	
10	0	143.90*	28	86	1.04	287.53	284	8	7.69E-03	62.4	
11	0	186.28*	52	156	1.07	372.33	367	11	1.46E-02	50.5	
12	0	209.07	76	95	1.25	417.93	412	13	2.10E-02	28.8	
13	2	238.72*	400	67	1.01	477.25	472	16	1.11E-01	5.9	2.09E+00
14	2	241.86	95	55	1.33	483.54	472	16	2.64E-02	18.9	
15	0	252.87	17	52	1.06	505.57	501	8	4.69E-03	77.9	
16	0	271.22	26	77	3.19	542.28	536	11	7.35E-03	67.1	
17	0	295.22*	132	44	1.06	590.30	585	11	3.66E-02	13.2	
18	2	300.05	43	40	1.41	599.98	596	14	1.19E-02	30.7	1.09E+00
19	2	301.81	18	44	1.41	603.49	596	14	4.87E-03	75.5	
20	0	310.57	20	13	1.32	621.03	619	5	5.64E-03	34.9	
21	0	338.61*	61	78	1.09	677.12	672	12	1.68E-02	31.8	
22	2	351.87*	230	25	1.08	703.66	698	15	6.39E-02	7.4	4.86E-01
23	2	354.59	25	15	1.47	709.11	698	15	6.92E-03	37.7	
24	0	438.55	10	14	0.72	877.10	874	7	2.78E-03	69.6	
25	0	463.64	25	46	1.00	927.29	921	12	7.02E-03	56.8	
26	0	478.15*	14	18	0.63	956.32	951	10	3.99E-03	62.1	
27	8	510.76*	23	30	2.90	1021.58	1015	23	6.50E-03	67.7	1.65E+00
28	8	516.91	17	16	1.99	1033.88	1015	23	4.60E-03	49.8	
29	0	528.48	8	13	1.60	1057.04	1052	7	2.28E-03	82.4	
30	0	558.41*	14	11	1.80	1116.93	1114	7	3.95E-03	51.0	
31	0	564.80	37	33	8.03	1129.72	1121	21	1.03E-02	41.5	
32	0	578.37	11	12	0.66	1156.86	1150	10	2.93E-03	69.9	
33	0	583.01*	119	14	1.62	1166.15	1160	11	3.32E-02	11.2	
34	0	609.05*	182	13	1.22	1218.25	1211	13	5.05E-02	8.7	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	613.75	7	14	0.89	1227.64	1223	6	2.06E-03	86.5	
36	0	650.11	10	14	1.37	1300.41	1295	8	2.82E-03	70.9	
37	0	661.42	40	29	1.10	1323.03	1318	11	1.11E-02	30.2	
38	0	703.29	18	14	1.79	1406.82	1401	10	5.05E-03	45.8	
39	0	727.30	41	15	1.48	1454.86	1449	13	1.15E-02	25.1	
40	0	763.48	10	7	0.57	1527.25	1524	6	2.71E-03	54.4	
41	0	772.21	13	18	0.52	1544.73	1538	10	3.67E-03	68.0	
42	0	786.69	27	7	3.56	1573.70	1568	13	7.36E-03	27.8	
43	0	794.71	19	20	3.02	1589.74	1585	11	5.32E-03	50.1	
44	0	906.46	10	8	0.54	1813.34	1806	10	2.83E-03	59.5	
45	0	910.92*	61	10	1.51	1822.27	1818	10	1.70E-02	16.7	
46	0	928.71	11	10	3.73	1857.87	1850	13	3.15E-03	64.0	
47	0	933.91	22	5	1.90	1868.28	1863	10	6.17E-03	28.3	
48	0	969.07	60	8	1.31	1938.63	1933	13	1.67E-02	16.6	
49	0	1003.12	15	19	2.89	2006.77	2000	13	4.04E-03	71.4	
50	0	1078.97*	15	6	3.30	2158.55	2152	11	4.09E-03	41.6	
51	0	1097.54	7	6	0.75	2195.69	2191	8	2.02E-03	68.8	
52	0	1119.96	39	6	1.88	2240.55	2235	12	1.08E-02	20.4	
53	0	1124.78	10	4	0.83	2250.21	2247	7	2.64E-03	46.0	
54	0	1138.08	4	16	0.45	2276.82	2271	12	1.24E-03	180.2	
55	0	1156.29	13	20	3.87	2313.25	2302	16	3.74E-03	79.0	
56	0	1180.73	10	12	0.61	2362.16	2356	9	2.66E-03	75.5	
57	0	1378.46	7	6	1.23	2757.82	2752	8	1.92E-03	72.2	
58	0	1460.16*	313	0	1.95	2921.32	2914	15	8.69E-02	5.7	
59	0	1587.68	6	5	0.87	3176.50	3169	10	1.67E-03	80.8	
60	0	1763.90*	30	0	2.05	3529.12	3521	15	8.22E-03	19.8	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235028.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 23-NOV-2015 14:50:00 Acquisition date : 3-OCT-2016 09:08:29
 Sample ID : G405235028 Sample quantity : 125.52 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA9 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.50 0.0%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	87.09	EU-155	86.55
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	242.00	RA-224	240.99
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
BE-7	477.60	10.44*	2.792E+00	2.997E-01	1.808E+01	124.28	OK
K-40	1460.82	10.66*	1.146E+00	1.455E+01	1.455E+01	11.45	OK
CD-109	88.03	3.70*	4.842E+00	3.338E-01	5.357E-01	497.78	OK
SN-126	64.28	9.60	2.286E+00	1.416E+00	1.416E+00	62.78	OK
	86.94	8.90	4.842E+00	1.388E-01	1.388E-01	497.78	OK
	87.57	37.00*	4.842E+00	3.338E-02	3.339E-02	497.78	OK
BA-137M	661.66	89.90*	2.157E+00	1.226E-01	1.250E-01	60.39	OK
CS-137	661.66	85.10*	2.157E+00	1.295E-01	1.321E-01	60.39	OK
PM-147	121.22	0.00*	6.261E+00	6.398E+02	8.035E+02	175.07	OK
EU-155	86.55	30.70	4.842E+00	4.024E-02	4.563E-02	497.78	OK
	105.31	21.10*	5.939E+00	1.210E-01	1.373E-01	102.30	OK
TL-208	277.37	6.60	4.352E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.382E+00	3.546E-01	3.546E-01	22.39	OK
	860.56	12.50	1.758E+00	----- Line	Not Found	-----	Absent
BI-211	72.87	1.23	3.448E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	3.589E+00	9.525E-02	9.525E-02	958.15	OK
BI-212	727.33	6.67*	2.003E+00	1.843E+00	1.843E+00	50.28	OK
	785.37	1.10	1.885E+00	7.548E+00	7.548E+00	55.52	OK
	1620.50	1.47	1.045E+00	----- Line	Not Found	-----	Absent
PB-212	74.82	10.28	3.689E+00	1.148E+00	1.148E+00	62.52	OK
	77.11	17.10	3.920E+00	1.490E+00	1.490E+00	25.72	OK
	238.63	43.60*	4.881E+00	1.192E+00	1.192E+00	11.89	OK
	300.09	3.30	4.087E+00	1.991E+00	1.991E+00	61.31	OK
BI-214	609.32	45.49*	2.302E+00	1.041E+00	1.041E+00	17.44	OK
	1120.29	14.92	1.429E+00	1.057E+00	1.057E+00	40.70	OK
	1764.49	15.30	9.659E-01	1.123E+00	1.124E+00	39.59	OK
PB-214	74.82	5.80	3.669E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.920E+00	2.627E+00	2.628E+00	25.72	OK
	87.09	3.41	4.849E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.832E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.141E+00	1.082E+00	1.083E+00	26.47	OK
	351.93	35.60*	3.588E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	2.302E+00	1.041E+00	1.041E+00	17.44	OK
	1120.29	14.92	1.429E+00	1.057E+00	1.057E+00	40.70	OK
	1764.49	15.30	9.659E-01	1.123E+00	1.124E+00	39.59	OK
RA-224	240.99	4.10*	4.834E+00	1.125E+00	1.125E+00	111.80	OK
RA-226	609.32	45.49*	2.302E+00	1.041E+00	1.041E+00	17.44	OK
	1120.29	14.92	1.429E+00	1.057E+00	1.057E+00	40.70	OK
	1764.49	15.30	9.659E-01	1.123E+00	1.124E+00	39.59	OK
AC-228	105.21	1.10	5.939E+00	2.322E+00	2.322E+00	102.30	OK
	338.32	11.27	3.704E+00	9.016E-01	9.016E-01	63.62	OK
	794.95	4.25	1.870E+00	1.422E+00	1.422E+00	100.12	OK
	835.71	1.61	1.799E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.682E+00	8.265E-01	8.265E-01	33.32	OK
	968.97	15.80	1.603E+00	1.383E+00	1.383E+00	33.25	OK
RA-228	105.21	1.10	5.939E+00	2.322E+00	2.322E+00	102.30	OK
	338.32	11.27	3.704E+00	9.016E-01	9.016E-01	63.62	OK
	794.95	4.25	1.870E+00	1.422E+00	1.422E+00	100.12	OK
	835.71	1.61	1.799E+00	----- Line	Not Found	-----	Absent

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-228	911.20	25.80*	1.682E+00	8.265E-01	8.265E-01	33.32	OK
	968.97	15.80	1.603E+00	1.383E+00	1.383E+00	33.25	OK
	74.82	10.28	3.689E+00	1.148E+00	1.148E+00	62.52	OK
	77.11	17.10	3.920E+00	1.490E+00	1.490E+00	25.72	OK
TH-230	238.63	43.60*	4.881E+00	1.192E+00	1.192E+00	11.89	OK
	300.09	3.30	4.087E+00	1.991E+00	1.991E+00	61.31	OK
	609.32	45.49*	2.302E+00	1.041E+00	1.041E+00	17.44	OK
	1120.29	14.92	1.429E+00	1.057E+00	1.057E+00	40.70	OK
PA-231	1764.49	15.30	9.659E-01	1.123E+00	1.123E+00	39.59	OK
	283.69	1.70	4.275E+00	-----	Line Not Found	-----	Absent
TH-232	301.36	5.35*	4.068E+00	5.038E-01	5.038E-01	150.97	OK
	105.21	1.10	5.939E+00	2.322E+00	2.322E+00	102.30	OK
	338.32	11.27	3.704E+00	9.016E-01	9.016E-01	63.62	OK
PA-233	835.71	1.61	1.799E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.682E+00	8.265E-01	8.265E-01	33.32	OK
	968.97	15.80	1.603E+00	1.383E+00	1.383E+00	33.25	OK
	300.13	6.63	4.087E+00	9.909E-01	9.909E-01	61.31	OK
	311.90	38.50*	3.975E+00	8.293E-02	8.293E-02	69.73	OK
TH-234	340.48	4.45	3.687E+00	-----	Line Not Found	-----	Absent
	63.29	3.70*	2.286E+00	3.673E+00	3.673E+00	62.78	OK
U-234	92.59	4.23	5.269E+00	2.122E+00	2.122E+00	64.22	OK
	609.32	45.49*	2.302E+00	1.041E+00	1.041E+00	17.44	OK
	1120.29	14.92	1.429E+00	1.057E+00	1.057E+00	40.70	OK
U-235	1764.49	15.30	9.659E-01	1.123E+00	1.123E+00	39.59	OK
	89.96	3.47	5.068E+00	-----	Line Not Found	-----	Absent
	93.35	5.60	5.269E+00	1.603E+00	1.603E+00	64.22	OK
	143.76	10.96*	6.310E+00	2.613E-01	2.613E-01	124.72	OK
	163.33	5.08	6.096E+00	-----	Line Not Found	-----	Absent
U-238	185.72	57.20	5.735E+00	1.027E-01	1.027E-01	101.07	OK
	205.31	5.01	5.415E+00	-----	Line Not Found	-----	Absent
	63.29	3.70*	2.286E+00	3.673E+00	3.673E+00	62.78	OK
AM-243	92.59	4.23	5.269E+00	2.122E+00	2.122E+00	64.22	OK
	43.53	5.90	1.969E-01	-----	Line Not Found	-----	Absent
ANH-511	74.66	67.20*	3.689E+00	1.756E-01	1.757E-01	62.52	OK
	511.00	100.00*	2.647E+00	5.361E-02	5.361E-02	135.49	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235028.CNF;1
* Acquisition date   : 3-OCT-2016 09:08:29 Sensitivity      : 3.000
* Detector ID        : GAM09 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.50 Half life ratio : *****
* Sample date        : 23-NOV-2015 14:50:00 Analyst initials: MXR1
* Sample ID          : G405235028 Sample Quantity : 1.2552E+02 GRAM
* Batch Number       : 1596249 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 3-JUN-2016 07:32:22 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM09 CAN.CNF;16
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
BE-7	1.808E+01	2.202E+01	2.537E+01
K-40	1.455E+01	1.633E+00	5.780E-01
CD-109	5.357E-01	2.613E+00	2.642E+00
SN-126	3.339E-02	1.629E-01	1.567E-01
BA-137M	1.250E-01	7.400E-02	6.889E-02
CS-137	1.321E-01	7.818E-02	7.278E-02
PM-147	8.035E+02	1.379E+03	1.471E+03
EU-155	1.373E-01	1.376E-01	1.936E-01
TL-208	3.546E-01	7.780E-02	5.179E-02
BI-211	9.525E-02	8.943E-01	2.961E-01
BI-212	1.843E+00	9.080E-01	8.217E-01
PB-212	1.192E+00	1.388E-01	1.019E-01
BI-214	1.041E+00	1.780E-01	1.173E-01
PB-214	1.117E+00	1.628E-01	3.643E-01
RN-222	1.041E+00	1.780E-01	1.173E-01
RA-224	1.125E+00	1.232E+00	1.092E+00
RA-226	1.041E+00	1.780E-01	1.173E-01
AC-228	8.265E-01	2.699E-01	2.702E-01
RA-228	8.265E-01	2.699E-01	2.702E-01
TH-228	1.192E+00	1.388E-01	1.019E-01
TH-230	1.041E+00	1.779E-01	1.173E-01
PA-231	5.038E-01	7.453E-01	7.462E-01
TH-232	8.265E-01	2.699E-01	2.702E-01
PA-233	8.293E-02	5.667E-02	9.811E-02
TH-234	3.673E+00	2.260E+00	2.660E+00
U-234	1.041E+00	1.779E-01	1.173E-01
U-235	2.613E-01	3.194E-01	3.047E-01
U-238	3.673E+00	2.260E+00	2.660E+00
AM-243	1.757E-01	1.076E-01	1.018E-01
ANH-511	5.361E-02	7.119E-02	4.918E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)
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NA-22	1.756E-02	4.724E-02	1.033E-01	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	-2.615E-02	3.992E-02	6.817E-02	NOT IDENT.
SC-46	-1.364E-01	3.834E-01	7.040E-01	FAIL ABUN
V-48	0.000E+00	2.257E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	6.119E+02	0.000E+00	SHORT HLIF
MN-54	3.315E-02	6.476E-02	1.373E-01	NOT IDENT.
CO-56	-5.328E-02	5.071E-01	9.791E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-1.256E-02	4.967E-02	8.579E-02	NOT IDENT.
CO-58	-1.170E-01	6.807E-01	1.291E+00	NOT IDENT.
FE-59	1.602E+00	7.670E+00	1.466E+01	NOT IDENT.
CO-60	-2.154E-03	3.686E-02	7.673E-02	NOT IDENT.
ZN-65	9.149E-02	1.921E-01	3.738E-01	NOT IDENT.
GE-68	4.253E-01	2.527E+00	5.191E+00	NOT IDENT.
AS-73	4.979E+00	1.469E+01	3.036E+01	NOT IDENT.
AS-74	0.000E+00	1.023E+04	0.000E+00	SHORT HLIF
SE-75	-7.611E-02	2.177E-01	3.834E-01	FAIL ABUN
BR-77	0.000E+00	1.945E+39	0.000E+00	SHORT HLIF
SR-82	0.000E+00	1.280E+03	0.000E+00	SHORT HLIF
RB-83	-3.059E-02	6.694E-01	1.212E+00	FAIL ABUN
KR-85	6.317E+00	7.064E+00	1.526E+01	NOT IDENT.
SR-85	7.776E-01	8.727E-01	1.885E+00	NOT IDENT.
RB-86	0.000E+00	5.587E+04	0.000E+00	SHORT HLIF
Y-88	1.465E-01	2.634E-01	6.554E-01	NOT IDENT.
Y-91	-5.891E+02	7.282E+02	1.267E+03	NOT IDENT.
NB-94	5.270E-02	4.734E-02	7.625E-02	FAIL ABUN
NB-95	-1.152E+00	1.662E+00	2.151E+00	NOT IDENT.
NB-95M	9.905E-01	3.326E+00	5.763E+00	NOT IDENT.
ZR-95	-1.217E+00	1.834E+00	3.156E+00	NOT IDENT.
NB-97	0.000E+00	1.486E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.540E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	8.116E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	4.562E-03	3.112E-02	5.643E-02	NOT IDENT.
RH-102	-4.028E-03	5.142E-02	1.020E-01	NOT IDENT.
RU-103	-7.032E+00	7.433E+00	1.280E+01	FAIL ABUN
RH-106	1.548E-01	5.407E-01	1.101E+00	NOT IDENT.
RU-106	1.548E-01	5.407E-01	1.101E+00	NOT IDENT.
AG-108M	1.214E-02	2.629E-02	5.542E-02	FAIL ABUN
AG-110M	5.191E-02	9.494E-02	2.088E-01	FAIL ABUN
SN-113	5.300E-02	2.431E-01	4.966E-01	NOT IDENT.
CD-115	0.000E+00	1.614E+41	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	2.047E+05	0.000E+00	SHORT HLIF
TE-123M	-8.001E-02	1.355E-01	2.405E-01	NOT IDENT.
SB-124	-1.427E+00	2.073E+00	3.444E+00	NOT IDENT.
SB-125	1.741E-02	1.128E-01	2.259E-01	FAIL ABUN
TE-125M	7.959E+01	3.427E+02	6.264E+02	NOT IDENT.
I-126	0.000E+00	2.574E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	2.566E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	3.398E+23	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.842E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	9.253E+27	0.000E+00	SHORT HLIF
BA-133	0.000E+00	5.448E-02	6.917E-02	FAIL ABUN
I-133	0.000E+00	1.614E+41	0.000E+00	SHORT HLIF
CS-134	9.440E-02	9.262E-02	1.315E-01	FAIL ABUN
CS-135	1.502E-02	1.440E-01	2.481E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	7.482E+05	0.000E+00	SHORT HLIF
CE-139	-1.851E-02	1.115E-01	2.061E-01	NOT IDENT.
BA-140	0.000E+00	2.611E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	8.833E+05	0.000E+00	SHORT HLIF
CE-141	1.848E+01	3.181E+01	5.958E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	-2.757E-01	3.593E-01	5.769E-01	NOT IDENT.
PM-144	4.008E-03	6.903E-02	1.327E-01	FAIL ABUN
PR-144	3.695E-01	6.046E+00	1.162E+01	NOT IDENT.
PM-146	6.640E-03	3.953E-02	8.110E-02	NOT IDENT.
ND-147	0.000E+00	9.701E+07	0.000E+00	SHORT HLIF
PM-149	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
EU-150	2.547E-02	2.832E-02	5.375E-02	FAIL ABUN
EU-152	-1.123E-03	9.637E-02	1.745E-01	NOT IDENT.
GD-153	-1.396E-01	1.842E-01	3.311E-01	NOT IDENT.
EU-154	4.025E-02	1.144E-01	2.496E-01	NOT IDENT.
TB-160	-1.721E-01	2.134E+00	4.117E+00	FAIL ABUN
HO-166M	-6.627E-06	5.425E-02	1.067E-01	NOT IDENT.
TM-171	-3.799E+01	3.069E+01	5.512E+01	FAIL ABUN

HF-172	-9.466E-02	2.221E-01	3.752E-01	FAIL ABUN
LU-172	8.053E-03	1.025E-01	1.754E-01	FAIL ABUN
LU-176	1.258E-03	2.585E-02	4.393E-02	FAIL ABUN
HF-181	-2.856E+00	5.271E+00	8.511E+00	NOT IDENT.
TA-182	-2.635E-01	1.203E+00	2.305E+00	FAIL ABUN
RE-183	-1.317E+00	4.465E+00	8.714E+00	FAIL ABUN
RE-184	-1.442E+01	4.071E+01	6.438E+01	NOT IDENT.
W-188	-4.982E+01	1.307E+02	2.071E+02	FAIL ABUN
IR-192	2.345E-01	5.058E-01	9.876E-01	FAIL ABUN
HG-203	-1.792E+00	3.411E+00	5.806E+00	NOT IDENT.
BI-207	-1.288E-02	5.720E-02	1.054E-01	FAIL ABUN
PB-210	4.970E+00	7.193E+00	1.502E+01	NOT IDENT.
PB-211	1.667E-01	5.689E-01	1.190E+00	NOT IDENT.
RN-219	-9.467E-02	3.489E-01	6.765E-01	FAIL ABUN
RA-223	-1.686E-01	6.674E-01	1.164E+00	FAIL ABUN
AC-227	-1.360E-01	2.527E-01	3.935E-01	FAIL ABUN
TH-227	-1.360E-01	2.527E-01	3.935E-01	FAIL ABUN
TH-229	3.335E-02	4.608E-01	8.606E-01	FAIL ABUN
TH-231	-1.686E-01	6.674E-01	1.164E+00	FAIL ABUN
PA-234	1.703E-01	2.931E-01	6.240E-01	NOT IDENT.
PA-234M	3.661E-01	6.507E+00	1.145E+01	NOT IDENT.
NP-237	8.293E-02	5.667E-02	1.027E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-1.455E-01	2.759E-01	4.615E-01	FAIL ABUN
PU-239	4.101E+02	6.648E+02	6.211E+02	FAIL ABUN
AM-241	1.354E-02	1.698E-01	3.410E-01	NOT IDENT.
CM-243	-5.031E-02	1.030E-01	1.751E-01	NOT IDENT.
BK-247	1.326E-02	6.734E-02	1.276E-01	FAIL ABUN
CM-247	-2.270E-02	3.109E-02	5.675E-02	NOT IDENT.
CF-249	-1.524E-02	4.413E-02	7.493E-02	FAIL ABUN
CF-251	7.510E-02	1.124E-01	2.225E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
BE-7	477.60	15	10.44*	2.792E+00	2.997E-01	1.808E+01	124.28
K-40	1460.82	297	10.66*	1.146E+00	1.455E+01	1.455E+01	11.45
CD-109	88.03	40	3.70*	4.842E+00	1.331E+00	2.136E+00	123.24
SN-126	64.28	52	9.60	2.286E+00	1.416E+00	1.416E+00	62.78
	86.94	40	8.90	4.842E+00	5.535E-01	5.535E-01	123.24
	87.57	40	37.00*	4.842E+00	1.331E-01	1.331E-01	123.24
BA-137M	661.66	40	89.90*	2.157E+00	1.226E-01	1.250E-01	60.39
CS-137	661.66	40	85.10*	2.157E+00	1.295E-01	1.321E-01	60.39
PM-147	121.22	19	0.00*	6.261E+00	6.398E+02	8.035E+02	175.07
EU-155	86.55	40	30.70	4.842E+00	1.605E-01	1.820E-01	123.24
	105.31	25	21.10*	5.939E+00	1.210E-01	1.373E-01	102.30
TL-208	277.37	-----	6.60	4.352E+00	-----	Line Not Found	-----
	583.19	120	85.00*	2.382E+00	3.546E-01	3.546E-01	22.39
	860.56	-----	12.50	1.758E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.448E+00	-----	Line Not Found	-----
	351.06	239	12.92*	3.589E+00	3.077E+00	3.077E+00	14.87
BI-212	727.33	41	6.67*	2.003E+00	1.843E+00	1.843E+00	50.28
	785.37	26	1.10	1.885E+00	7.548E+00	7.548E+00	55.52
	1620.50	-----	1.47	1.045E+00	-----	Line Not Found	-----
PB-212	74.82	112	10.28	3.689E+00	1.759E+00	1.759E+00	39.77
	77.11	167	17.10	3.920E+00	1.490E+00	1.490E+00	25.72
	238.63	424	43.60*	4.881E+00	1.192E+00	1.192E+00	11.89
	300.09	45	3.30	4.087E+00	1.991E+00	1.991E+00	61.31
BI-214	609.32	182	45.49*	2.302E+00	1.041E+00	1.041E+00	17.44
	1120.29	38	14.92	1.429E+00	1.057E+00	1.057E+00	40.70
	1764.49	28	15.30	9.659E-01	1.123E+00	1.124E+00	39.59
PB-214	74.82	112	5.80	3.689E+00	3.117E+00	3.119E+00	39.77
	77.11	167	9.70	3.920E+00	2.627E+00	2.628E+00	25.72
	87.09	40	3.41	4.842E+00	1.445E+00	1.445E+00	123.24
	242.00	101	7.25	4.834E+00	1.718E+00	1.719E+00	37.88
	295.22	138	18.42	4.141E+00	1.082E+00	1.083E+00	26.47
	351.93	239	35.60*	3.589E+00	1.117E+00	1.117E+00	14.87
RN-222	609.32	182	45.49*	2.302E+00	1.041E+00	1.041E+00	17.44
	1120.29	38	14.92	1.429E+00	1.057E+00	1.057E+00	40.70
	1764.49	28	15.30	9.659E-01	1.123E+00	1.124E+00	39.59
RA-224	240.99	101	4.10*	4.834E+00	3.039E+00	3.039E+00	37.88
RA-226	609.32	182	45.49*	2.302E+00	1.041E+00	1.041E+00	17.44
	1120.29	38	14.92	1.429E+00	1.057E+00	1.057E+00	40.70
	1764.49	28	15.30	9.659E-01	1.123E+00	1.124E+00	39.59
AC-228	105.21	25	1.10	5.939E+00	2.322E+00	2.322E+00	102.30
	338.32	63	11.27	3.704E+00	9.016E-01	9.016E-01	63.62
	794.95	19	4.25	1.870E+00	1.422E+00	1.422E+00	100.12
	835.71	-----	1.61	1.799E+00	-----	Line Not Found	-----
	911.20	60	25.80*	1.682E+00	8.265E-01	8.265E-01	33.32
	968.97	59	15.80	1.603E+00	1.383E+00	1.383E+00	33.25
RA-228	105.21	25	1.10	5.939E+00	2.322E+00	2.322E+00	102.30
	338.32	63	11.27	3.704E+00	9.016E-01	9.016E-01	63.62

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	794.95	19	4.25	1.870E+00	1.422E+00	1.422E+00	100.12
	835.71	-----	1.61	1.799E+00	-----	Line Not Found	-----
	911.20	60	25.80*	1.682E+00	8.265E-01	8.265E-01	33.32
	968.97	59	15.80	1.603E+00	1.383E+00	1.383E+00	33.25
TH-228	74.82	112	10.28	3.689E+00	1.759E+00	1.759E+00	39.77
	77.11	167	17.10	3.920E+00	1.490E+00	1.490E+00	25.72
	238.63	424	43.60*	4.881E+00	1.192E+00	1.192E+00	11.89
	300.09	45	3.30	4.087E+00	1.991E+00	1.991E+00	61.31
TH-230	609.32	182	45.49*	2.302E+00	1.041E+00	1.041E+00	17.44
	1120.29	38	14.92	1.429E+00	1.057E+00	1.057E+00	40.70
	1764.49	28	15.30	9.659E-01	1.123E+00	1.123E+00	39.59
PA-231	283.69	-----	1.70	4.275E+00	-----	Line Not Found	-----
	301.36	18	5.35*	4.068E+00	5.038E-01	5.038E-01	150.97
TH-232	105.21	25	1.10	5.939E+00	2.322E+00	2.322E+00	102.30
	338.32	63	11.27	3.704E+00	9.016E-01	9.016E-01	63.62
	835.71	-----	1.61	1.799E+00	-----	Line Not Found	-----
	911.20	60	25.80*	1.682E+00	8.265E-01	8.265E-01	33.32
	968.97	59	15.80	1.603E+00	1.383E+00	1.383E+00	33.25
PA-233	300.13	45	6.63	4.087E+00	9.909E-01	9.909E-01	61.31
	311.90	21	38.50*	3.975E+00	8.293E-02	8.293E-02	69.73
	340.48	-----	4.45	3.687E+00	-----	Line Not Found	-----
TH-234	63.29	52	3.70*	2.286E+00	3.673E+00	3.673E+00	62.78
	92.59	79	4.23	5.269E+00	2.122E+00	2.122E+00	64.22
U-234	609.32	182	45.49*	2.302E+00	1.041E+00	1.041E+00	17.44
	1120.29	38	14.92	1.429E+00	1.057E+00	1.057E+00	40.70
	1764.49	28	15.30	9.659E-01	1.123E+00	1.123E+00	39.59
U-235	89.96	-----	3.47	5.068E+00	-----	Line Not Found	-----
	93.35	79	5.60	5.269E+00	1.603E+00	1.603E+00	64.22
	143.76	30	10.96*	6.310E+00	2.613E-01	2.613E-01	124.72
	163.33	-----	5.08	6.096E+00	-----	Line Not Found	-----
	185.72	56	57.20	5.735E+00	1.027E-01	1.027E-01	101.07
	205.31	-----	5.01	5.415E+00	-----	Line Not Found	-----
U-238	63.29	52	3.70*	2.286E+00	3.673E+00	3.673E+00	62.78
	92.59	79	4.23	5.269E+00	2.122E+00	2.122E+00	64.22
AM-243	43.53	-----	5.90	1.969E-01	-----	Line Not Found	-----
	74.66	112	67.20*	3.689E+00	2.691E-01	2.691E-01	39.77
ANH-511	511.00	24	100.00*	2.647E+00	5.361E-02	5.361E-02	135.49

Flag: "*" = Keyline

Total number of lines in spectrum 60
Number of unidentified lines 16
Number of lines tentatively identified by NID 44 73.33%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BE-7	53.22D	60.3	2.997E-01	1.808E+01	2.247E+01	124.28	
K-40	1.25E+09Y	1.00	1.455E+01	1.455E+01	0.167E+01	11.45	
CD-109	461.40D	1.60	1.331E+00	2.136E+00	2.633E+00	123.24	
SN-126	2.30E+05Y	1.00	1.331E-01	1.331E-01	1.641E-01	123.24	
BA-137M	30.08Y	1.02	1.226E-01	1.250E-01	0.755E-01	60.39	
CS-137	30.08Y	1.02	1.295E-01	1.321E-01	0.798E-01	60.39	
PM-147	2.62Y	1.26	6.398E+02	8.035E+02	14.07E+02	175.07	
EU-155	4.75Y	1.13	1.210E-01	1.373E-01	1.404E-01	102.30	
TL-208	1.41E+10Y	1.00	3.546E-01	3.546E-01	0.794E-01	22.39	
BI-211	7.04E+08Y	1.00	3.077E+00	3.077E+00	0.458E+00	14.87	
BI-212	1.41E+10Y	1.00	1.843E+00	1.843E+00	0.927E+00	50.28	
PB-212	1.41E+10Y	1.00	1.192E+00	1.192E+00	0.142E+00	11.89	
BI-214	1600.00Y	1.00	1.041E+00	1.041E+00	0.182E+00	17.44	
PB-214	1600.00Y	1.00	1.117E+00	1.117E+00	0.166E+00	14.87	
RN-222	1600.00Y	1.00	1.041E+00	1.041E+00	0.182E+00	17.44	
RA-224	1.41E+10Y	1.00	3.039E+00	3.039E+00	1.151E+00	37.88	
RA-226	1600.00Y	1.00	1.041E+00	1.041E+00	0.182E+00	17.44	
AC-228	1.41E+10Y	1.00	8.265E-01	8.265E-01	2.754E-01	33.32	
RA-228	1.41E+10Y	1.00	8.265E-01	8.265E-01	2.754E-01	33.32	
TH-228	1.41E+10Y	1.00	1.192E+00	1.192E+00	0.142E+00	11.89	
TH-230	7.54E+04Y	1.00	1.041E+00	1.041E+00	0.182E+00	17.44	
PA-231	7.04E+08Y	1.00	5.038E-01	5.038E-01	7.605E-01	150.97	
TH-232	1.41E+10Y	1.00	8.265E-01	8.265E-01	2.754E-01	33.32	
PA-233	2.14E+06Y	1.00	8.293E-02	8.293E-02	5.783E-02	69.73	
TH-234	4.47E+09Y	1.00	3.673E+00	3.673E+00	2.306E+00	62.78	
U-234	2.45E+05Y	1.00	1.041E+00	1.041E+00	0.182E+00	17.44	
U-235	7.04E+08Y	1.00	2.613E-01	2.613E-01	3.259E-01	124.72	
U-238	4.47E+09Y	1.00	3.673E+00	3.673E+00	2.306E+00	62.78	
AM-243	7370.00Y	1.00	2.691E-01	2.691E-01	1.070E-01	39.77	
ANH-511	1.00E+09Y	1.00	5.361E-02	5.361E-02	7.264E-02	135.49	

Total Activity : 6.845E+02 8.668E+02

Grand Total Activity : 6.845E+02 8.668E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	66.17	25	121	1.34	132.01	124	13	6.21E-03	****	2.63E+00	T
0	129.51	27	126	0.56	258.74	254	10	6.94E-03	****	6.34E+00	T
0	209.07	81	102	1.25	417.93	412	13	2.10E-02	57.7	5.35E+00	
0	252.87	18	55	1.06	505.57	501	8	4.69E-03	****	4.68E+00	T
0	271.22	28	81	3.19	542.28	536	11	7.35E-03	****	4.43E+00	T
2	354.59	26	16	1.47	709.11	698	15	6.92E-03	75.3	3.57E+00	T
0	438.55	10	14	0.72	877.10	874	7	2.78E-03	****	3.00E+00	T
0	463.64	26	47	1.00	927.29	921	12	7.02E-03	****	2.86E+00	T
8	516.91	17	17	1.99	1033.88	1015	23	4.60E-03	99.7	2.62E+00	
0	528.48	8	13	1.60	1057.04	1052	7	2.28E-03	****	2.58E+00	T
0	558.41	14	11	1.80	1116.93	1114	7	3.95E-03	****	2.47E+00	
0	564.80	37	33	8.03	1129.72	1121	21	1.03E-02	83.0	2.44E+00	
0	578.37	11	13	0.66	1156.86	1150	10	2.93E-03	****	2.40E+00	
0	613.75	7	14	0.89	1227.64	1223	6	2.06E-03	****	2.29E+00	T
0	650.11	10	14	1.37	1300.41	1295	8	2.82E-03	****	2.19E+00	
0	703.29	18	14	1.79	1406.82	1401	10	5.05E-03	91.7	2.06E+00	T
0	763.48	10	7	0.57	1527.25	1524	6	2.71E-03	****	1.93E+00	T
0	772.21	13	18	0.52	1544.73	1538	10	3.67E-03	****	1.91E+00	T
0	906.46	10	8	0.54	1813.34	1806	10	2.83E-03	****	1.69E+00	
0	928.71	11	9	3.73	1857.87	1850	13	3.15E-03	****	1.66E+00	T
0	933.91	22	5	1.90	1868.28	1863	10	6.17E-03	56.6	1.65E+00	
0	1003.12	14	19	2.89	2006.77	2000	13	4.04E-03	****	1.56E+00	T
0	1078.97	14	5	3.30	2158.55	2152	11	4.09E-03	83.1	1.47E+00	
0	1097.54	7	6	0.75	2195.69	2191	8	2.02E-03	****	1.45E+00	
0	1124.78	9	3	0.83	2250.21	2247	7	2.64E-03	92.1	1.42E+00	
0	1138.08	4	15	0.45	2276.82	2271	12	1.24E-03	****	1.41E+00	
0	1156.29	13	19	3.87	2313.25	2302	16	3.74E-03	****	1.39E+00	
0	1180.73	9	12	0.61	2362.16	2356	9	2.66E-03	****	1.37E+00	
0	1378.46	7	6	1.23	2757.82	2752	8	1.92E-03	****	1.20E+00	
0	1587.68	6	5	0.87	3176.50	3169	10	1.67E-03	****	1.06E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235028.CNF;1    *
* Acquisition date   : 3-OCT-2016 09:08:29 Sensitivity      : 3.000              *
* Detector ID        : GAM09 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.50 Half life ratio : *****          *
* Sample date       : 23-NOV-2015 14:50:00 Nuclide Library : SOLID        *
* Sample ID         : G405235028 Analyst initials: MXR1          *
* Batch Number      : 1596249 Sample Quantity : 1.2552E+02 GRAM      *
* Wet wt corr       : 1.00000 Wet Weight      : 0.00000          *
*                               Dry Weight      : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 3-JUN-2016 07:32:22 Eff. Geometry   : CAN          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM09 CAN.CNF;16          *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
BE-7	1.099E+01
K-40	2.228E-01
CD-109	1.247E+00
SN-126	7.373E-02
BA-137M	3.015E-02
CS-137	3.186E-02
PM-147	6.771E+02
EU-155	8.918E-02
TL-208	2.185E-02
BI-211	1.303E-01
BI-212	3.498E-01
PB-212	4.705E-02
BI-214	5.086E-02
PB-214	1.758E-01
RN-222	5.086E-02
RA-224	5.046E-01
RA-226	5.086E-02
AC-228	1.164E-01
RA-228	1.164E-01
TH-228	4.705E-02
TH-230	5.084E-02
PA-231	3.353E-01
TH-232	1.164E-01
PA-233	4.365E-02
TH-234	1.230E+00
U-234	5.084E-02
U-235	1.403E-01
U-238	1.230E+00
AM-243	4.748E-02
ANH-511	2.149E-02

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

Nuclide	Lc (pCi/GRAM)
NA-22	4.375E-02 NOT IDENT.

NA-24	0.000E+00	SHORT HLIF
AL-26	2.552E-02	NOT IDENT.
SC-46	2.878E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.955E-02	NOT IDENT.
CO-56	4.124E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	3.944E-02	NOT IDENT.
CO-58	5.488E-01	NOT IDENT.
FE-59	5.998E+00	NOT IDENT.
CO-60	3.105E-02	NOT IDENT.
ZN-65	1.596E-01	NOT IDENT.
GE-68	2.214E+00	NOT IDENT.
AS-73	1.400E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.725E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.185E-01	FAIL ABUN
KR-85	6.874E+00	NOT IDENT.
SR-85	8.490E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	2.601E-01	NOT IDENT.
Y-91	5.371E+02	NOT IDENT.
NB-94	3.416E-02	FAIL ABUN
NB-95	9.476E-01	NOT IDENT.
NB-95M	2.677E+00	NOT IDENT.
ZR-95	1.345E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.590E-02	NOT IDENT.
RH-102	4.337E-02	NOT IDENT.
RU-103	5.538E+00	FAIL ABUN
RH-106	4.852E-01	NOT IDENT.
RU-106	4.852E-01	NOT IDENT.
AG-108M	2.471E-02	FAIL ABUN
AG-110M	8.884E-02	FAIL ABUN
SN-113	2.227E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.102E-01	NOT IDENT.
SB-124	1.089E+00	NOT IDENT.
SB-125	1.018E-01	FAIL ABUN
TE-125M	2.903E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.063E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	5.896E-02	FAIL ABUN
CS-135	1.125E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.472E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.755E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.630E-01	NOT IDENT.
PM-144	5.912E-02	FAIL ABUN
PR-144	5.181E+00	NOT IDENT.
PM-146	3.572E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-149	0.000E+00	SHORT HLIF
EU-150	2.455E-02	FAIL ABUN
EU-152	7.841E-02	NOT IDENT.
GD-153	1.527E-01	NOT IDENT.
EU-154	1.056E-01	NOT IDENT.
TB-160	1.739E+00	FAIL ABUN
HO-166M	4.597E-02	NOT IDENT.
TM-171	2.493E+01	FAIL ABUN
HF-172	1.716E-01	FAIL ABUN

LU-172	7.553E-02	FAIL ABUN
LU-176	1.977E-02	FAIL ABUN
HF-181	3.624E+00	NOT IDENT.
TA-182	1.001E+00	FAIL ABUN
RE-183	4.009E+00	FAIL ABUN
RE-184	2.620E+01	NOT IDENT.
W-188	9.241E+01	FAIL ABUN
IR-192	4.449E-01	FAIL ABUN
HG-203	2.651E+00	NOT IDENT.
BI-207	4.529E-02	FAIL ABUN
PB-210	6.984E+00	NOT IDENT.
PB-211	5.268E-01	NOT IDENT.
RN-219	2.996E-01	FAIL ABUN
RA-223	5.283E-01	FAIL ABUN
AC-227	1.780E-01	FAIL ABUN
TH-227	1.780E-01	FAIL ABUN
TH-229	3.969E-01	FAIL ABUN
TH-231	5.283E-01	FAIL ABUN
PA-234	2.706E-01	NOT IDENT.
PA-234M	5.107E+00	NOT IDENT.
NP-237	4.592E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.139E-01	FAIL ABUN
PU-239	2.898E+02	FAIL ABUN
AM-241	1.573E-01	NOT IDENT.
CM-243	8.054E-02	NOT IDENT.
BK-247	5.770E-02	FAIL ABUN
CM-247	2.482E-02	NOT IDENT.
CF-249	3.370E-02	FAIL ABUN
CF-251	1.031E-01	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
BE-7	1.808E+01	2.204E+01	2.204E+01
K-40	1.455E+01	1.800E+00	1.800E+00
CD-109	5.357E-01	2.621E+00	2.621E+00
SN-126	3.339E-02	1.633E-01	1.633E-01
BA-137M	1.250E-01	7.420E-02	7.420E-02
CS-137	1.321E-01	7.838E-02	7.838E-02
PM-147	8.035E+02	1.379E+03	1.379E+03
EU-155	1.373E-01	1.379E-01	1.379E-01
TL-208	3.546E-01	7.924E-02	7.924E-02
BI-211	9.525E-02	9.126E-01	9.126E-01
BI-212	1.843E+00	9.128E-01	9.128E-01
PB-212	1.192E+00	1.524E-01	1.524E-01
BI-214	1.041E+00	1.835E-01	1.835E-01
PB-214	1.117E+00	1.693E-01	1.693E-01
RN-222	1.041E+00	1.835E-01	1.835E-01
RA-224	1.125E+00	1.240E+00	1.240E+00
RA-226	1.041E+00	1.835E-01	1.835E-01
AC-228	8.265E-01	2.732E-01	2.732E-01
RA-228	8.265E-01	2.732E-01	2.732E-01
TH-228	1.192E+00	1.524E-01	1.524E-01
TH-230	1.041E+00	1.834E-01	1.834E-01
PA-231	5.038E-01	7.530E-01	7.530E-01
TH-232	8.265E-01	2.732E-01	2.732E-01
PA-233	8.293E-02	5.681E-02	5.681E-02
TH-234	3.673E+00	2.402E+00	2.402E+00
U-234	1.041E+00	1.834E-01	1.834E-01
U-235	2.613E-01	3.196E-01	3.196E-01
U-238	3.673E+00	2.402E+00	2.402E+00
AM-243	1.757E-01	1.088E-01	1.088E-01
ANH-511	5.361E-02	7.122E-02	7.122E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)
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NA-22	1.756E-02	4.725E-02	4.791E-02	NOT IDENT.
NA-24	-1.000E+41	1.020E+42	0.000E+00	SHORT HLIF
AL-26	-2.615E-02	3.996E-02	4.166E-02	NOT IDENT.
SC-46	-1.364E-01	3.835E-01	3.884E-01	FAIL ABUN
V-48	1.045E+04	2.257E+04	2.306E+04	SHORT HLIF
CR-51	2.576E+02	6.120E+02	6.229E+02	SHORT HLIF
MN-54	3.315E-02	6.478E-02	6.648E-02	NOT IDENT.
CO-56	-5.328E-02	5.071E-01	5.077E-01	NOT IDENT.
MN-56	-1.000E+41	1.094E+42	0.000E+00	SHORT HLIF
CO-57	-1.256E-02	4.968E-02	5.000E-02	NOT IDENT.
CO-58	-1.170E-01	6.807E-01	6.827E-01	NOT IDENT.
FE-59	1.602E+00	7.671E+00	7.705E+00	NOT IDENT.
CO-60	-2.154E-03	3.686E-02	3.687E-02	NOT IDENT.
ZN-65	9.149E-02	1.921E-01	1.965E-01	NOT IDENT.
GE-68	4.253E-01	2.527E+00	2.534E+00	NOT IDENT.
AS-73	4.979E+00	1.473E+01	1.490E+01	NOT IDENT.
AS-74	1.334E+02	1.023E+04	1.023E+04	SHORT HLIF
SE-75	-7.611E-02	2.177E-01	2.204E-01	FAIL ABUN
BR-77	1.670E+40	1.517E+41	0.000E+00	SHORT HLIF
SR-82	2.876E+02	1.280E+03	1.287E+03	SHORT HLIF
RB-83	-3.059E-02	6.694E-01	6.695E-01	FAIL ABUN
KR-85	6.317E+00	7.069E+00	7.621E+00	NOT IDENT.
SR-85	7.776E-01	8.733E-01	9.410E-01	NOT IDENT.
RB-86	-2.782E+03	5.587E+04	5.588E+04	SHORT HLIF
Y-88	1.465E-01	2.636E-01	2.718E-01	NOT IDENT.
Y-91	-5.891E+02	7.285E+02	7.754E+02	NOT IDENT.
NB-94	5.270E-02	4.740E-02	5.302E-02	FAIL ABUN
NB-95	-1.152E+00	1.662E+00	1.742E+00	NOT IDENT.
NB-95M	9.905E-01	3.326E+00	3.356E+00	NOT IDENT.
ZR-95	-1.217E+00	1.835E+00	1.915E+00	NOT IDENT.
NB-97	1.000E+41	1.487E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.540E+41	0.000E+00	SHORT HLIF
MO-99	3.489E+33	8.120E+33	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	2.294E+41	0.000E+00	SHORT HLIF
RH-101	4.562E-03	3.113E-02	3.120E-02	NOT IDENT.
RH-102	-4.028E-03	5.142E-02	5.145E-02	NOT IDENT.
RU-103	-7.032E+00	7.441E+00	8.088E+00	FAIL ABUN
RH-106	1.548E-01	5.408E-01	5.453E-01	NOT IDENT.
RU-106	1.548E-01	5.408E-01	5.453E-01	NOT IDENT.
AG-108M	1.214E-02	2.630E-02	2.686E-02	FAIL ABUN
AG-110M	5.191E-02	9.498E-02	9.782E-02	FAIL ABUN
SN-113	5.300E-02	2.431E-01	2.443E-01	NOT IDENT.
CD-115	1.000E+41	1.625E+41	0.000E+00	SHORT HLIF
SN-117M	-1.501E+05	2.055E+05	2.164E+05	SHORT HLIF
TE-123M	-8.001E-02	1.355E-01	1.403E-01	NOT IDENT.
SB-124	-1.427E+00	2.075E+00	2.172E+00	NOT IDENT.
SB-125	1.741E-02	1.128E-01	1.130E-01	FAIL ABUN
TE-125M	7.959E+01	3.427E+02	3.446E+02	NOT IDENT.
I-126	-2.242E+06	2.593E+06	2.783E+06	SHORT HLIF
SB-126	-1.766E+05	2.566E+06	2.567E+06	SHORT HLIF
SB-127	-3.841E+22	3.443E+23	0.000E+00	SHORT HLIF
I-131	-1.353E+10	1.843E+10	1.941E+10	SHORT HLIF
I-132	1.000E+41	2.096E+42	0.000E+00	SHORT HLIF
TE-132	1.051E+28	1.028E+28	0.000E+00	SHORT HLIF
BA-133	7.383E-02	5.457E-02	6.392E-02	FAIL ABUN
I-133	1.000E+41	2.492E+41	0.000E+00	SHORT HLIF
CS-134	9.440E-02	9.271E-02	1.020E-01	FAIL ABUN
CS-135	1.502E-02	1.441E-01	1.442E-01	NOT IDENT.
I-135	-1.000E+41	2.766E+42	0.000E+00	SHORT HLIF
CS-136	-4.440E+05	7.498E+05	7.761E+05	SHORT HLIF
CE-139	-1.851E-02	1.116E-01	1.119E-01	NOT IDENT.
BA-140	-1.436E+06	2.612E+06	2.691E+06	SHORT HLIF
LA-140	9.574E+03	8.833E+05	8.834E+05	SHORT HLIF
CE-141	1.848E+01	3.182E+01	3.289E+01	NOT IDENT.
CE-143	1.000E+41	2.630E+41	0.000E+00	SHORT HLIF
CE-144	-2.757E-01	3.596E-01	3.805E-01	NOT IDENT.
PM-144	4.008E-03	6.903E-02	6.906E-02	FAIL ABUN
PR-144	3.695E-01	6.046E+00	6.049E+00	NOT IDENT.
PM-146	6.640E-03	3.953E-02	3.965E-02	NOT IDENT.
ND-147	2.722E+07	9.703E+07	9.780E+07	SHORT HLIF
PM-149	-1.000E+41	2.133E+41	0.000E+00	SHORT HLIF
EU-150	2.547E-02	2.834E-02	3.058E-02	FAIL ABUN
EU-152	-1.123E-03	9.637E-02	9.637E-02	NOT IDENT.
GD-153	-1.396E-01	1.844E-01	1.949E-01	NOT IDENT.
EU-154	4.025E-02	1.144E-01	1.158E-01	NOT IDENT.
TB-160	-1.721E-01	2.134E+00	2.135E+00	FAIL ABUN
HO-166M	-6.627E-06	5.425E-02	5.425E-02	NOT IDENT.
TM-171	-3.799E+01	3.088E+01	3.531E+01	FAIL ABUN

HF-172	-9.466E-02	2.226E-01	2.267E-01	FAIL ABUN
LU-172	8.053E-03	1.025E-01	1.025E-01	FAIL ABUN
LU-176	1.258E-03	2.585E-02	2.585E-02	FAIL ABUN
HF-181	-2.856E+00	5.272E+00	5.427E+00	NOT IDENT.
TA-182	-2.635E-01	1.203E+00	1.209E+00	FAIL ABUN
RE-183	-1.317E+00	4.470E+00	4.509E+00	FAIL ABUN
RE-184	-1.442E+01	4.087E+01	4.138E+01	NOT IDENT.
W-188	-4.982E+01	1.308E+02	1.327E+02	FAIL ABUN
IR-192	2.345E-01	5.059E-01	5.168E-01	FAIL ABUN
HG-203	-1.792E+00	3.412E+00	3.506E+00	NOT IDENT.
BI-207	-1.288E-02	5.720E-02	5.750E-02	FAIL ABUN
PB-210	4.970E+00	7.208E+00	7.548E+00	NOT IDENT.
PB-211	1.667E-01	5.689E-01	5.739E-01	NOT IDENT.
RN-219	-9.467E-02	3.491E-01	3.517E-01	FAIL ABUN
RA-223	-1.686E-01	6.675E-01	6.718E-01	FAIL ABUN
AC-227	-1.360E-01	2.533E-01	2.606E-01	FAIL ABUN
TH-227	-1.360E-01	2.533E-01	2.606E-01	FAIL ABUN
TH-229	3.335E-02	4.608E-01	4.611E-01	FAIL ABUN
TH-231	-1.686E-01	6.675E-01	6.718E-01	FAIL ABUN
PA-234	1.703E-01	3.519E-01	3.602E-01	NOT IDENT.
PA-234M	3.661E-01	6.507E+00	6.509E+00	NOT IDENT.
NP-237	8.293E-02	5.681E-02	6.801E-02	FAIL ABUN
NP-238	1.000E+41	4.439E+41	0.000E+00	SHORT HLIF
NP-239	-1.455E-01	2.761E-01	2.838E-01	FAIL ABUN
PU-239	4.101E+02	6.650E+02	6.903E+02	FAIL ABUN
AM-241	1.354E-02	1.698E-01	1.699E-01	NOT IDENT.
CM-243	-5.031E-02	1.031E-01	1.056E-01	NOT IDENT.
BK-247	1.326E-02	6.740E-02	6.766E-02	FAIL ABUN
CM-247	-2.270E-02	3.132E-02	3.295E-02	NOT IDENT.
CF-249	-1.524E-02	4.415E-02	4.468E-02	FAIL ABUN
CF-251	7.510E-02	1.127E-01	1.177E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
74.66	38.0285	105.31	84.7366	131.20	51.9924
879.38	51.5907	86.79	84.7818	133.02	39.4293
46.54	36.0719	86.94	84.8099	133.52	50.9180
228.16	0.0000	87.09	84.8380	136.00	41.2183
52.39	31.0659	87.57	84.9283	136.47	46.0459
1093.63	38.2976	88.03	95.8227	739.50	0.0000
52.39	50.3473	306.78	95.8877	140.51	0.0000
125.81	48.8370	88.47	95.9152	143.76	45.6080
53.44	40.8900	143.76	51.0469	144.24	45.6417
54.07	30.5259	90.64	89.9037	145.44	38.9160
293.27	0.0000	531.02	0.0000	152.43	51.1280
482.18	46.2649	92.59	72.5764	1048.07	0.0000
57.98	49.5762	93.35	72.6928	154.21	47.3188
59.27	46.4984	94.56	50.9549	158.56	0.0000
59.32	46.5051	311.90	50.9641	159.00	51.6207
59.54	46.5343	946.00	50.9663	162.33	48.8744
60.96	43.7166	94.87	50.9877	537.26	0.0000
61.17	44.8360	97.43	57.2173	163.33	40.9531
62.93	50.2762	98.43	47.4797	165.86	46.1109
63.29	50.3260	98.44	47.4805	427.87	48.8064
290.67	50.3659	103.37	55.6658	176.60	0.0000
87.57	50.4621	116.74	55.6658	177.52	40.7379
66.73	50.7949	100.11	55.7306	181.07	0.0000
67.24	50.8633	102.03	45.1160	181.52	55.9688
67.68	55.6529	103.18	59.0852	184.41	61.6599
1221.41	55.6625	103.37	54.2821	185.72	61.7642
97.43	61.5354	911.20	42.3711	193.51	45.7422
279.20	64.8037	105.31	46.0118	197.03	42.8093
1063.66	76.6875	106.12	50.0250	198.01	38.6796
72.87	76.6992	106.47	50.0586	201.83	38.8597
351.06	76.6992	109.28	48.8017	203.43	43.1440
74.66	64.5773	111.00	56.9150	205.31	42.1863
238.63	64.6028	111.76	0.0000	210.85	33.9702
351.93	64.6028	114.06	65.5458	215.65	41.6321
238.63	64.6028	116.30	0.0000	222.11	38.7131
74.97	64.6266	116.74	65.5556	227.09	43.2538
77.11	64.9623	119.76	45.7012	227.38	42.1861
78.74	65.2151	264.66	44.8759	228.16	0.0000
256.23	68.8013	121.22	44.8835	228.18	25.9838
133.52	67.7230	344.28	53.6634	235.69	50.9384
364.49	0.0000	122.06	48.6953	235.96	64.0557
711.68	62.0486	122.92	43.7662	238.63	49.2737
356.01	56.3597	1274.44	40.0251	238.98	0.0000
323.87	48.3164	123.68	41.3195	240.99	49.3973
81.75	65.6755	125.81	46.4973	242.00	49.4501
83.79	61.3519	127.23	39.0512	244.70	30.8561
265.00	61.3810	127.91	45.4021	685.70	0.0000
193.51	75.5212	129.30	45.5076	388.16	38.8943

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
507.63	0.0000	345.93	21.7535	569.50	25.1686
256.23	40.1451	351.06	18.2021	569.70	25.1708
527.90	0.0000	351.93	18.2149	583.19	9.8596
264.66	32.6117	355.39	0.0000	584.27	14.0930
264.80	31.4915	356.01	27.6132	595.83	0.0000
265.00	26.9978	364.49	0.0000	600.60	17.0566
268.22	30.0928	366.42	0.0000	602.52	0.0000
269.46	38.4150	372.51	27.1435	604.72	15.6688
270.03	38.4357	375.05	19.7788	607.14	14.2621
401.81	38.4803	377.52	24.7693	609.32	14.2780
273.65	0.0000	383.85	27.3745	610.33	0.0000
276.40	50.0465	388.16	32.4548	614.28	8.5884
583.19	28.4615	666.33	0.0000	618.01	22.9463
277.60	27.3289	391.69	22.5269	884.68	15.3151
402.40	30.7565	400.66	18.4743	621.93	15.3275
279.20	46.7581	401.81	23.5316	630.19	0.0000
279.54	44.4915	402.40	25.2234	631.29	11.5493
279.70	44.4975	404.85	16.8449	633.25	17.3408
280.46	41.1042	410.95	27.9136	634.78	0.0000
301.36	32.0674	413.71	28.8148	635.95	12.5409
284.31	0.0000	720.70	0.0000	636.99	0.0000
285.41	34.4128	423.72	0.0000	1690.97	23.2646
285.90	0.0000	427.09	23.9497	657.76	5.8499
287.50	28.7331	427.87	25.6738	657.90	0.0000
290.67	29.2012	433.94	17.1863	661.66	16.6057
293.27	0.0000	439.40	15.5240	664.57	0.0000
295.22	21.6061	453.88	16.5427	666.33	0.0000
316.51	21.6204	463.37	13.1400	666.50	0.0000
298.58	20.8976	468.07	21.0864	667.71	0.0000
299.98	26.3488	473.00	0.0000	677.62	15.7474
300.09	26.3508	631.29	18.5322	685.70	0.0000
300.13	26.3522	696.49	14.1348	695.00	0.0000
311.90	26.3522	477.60	14.1419	696.49	21.8433
301.36	26.3813	482.18	17.2847	696.51	21.8433
302.85	26.4159	487.02	0.0000	697.00	0.0000
304.50	31.1230	492.35	0.0000	697.30	23.8379
304.85	0.0000	497.08	25.0452	697.49	23.8398
306.78	26.5079	505.52	12.1366	702.65	16.9260
308.46	26.5473	507.63	0.0000	706.68	13.4659
311.90	21.9280	511.00	16.2345	711.68	12.9968
316.51	21.2294	514.00	16.2634	720.70	0.0000
319.41	0.0000	514.00	16.2634	721.93	0.0000
320.08	0.0000	520.40	12.2432	722.78	9.0425
321.04	28.4150	520.69	0.0000	722.91	9.0428
323.87	36.7907	667.71	0.0000	723.31	13.5670
325.23	33.2688	527.90	0.0000	756.73	21.1119
1596.21	0.0000	528.26	10.9321	727.33	11.0743
333.37	25.1214	529.59	25.9835	733.00	15.1392
333.97	22.3410	529.87	0.0000	735.93	10.1058
334.37	23.9447	531.02	0.0000	737.46	17.1909
338.28	27.6248	537.26	0.0000	739.50	0.0000
338.32	27.6255	1260.41	0.0000	747.24	15.2332
340.48	27.6740	552.55	17.5481	748.06	13.2068
340.55	0.0000	795.86	18.1154	752.31	16.2845
344.28	26.5527	569.33	25.1664	753.82	0.0000

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:10:18.82

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235029.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM19.CNF;561
Background date    : 2-OCT-2016 11:01:07.
Sample date       : 23-NOV-2015 11:10:00 Acquisition date : 3-OCT-2016 09:08:53.
Sample ID        : G405235029 Sample quantity  : 1.51202E+02 GRAM
Detector name     : GAM19 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.76 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity       : 3.00000
Batch ID          : 1596249 Detector SN#       :
Matrix Spike ID   : LCS ID                   : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.52*	22	186	0.54	125.82	121	10	6.15E-03	119.5	
2	1	74.69*	131	171	1.30	150.19	143	18	3.65E-02	19.8	2.59E+00
3	1	77.07*	207	123	1.07	154.93	143	18	5.76E-02	11.1	
4	0	86.79	70	244	1.00	174.38	168	11	1.93E-02	45.1	
5	5	89.88	58	102	1.14	180.56	178	13	1.62E-02	28.4	4.40E-01
6	5	92.81*	74	173	1.56	186.43	178	13	2.04E-02	35.9	
7	0	129.14	51	116	0.79	259.12	256	8	1.41E-02	39.2	
8	0	143.25*	37	123	2.78	287.35	283	9	1.03E-02	57.4	
9	0	186.00*	71	143	1.49	372.89	369	11	1.98E-02	35.7	
10	0	209.48	40	105	0.91	419.88	416	10	1.11E-02	50.9	
11	4	238.55*	403	73	1.10	478.04	470	24	1.12E-01	6.2	5.95E-01
12	4	241.66	146	103	2.07	484.25	470	24	4.06E-02	20.7	
13	0	255.93	14	80	0.57	512.80	509	9	3.79E-03	121.7	
14	0	274.31	82	203	8.38	549.58	533	28	2.28E-02	50.4	
15	1	295.16*	139	75	1.62	591.29	586	26	3.86E-02	14.6	1.62E+00
16	1	300.36	31	75	1.63	601.70	586	26	8.50E-03	56.7	
17	0	338.55	56	63	1.51	678.12	674	9	1.55E-02	29.5	
18	0	351.84*	269	58	1.32	704.70	698	13	7.47E-02	8.6	
19	0	410.33	29	68	2.16	821.74	812	13	7.98E-03	62.1	
20	0	510.76*	49	47	2.14	1022.67	1016	16	1.35E-02	39.7	
21	0	583.11*	124	29	1.75	1167.44	1162	12	3.46E-02	12.7	
22	0	609.54*	151	43	1.53	1220.32	1212	14	4.20E-02	12.4	
23	0	625.69	17	8	0.91	1252.65	1249	8	4.72E-03	37.7	
24	0	661.59	108	24	1.26	1324.47	1319	11	2.99E-02	13.1	
25	1	723.01*	15	35	1.98	1447.36	1440	27	4.06E-03	83.9	1.19E+00
26	1	726.99	27	33	1.98	1455.34	1440	27	7.39E-03	48.0	
27	0	748.16	14	10	1.39	1497.69	1494	10	3.92E-03	52.6	
28	8	781.40	13	16	2.20	1564.19	1561	17	3.50E-03	54.1	2.80E+00
29	8	785.81	17	18	2.29	1573.03	1561	17	4.83E-03	52.7	
30	0	804.73	17	24	1.55	1610.87	1605	12	4.61E-03	64.1	
31	0	859.99	26	10	1.80	1721.45	1717	12	7.35E-03	30.0	
32	0	911.02*	74	22	1.31	1823.55	1818	12	2.06E-02	17.5	
33	0	946.99	22	13	4.32	1895.53	1886	17	6.21E-03	42.2	
34	4	963.76	18	15	2.84	1929.07	1920	23	4.95E-03	56.9	3.57E-01

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	4	968.62	53	6	1.82	1938.81	1920	23	1.46E-02	16.2	
36	0	1063.76*	10	22	1.73	2129.16	2121	15	2.67E-03	160.0	
37	0	1120.42	41	14	1.66	2242.54	2237	11	1.14E-02	23.4	
38	0	1134.69	13	15	3.50	2271.08	2263	15	3.61E-03	70.6	
39	0	1143.20	15	12	3.51	2288.11	2282	12	4.16E-03	53.0	
40	0	1168.70	19	12	1.24	2339.14	2333	13	5.26E-03	45.2	
41	0	1200.59	13	9	3.91	2402.95	2394	14	3.55E-03	59.9	
42	3	1203.95	11	2	1.89	2409.67	2407	13	3.16E-03	28.6	1.41E-01
43	3	1207.52	13	1	2.05	2416.82	2407	13	3.70E-03	28.3	
44	0	1236.70	32	28	8.17	2475.21	2464	27	8.92E-03	48.5	
45	0	1263.32	9	8	1.37	2528.47	2521	12	2.57E-03	71.8	
46	1	1272.80	20	6	2.30	2547.42	2542	19	5.48E-03	31.7	2.13E+00
47	1	1275.58	15	7	2.09	2553.00	2542	19	4.30E-03	41.9	
48	0	1280.93	7	4	1.39	2563.69	2560	7	1.81E-03	61.8	
49	0	1460.59	368	3	1.93	2923.18	2916	14	1.02E-01	5.3	
50	0	1511.05	7	5	1.34	3024.14	3017	10	1.94E-03	70.7	
51	0	1764.29*	34	0	3.25	3530.84	3522	15	9.40E-03	18.4	

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

VMS Nuclide Identification Report V3.1 Generated 3-OCT-2016 10:10:20

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235029.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 23-NOV-2015 11:10:00 Acquisition date : 3-OCT-2016 09:08:53
 Sample ID : G405235029 Sample quantity : 151.20 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA19 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.76 0.0%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	TH-229	85.43
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
NA-22	1274.54	99.94*	1.297E+00	5.808E-02	7.308E-02	83.90	OK
K-40	1460.82	10.66*	1.161E+00	1.424E+01	1.424E+01	10.65	OK
Y-91	1204.77	0.26*	1.358E+00	1.576E+01	6.574E+02	57.20	OK
CD-109	88.03	3.70*	5.459E+00	1.234E+00	1.980E+00	160.25	OK
SN-126	64.28	9.60	3.426E+00	----- Line	Not Found	-----	Absent
	86.94	8.90	5.459E+00	5.128E-01	5.128E-01	160.25	OK
	87.57	37.00*	5.459E+00	1.234E-01	1.234E-01	160.25	OK
BA-137M	661.66	89.90*	2.164E+00	2.887E-01	2.945E-01	26.26	OK
CS-137	661.66	85.10*	2.164E+00	3.050E-01	3.111E-01	26.26	OK
TL-208	277.37	6.60	4.415E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.392E+00	3.231E-01	3.231E-01	25.47	OK
	860.56	12.50	1.764E+00	6.089E-01	6.089E-01	60.00	OK
BI-211	72.87	1.23	4.361E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	3.630E+00	3.842E-01	3.842E-01	255.35	OK
BI-212	727.33	6.67*	2.010E+00	1.025E+00	1.025E+00	95.99	OK
	785.37	1.10	1.892E+00	4.277E+00	4.277E+00	105.50	OK
	1620.50	1.47	1.063E+00	----- Line	Not Found	-----	Absent
PB-212	74.82	10.28	4.533E+00	1.224E+00	1.224E+00	59.67	OK
	77.11	17.10	4.743E+00	1.624E+00	1.624E+00	22.16	OK
	238.63	43.60*	4.961E+00	1.074E+00	1.074E+00	12.45	OK
	300.09	3.30	4.139E+00	1.262E+00	1.262E+00	113.35	OK
BI-214	609.32	45.49*	2.309E+00	7.574E-01	7.577E-01	24.87	OK
	1120.29	14.92	1.437E+00	9.465E-01	9.468E-01	46.85	OK
	1764.49	15.30	9.862E-01	1.052E+00	1.052E+00	36.70	OK
PB-214	74.82	5.80	4.544E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	4.743E+00	2.862E+00	2.863E+00	22.16	OK
	87.09	3.41	5.478E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.908E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.198E+00	1.015E+00	1.016E+00	29.18	OK
	351.93	35.60*	3.629E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	2.309E+00	7.574E-01	7.577E-01	24.87	OK
	1120.29	14.92	1.437E+00	9.465E-01	9.468E-01	46.85	OK
	1764.49	15.30	9.862E-01	1.052E+00	1.052E+00	36.70	OK
RA-224	240.99	4.10*	4.913E+00	2.381E+00	2.381E+00	75.98	OK
RA-226	609.32	45.49*	2.309E+00	7.574E-01	7.577E-01	24.87	OK
	1120.29	14.92	1.437E+00	9.465E-01	9.468E-01	46.85	OK
	1764.49	15.30	9.862E-01	1.052E+00	1.052E+00	36.70	OK
AC-228	105.21	1.10	6.259E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.748E+00	7.358E-01	7.358E-01	58.98	OK
	794.95	4.25	1.875E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.803E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.687E+00	8.586E-01	8.586E-01	35.02	OK
	968.97	15.80	1.609E+00	1.038E+00	1.038E+00	32.48	OK
RA-228	105.21	1.10	6.259E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.748E+00	7.358E-01	7.358E-01	58.98	OK
	794.95	4.25	1.875E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.803E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.687E+00	8.586E-01	8.586E-01	35.02	OK
	968.97	15.80	1.609E+00	1.038E+00	1.038E+00	32.48	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-228	74.82	10.28	4.533E+00	1.224E+00	1.224E+00	59.67	OK
	77.11	17.10	4.743E+00	1.624E+00	1.624E+00	22.16	OK
	238.63	43.60*	4.961E+00	1.074E+00	1.074E+00	12.45	OK
	300.09	3.30	4.139E+00	1.262E+00	1.262E+00	113.35	OK
TH-229	85.43	14.70	5.459E+00	3.105E-01	3.105E-01	160.25	OK
	88.47	24.00	5.640E+00	2.705E-01	2.705E-01	56.87	OK
	193.51	4.41*	5.711E+00	----- Line	Not Found	-----	Absent
	210.85	2.80	5.435E+00	1.529E+00	1.529E+00	101.84	OK
TH-230	609.32	45.49*	2.309E+00	7.574E-01	7.574E-01	24.87	OK
	1120.29	14.92	1.437E+00	9.465E-01	9.465E-01	46.85	OK
	1764.49	15.30	9.862E-01	1.052E+00	1.052E+00	36.70	OK
	283.69	1.70	4.336E+00	----- Line	Not Found	-----	Absent
PA-231	301.36	5.35*	4.139E+00	7.782E-01	7.782E-01	113.35	OK
	105.21	1.10	6.259E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.748E+00	7.358E-01	7.358E-01	58.98	OK
	835.71	1.61	1.803E+00	----- Line	Not Found	-----	Absent
TH-232	911.20	25.80*	1.687E+00	8.586E-01	8.586E-01	35.02	OK
	968.97	15.80	1.609E+00	1.038E+00	1.038E+00	32.48	OK
	63.29	3.70*	3.208E+00	1.207E+00	1.207E+00	239.06	OK
	92.59	4.23	5.793E+00	1.879E+00	1.879E+00	71.76	OK
U-234	609.32	45.49*	2.309E+00	7.574E-01	7.574E-01	24.87	OK
	1120.29	14.92	1.437E+00	9.465E-01	9.465E-01	46.85	OK
	1764.49	15.30	9.862E-01	1.052E+00	1.052E+00	36.70	OK
	89.96	3.47	5.640E+00	1.871E+00	1.871E+00	56.87	OK
U-235	93.35	5.60	5.793E+00	1.419E+00	1.419E+00	71.76	OK
	143.76	10.96*	6.467E+00	3.153E-01	3.153E-01	114.86	OK
	163.33	5.08	6.216E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	5.841E+00	1.258E-01	1.258E-01	71.50	OK
U-238	205.31	5.01	5.506E+00	----- Line	Not Found	-----	Absent
	63.29	3.70*	3.208E+00	1.207E+00	1.207E+00	239.06	OK
	92.59	4.23	5.793E+00	1.879E+00	1.879E+00	71.76	OK
	43.53	5.90	5.190E-01	----- Line	Not Found	-----	Absent
AM-243	74.66	67.20*	4.533E+00	1.873E-01	1.873E-01	59.67	OK
	511.00	100.00*	2.663E+00	9.783E-02	9.783E-02	79.36	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*                                     *****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235029.CNF;1
* Acquisition date   : 3-OCT-2016 09:08:53 Sensitivity      : 3.000
* Detector ID        : GAM19 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.76 Half life ratio : *****
* Sample date       : 23-NOV-2015 11:10:00 Analyst initials: MXR1
* Sample ID         : G405235029 Sample Quantity : 1.5120E+02 GRAM
* Batch Number      : 1596249 Wet Weight : 0.00000
* Wet wt corr       : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 15-JUN-2016 10:35:16 Eff. Geometry : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM19 CAN.CNF;17
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
NA-22	7.308E-02	6.009E-02	8.499E-02
K-40	1.424E+01	1.486E+00	5.018E-01
Y-91	6.574E+02	3.685E+02	9.545E+02
CD-109	1.980E+00	3.109E+00	1.938E+00
SN-126	1.234E-01	1.937E-01	1.371E-01
BA-137M	2.945E-01	7.580E-02	6.679E-02
CS-137	3.111E-01	8.007E-02	7.055E-02
TL-208	3.231E-01	8.062E-02	6.673E-02
BI-211	3.842E-01	9.615E-01	3.653E-01
BI-212	1.025E+00	9.640E-01	9.073E-01
PB-212	1.074E+00	1.310E-01	9.802E-02
BI-214	7.577E-01	1.846E-01	1.440E-01
PB-214	1.155E+00	1.937E-01	3.270E-01
RN-222	7.577E-01	1.846E-01	1.440E-01
RA-224	2.381E+00	1.773E+00	1.051E+00
RA-226	7.577E-01	1.846E-01	1.440E-01
AC-228	8.586E-01	2.947E-01	2.737E-01
RA-228	8.586E-01	2.947E-01	2.737E-01
TH-228	1.074E+00	1.310E-01	9.802E-02
TH-229	1.099E-01	4.780E-01	9.407E-01
TH-230	7.574E-01	1.846E-01	1.439E-01
PA-231	7.782E-01	8.644E-01	8.855E-01
TH-232	8.586E-01	2.947E-01	2.737E-01
TH-234	1.207E+00	2.828E+00	2.050E+00
U-234	7.574E-01	1.846E-01	1.439E-01
U-235	3.153E-01	3.549E-01	3.256E-01
U-238	1.207E+00	2.828E+00	2.050E+00
AM-243	1.873E-01	1.095E-01	8.635E-02
ANH-511	9.783E-02	7.608E-02	5.772E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.453E+01	1.671E+01	2.797E+01	NOT IDENT.

NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	5.527E-03	1.712E-02	4.800E-02	NOT IDENT.
SC-46	4.859E-02	4.254E-01	8.598E-01	FAIL ABUN
V-48	0.000E+00	2.902E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	6.549E+02	0.000E+00	SHORT HLIF
MN-54	5.341E-02	7.338E-02	1.554E-01	NOT IDENT.
CO-56	-1.196E-01	5.202E-01	1.002E+00	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-1.255E-02	4.811E-02	9.420E-02	NOT IDENT.
CO-58	-4.650E-03	7.415E-01	1.366E+00	NOT IDENT.
FE-59	-3.147E+00	7.184E+00	1.322E+01	NOT IDENT.
CO-60	1.764E-03	3.682E-02	7.433E-02	NOT IDENT.
ZN-65	-1.572E-01	1.983E-01	2.720E-01	NOT IDENT.
GE-68	-9.278E-01	2.040E+00	3.751E+00	NOT IDENT.
AS-73	-5.050E-01	9.791E+00	1.836E+01	NOT IDENT.
AS-74	0.000E+00	1.046E+04	0.000E+00	SHORT HLIF
SE-75	-1.882E-02	2.424E-01	4.155E-01	NOT IDENT.
BR-77	0.000E+00	1.919E+39	0.000E+00	SHORT HLIF
SR-82	0.000E+00	1.113E+03	0.000E+00	SHORT HLIF
RB-83	1.073E-01	7.244E-01	1.401E+00	NOT IDENT.
KR-85	-3.223E-01	8.982E+00	1.473E+01	NOT IDENT.
SR-85	-4.160E-02	1.112E+00	1.823E+00	NOT IDENT.
RB-86	0.000E+00	4.141E+04	0.000E+00	SHORT HLIF
Y-88	8.967E-02	2.204E-01	5.349E-01	NOT IDENT.
NB-94	4.531E-03	3.256E-02	6.536E-02	NOT IDENT.
NB-95	3.129E-01	1.035E+00	2.106E+00	NOT IDENT.
NB-95M	-5.126E-02	3.181E+00	5.462E+00	NOT IDENT.
ZR-95	4.002E-01	1.703E+00	3.490E+00	FAIL ABUN
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	9.997E+40	0.000E+00	SHORT HLIF
MO-99	0.000E+00	7.075E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.348E+41	0.000E+00	SHORT HLIF
RH-101	-6.025E-03	3.588E-02	6.334E-02	NOT IDENT.
RH-102	2.108E-02	5.714E-02	1.140E-01	NOT IDENT.
RU-103	5.562E+00	8.283E+00	1.671E+01	FAIL ABUN
RH-106	-1.176E-01	5.939E-01	9.486E-01	NOT IDENT.
RU-106	-1.176E-01	5.939E-01	9.486E-01	NOT IDENT.
AG-108M	-1.943E-03	2.940E-02	5.510E-02	FAIL ABUN
AG-110M	-6.504E-02	9.867E-02	1.764E-01	NOT IDENT.
SN-113	-1.233E-01	2.916E-01	5.249E-01	NOT IDENT.
CD-115	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.975E+05	0.000E+00	SHORT HLIF
TE-123M	-2.844E-02	1.300E-01	2.524E-01	NOT IDENT.
SB-124	1.719E-01	2.269E+00	5.036E+00	FAIL ABUN
SB-125	-6.711E-02	1.221E-01	2.154E-01	NOT IDENT.
TE-125M	3.728E+01	3.485E+02	6.358E+02	NOT IDENT.
I-126	0.000E+00	1.936E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	3.089E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	3.556E+23	0.000E+00	SHORT HLIF
I-131	0.000E+00	2.150E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.138E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.068E+28	0.000E+00	SHORT HLIF
BA-133	-7.632E-03	4.557E-02	7.581E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	4.499E-02	5.828E-02	1.230E-01	NOT IDENT.
CS-135	2.104E-02	1.352E-01	2.635E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	7.600E+05	0.000E+00	SHORT HLIF
CE-139	-2.342E-02	1.250E-01	2.409E-01	NOT IDENT.
BA-140	0.000E+00	3.081E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	1.063E+06	0.000E+00	SHORT HLIF
CE-141	-2.317E+00	3.524E+01	6.223E+01	NOT IDENT.
CE-143	0.000E+00	1.226E+41	0.000E+00	SHORT HLIF
CE-144	1.442E-01	4.299E-01	7.843E-01	NOT IDENT.
PM-144	-1.616E-02	5.745E-02	1.112E-01	NOT IDENT.
PR-144	-1.415E+00	5.030E+00	9.733E+00	NOT IDENT.
PM-146	3.302E-02	4.418E-02	9.098E-02	FAIL ABUN
ND-147	0.000E+00	9.122E+07	0.000E+00	SHORT HLIF
PM-147	-3.599E+02	8.051E+02	1.558E+03	NOT IDENT.
PM-149	0.000E+00	1.350E+41	0.000E+00	SHORT HLIF
EU-150	-5.813E-03	2.843E-02	4.715E-02	FAIL ABUN
EU-152	2.077E-02	9.563E-02	1.859E-01	FAIL ABUN
GD-153	6.480E-02	2.002E-01	3.735E-01	NOT IDENT.
EU-154	1.778E-01	1.462E-01	2.544E-01	FAIL ABUN
EU-155	2.016E-02	1.094E-01	2.020E-01	FAIL ABUN
TB-160	1.846E+00	2.382E+00	5.125E+00	FAIL ABUN
HO-166M	-1.935E-02	4.932E-02	9.416E-02	FAIL ABUN
TM-171	-5.108E+00	1.995E+01	3.692E+01	NOT IDENT.

HF-172	2.179E-02	2.578E-01	4.644E-01	FAIL ABUN
LU-172	-3.290E-02	7.642E-02	1.395E-01	FAIL ABUN
LU-176	1.887E-03	2.750E-02	4.748E-02	NOT IDENT.
HF-181	1.695E-01	5.978E+00	1.128E+01	NOT IDENT.
TA-182	-7.827E-01	1.081E+00	1.834E+00	FAIL ABUN
RE-183	-3.873E-01	3.611E+00	6.168E+00	NOT IDENT.
RE-184	1.204E+01	4.234E+01	8.666E+01	NOT IDENT.
W-188	-2.611E+01	1.555E+02	2.594E+02	FAIL ABUN
IR-192	-1.159E-01	5.398E-01	1.011E+00	FAIL ABUN
HG-203	-1.561E+00	3.603E+00	5.903E+00	NOT IDENT.
BI-207	4.348E-02	1.364E-01	2.539E-01	FAIL ABUN
PB-210	-1.349E+00	3.389E+00	6.214E+00	NOT IDENT.
PB-211	-2.626E-01	8.082E-01	1.296E+00	NOT IDENT.
RN-219	5.338E-02	4.152E-01	7.924E-01	NOT IDENT.
RA-223	8.816E-02	6.105E-01	1.178E+00	FAIL ABUN
AC-227	1.748E-01	4.169E-01	4.780E-01	FAIL ABUN
TH-227	1.748E-01	4.169E-01	4.780E-01	FAIL ABUN
TH-231	8.816E-02	6.105E-01	1.178E+00	FAIL ABUN
PA-233	2.158E-03	6.096E-02	1.168E-01	FAIL ABUN
PA-234	5.719E-01	4.732E-01	5.968E-01	FAIL ABUN
PA-234M	-1.459E+00	4.351E+00	8.286E+00	NOT IDENT.
NP-237	2.158E-03	6.096E-02	1.168E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	1.473E-01	2.327E-01	4.827E-01	NOT IDENT.
PU-239	0.000E+00	5.744E+02	6.895E+02	FAIL ABUN
AM-241	-3.107E-02	1.379E-01	2.326E-01	NOT IDENT.
CM-243	1.986E-02	9.940E-02	1.840E-01	NOT IDENT.
BK-247	-1.230E-02	7.877E-02	1.335E-01	NOT IDENT.
CM-247	1.685E-03	3.922E-02	7.085E-02	NOT IDENT.
CF-249	1.638E-03	4.231E-02	7.992E-02	NOT IDENT.
CF-251	4.163E-02	1.130E-01	2.261E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
NA-22	1274.54	15	99.94*	1.297E+00	5.808E-02	7.308E-02	83.90
K-40	1460.82	355	10.66*	1.161E+00	1.424E+01	1.424E+01	10.65
Y-91	1204.77	11	0.26*	1.358E+00	1.576E+01	6.574E+02	57.20
CD-109	88.03	88	3.70*	5.459E+00	2.169E+00	3.482E+00	90.26
SN-126	64.28	-----	9.60	3.426E+00	-----	Line Not Found	-----
	86.94	88	8.90	5.459E+00	9.018E-01	9.018E-01	90.26
	87.57	88	37.00*	5.459E+00	2.169E-01	2.169E-01	90.26
BA-137M	661.66	113	89.90*	2.164E+00	2.887E-01	2.945E-01	26.26
CS-137	661.66	113	85.10*	2.164E+00	3.050E-01	3.111E-01	26.26
TL-208	277.37	-----	6.60	4.415E+00	-----	Line Not Found	-----
	583.19	132	85.00*	2.392E+00	3.231E-01	3.231E-01	25.47
	860.56	27	12.50	1.764E+00	6.089E-01	6.089E-01	60.00
BI-211	72.87	-----	1.23	4.361E+00	-----	Line Not Found	-----
	351.06	300	12.92*	3.630E+00	3.182E+00	3.182E+00	17.11
BI-212	727.33	28	6.67*	2.010E+00	1.025E+00	1.025E+00	95.99
	785.37	18	1.10	1.892E+00	4.277E+00	4.277E+00	105.50
	1620.50	-----	1.47	1.063E+00	-----	Line Not Found	-----
PB-212	74.82	169	10.28	4.533E+00	1.797E+00	1.797E+00	39.57
	77.11	265	17.10	4.743E+00	1.624E+00	1.624E+00	22.16
	238.63	468	43.60*	4.961E+00	1.074E+00	1.074E+00	12.45
	300.09	35	3.30	4.139E+00	1.262E+00	1.262E+00	113.35
BI-214	609.32	160	45.49*	2.309E+00	7.574E-01	7.577E-01	24.87
	1120.29	41	14.92	1.437E+00	9.465E-01	9.468E-01	46.85
	1764.49	32	15.30	9.862E-01	1.052E+00	1.052E+00	36.70
PB-214	74.82	169	5.80	4.533E+00	3.185E+00	3.186E+00	39.57
	77.11	265	9.70	4.743E+00	2.862E+00	2.863E+00	22.16
	87.09	88	3.41	5.459E+00	2.354E+00	2.355E+00	90.26
	242.00	169	7.25	4.913E+00	2.362E+00	2.362E+00	41.46
	295.22	158	18.42	4.198E+00	1.015E+00	1.016E+00	29.18
	351.93	300	35.60*	3.630E+00	1.155E+00	1.155E+00	17.11
RN-222	609.32	160	45.49*	2.309E+00	7.574E-01	7.577E-01	24.87
	1120.29	41	14.92	1.437E+00	9.465E-01	9.468E-01	46.85
	1764.49	32	15.30	9.862E-01	1.052E+00	1.052E+00	36.70
RA-224	240.99	169	4.10*	4.913E+00	4.176E+00	4.176E+00	41.46
RA-226	609.32	160	45.49*	2.309E+00	7.574E-01	7.577E-01	24.87
	1120.29	41	14.92	1.437E+00	9.465E-01	9.468E-01	46.85
	1764.49	32	15.30	9.862E-01	1.052E+00	1.052E+00	36.70
AC-228	105.21	-----	1.10	6.259E+00	-----	Line Not Found	-----
	338.32	63	11.27	3.748E+00	7.358E-01	7.358E-01	58.98
	794.95	-----	4.25	1.875E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.803E+00	-----	Line Not Found	-----
	911.20	75	25.80*	1.687E+00	8.586E-01	8.586E-01	35.02
	968.97	53	15.80	1.609E+00	1.038E+00	1.038E+00	32.48
RA-228	105.21	-----	1.10	6.259E+00	-----	Line Not Found	-----
	338.32	63	11.27	3.748E+00	7.358E-01	7.358E-01	58.98
	794.95	-----	4.25	1.875E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.803E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	75	25.80*	1.687E+00	8.586E-01	8.586E-01	35.02
	968.97	53	15.80	1.609E+00	1.038E+00	1.038E+00	32.48
TH-228	74.82	169	10.28	4.533E+00	1.797E+00	1.797E+00	39.57
	77.11	265	17.10	4.743E+00	1.624E+00	1.624E+00	22.16
	238.63	468	43.60*	4.961E+00	1.074E+00	1.074E+00	12.45
	300.09	35	3.30	4.139E+00	1.262E+00	1.262E+00	113.35
TH-229	85.43	88	14.70	5.459E+00	5.460E-01	5.460E-01	90.26
	88.47	74	24.00	5.640E+00	2.705E-01	2.705E-01	56.87
	193.51	-----	4.41*	5.711E+00	-----	Line Not Found	-----
	210.85	47	2.80	5.435E+00	1.529E+00	1.529E+00	101.84
TH-230	609.32	160	45.49*	2.309E+00	7.574E-01	7.574E-01	24.87
	1120.29	41	14.92	1.437E+00	9.465E-01	9.465E-01	46.85
	1764.49	32	15.30	9.862E-01	1.052E+00	1.052E+00	36.70
PA-231	283.69	-----	1.70	4.336E+00	-----	Line Not Found	-----
	301.36	35	5.35*	4.139E+00	7.782E-01	7.782E-01	113.35
TH-232	105.21	-----	1.10	6.259E+00	-----	Line Not Found	-----
	338.32	63	11.27	3.748E+00	7.358E-01	7.358E-01	58.98
	835.71	-----	1.61	1.803E+00	-----	Line Not Found	-----
	911.20	75	25.80*	1.687E+00	8.586E-01	8.586E-01	35.02
	968.97	53	15.80	1.609E+00	1.038E+00	1.038E+00	32.48
TH-234	63.29	29	3.70*	3.208E+00	1.207E+00	1.207E+00	239.06
	92.59	93	4.23	5.793E+00	1.879E+00	1.879E+00	71.76
U-234	609.32	160	45.49*	2.309E+00	7.574E-01	7.574E-01	24.87
	1120.29	41	14.92	1.437E+00	9.465E-01	9.465E-01	46.85
	1764.49	32	15.30	9.862E-01	1.052E+00	1.052E+00	36.70
U-235	89.96	74	3.47	5.640E+00	1.871E+00	1.871E+00	56.87
	93.35	93	5.60	5.793E+00	1.419E+00	1.419E+00	71.76
	143.76	45	10.96*	6.467E+00	3.153E-01	3.153E-01	114.86
	163.33	-----	5.08	6.216E+00	-----	Line Not Found	-----
	185.72	85	57.20	5.841E+00	1.258E-01	1.258E-01	71.50
	205.31	-----	5.01	5.506E+00	-----	Line Not Found	-----
U-238	63.29	29	3.70*	3.208E+00	1.207E+00	1.207E+00	239.06
	92.59	93	4.23	5.793E+00	1.879E+00	1.879E+00	71.76
AM-243	43.53	-----	5.90	5.190E-01	-----	Line Not Found	-----
	74.66	169	67.20*	4.533E+00	2.749E-01	2.749E-01	39.57
ANH-511	511.00	52	100.00*	2.663E+00	9.783E-02	9.783E-02	79.36

Flag: "*" = Keyline

Total number of lines in spectrum 51
Number of unidentified lines 11
Number of lines tentatively identified by NID 40 78.43%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
NA-22	2.60Y	1.26	5.808E-02	7.308E-02	6.132E-02	83.90	
K-40	1.25E+09Y	1.00	1.424E+01	1.424E+01	0.152E+01	10.65	
Y-91	58.51D	41.7	1.576E+01	6.574E+02	3.760E+02	57.20	
CD-109	461.40D	1.60	2.169E+00	3.482E+00	3.142E+00	90.26	
SN-126	2.30E+05Y	1.00	2.169E-01	2.169E-01	1.958E-01	90.26	
BA-137M	30.08Y	1.02	2.887E-01	2.945E-01	0.773E-01	26.26	
CS-137	30.08Y	1.02	3.050E-01	3.111E-01	0.817E-01	26.26	
TL-208	1.41E+10Y	1.00	3.231E-01	3.231E-01	0.823E-01	25.47	
BI-211	7.04E+08Y	1.00	3.182E+00	3.182E+00	0.544E+00	17.11	
BI-212	1.41E+10Y	1.00	1.025E+00	1.025E+00	0.984E+00	95.99	
PB-212	1.41E+10Y	1.00	1.074E+00	1.074E+00	0.134E+00	12.45	
BI-214	1600.00Y	1.00	7.574E-01	7.577E-01	1.884E-01	24.87	
PB-214	1600.00Y	1.00	1.155E+00	1.155E+00	0.198E+00	17.11	
RN-222	1600.00Y	1.00	7.574E-01	7.577E-01	1.884E-01	24.87	
RA-224	1.41E+10Y	1.00	4.176E+00	4.176E+00	1.731E+00	41.46	
RA-226	1600.00Y	1.00	7.574E-01	7.577E-01	1.884E-01	24.87	
AC-228	1.41E+10Y	1.00	8.586E-01	8.586E-01	3.007E-01	35.02	
RA-228	1.41E+10Y	1.00	8.586E-01	8.586E-01	3.007E-01	35.02	
TH-228	1.41E+10Y	1.00	1.074E+00	1.074E+00	0.134E+00	12.45	
TH-229	7340.00Y	1.00	2.705E-01	2.705E-01	1.539E-01	56.87	K
TH-230	7.54E+04Y	1.00	7.574E-01	7.574E-01	1.883E-01	24.87	
PA-231	7.04E+08Y	1.00	7.782E-01	7.782E-01	8.821E-01	113.35	
TH-232	1.41E+10Y	1.00	8.586E-01	8.586E-01	3.007E-01	35.02	
TH-234	4.47E+09Y	1.00	1.207E+00	1.207E+00	2.886E+00	239.06	
U-234	2.45E+05Y	1.00	7.574E-01	7.574E-01	1.883E-01	24.87	
U-235	7.04E+08Y	1.00	3.153E-01	3.153E-01	3.621E-01	114.86	
U-238	4.47E+09Y	1.00	1.207E+00	1.207E+00	2.886E+00	239.06	
AM-243	7370.00Y	1.00	2.749E-01	2.749E-01	1.088E-01	39.57	
ANH-511	1.00E+09Y	1.00	9.783E-02	9.783E-02	7.763E-02	79.36	
Total Activity :			5.556E+01	6.986E+02			

Grand Total Activity : 5.556E+01 6.986E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.14	62	143	0.79	259.12	256	8	1.41E-02	78.5	6.54E+00	T
0	255.93	16	93	0.57	512.80	509	9	3.79E-03	****	4.70E+00	T
0	274.31	94	232	8.38	549.58	533	28	2.28E-02	****	4.45E+00	T
0	410.33	32	75	2.16	821.74	812	13	7.98E-03	****	3.19E+00	T
0	625.69	18	8	0.91	1252.65	1249	8	4.72E-03	75.3	2.26E+00	
1	723.01	15	36	1.98	1447.36	1440	27	4.06E-03	****	2.02E+00	T
0	748.16	15	10	1.39	1497.69	1494	10	3.92E-03	****	1.97E+00	T
8	781.40	13	16	2.20	1564.19	1561	17	3.50E-03	****	1.90E+00	
0	804.73	17	25	1.55	1610.87	1605	12	4.61E-03	****	1.86E+00	
0	946.99	23	13	4.32	1895.53	1886	17	6.21E-03	84.4	1.64E+00	T
4	963.76	18	15	2.84	1929.07	1920	23	4.95E-03	****	1.62E+00	T
0	1063.76	10	22	1.73	2129.16	2121	15	2.67E-03	****	1.50E+00	T
0	1134.69	13	15	3.50	2271.08	2263	15	3.61E-03	****	1.42E+00	
0	1143.20	15	12	3.51	2288.11	2282	12	4.16E-03	****	1.41E+00	
0	1168.70	19	12	1.24	2339.14	2333	13	5.26E-03	90.3	1.39E+00	
0	1200.59	13	9	3.91	2402.95	2394	14	3.55E-03	****	1.36E+00	
3	1207.52	13	1	2.05	2416.82	2407	13	3.70E-03	56.6	1.35E+00	
0	1236.70	32	27	8.17	2475.21	2464	27	8.92E-03	97.0	1.33E+00	T
0	1263.32	9	8	1.37	2528.47	2521	12	2.57E-03	****	1.31E+00	
1	1272.80	19	6	2.30	2547.42	2542	19	5.48E-03	63.4	1.30E+00	T
0	1280.93	6	3	1.39	2563.69	2560	7	1.81E-03	****	1.29E+00	
0	1511.05	7	5	1.34	3024.14	3017	10	1.94E-03	****	1.13E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235029.CNF;1
* Acquisition date   : 3-OCT-2016 09:08:53 Sensitivity      : 3.000
* Detector ID        : GAM19 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.76 Half life ratio : *****
* Sample date        : 23-NOV-2015 11:10:00 Nuclide Library : SOLID
* Sample ID          : G405235029 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.5120E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 15-JUN-2016 10:35:16 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM19 CAN.CNF;17
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
NA-22	3.592E-02
K-40	1.963E-01
Y-91	3.970E+02
CD-109	9.125E-01
SN-126	6.504E-02
BA-137M	2.978E-02
CS-137	3.146E-02
TL-208	2.997E-02
BI-211	1.678E-01
BI-212	4.024E-01
PB-212	4.576E-02
BI-214	6.542E-02
PB-214	1.582E-01
RN-222	6.542E-02
RA-224	4.905E-01
RA-226	6.542E-02
AC-228	1.212E-01
RA-228	1.212E-01
TH-228	4.576E-02
TH-229	4.423E-01
TH-230	6.540E-02
PA-231	4.111E-01
TH-232	1.212E-01
TH-234	9.659E-01
U-234	6.540E-02
U-235	1.528E-01
U-238	9.659E-01
AM-243	4.080E-02
ANH-511	2.626E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.256E+01	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF

AL-26	1.701E-02	NOT IDENT.
SC-46	3.761E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	7.005E-02	NOT IDENT.
CO-56	4.361E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.424E-02	NOT IDENT.
CO-58	6.015E-01	NOT IDENT.
FE-59	5.496E+00	NOT IDENT.
CO-60	3.110E-02	NOT IDENT.
ZN-65	1.132E-01	NOT IDENT.
GE-68	1.556E+00	NOT IDENT.
AS-73	8.631E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.917E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.265E-01	NOT IDENT.
KR-85	6.727E+00	NOT IDENT.
SR-85	8.326E-01	NOT IDENT.
RE-86	0.000E+00	SHORT HLIF
Y-88	2.123E-01	NOT IDENT.
NB-94	2.934E-02	NOT IDENT.
NB-95	9.456E-01	NOT IDENT.
NB-95M	2.560E+00	NOT IDENT.
ZR-95	1.549E+00	FAIL ABUN
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.975E-02	NOT IDENT.
RH-102	5.057E-02	NOT IDENT.
RU-103	7.631E+00	FAIL ABUN
RH-106	4.193E-01	NOT IDENT.
RU-106	4.193E-01	NOT IDENT.
AG-108M	2.503E-02	FAIL ABUN
AG-110M	7.513E-02	NOT IDENT.
SN-113	2.409E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.178E-01	NOT IDENT.
SB-124	1.998E+00	FAIL ABUN
SB-125	9.828E-02	NOT IDENT.
TE-125M	2.992E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.459E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.580E-02	NOT IDENT.
CS-135	1.221E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.135E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.923E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.710E-01	NOT IDENT.
PM-144	4.951E-02	NOT IDENT.
PR-144	4.335E+00	NOT IDENT.
PM-146	4.144E-02	FAIL ABUN
ND-147	0.000E+00	SHORT HLIF
PM-147	7.308E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.162E-02	FAIL ABUN
EU-152	8.553E-02	FAIL ABUN
GD-153	1.765E-01	NOT IDENT.
EU-154	1.112E-01	FAIL ABUN
EU-155	9.483E-02	FAIL ABUN
TB-160	2.294E+00	FAIL ABUN
HO-166M	4.085E-02	FAIL ABUN
TM-171	1.728E+01	NOT IDENT.
HF-172	2.189E-01	FAIL ABUN

LU-172	5.959E-02	FAIL ABUN
LU-176	2.190E-02	NOT IDENT.
HF-181	5.107E+00	NOT IDENT.
TA-182	7.907E-01	FAIL ABUN
RE-183	2.900E+00	NOT IDENT.
RE-184	3.830E+01	NOT IDENT.
W-188	1.203E+02	FAIL ABUN
IR-192	4.643E-01	FAIL ABUN
HG-203	2.739E+00	NOT IDENT.
BI-207	1.208E-01	FAIL ABUN
PB-210	2.914E+00	NOT IDENT.
PB-211	5.911E-01	NOT IDENT.
RN-219	3.638E-01	NOT IDENT.
RA-223	5.439E-01	FAIL ABUN
AC-227	2.233E-01	FAIL ABUN
TH-227	2.233E-01	FAIL ABUN
TH-231	5.439E-01	FAIL ABUN
PA-233	5.388E-02	FAIL ABUN
PA-234	2.637E-01	FAIL ABUN
PA-234M	3.626E+00	NOT IDENT.
NP-237	5.388E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.275E-01	NOT IDENT.
PU-239	3.275E+02	FAIL ABUN
AM-241	1.091E-01	NOT IDENT.
CM-243	8.638E-02	NOT IDENT.
BK-247	6.165E-02	NOT IDENT.
CM-247	3.244E-02	NOT IDENT.
CF-249	3.680E-02	NOT IDENT.
CF-251	1.062E-01	NOT IDENT.


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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235029.CNF;1
* Acquisition date   : 3-OCT-2016 09:08:53 Sensitivity      : 3.000
* Detector ID        : GAM19 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.76 Half life ratio : *****
* Sample date        : 23-NOV-2015 11:10:00 Nuclide Library : SOLID
* Sample ID          : G405235029 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.5120E+02 GRAM
*                               Quantity Err(%) : 1.3227E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight  : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 15-JUN-2016 10:35:16 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM19 CAN.CNF;17
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
             (pCi/GRAM )   (1.96-sigma)  (1.96-sigma)
NA-22        7.308E-02      6.015E-02      6.015E-02
K-40         1.424E+01      1.663E+00      1.663E+00
Y-91         6.574E+02      3.693E+02      3.693E+02
CD-109       1.980E+00      3.119E+00      3.119E+00
SN-126       1.234E-01      1.942E-01      1.942E-01
BA-137M      2.945E-01      7.686E-02      7.686E-02
CS-137       3.111E-01      8.119E-02      8.119E-02
TL-208       3.231E-01      8.180E-02      8.180E-02
BI-211       3.842E-01      9.768E-01      9.768E-01
BI-212       1.025E+00      9.654E-01      9.654E-01
PB-212       1.074E+00      1.428E-01      1.428E-01
BI-214       7.577E-01      1.875E-01      1.875E-01
PB-214       1.155E+00      1.996E-01      1.996E-01
RN-222       7.577E-01      1.875E-01      1.875E-01
RA-224       2.381E+00      1.781E+00      1.781E+00
RA-226       7.577E-01      1.875E-01      1.875E-01
AC-228       8.586E-01      2.980E-01      2.980E-01
RA-228       8.586E-01      2.980E-01      2.980E-01
TH-228       1.074E+00      1.428E-01      1.428E-01
TH-229       1.099E-01      4.781E-01      4.781E-01
TH-230       7.574E-01      1.874E-01      1.874E-01
PA-231       7.782E-01      8.802E-01      8.802E-01
TH-232       8.586E-01      2.980E-01      2.980E-01
TH-234       1.207E+00      2.841E+00      2.841E+00
U-234        7.574E-01      1.874E-01      1.874E-01
U-235        3.153E-01      3.553E-01      3.553E-01
U-238        1.207E+00      2.841E+00      2.841E+00
AM-243       1.873E-01      1.107E-01      1.107E-01
ANH-511      9.783E-02      7.619E-02      7.619E-02

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

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Key-Line
Nuclide      Activity      K.L. Act error      TPU
             (pCi/GRAM )   (1.96-sigma)  (1.96-sigma)
BE-7         -1.453E+01      1.672E+01      1.796E+01 NOT IDENT.

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NA-24	1.000E+41	3.370E+41	0.000E+00	SHORT HLIF
AL-26	5.527E-03	1.712E-02	1.730E-02	NOT IDENT.
SC-46	4.859E-02	4.254E-01	4.259E-01	FAIL ABUN
V-48	8.593E+03	2.902E+04	2.927E+04	SHORT HLIF
CR-51	2.128E+02	6.550E+02	6.619E+02	SHORT HLIF
MN-54	5.341E-02	7.342E-02	7.727E-02	NOT IDENT.
CO-56	-1.196E-01	5.203E-01	5.230E-01	NOT IDENT.
MN-56	-1.000E+41	4.574E+41	0.000E+00	SHORT HLIF
CO-57	-1.255E-02	4.811E-02	4.844E-02	NOT IDENT.
CO-58	-4.650E-03	7.415E-01	7.415E-01	NOT IDENT.
FE-59	-3.147E+00	7.188E+00	7.326E+00	NOT IDENT.
CO-60	1.764E-03	3.682E-02	3.683E-02	NOT IDENT.
ZN-65	-1.572E-01	1.984E-01	2.107E-01	NOT IDENT.
GE-68	-9.278E-01	2.040E+00	2.083E+00	NOT IDENT.
AS-73	-5.050E-01	9.792E+00	9.795E+00	NOT IDENT.
AS-74	6.443E+03	1.048E+04	1.087E+04	SHORT HLIF
SE-75	-1.882E-02	2.424E-01	2.426E-01	NOT IDENT.
BR-77	1.573E+40	1.430E+41	0.000E+00	SHORT HLIF
SR-82	3.226E+02	1.113E+03	1.123E+03	SHORT HLIF
RB-83	1.073E-01	7.245E-01	7.261E-01	NOT IDENT.
KR-85	-3.223E-01	8.982E+00	8.983E+00	NOT IDENT.
SR-85	-4.160E-02	1.112E+00	1.112E+00	NOT IDENT.
RB-86	-1.883E+04	4.142E+04	4.228E+04	SHORT HLIF
Y-88	8.967E-02	2.205E-01	2.242E-01	NOT IDENT.
NB-94	4.531E-03	3.256E-02	3.263E-02	NOT IDENT.
NB-95	3.129E-01	1.035E+00	1.045E+00	NOT IDENT.
NB-95M	-5.126E-02	3.181E+00	3.181E+00	NOT IDENT.
ZR-95	4.002E-01	1.703E+00	1.713E+00	FAIL ABUN
NB-97	-1.000E+41	2.803E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.001E+41	0.000E+00	SHORT HLIF
MO-99	2.584E+33	7.077E+33	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	1.352E+41	0.000E+00	SHORT HLIF
RH-101	-6.025E-03	3.589E-02	3.600E-02	NOT IDENT.
RH-102	2.108E-02	5.717E-02	5.795E-02	NOT IDENT.
RU-103	5.562E+00	8.287E+00	8.658E+00	FAIL ABUN
RH-106	-1.176E-01	5.939E-01	5.963E-01	NOT IDENT.
RU-106	-1.176E-01	5.939E-01	5.963E-01	NOT IDENT.
AG-108M	-1.943E-03	2.940E-02	2.941E-02	FAIL ABUN
AG-110M	-6.504E-02	9.872E-02	1.030E-01	NOT IDENT.
SN-113	-1.233E-01	2.916E-01	2.969E-01	NOT IDENT.
CD-115	-1.000E+41	2.080E+41	0.000E+00	SHORT HLIF
SN-117M	-4.185E+04	1.976E+05	1.985E+05	SHORT HLIF
TE-123M	-2.844E-02	1.300E-01	1.307E-01	NOT IDENT.
SB-124	1.719E-01	2.269E+00	2.271E+00	FAIL ABUN
SB-125	-6.711E-02	1.221E-01	1.258E-01	NOT IDENT.
TE-125M	3.728E+01	3.486E+02	3.490E+02	NOT IDENT.
I-126	3.262E+05	1.936E+06	1.942E+06	SHORT HLIF
SB-126	8.123E+04	3.089E+06	3.089E+06	SHORT HLIF
SB-127	-1.859E+23	4.455E+23	0.000E+00	SHORT HLIF
I-131	3.083E+09	2.150E+10	2.155E+10	SHORT HLIF
I-132	-1.000E+41	1.944E+42	0.000E+00	SHORT HLIF
TE-132	-3.774E+27	1.080E+28	0.000E+00	SHORT HLIF
BA-133	-7.632E-03	4.557E-02	4.570E-02	NOT IDENT.
I-133	-1.000E+41	7.518E+41	0.000E+00	SHORT HLIF
CS-134	4.499E-02	5.831E-02	6.174E-02	NOT IDENT.
CS-135	2.104E-02	1.352E-01	1.355E-01	NOT IDENT.
I-135	1.000E+41	7.389E+41	0.000E+00	SHORT HLIF
CS-136	9.174E+04	7.601E+05	7.612E+05	SHORT HLIF
CE-139	-2.342E-02	1.251E-01	1.255E-01	NOT IDENT.
BA-140	8.583E+04	3.081E+06	3.081E+06	SHORT HLIF
LA-140	-8.895E+05	1.064E+06	1.137E+06	SHORT HLIF
CE-141	-2.317E+00	3.524E+01	3.525E+01	NOT IDENT.
CE-143	1.000E+41	1.230E+41	0.000E+00	SHORT HLIF
CE-144	1.442E-01	4.300E-01	4.348E-01	NOT IDENT.
PM-144	-1.616E-02	5.746E-02	5.792E-02	NOT IDENT.
PR-144	-1.415E+00	5.030E+00	5.070E+00	NOT IDENT.
PM-146	3.302E-02	4.424E-02	4.668E-02	FAIL ABUN
ND-147	4.440E+07	9.125E+07	9.342E+07	SHORT HLIF
PM-147	-3.599E+02	8.053E+02	8.214E+02	NOT IDENT.
PM-149	-1.000E+41	1.368E+41	0.000E+00	SHORT HLIF
EU-150	-5.813E-03	2.843E-02	2.855E-02	FAIL ABUN
EU-152	2.077E-02	9.564E-02	9.609E-02	FAIL ABUN
GD-153	6.480E-02	2.002E-01	2.023E-01	NOT IDENT.
EU-154	1.778E-01	1.464E-01	1.669E-01	FAIL ABUN
EU-155	2.016E-02	1.094E-01	1.098E-01	FAIL ABUN
TB-160	1.846E+00	2.384E+00	2.525E+00	FAIL ABUN
HO-166M	-1.935E-02	4.933E-02	5.009E-02	FAIL ABUN
TM-171	-5.108E+00	1.996E+01	2.009E+01	NOT IDENT.

HF-172	2.179E-02	2.579E-01	2.581E-01	FAIL ABUN
LU-172	-3.290E-02	7.649E-02	7.791E-02	FAIL ABUN
LU-176	1.887E-03	2.750E-02	2.751E-02	NOT IDENT.
HF-181	1.695E-01	5.978E+00	5.978E+00	NOT IDENT.
TA-182	-7.827E-01	1.081E+00	1.138E+00	FAIL ABUN
RE-183	-3.873E-01	3.612E+00	3.616E+00	NOT IDENT.
RE-184	1.204E+01	4.245E+01	4.279E+01	NOT IDENT.
W-188	-2.611E+01	1.556E+02	1.560E+02	FAIL ABUN
IR-192	-1.159E-01	5.398E-01	5.423E-01	FAIL ABUN
HG-203	-1.561E+00	3.604E+00	3.672E+00	NOT IDENT.
BI-207	4.348E-02	1.364E-01	1.378E-01	FAIL ABUN
PB-210	-1.349E+00	3.391E+00	3.445E+00	NOT IDENT.
PB-211	-2.626E-01	8.083E-01	8.170E-01	NOT IDENT.
RN-219	5.338E-02	4.152E-01	4.159E-01	NOT IDENT.
RA-223	8.816E-02	6.105E-01	6.118E-01	FAIL ABUN
AC-227	1.748E-01	4.176E-01	4.249E-01	FAIL ABUN
TH-227	1.748E-01	4.176E-01	4.249E-01	FAIL ABUN
TH-231	8.816E-02	6.105E-01	6.118E-01	FAIL ABUN
PA-233	2.158E-03	6.096E-02	6.096E-02	FAIL ABUN
PA-234	5.719E-01	8.074E-01	8.476E-01	FAIL ABUN
PA-234M	-1.459E+00	4.352E+00	4.401E+00	NOT IDENT.
NP-237	2.158E-03	6.096E-02	6.096E-02	FAIL ABUN
NP-238	1.000E+41	3.756E+41	0.000E+00	SHORT HLIF
NP-239	1.473E-01	2.330E-01	2.423E-01	NOT IDENT.
PU-239	7.470E+02	5.753E+02	6.666E+02	FAIL ABUN
AM-241	-3.107E-02	1.379E-01	1.386E-01	NOT IDENT.
CM-243	1.986E-02	9.941E-02	9.982E-02	NOT IDENT.
BK-247	-1.230E-02	7.881E-02	7.900E-02	NOT IDENT.
CM-247	1.685E-03	3.922E-02	3.922E-02	NOT IDENT.
CF-249	1.638E-03	4.231E-02	4.232E-02	NOT IDENT.
CF-251	4.163E-02	1.131E-01	1.147E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	53.6616	879.38	112.8485	482.18	100.1077
45.60	62.8962	87.57	112.8741	133.52	92.4598
46.54	79.9083	87.09	112.8991	264.66	89.2840
49.72	0.0000	87.57	112.9795	122.06	100.4969
51.35	69.3568	88.03	87.2150	140.51	0.0000
51.87	78.5368	88.34	87.2545	143.76	77.0593
52.39	77.4805	193.51	87.2715	144.24	81.8637
52.97	75.2901	89.96	92.3206	145.44	81.9684
53.44	83.3542	90.64	92.4122	152.43	110.0975
125.81	70.8834	91.11	0.0000	153.25	0.0000
57.36	0.0000	63.29	92.6714	154.21	88.4151
57.53	81.7246	143.76	92.7717	156.02	0.0000
57.98	86.0189	94.56	89.6704	158.56	0.0000
1093.63	87.7696	94.65	92.9427	159.00	70.3743
57.98	87.7779	94.67	92.9456	162.33	73.2574
59.54	83.1923	94.87	92.9717	162.66	0.0000
60.96	77.2344	97.43	83.4825	163.33	66.2621
61.17	88.0817	311.90	78.6802	165.86	92.1119
62.93	88.3663	946.00	78.6816	176.31	78.7268
63.29	88.4241	99.53	75.1051	1048.07	0.0000
63.58	88.4705	1221.41	107.2021	177.52	71.6512
64.28	97.9062	265.00	79.0664	739.50	0.0000
66.73	112.3799	103.18	73.0014	181.52	78.2110
67.24	106.6219	103.37	73.0199	711.68	63.5464
67.68	103.1861	116.74	73.0199	185.72	78.5128
67.75	96.1619	105.21	74.4388	193.51	77.2448
69.67	106.6782	105.31	74.4484	197.03	88.4233
70.83	111.6041	106.12	78.2544	127.23	71.1644
72.81	98.1750	106.47	78.2900	306.78	85.1299
279.20	98.1851	109.28	82.3177	203.43	78.8307
72.87	98.1851	111.00	88.7489	205.31	68.8576
74.66	98.4751	228.16	0.0000	210.85	71.0243
74.82	98.5004	114.06	85.3279	215.65	72.2339
1063.66	98.5245	116.30	0.0000	222.11	80.0616
238.63	98.8665	116.74	73.8615	290.67	77.5769
351.93	98.8665	119.76	81.7165	177.52	74.7908
78.74	98.7248	121.12	86.9136	228.16	0.0000
79.69	86.1152	121.22	86.9241	228.18	74.8381
80.12	86.1735	121.78	86.1382	235.69	74.8086
80.19	0.0000	122.06	86.1673	256.23	65.8828
80.57	95.8154	122.92	83.7191	238.63	66.0181
81.00	97.4775	123.07	86.2711	238.98	0.0000
81.07	110.2734	123.68	82.9482	240.99	66.1377
81.75	100.7908	125.81	87.8240	242.00	66.1883
323.87	93.0818	127.23	84.1448	344.28	66.3235
84.00	93.1119	127.91	88.0399	252.40	0.0000
85.43	112.6192	129.30	85.1990	252.80	48.6146
86.55	112.8086	131.20	96.0583	254.15	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
256.23	56.3820	351.93	42.7203	583.19	26.1651
260.90	0.0000	507.63	0.0000	584.27	26.1773
264.66	49.0348	356.01	39.7633	595.83	0.0000
264.80	51.9247	364.49	0.0000	600.60	28.6407
265.00	51.9313	366.42	0.0000	602.52	0.0000
268.22	50.1232	372.51	32.9355	604.72	30.9825
269.46	50.1666	129.30	38.1359	607.14	33.3094
270.03	50.1867	377.52	35.0922	609.32	33.3377
271.23	50.2290	383.85	45.5737	497.08	33.3507
273.65	0.0000	388.16	44.6429	433.94	10.3663
356.01	50.4110	388.63	0.0000	696.49	23.0705
277.37	50.4448	391.69	49.9297	620.36	11.5454
277.60	50.4533	400.66	39.7194	621.93	22.5278
278.00	50.4670	401.81	39.7434	667.71	0.0000
279.20	61.1927	402.40	38.9195	631.29	16.2319
279.54	64.1215	404.85	42.4273	453.88	23.2064
279.70	64.1295	410.95	39.4104	595.83	0.0000
280.46	55.4136	413.71	52.0973	635.95	24.3915
283.69	58.4583	414.70	0.0000	636.99	0.0000
364.49	0.0000	423.72	0.0000	645.85	30.3132
285.41	56.5757	404.85	39.2116	884.68	32.3224
285.90	0.0000	427.87	46.6479	657.90	0.0000
402.40	46.8877	433.94	34.0306	661.66	22.8698
290.67	52.8618	333.97	33.0573	664.57	0.0000
293.27	0.0000	453.88	23.6288	666.33	0.0000
295.22	55.9679	463.37	20.5006	720.70	0.0000
295.96	55.9946	468.07	25.9541	667.71	0.0000
298.58	56.0920	685.70	0.0000	677.62	17.6953
299.98	56.1430	475.06	34.7207	685.70	0.0000
300.09	56.1476	476.78	33.6628	695.00	0.0000
300.13	56.1488	477.60	40.1940	696.49	23.1610
301.36	56.1940	482.18	30.4826	696.51	23.1610
302.85	56.2485	1596.21	0.0000	697.00	0.0000
304.50	47.4180	527.90	0.0000	697.30	21.3853
537.26	0.0000	497.08	26.3081	697.49	22.2778
306.78	46.0043	505.52	19.8073	702.65	24.1046
316.51	43.5775	507.63	0.0000	706.68	24.1383
311.90	46.6519	511.00	34.1964	711.68	18.8076
316.51	46.7877	514.00	38.1078	720.70	0.0000
531.02	0.0000	514.00	38.1078	721.93	0.0000
320.08	0.0000	520.40	22.1549	1690.97	20.6788
427.87	48.9183	238.98	0.0000	722.91	20.6795
323.87	46.0037	522.65	0.0000	1274.44	20.6823
325.23	54.0505	527.90	0.0000	724.19	20.6886
328.76	0.0000	528.26	25.5662	727.33	20.7111
388.16	51.9065	520.40	28.9178	733.00	14.4360
333.97	45.2838	529.87	0.0000	735.93	25.8048
334.37	49.8243	531.02	0.0000	737.46	14.4580
338.28	45.4019	537.26	0.0000	739.50	0.0000
911.20	45.4037	546.56	0.0000	747.24	20.3089
340.48	45.4623	552.55	22.4650	748.06	16.3240
340.55	0.0000	563.25	33.8489	752.31	24.7023
344.28	40.5029	795.86	31.6732	753.82	0.0000
345.93	36.4885	569.50	29.4129	756.73	18.1909
351.06	42.6990	569.70	29.4150	756.80	19.1005

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
763.94	26.4406	984.45	0.0000	1596.21	0.0000
765.81	21.8950	996.26	16.6176	1620.50	3.3697
766.42	13.6871	1001.03	15.6606	1621.92	3.3706
766.84	14.6016	1002.74	16.6467	1678.03	0.0000
772.60	0.0000	1004.73	17.6358	1690.97	4.5510
776.52	0.0000	1021.30	0.0000	1750.46	0.0000
777.92	0.0000	1025.87	0.0000	1764.49	1.8441
778.90	20.5235	1028.54	0.0000	1770.23	11.0760
783.70	0.0000	846.77	11.8616	1771.35	3.4618
727.33	14.6909	1038.76	0.0000	1791.20	0.0000
792.07	25.7655	1046.59	16.8423	1808.65	0.9291
794.95	23.0263	1048.07	0.0000	846.75	0.0000
795.86	21.1898	1049.04	19.8267	1836.06	2.8000
801.95	19.2010	621.93	19.8340		
810.06	20.7313	1063.66	10.9463		
810.29	19.2518	1077.00	0.0000		
810.45	18.5126	1077.34	11.9832		
810.76	18.5144	1085.87	11.0087		
815.77	0.0000	1093.63	16.0439		
818.51	0.0000	1099.45	12.0513		
832.01	19.5709	1112.07	11.0819		
834.85	18.6554	1112.84	13.0992		
835.71	21.4593	1115.54	17.7461		
1260.41	0.0000	609.32	11.1041		
846.75	0.0000	889.28	11.1047		
846.77	17.7876	1121.30	11.3094		
856.80	0.0000	1129.67	14.5705		
860.56	14.1023	1131.51	0.0000		
702.65	16.0335	1147.95	0.0000		
873.19	12.2688	1173.23	6.5445		
529.87	0.0000	1177.95	16.3799		
879.38	15.1279	1189.05	13.3436		
880.51	17.0250	1204.77	8.2422		
883.24	18.9319	1221.41	21.7191		
884.68	17.9928	1231.02	18.2435		
889.28	15.1729	1235.36	0.0000		
903.28	18.0468	1238.28	10.3827		
898.04	18.0641	1260.41	0.0000		
900.72	19.0302	1271.87	10.0441		
903.28	16.1876	1274.44	10.0500		
911.20	20.0425	1274.54	10.0500		
912.08	20.0477	1099.45	4.2034		
923.98	0.0000	1298.22	0.0000		
926.50	16.2970	1312.11	0.0000		
929.11	13.4313	1332.49	8.4824		
937.49	19.2334	1362.66	0.0000		
944.13	0.0000	1365.19	9.6103		
946.00	10.6039	1368.63	0.0000		
949.00	10.8059	1384.29	6.4325		
954.55	0.0000	1408.01	8.6196		
962.31	8.7157	1457.56	0.0000		
964.08	8.7201	1460.82	4.3564		
966.17	8.7251	696.51	5.4764		
968.97	9.3141	1505.03	5.2740		
983.53	0.0000	1584.12	11.1560		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:11:09.21

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235030.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM20.CNF;515
Background date    : 2-OCT-2016 11:01:13.
Sample date       : 23-NOV-2015 14:44:00 Acquisition date : 3-OCT-2016 09:09:22.
Sample ID        : G405235030 Sample quantity   : 1.31120E+02 GRAM
Detector name     : GAM20 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:15.23 0.4%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity       : 3.00000
Batch ID          : 1596249 Detector SN#       :
Matrix Spike ID   : LCS ID                   : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.17*	43	187	1.39	126.50	123	9	1.20E-02	60.3	
2	3	74.94	159	178	1.17	150.02	145	15	4.42E-02	15.9	1.23E+00
3	3	77.25	261	153	1.22	154.64	145	15	7.26E-02	10.4	
4	3	87.53	112	173	1.32	175.17	171	21	3.11E-02	21.2	2.21E+00
5	3	90.08*	53	130	1.19	180.28	171	21	1.46E-02	38.5	
6	3	92.88*	129	138	1.48	185.86	171	21	3.59E-02	21.1	
7	3	129.39	41	111	1.36	258.84	254	12	1.13E-02	47.8	1.57E+00
8	3	131.32	24	93	1.14	262.70	254	12	6.80E-03	72.2	
9	0	161.55	27	63	1.56	323.13	321	6	7.50E-03	50.3	
10	0	186.00*	133	130	1.69	372.01	366	13	3.69E-02	20.5	
11	0	208.97	59	86	1.23	417.91	415	9	1.64E-02	30.9	
12	4	238.54*	490	48	1.21	477.02	472	26	1.36E-01	5.2	1.10E+00
13	4	241.80	131	65	1.85	483.56	472	26	3.63E-02	18.0	
14	0	270.50	21	75	2.05	540.93	539	8	5.75E-03	77.9	
15	1	295.18*	162	65	1.27	590.27	585	20	4.51E-02	11.4	2.45E+00
16	1	300.19	38	69	1.51	600.27	585	20	1.07E-02	41.5	
17	0	327.64	36	51	1.31	655.16	650	9	9.89E-03	38.0	
18	0	338.27*	68	60	1.03	676.42	671	10	1.88E-02	24.9	
19	1	351.92*	231	50	1.55	703.72	699	17	6.40E-02	8.7	5.15E+00
20	1	355.92*	13	34	1.56	711.72	699	17	3.59E-03	101.2	
21	0	416.83	11	17	1.33	833.50	830	6	3.14E-03	64.3	
22	0	463.17	34	27	1.62	926.18	922	11	9.55E-03	33.0	
23	0	510.97*	40	53	1.72	1021.77	1016	13	1.11E-02	47.3	
24	0	583.15*	175	18	1.56	1166.14	1157	18	4.87E-02	9.6	
25	0	609.31*	164	50	1.46	1218.47	1213	13	4.57E-02	12.0	
26	0	657.26	19	9	1.53	1314.39	1306	14	5.14E-03	43.5	
27	0	661.74*	26	11	0.62	1323.34	1319	9	7.23E-03	31.7	
28	0	710.81	10	14	1.33	1421.52	1417	9	2.76E-03	77.6	
29	0	727.71	37	39	1.38	1455.33	1449	12	1.03E-02	37.4	
30	0	860.58	32	20	1.75	1721.19	1712	17	8.87E-03	37.4	
31	0	911.09*	86	16	1.67	1822.28	1815	13	2.38E-02	14.7	
32	0	922.69	17	10	4.74	1845.49	1837	12	4.81E-03	42.4	
33	0	969.00	57	24	2.10	1938.18	1933	11	1.59E-02	21.4	
34	0	1001.87*	10	3	1.31	2003.97	2000	7	2.81E-03	48.7	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1121.07	37	37	1.65	2242.58	2237	15	1.04E-02	37.9	
36	0	1238.15	21	11	2.37	2477.01	2472	9	5.79E-03	36.3	
37	0	1432.30	6	4	1.39	2865.83	2861	8	1.67E-03	70.7	
38	0	1460.87*	386	0	2.07	2923.05	2916	13	1.07E-01	5.1	
39	0	1504.53	8	3	0.56	3010.52	3004	10	2.31E-03	49.9	
40	0	1729.83	18	2	1.32	3461.94	3457	10	4.92E-03	28.9	
41	0	1764.61	44	12	2.38	3531.63	3522	15	1.23E-02	22.4	
42	0	1846.37	16	0	1.04	3695.50	3690	11	4.44E-03	25.0	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235030.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 23-NOV-2015 14:44:00 Acquisition date : 3-OCT-2016 09:09:22
Sample ID : G405235030 Sample quantity : 131.12 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA20 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:15.23 0.4%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.312E+00	1.507E+01	1.507E+01	10.25	OK
CD-109	88.03	3.70*	6.859E+00	1.859E+00	2.983E+00	67.66	OK
SN-126	64.28	9.60	4.772E+00	6.364E-01	6.364E-01	120.63	OK
	86.94	8.90	6.859E+00	7.727E-01	7.727E-01	67.66	OK
	87.57	37.00*	6.859E+00	1.859E-01	1.859E-01	67.66	OK
BA-137M	661.66	89.90*	2.464E+00	6.788E-02	6.924E-02	63.43	OK
CS-137	661.66	85.10*	2.464E+00	7.170E-02	7.314E-02	63.43	OK
TL-208	277.37	6.60	4.947E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.720E+00	4.419E-01	4.419E-01	19.14	OK
	860.56	12.50	2.011E+00	7.206E-01	7.206E-01	74.72	OK
PB-212	74.82	10.28	6.006E+00	1.071E+00	1.071E+00	52.68	OK
	77.11	17.10	6.195E+00	1.641E+00	1.641E+00	20.71	OK
	238.63	43.60*	5.554E+00	1.253E+00	1.253E+00	10.39	OK
	300.09	3.30	4.645E+00	1.532E+00	1.532E+00	82.97	OK
BI-214	609.32	45.49*	2.628E+00	7.998E-01	8.001E-01	24.10	OK
	1120.29	14.92	1.635E+00	8.518E-01	8.521E-01	75.87	OK
	1764.49	15.30	1.106E+00	1.404E+00	1.405E+00	44.86	OK
PB-214	74.82	5.80	5.996E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	6.195E+00	2.893E+00	2.894E+00	20.71	OK
	87.09	3.41	6.836E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	5.495E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.708E+00	1.144E+00	1.144E+00	22.73	OK
	351.93	35.60*	4.083E+00	9.572E-01	9.576E-01	17.36	OK
RN-222	609.32	45.49*	2.628E+00	7.998E-01	8.001E-01	24.10	OK
	1120.29	14.92	1.635E+00	8.518E-01	8.521E-01	75.87	OK
	1764.49	15.30	1.106E+00	1.404E+00	1.405E+00	44.86	OK
RA-224	240.99	4.10*	5.498E+00	1.568E+00	1.568E+00	87.46	OK
RA-226	609.32	45.49*	2.628E+00	7.998E-01	8.001E-01	24.10	OK
	1120.29	14.92	1.635E+00	8.518E-01	8.521E-01	75.87	OK
	1764.49	15.30	1.106E+00	1.404E+00	1.405E+00	44.86	OK
AC-228	105.21	1.10	7.453E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.217E+00	8.632E-01	8.632E-01	49.76	OK
	794.95	4.25	2.138E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	2.057E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.924E+00	9.747E-01	9.747E-01	29.48	OK
	968.97	15.80	1.834E+00	1.110E+00	1.110E+00	42.70	OK
RA-228	105.21	1.10	7.453E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.217E+00	8.632E-01	8.632E-01	49.76	OK
	794.95	4.25	2.138E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	2.057E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.924E+00	9.747E-01	9.747E-01	29.48	OK
	968.97	15.80	1.834E+00	1.110E+00	1.110E+00	42.70	OK
TH-228	74.82	10.28	6.006E+00	1.071E+00	1.071E+00	52.68	OK
	77.11	17.10	6.195E+00	1.641E+00	1.641E+00	20.71	OK
	238.63	43.60*	5.554E+00	1.253E+00	1.253E+00	10.39	OK
	300.09	3.30	4.645E+00	1.532E+00	1.532E+00	82.97	OK
TH-230	609.32	45.49*	2.628E+00	7.998E-01	7.998E-01	24.10	OK
	1120.29	14.92	1.635E+00	8.518E-01	8.518E-01	75.87	OK
	1764.49	15.30	1.106E+00	1.404E+00	1.404E+00	44.86	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
PA-231	283.69	1.70	4.860E+00	----- Line Not Found	-----	-----	Absent
	301.36	5.35*	4.645E+00	9.449E-01	9.449E-01	82.97	OK
TH-232	105.21	1.10	7.453E+00	----- Line Not Found	-----	-----	Absent
	338.32	11.27	4.217E+00	8.632E-01	8.632E-01	49.76	OK
	835.71	1.61	2.057E+00	----- Line Not Found	-----	-----	Absent
	911.20	25.80*	1.924E+00	9.747E-01	9.747E-01	29.48	OK
	968.97	15.80	1.834E+00	1.110E+00	1.110E+00	42.70	OK
TH-234	63.29	3.70*	4.772E+00	1.651E+00	1.651E+00	120.63	OK
	92.59	4.23	7.103E+00	2.828E+00	2.828E+00	42.14	OK
U-234	609.32	45.49*	2.628E+00	7.998E-01	7.998E-01	24.10	OK
	1120.29	14.92	1.635E+00	8.518E-01	8.518E-01	75.87	OK
	1764.49	15.30	1.106E+00	1.404E+00	1.404E+00	44.86	OK
U-235	89.96	3.47	6.984E+00	1.434E+00	1.434E+00	77.01	OK
	93.35	5.60	7.103E+00	2.136E+00	2.136E+00	42.14	OK
	143.76	10.96*	7.370E+00	----- Line Not Found	-----	-----	Absent
	163.33	5.08	7.024E+00	----- Line Not Found	-----	-----	Absent
	185.72	57.20	6.563E+00	2.227E-01	2.227E-01	41.06	OK
	205.31	5.01	6.171E+00	----- Line Not Found	-----	-----	Absent
U-238	63.29	3.70*	4.772E+00	1.651E+00	1.651E+00	120.63	OK
	92.59	4.23	7.103E+00	2.828E+00	2.828E+00	42.14	OK
AM-243	43.53	5.90	1.315E+00	----- Line Not Found	-----	-----	Absent
	74.66	67.20*	6.006E+00	1.639E-01	1.639E-01	52.68	OK
ANH-511	511.00	100.00*	3.019E+00	7.810E-02	7.810E-02	94.68	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235030.CNF;1
* Acquisition date   : 3-OCT-2016 09:09:22 Sensitivity      : 3.000
* Detector ID        : GAM20 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:15.23 Half life ratio : *****
* Sample date        : 23-NOV-2015 14:44:00 Analyst initials: MXR1
* Sample ID          : G405235030 Sample Quantity : 1.3112E+02 GRAM
* Batch Number       : 1596249 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight       : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 30-JUN-2016 06:52:39 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM20 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.507E+01	1.514E+00	3.783E-01
CD-109	2.983E+00	1.978E+00	1.876E+00
SN-126	1.859E-01	1.233E-01	1.173E-01
BA-137M	6.924E-02	4.304E-02	5.190E-02
CS-137	7.314E-02	4.546E-02	5.483E-02
TL-208	4.419E-01	8.288E-02	4.272E-02
PB-212	1.253E+00	1.276E-01	8.896E-02
BI-214	8.001E-01	1.889E-01	1.294E-01
PB-214	9.576E-01	1.629E-01	1.188E-01
RN-222	8.001E-01	1.889E-01	1.294E-01
RA-224	1.568E+00	1.344E+00	9.536E-01
RA-226	8.001E-01	1.889E-01	1.294E-01
AC-228	9.747E-01	2.816E-01	2.158E-01
RA-228	9.747E-01	2.816E-01	2.158E-01
TH-228	1.253E+00	1.276E-01	8.896E-02
TH-230	7.998E-01	1.889E-01	1.294E-01
PA-231	9.449E-01	7.683E-01	7.239E-01
TH-232	9.747E-01	2.816E-01	2.158E-01
TH-234	1.651E+00	1.952E+00	1.661E+00
U-234	7.998E-01	1.889E-01	1.294E-01
U-235	-2.216E-02	1.820E-01	3.210E-01
U-238	1.651E+00	1.952E+00	1.661E+00
AM-243	1.639E-01	8.461E-02	7.554E-02
ANH-511	7.810E-02	7.247E-02	5.562E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-5.191E+00	1.334E+01	2.434E+01	NOT IDENT.
NA-22	-2.891E-02	4.082E-02	7.116E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	3.919E-03	1.766E-02	4.726E-02	NOT IDENT.
SC-46	5.750E-02	3.774E-01	7.455E-01	FAIL ABUN
V-48	0.000E+00	2.440E+04	0.000E+00	SHORT HLIF

CR-51	0.000E+00	5.321E+02	0.000E+00	SHORT HLIF
MN-54	3.804E-02	5.866E-02	1.238E-01	NOT IDENT.
CO-56	2.432E-02	4.637E-01	8.989E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-5.382E-02	5.013E-02	8.085E-02	NOT IDENT.
CO-58	-2.598E-01	6.789E-01	1.196E+00	NOT IDENT.
FE-59	2.421E-01	8.558E+00	1.708E+01	NOT IDENT.
CO-60	2.369E-02	3.601E-02	8.216E-02	NOT IDENT.
ZN-65	6.554E-02	1.670E-01	3.266E-01	NOT IDENT.
GE-68	-5.813E-01	2.548E+00	4.883E+00	NOT IDENT.
AS-73	2.459E+00	6.369E+00	1.214E+01	NOT IDENT.
AS-74	0.000E+00	1.068E+04	0.000E+00	SHORT HLIF
SE-75	-5.855E-02	2.090E-01	3.937E-01	NOT IDENT.
BR-77	0.000E+00	1.790E+39	0.000E+00	SHORT HLIF
SR-82	0.000E+00	1.060E+03	0.000E+00	SHORT HLIF
RB-83	-2.797E-01	7.158E-01	1.294E+00	NOT IDENT.
KR-85	2.480E+00	7.227E+00	1.297E+01	NOT IDENT.
SR-85	3.059E-01	8.933E-01	1.603E+00	NOT IDENT.
RB-86	0.000E+00	5.102E+04	0.000E+00	SHORT HLIF
Y-88	-6.971E-02	2.168E-01	4.233E-01	NOT IDENT.
Y-91	-1.463E+02	5.109E+02	9.832E+02	NOT IDENT.
NB-94	-6.041E-03	3.051E-02	5.576E-02	NOT IDENT.
NB-95	-3.666E-01	1.205E+00	2.121E+00	NOT IDENT.
NB-95M	2.424E+00	2.635E+00	5.031E+00	NOT IDENT.
ZR-95	-8.124E-01	1.394E+00	2.384E+00	NOT IDENT.
NB-97	0.000E+00	8.517E+40	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	6.694E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	8.237E-03	3.475E-02	5.858E-02	NOT IDENT.
RH-102	-4.122E-03	6.028E-02	1.129E-01	NOT IDENT.
RU-103	-1.577E+00	6.996E+00	1.300E+01	FAIL ABUN
RH-106	-1.630E-01	5.076E-01	9.176E-01	NOT IDENT.
RU-106	-1.630E-01	5.076E-01	9.176E-01	NOT IDENT.
AG-108M	1.808E-02	2.465E-02	5.173E-02	NOT IDENT.
AG-110M	2.838E-02	8.461E-02	1.756E-01	FAIL ABUN
SN-113	5.595E-02	2.420E-01	4.747E-01	NOT IDENT.
CD-115	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	2.242E+05	0.000E+00	SHORT HLIF
TE-123M	5.483E-02	1.550E-01	2.624E-01	NOT IDENT.
SB-124	9.869E-02	1.958E+00	4.383E+00	NOT IDENT.
SB-125	2.725E-02	9.345E-02	1.864E-01	FAIL ABUN
TE-125M	-1.420E+02	3.103E+02	5.351E+02	NOT IDENT.
I-126	0.000E+00	1.881E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	2.675E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.891E+23	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.492E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	8.342E+27	0.000E+00	SHORT HLIF
BA-133	3.287E-02	6.517E-02	7.453E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	5.534E-02	5.875E-02	1.214E-01	NOT IDENT.
CS-135	8.038E-02	1.421E-01	2.623E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	5.874E+05	0.000E+00	SHORT HLIF
CE-139	-4.901E-02	1.118E-01	1.890E-01	NOT IDENT.
BA-140	0.000E+00	2.717E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	8.756E+05	0.000E+00	SHORT HLIF
CE-141	-4.732E+01	3.413E+01	5.290E+01	NOT IDENT.
CE-143	0.000E+00	1.204E+41	0.000E+00	SHORT HLIF
CE-144	-1.732E-01	4.037E-01	6.288E-01	NOT IDENT.
PM-144	4.007E-02	5.701E-02	1.174E-01	NOT IDENT.
PR-144	3.477E+00	4.986E+00	1.026E+01	NOT IDENT.
PM-146	-1.605E-02	3.918E-02	7.140E-02	NOT IDENT.
ND-147	0.000E+00	7.119E+07	0.000E+00	SHORT HLIF
PM-147	3.755E+02	7.836E+02	1.464E+03	NOT IDENT.
PM-149	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
EU-150	-8.685E-03	2.611E-02	4.296E-02	FAIL ABUN
EU-152	5.652E-02	8.423E-02	1.733E-01	NOT IDENT.
GD-153	-1.544E-02	1.937E-01	3.200E-01	NOT IDENT.
EU-154	-5.707E-02	9.728E-02	1.749E-01	NOT IDENT.
EU-155	1.721E-02	1.027E-01	1.873E-01	FAIL ABUN
TB-160	1.611E+00	2.126E+00	4.514E+00	FAIL ABUN
HO-166M	4.534E-02	6.894E-02	9.764E-02	FAIL ABUN
TM-171	9.197E-01	1.300E+01	2.426E+01	NOT IDENT.
HF-172	-7.889E-02	2.624E-01	4.157E-01	FAIL ABUN
LU-172	-1.581E-03	8.202E-02	1.616E-01	FAIL ABUN
LU-176	-9.895E-03	2.278E-02	4.200E-02	FAIL ABUN

HF-181	-5.063E-01	4.960E+00	9.421E+00	NOT IDENT.
TA-182	3.245E-01	1.046E+00	2.133E+00	FAIL ABUN
RE-183	2.875E-01	2.455E+00	4.555E+00	FAIL ABUN
RE-184	3.007E+01	4.311E+01	8.915E+01	NOT IDENT.
W-188	-4.717E+01	1.309E+02	2.163E+02	FAIL ABUN
IR-192	-3.451E-02	4.503E-01	8.673E-01	FAIL ABUN
HG-203	-1.845E+00	2.597E+00	4.678E+00	NOT IDENT.
BI-207	-4.604E-02	4.113E-02	6.609E-02	FAIL ABUN
PB-210	1.033E+00	1.856E+00	3.617E+00	NOT IDENT.
BI-211	0.000E+00	4.488E-01	8.123E-01	FAIL ABUN
PB-211	-4.082E-01	6.342E-01	1.123E+00	NOT IDENT.
BI-212	1.398E+00	1.024E+00	1.446E+00	FAIL ABUN
RN-219	1.717E-01	3.548E-01	7.156E-01	FAIL ABUN
RA-223	-2.322E-01	5.966E-01	9.761E-01	FAIL ABUN
AC-227	1.576E-01	2.101E-01	4.310E-01	FAIL ABUN
TH-227	1.576E-01	2.101E-01	4.310E-01	FAIL ABUN
TH-229	-3.144E-01	4.163E-01	7.625E-01	FAIL ABUN
TH-231	-2.322E-01	5.966E-01	9.761E-01	FAIL ABUN
PA-233	5.683E-03	5.437E-02	1.059E-01	FAIL ABUN
PA-234	4.956E-02	2.242E-01	4.775E-01	FAIL ABUN
PA-234M	3.779E+00	3.610E+00	8.733E+00	FAIL ABUN
NP-237	5.683E-03	5.437E-02	1.059E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	8.044E-02	2.107E-01	3.936E-01	NOT IDENT.
PU-239	5.533E+02	5.183E+02	6.391E+02	FAIL ABUN
AM-241	1.108E-01	1.030E-01	1.921E-01	NOT IDENT.
CM-243	5.665E-03	8.751E-02	1.591E-01	NOT IDENT.
BK-247	-7.044E-03	6.501E-02	1.246E-01	NOT IDENT.
CM-247	2.966E-02	3.276E-02	6.874E-02	NOT IDENT.
CF-249	-4.716E-03	3.330E-02	6.312E-02	NOT IDENT.
CF-251	8.311E-02	1.055E-01	2.163E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn.	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	368	10.66*	1.312E+00	1.507E+01	1.507E+01	10.25
CD-109	88.03	129	3.70*	6.859E+00	2.913E+00	4.675E+00	42.38
SN-126	64.28	51	9.60	4.772E+00	6.364E-01	6.364E-01	120.63
	86.94	129	8.90	6.859E+00	1.211E+00	1.211E+00	42.38
	87.57	129	37.00*	6.859E+00	2.913E-01	2.913E-01	42.38
BA-137M	661.66	26	89.90*	2.464E+00	6.788E-02	6.924E-02	63.43
CS-137	661.66	26	85.10*	2.464E+00	7.170E-02	7.314E-02	63.43
TL-208	277.37	-----	6.60	4.947E+00	-----	Line Not Found	-----
	583.19	178	85.00*	2.720E+00	4.419E-01	4.419E-01	19.14
	860.56	32	12.50	2.011E+00	7.206E-01	7.206E-01	74.72
BI-211	72.87	-----	1.23	5.823E+00	-----	Line Not Found	-----
	351.06	243	12.92*	4.083E+00	2.638E+00	2.638E+00	17.36
PB-212	74.82	185	10.28	6.006E+00	1.717E+00	1.717E+00	31.74
	77.11	304	17.10	6.195E+00	1.641E+00	1.641E+00	20.71
	238.63	530	43.60*	5.554E+00	1.253E+00	1.253E+00	10.39
	300.09	41	3.30	4.645E+00	1.532E+00	1.532E+00	82.97
BI-214	609.32	167	45.49*	2.628E+00	7.998E-01	8.001E-01	24.10
	1120.29	36	14.92	1.635E+00	8.518E-01	8.521E-01	75.87
	1764.49	42	15.30	1.106E+00	1.404E+00	1.405E+00	44.86
PB-214	74.82	185	5.80	6.006E+00	3.043E+00	3.044E+00	31.74
	77.11	304	9.70	6.195E+00	2.893E+00	2.894E+00	20.71
	87.09	129	3.41	6.859E+00	3.161E+00	3.162E+00	42.38
	242.00	141	7.25	5.498E+00	2.031E+00	2.032E+00	35.98
	295.22	173	18.42	4.708E+00	1.144E+00	1.144E+00	22.73
	351.93	243	35.60*	4.083E+00	9.572E-01	9.576E-01	17.36
RN-222	609.32	167	45.49*	2.628E+00	7.998E-01	8.001E-01	24.10
	1120.29	36	14.92	1.635E+00	8.518E-01	8.521E-01	75.87
	1764.49	42	15.30	1.106E+00	1.404E+00	1.405E+00	44.86
RA-224	240.99	141	4.10*	5.498E+00	3.591E+00	3.591E+00	35.98
RA-226	609.32	167	45.49*	2.628E+00	7.998E-01	8.001E-01	24.10
	1120.29	36	14.92	1.635E+00	8.518E-01	8.521E-01	75.87
	1764.49	42	15.30	1.106E+00	1.404E+00	1.405E+00	44.86
AC-228	105.21	-----	1.10	7.453E+00	-----	Line Not Found	-----
	338.32	72	11.27	4.217E+00	8.632E-01	8.632E-01	49.76
	794.95	-----	4.25	2.138E+00	-----	Line Not Found	-----
	835.71	-----	1.61	2.057E+00	-----	Line Not Found	-----
	911.20	84	25.80*	1.924E+00	9.747E-01	9.747E-01	29.48
	968.97	56	15.80	1.834E+00	1.110E+00	1.110E+00	42.70
RA-228	105.21	-----	1.10	7.453E+00	-----	Line Not Found	-----
	338.32	72	11.27	4.217E+00	8.632E-01	8.632E-01	49.76
	794.95	-----	4.25	2.138E+00	-----	Line Not Found	-----
	835.71	-----	1.61	2.057E+00	-----	Line Not Found	-----
	911.20	84	25.80*	1.924E+00	9.747E-01	9.747E-01	29.48
	968.97	56	15.80	1.834E+00	1.110E+00	1.110E+00	42.70
TH-228	74.82	185	10.28	6.006E+00	1.717E+00	1.717E+00	31.74
	77.11	304	17.10	6.195E+00	1.641E+00	1.641E+00	20.71
	238.63	530	43.60*	5.554E+00	1.253E+00	1.253E+00	10.39

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-230	300.09	41	3.30	4.645E+00	1.532E+00	1.532E+00	82.97
	609.32	167	45.49*	2.628E+00	7.998E-01	7.998E-01	24.10
	1120.29	36	14.92	1.635E+00	8.518E-01	8.518E-01	75.87
	1764.49	42	15.30	1.106E+00	1.404E+00	1.404E+00	44.86
PA-231	283.69	-----	1.70	4.860E+00	-----	Line Not Found	-----
	301.36	41	5.35*	4.645E+00	9.449E-01	9.449E-01	82.97
TH-232	105.21	-----	1.10	7.453E+00	-----	Line Not Found	-----
	338.32	72	11.27	4.217E+00	8.632E-01	8.632E-01	49.76
	835.71	-----	1.61	2.057E+00	-----	Line Not Found	-----
	911.20	84	25.80*	1.924E+00	9.747E-01	9.747E-01	29.48
TH-234	968.97	56	15.80	1.834E+00	1.110E+00	1.110E+00	42.70
	63.29	51	3.70*	4.772E+00	1.651E+00	1.651E+00	120.63
	92.59	148	4.23	7.103E+00	2.828E+00	2.828E+00	42.14
U-234	609.32	167	45.49*	2.628E+00	7.998E-01	7.998E-01	24.10
	1120.29	36	14.92	1.635E+00	8.518E-01	8.518E-01	75.87
	1764.49	42	15.30	1.106E+00	1.404E+00	1.404E+00	44.86
U-235	89.96	61	3.47	6.984E+00	1.434E+00	1.434E+00	77.01
	93.35	148	5.60	7.103E+00	2.136E+00	2.136E+00	42.14
	143.76	-----	10.96*	7.370E+00	-----	Line Not Found	-----
	163.33	-----	5.08	7.024E+00	-----	Line Not Found	-----
	185.72	146	57.20	6.563E+00	2.227E-01	2.227E-01	41.06
U-238	205.31	-----	5.01	6.171E+00	-----	Line Not Found	-----
	63.29	51	3.70*	4.772E+00	1.651E+00	1.651E+00	120.63
	92.59	148	4.23	7.103E+00	2.828E+00	2.828E+00	42.14
AM-243	43.53	-----	5.90	1.315E+00	-----	Line Not Found	-----
ANH-511	74.66	185	67.20*	6.006E+00	2.626E-01	2.626E-01	31.74
	511.00	41	100.00*	3.019E+00	7.810E-02	7.810E-02	94.68

Flag: "*" = Keyline

Total number of lines in spectrum 42
Number of unidentified lines 5
Number of lines tentatively identified by NID 37 88.10%

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	1.507E+01	1.507E+01	0.155E+01	10.25	
CD-109	461.40D	1.60	2.913E+00	4.675E+00	1.981E+00	42.38	
SN-126	2.30E+05Y	1.00	2.913E-01	2.913E-01	1.235E-01	42.38	
BA-137M	30.08Y	1.02	6.788E-02	6.924E-02	4.392E-02	63.43	
CS-137	30.08Y	1.02	7.170E-02	7.314E-02	4.639E-02	63.43	
TL-208	1.41E+10Y	1.00	4.419E-01	4.419E-01	0.846E-01	19.14	
BI-211	7.04E+08Y	1.00	2.638E+00	2.638E+00	0.458E+00	17.36	
PB-212	1.41E+10Y	1.00	1.253E+00	1.253E+00	0.130E+00	10.39	
BI-214	1600.00Y	1.00	7.998E-01	8.001E-01	1.928E-01	24.10	
PB-214	1600.00Y	1.00	9.572E-01	9.576E-01	1.663E-01	17.36	
RN-222	1600.00Y	1.00	7.998E-01	8.001E-01	1.928E-01	24.10	
RA-224	1.41E+10Y	1.00	3.591E+00	3.591E+00	1.292E+00	35.98	
RA-226	1600.00Y	1.00	7.998E-01	8.001E-01	1.928E-01	24.10	
AC-228	1.41E+10Y	1.00	9.747E-01	9.747E-01	2.873E-01	29.48	
RA-228	1.41E+10Y	1.00	9.747E-01	9.747E-01	2.873E-01	29.48	
TH-228	1.41E+10Y	1.00	1.253E+00	1.253E+00	0.130E+00	10.39	
TH-230	7.54E+04Y	1.00	7.998E-01	7.998E-01	1.927E-01	24.10	
PA-231	7.04E+08Y	1.00	9.449E-01	9.449E-01	7.840E-01	82.97	
TH-232	1.41E+10Y	1.00	9.747E-01	9.747E-01	2.873E-01	29.48	
TH-234	4.47E+09Y	1.00	1.651E+00	1.651E+00	1.992E+00	120.63	
U-234	2.45E+05Y	1.00	7.998E-01	7.998E-01	1.927E-01	24.10	
U-235	7.04E+08Y	1.00	2.227E-01	2.227E-01	0.914E-01	41.06	K
U-238	4.47E+09Y	1.00	1.651E+00	1.651E+00	1.992E+00	120.63	
AM-243	7370.00Y	1.00	2.626E-01	2.626E-01	0.834E-01	31.74	
ANH-511	1.00E+09Y	1.00	7.810E-02	7.810E-02	7.395E-02	94.68	
Total Activity :			4.029E+01	4.205E+01			

Grand Total Activity : 4.029E+01 4.205E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	129.39	46	125	1.36	258.84	254	12	1.13E-02	95.6	7.54E+00	T
3	131.32	28	105	1.14	262.70	254	12	6.80E-03	****	7.52E+00	T
0	161.55	30	70	1.56	323.13	321	6	7.50E-03	****	7.06E+00	T
0	208.97	64	94	1.23	417.91	415	9	1.64E-02	61.7	6.10E+00	
0	270.50	22	81	2.05	540.93	539	8	5.75E-03	****	5.05E+00	T
0	327.64	38	54	1.31	655.16	650	9	9.89E-03	76.1	4.33E+00	T
1	355.92	14	35	1.56	711.72	699	17	3.59E-03	****	4.05E+00	T
0	416.83	12	17	1.33	833.50	830	6	3.14E-03	****	3.56E+00	
0	463.17	36	28	1.62	926.18	922	11	9.55E-03	66.1	3.27E+00	T
0	657.26	19	10	1.53	1314.39	1306	14	5.14E-03	86.9	2.48E+00	T
0	710.81	10	14	1.33	1421.52	1417	9	2.76E-03	****	2.33E+00	T
0	727.71	37	39	1.38	1455.33	1449	12	1.03E-02	74.7	2.29E+00	T
0	922.69	17	10	4.74	1845.49	1837	12	4.81E-03	84.8	1.91E+00	T
0	1001.87	10	3	1.31	2003.97	2000	7	2.81E-03	97.5	1.79E+00	T
0	1238.15	20	11	2.37	2477.01	2472	9	5.79E-03	72.6	1.51E+00	T
0	1432.30	6	4	1.39	2865.83	2861	8	1.67E-03	****	1.33E+00	
0	1504.53	8	3	0.56	3010.52	3004	10	2.31E-03	99.9	1.28E+00	T
0	1729.83	17	2	1.32	3461.94	3457	10	4.92E-03	57.9	1.13E+00	
0	1846.37	15	0	1.04	3695.50	3690	11	4.44E-03	50.0	1.06E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235030.CNF;1
* Acquisition date   : 3-OCT-2016 09:09:22 Sensitivity      : 3.000
* Detector ID        : GAM20 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:15.23 Half life ratio : *****
* Sample date       : 23-NOV-2015 14:44:00 Nuclide Library : SOLID
* Sample ID         : G405235030 Analyst initials: MXR1
* Batch Number      : 1596249 Sample Quantity : 1.3112E+02 GRAM
* Wet wt corr       : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 30-JUN-2016 06:52:39 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM20 CAN.CNF;15
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.337E-01
CD-109	8.871E-01
SN-126	5.546E-02
BA-137M	2.234E-02
CS-137	2.360E-02
TL-208	1.796E-02
PB-212	4.120E-02
BI-214	5.814E-02
PB-214	5.393E-02
RN-222	5.814E-02
RA-224	4.416E-01
RA-226	5.814E-02
AC-228	9.220E-02
RA-228	9.220E-02
TH-228	4.120E-02
TH-230	5.812E-02
PA-231	3.300E-01
TH-232	9.220E-02
TH-234	7.849E-01
U-234	5.812E-02
U-235	1.506E-01
U-238	7.849E-01
AM-243	3.576E-02
ANH-511	2.521E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.074E+01	NOT IDENT.
NA-22	2.894E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.646E-02	NOT IDENT.
SC-46	3.189E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF

MN-54	5.427E-02	NOT IDENT.
CO-56	3.847E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	3.766E-02	NOT IDENT.
CO-58	5.167E-01	NOT IDENT.
FE-59	7.425E+00	NOT IDENT.
CO-60	3.496E-02	NOT IDENT.
ZN-65	1.404E-01	NOT IDENT.
GE-68	2.121E+00	NOT IDENT.
AS-73	5.709E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.806E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.732E-01	NOT IDENT.
KR-85	5.846E+00	NOT IDENT.
SR-85	7.226E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.551E-01	NOT IDENT.
Y-91	4.109E+02	NOT IDENT.
NB-94	2.454E-02	NOT IDENT.
NB-95	9.533E-01	NOT IDENT.
NB-95M	2.343E+00	NOT IDENT.
ZR-95	9.960E-01	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.742E-02	NOT IDENT.
RH-102	5.004E-02	NOT IDENT.
RU-103	5.773E+00	FAIL ABUN
RH-106	4.039E-01	NOT IDENT.
RU-106	4.039E-01	NOT IDENT.
AG-108M	2.333E-02	NOT IDENT.
AG-110M	7.472E-02	FAIL ABUN
SN-113	2.157E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.229E-01	NOT IDENT.
SB-124	1.662E+00	NOT IDENT.
SB-125	8.378E-02	FAIL ABUN
TE-125M	2.498E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.393E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	5.498E-02	NOT IDENT.
CS-135	1.214E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	8.751E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.459E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.937E-01	NOT IDENT.
PM-144	5.263E-02	NOT IDENT.
PR-144	4.600E+00	NOT IDENT.
PM-146	3.163E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	6.855E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.951E-02	FAIL ABUN
EU-152	7.919E-02	NOT IDENT.
GD-153	1.506E-01	NOT IDENT.
EU-154	7.132E-02	NOT IDENT.
EU-155	8.785E-02	FAIL ABUN
TB-160	1.989E+00	FAIL ABUN
HO-166M	4.260E-02	FAIL ABUN
TM-171	1.137E+01	NOT IDENT.
HF-172	1.949E-01	FAIL ABUN
LU-172	7.063E-02	FAIL ABUN
LU-176	1.915E-02	FAIL ABUN
HF-181	4.179E+00	NOT IDENT.

TA-182	9.395E-01	FAIL ABUN
RE-183	2.146E+00	FAIL ABUN
RE-184	3.956E+01	NOT IDENT.
W-188	9.873E+01	FAIL ABUN
IR-192.	3.923E-01	FAIL ABUN
HG-203	2.125E+00	NOT IDENT.
BI-207	2.681E-02	FAIL ABUN
PB-210	1.708E+00	NOT IDENT.
BI-211	3.913E-01	FAIL ABUN
PB-211	5.042E-01	NOT IDENT.
BI-212	6.719E-01	FAIL ABUN
RN-219	3.252E-01	FAIL ABUN
RA-223	4.426E-01	FAIL ABUN
AC-227	1.996E-01	FAIL ABUN
TH-227	1.996E-01	FAIL ABUN
TH-229	3.530E-01	FAIL ABUN
TH-231	4.426E-01	FAIL ABUN
PA-233	4.838E-02	FAIL ABUN
PA-234	2.040E-01	FAIL ABUN
PA-234M	3.848E+00	FAIL ABUN
NP-237	4.838E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.834E-01	NOT IDENT.
PU-239	3.027E+02	FAIL ABUN
AM-241	9.077E-02	NOT IDENT.
CM-243	7.428E-02	NOT IDENT.
BK-247	5.714E-02	NOT IDENT.
CM-247	3.138E-02	NOT IDENT.
CF-249	2.838E-02	NOT IDENT.
CF-251	1.013E-01	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235030.CNF;1
* Acquisition date   : 3-OCT-2016 09:09:22 Sensitivity      : 3.000
* Detector ID        : GAM20 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:15.23 Half life ratio : *****
* Sample date        : 23-NOV-2015 14:44:00 Nuclide Library: SOLID
* Sample ID          : G405235030 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.3112E+02 GRAM
*                               Quantity Err(%) : 1.5253E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 30-JUN-2016 06:52:39 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM20 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.507E+01	1.706E+00	1.706E+00
CD-109	2.983E+00	2.004E+00	2.004E+00
SN-126	1.859E-01	1.245E-01	1.245E-01
BA-137M	6.924E-02	4.314E-02	4.314E-02
CS-137	7.314E-02	4.557E-02	4.557E-02
TL-208	4.419E-01	8.498E-02	8.498E-02
PB-212	1.253E+00	1.437E-01	1.437E-01
BI-214	8.001E-01	1.920E-01	1.920E-01
PB-214	9.576E-01	1.677E-01	1.677E-01
RN-222	8.001E-01	1.920E-01	1.920E-01
RA-224	1.568E+00	1.353E+00	1.353E+00
RA-226	8.001E-01	1.920E-01	1.920E-01
AC-228	9.747E-01	2.860E-01	2.860E-01
RA-228	9.747E-01	2.860E-01	2.860E-01
TH-228	1.253E+00	1.437E-01	1.437E-01
TH-230	7.998E-01	1.920E-01	1.920E-01
PA-231	9.449E-01	7.944E-01	7.944E-01
TH-232	9.747E-01	2.860E-01	2.860E-01
TH-234	1.651E+00	1.986E+00	1.986E+00
U-234	7.998E-01	1.920E-01	1.920E-01
U-235	-2.216E-02	1.820E-01	1.820E-01
U-238	1.651E+00	1.986E+00	1.986E+00
AM-243	1.639E-01	8.612E-02	8.612E-02
ANH-511	7.810E-02	7.254E-02	7.254E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-5.191E+00	1.335E+01	1.355E+01	NOT IDENT.
NA-22	-2.891E-02	4.083E-02	4.286E-02	NOT IDENT.
NA-24	1.000E+41	6.080E+41	0.000E+00	SHORT HLIF
AL-26	3.919E-03	1.766E-02	1.775E-02	NOT IDENT.
SC-46	5.750E-02	3.774E-01	3.782E-01	FAIL ABUN
V-48	-6.282E+03	2.441E+04	2.457E+04	SHORT HLIF

CR-51	4.764E+02	5.325E+02	5.742E+02	SHORT HLIF
MN-54	3.804E-02	5.868E-02	6.114E-02	NOT IDENT.
CO-56	2.432E-02	4.637E-01	4.638E-01	FAIL ABUN
MN-56	1.000E+41	1.548E+42	0.000E+00	SHORT HLIF
CO-57	-5.382E-02	5.019E-02	5.574E-02	NOT IDENT.
CO-58	-2.598E-01	6.790E-01	6.890E-01	NOT IDENT.
FE-59	2.421E-01	8.558E+00	8.558E+00	NOT IDENT.
CO-60	2.369E-02	3.602E-02	3.757E-02	NOT IDENT.
ZN-65	6.554E-02	1.670E-01	1.696E-01	NOT IDENT.
GE-68	-5.813E-01	2.548E+00	2.562E+00	NOT IDENT.
AS-73	2.459E+00	6.389E+00	6.485E+00	NOT IDENT.
AS-74	-2.231E+03	1.068E+04	1.073E+04	SHORT HLIF
SE-75	-5.855E-02	2.090E-01	2.107E-01	NOT IDENT.
BR-77	1.758E+40	1.597E+41	0.000E+00	SHORT HLIF
SR-82	-5.368E+02	1.060E+03	1.087E+03	SHORT HLIF
RB-83	-2.797E-01	7.168E-01	7.278E-01	NOT IDENT.
KR-85	2.480E+00	7.228E+00	7.313E+00	NOT IDENT.
SR-85	3.059E-01	8.934E-01	9.040E-01	NOT IDENT.
RB-86	-1.417E+04	5.102E+04	5.142E+04	SHORT HLIF
Y-88	-6.971E-02	2.169E-01	2.191E-01	NOT IDENT.
Y-91	-1.463E+02	5.109E+02	5.152E+02	NOT IDENT.
NB-94	-6.041E-03	3.051E-02	3.064E-02	NOT IDENT.
NB-95	-3.666E-01	1.205E+00	1.217E+00	NOT IDENT.
NB-95M	2.424E+00	2.642E+00	2.859E+00	NOT IDENT.
ZR-95	-8.124E-01	1.395E+00	1.442E+00	NOT IDENT.
NB-97	1.000E+41	8.528E+40	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	2.811E+41	0.000E+00	SHORT HLIF
MO-99	-5.817E+33	6.707E+33	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	2.102E+41	0.000E+00	SHORT HLIF
RH-101	8.237E-03	3.478E-02	3.498E-02	NOT IDENT.
RH-102	-4.122E-03	6.028E-02	6.031E-02	NOT IDENT.
RU-103	-1.577E+00	6.996E+00	7.032E+00	FAIL ABUN
RH-106	-1.630E-01	5.077E-01	5.130E-01	NOT IDENT.
RU-106	-1.630E-01	5.077E-01	5.130E-01	NOT IDENT.
AG-108M	1.808E-02	2.466E-02	2.597E-02	NOT IDENT.
AG-110M	2.838E-02	8.462E-02	8.558E-02	FAIL ABUN
SN-113	5.595E-02	2.420E-01	2.433E-01	NOT IDENT.
CD-115	1.000E+41	2.668E+41	0.000E+00	SHORT HLIF
SN-117M	1.581E+05	2.251E+05	2.361E+05	SHORT HLIF
TE-123M	5.483E-02	1.550E-01	1.570E-01	NOT IDENT.
SB-124	9.869E-02	1.958E+00	1.958E+00	NOT IDENT.
SB-125	2.725E-02	9.346E-02	9.426E-02	FAIL ABUN
TE-125M	-1.420E+02	3.104E+02	3.170E+02	NOT IDENT.
I-126	3.392E+05	1.882E+06	1.888E+06	SHORT HLIF
SB-126	5.891E+05	2.677E+06	2.690E+06	SHORT HLIF
SB-127	-2.647E+23	4.791E+23	0.000E+00	SHORT HLIF
I-131	1.256E+10	1.493E+10	1.597E+10	SHORT HLIF
I-132	1.000E+41	2.546E+42	0.000E+00	SHORT HLIF
TE-132	2.590E+27	8.415E+27	0.000E+00	SHORT HLIF
BA-133	3.287E-02	6.519E-02	6.685E-02	FAIL ABUN
I-133	-1.000E+41	3.947E+41	0.000E+00	SHORT HLIF
CS-134	5.534E-02	5.880E-02	6.387E-02	NOT IDENT.
CS-135	8.038E-02	1.422E-01	1.467E-01	NOT IDENT.
I-135	-1.000E+41	1.129E+42	0.000E+00	SHORT HLIF
CS-136	1.009E+04	5.874E+05	5.874E+05	SHORT HLIF
CE-139	-4.901E-02	1.122E-01	1.143E-01	NOT IDENT.
BA-140	-3.097E+05	2.717E+06	2.721E+06	SHORT HLIF
LA-140	-6.788E+05	8.762E+05	9.281E+05	SHORT HLIF
CE-141	-4.732E+01	3.419E+01	4.030E+01	NOT IDENT.
CE-143	1.000E+41	1.209E+41	0.000E+00	SHORT HLIF
CE-144	-1.732E-01	4.038E-01	4.113E-01	NOT IDENT.
PM-144	4.007E-02	5.707E-02	5.986E-02	NOT IDENT.
PR-144	3.477E+00	4.989E+00	5.229E+00	NOT IDENT.
PM-146	-1.605E-02	3.920E-02	3.986E-02	NOT IDENT.
ND-147	-5.655E+07	7.126E+07	7.568E+07	SHORT HLIF
PM-147	3.755E+02	7.838E+02	8.018E+02	NOT IDENT.
PM-149	-1.000E+41	2.231E+41	0.000E+00	SHORT HLIF
EU-150	-8.685E-03	2.611E-02	2.640E-02	FAIL ABUN
EU-152	5.652E-02	8.429E-02	8.806E-02	NOT IDENT.
GD-153	-1.544E-02	1.937E-01	1.938E-01	NOT IDENT.
EU-154	-5.707E-02	9.730E-02	1.006E-01	NOT IDENT.
EU-155	1.721E-02	1.027E-01	1.030E-01	FAIL ABUN
TB-160	1.611E+00	2.128E+00	2.249E+00	FAIL ABUN
HO-166M	4.534E-02	6.898E-02	7.194E-02	FAIL ABUN
TM-171	9.197E-01	1.300E+01	1.301E+01	NOT IDENT.
HF-172	-7.889E-02	2.627E-01	2.651E-01	FAIL ABUN
LU-172	-1.581E-03	8.202E-02	8.202E-02	FAIL ABUN
LU-176	-9.895E-03	2.279E-02	2.322E-02	FAIL ABUN

HF-181	-5.063E-01	4.960E+00	4.966E+00	NOT IDENT.
TA-182	3.245E-01	1.046E+00	1.056E+00	FAIL ABUN
RE-183	2.875E-01	2.456E+00	2.459E+00	FAIL ABUN
RE-184	3.007E+01	4.376E+01	4.581E+01	NOT IDENT.
W-188	-4.717E+01	1.310E+02	1.327E+02	FAIL ABUN
IR-192	-3.451E-02	4.503E-01	4.505E-01	FAIL ABUN
HG-203	-1.845E+00	2.598E+00	2.728E+00	NOT IDENT.
BI-207	-4.604E-02	4.117E-02	4.611E-02	FAIL ABUN
PB-210	1.033E+00	1.858E+00	1.916E+00	NOT IDENT.
BI-211	2.638E+00	4.639E-01	1.276E+00	FAIL ABUN
PB-211	-4.082E-01	6.345E-01	6.607E-01	NOT IDENT.
BI-212	1.398E+00	1.026E+00	1.204E+00	FAIL ABUN
RN-219	1.717E-01	3.554E-01	3.638E-01	FAIL ABUN
RA-223	-2.322E-01	5.968E-01	6.059E-01	FAIL ABUN
AC-227	1.576E-01	2.111E-01	2.228E-01	FAIL ABUN
TH-227	1.576E-01	2.111E-01	2.228E-01	FAIL ABUN
TH-229	-3.144E-01	4.166E-01	4.400E-01	FAIL ABUN
TH-231	-2.322E-01	5.968E-01	6.059E-01	FAIL ABUN
PA-233	5.683E-03	5.437E-02	5.444E-02	FAIL ABUN
PA-234	4.956E-02	2.312E-01	2.323E-01	FAIL ABUN
PA-234M	3.779E+00	3.614E+00	3.995E+00	FAIL ABUN
NP-237	5.683E-03	5.437E-02	5.444E-02	FAIL ABUN
NP-238	1.000E+41	1.834E+42	0.000E+00	SHORT HLIF
NP-239	8.044E-02	2.108E-01	2.139E-01	NOT IDENT.
PU-239	5.533E+02	5.189E+02	5.757E+02	FAIL ABUN
AM-241	1.108E-01	1.033E-01	1.148E-01	NOT IDENT.
CM-243	5.665E-03	8.751E-02	8.755E-02	NOT IDENT.
BK-247	-7.044E-03	6.502E-02	6.510E-02	NOT IDENT.
CM-247	2.966E-02	3.314E-02	3.574E-02	NOT IDENT.
CF-249	-4.716E-03	3.330E-02	3.337E-02	NOT IDENT.
CF-251	8.311E-02	1.059E-01	1.123E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	72.2845	87.09	101.5767	136.47	53.1785
45.60	72.5864	87.57	101.6419	140.51	0.0000
46.54	70.5825	88.03	101.7051	143.76	74.2628
49.72	0.0000	88.34	101.7472	144.24	70.6432
51.35	86.3422	88.47	101.7645	145.44	90.2372
51.87	79.9433	89.96	101.9658	152.43	73.6569
52.39	73.5314	1093.63	102.0568	153.25	0.0000
52.97	70.3618	91.11	0.0000	323.87	78.6992
53.44	73.6720	92.59	102.3162	156.02	0.0000
54.07	80.2634	93.35	102.4167	158.56	0.0000
57.36	0.0000	94.56	72.2255	159.00	59.2881
57.53	91.6674	94.65	72.2341	162.33	69.3796
57.98	85.1854	94.67	72.2360	162.66	0.0000
59.27	68.5909	94.87	72.2542	163.33	57.8691
59.32	68.5966	97.43	81.7423	165.86	62.1437
59.54	68.6222	98.43	75.2817	176.31	56.8617
60.96	87.8125	98.44	75.2827	176.60	0.0000
61.17	87.8433	99.53	80.0234	177.52	56.0841
62.93	98.0102	100.11	77.7596	181.07	0.0000
63.29	98.0681	102.03	67.4731	181.52	49.1356
63.58	98.1144	103.18	66.4024	184.41	63.1470
64.28	98.2260	103.37	64.0872	143.76	63.2164
66.73	113.7548	105.21	72.4037	193.51	67.8630
67.24	110.8887	105.31	72.4122	197.03	69.7564
125.81	110.9657	106.12	71.3131	198.01	59.5944
67.75	110.9779	106.47	72.5125	201.83	63.1910
69.67	134.6849	109.28	77.4462	203.43	51.3000
70.83	112.9942	111.00	65.8433	205.31	52.6601
72.81	128.2459	111.76	0.0000	210.85	73.5235
72.87	128.2573	114.06	57.8152	215.65	68.1823
74.66	105.4215	116.30	0.0000	222.11	56.3698
74.82	105.4466	116.74	54.4400	227.09	47.0017
74.97	105.4696	119.76	78.3720	227.38	47.0116
77.11	105.8002	121.12	60.6504	228.16	0.0000
78.74	96.2715	121.22	60.6571	228.18	41.8125
79.69	111.4645	121.78	83.3060	116.74	41.8125
80.12	120.5754	122.06	89.2834	235.69	42.0386
80.19	0.0000	122.92	65.5357	235.96	42.0464
80.57	110.0948	123.07	60.7796	238.63	52.6575
81.00	101.1073	265.00	89.1675	238.98	0.0000
81.07	98.0991	125.81	64.4660	240.99	52.7448
81.75	135.9586	127.23	65.4401	242.00	52.7820
83.79	115.1349	127.91	71.8764	244.70	52.8809
84.00	124.2604	129.30	76.7803	252.40	0.0000
85.43	139.6874	131.20	76.9326	252.80	51.4025
86.55	101.5027	133.02	73.8665	254.15	0.0000
86.79	101.5353	133.52	78.7248	256.23	39.0854
86.94	101.5564	136.00	68.8573	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	46.4511	355.39	0.0000	584.27	9.3977
264.80	46.4553	356.01	33.0026	595.83	0.0000
265.00	42.8877	364.49	0.0000	602.52	22.0621
268.22	40.2914	366.42	0.0000	604.72	0.0000
269.46	49.7334	372.51	31.3887	607.14	15.7825
270.03	44.3730	375.05	25.7157	609.32	30.0134
271.23	36.7817	377.52	39.0998	610.33	26.3489
273.65	0.0000	388.16	27.7456	614.28	26.3590
276.40	37.8044	388.63	28.7653	618.01	25.3408
277.37	29.7216	391.69	0.0000	620.36	25.3750
277.60	28.8255	264.66	29.7771	621.93	13.7570
278.00	32.4368	401.81	25.0859	630.19	22.2347
279.20	45.0857	402.40	26.0656	631.29	0.0000
279.54	50.5062	404.85	23.1763	633.25	21.2476
279.70	54.1199	410.95	35.7730	634.78	14.8835
280.46	49.6334	413.71	39.7588	635.95	0.0000
283.69	40.6915	414.70	13.1089	636.99	25.5391
284.31	0.0000	423.72	0.0000	645.85	0.0000
285.41	47.9773	427.09	0.0000	657.76	20.2896
285.90	0.0000	427.87	24.4314	657.90	14.4767
287.50	32.6309	433.94	22.4848	661.66	0.0000
290.67	43.5938	439.40	18.6277	664.57	12.8853
293.27	0.0000	453.88	25.5551	666.33	0.0000
351.93	36.4290	463.37	25.7255	666.50	0.0000
295.96	36.4461	468.07	21.8608	667.71	0.0000
879.38	36.5039	473.00	25.3916	677.62	0.0000
299.98	36.5348	475.06	0.0000	677.70	17.2747
300.09	36.5373	476.78	13.9835	685.70	0.0000
300.13	36.5381	477.60	20.9910	695.00	0.0000
301.36	35.6508	482.18	23.9980	696.49	0.0000
302.85	41.1722	487.02	22.0421	696.51	16.2982
256.23	50.8298	492.35	0.0000	697.00	16.2982
304.85	0.0000	497.08	0.0000	697.30	0.0000
306.78	43.1034	505.52	24.2002	697.49	17.3893
308.46	37.6384	507.63	25.8045	702.65	17.3906
311.90	35.8754	511.00	0.0000	706.68	20.6862
316.51	31.3604	514.00	31.4421	711.68	22.8944
319.41	0.0000	514.00	22.8497	711.68	16.3800
320.08	0.0000	514.00	22.8497	720.70	0.0000
321.04	36.0666	520.40	25.4557	721.93	0.0000
323.87	38.9042	520.69	0.0000	722.78	18.0831
325.23	25.0291	522.65	0.0000	722.91	18.0838
328.76	0.0000	527.90	0.0000	723.31	19.7307
333.37	33.5259	528.26	0.0000	724.19	19.7366
333.97	39.1272	529.59	16.3438	727.33	23.0491
334.37	47.5220	529.87	16.3529	733.00	18.4728
338.28	39.2212	531.02	0.0000	735.93	14.3081
338.32	39.2220	537.26	0.0000	739.50	9.9104
311.90	44.8789	546.56	0.0000	739.50	0.0000
340.48	44.8789	552.55	0.0000	747.24	27.6143
340.55	0.0000	563.25	26.8178	748.06	17.6777
344.28	27.1710	569.33	14.5013	752.31	17.7012
345.93	42.2003	946.00	25.9562	753.82	0.0000
351.06	32.9143	569.70	29.0721	756.73	14.4023
351.93	32.9300	583.19	29.0744	756.80	14.4028
			9.3937	884.68	22.2078

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	31.1081	1274.44	7.1118	1620.50	5.0671
766.42	24.4474	1001.03	11.5706	1621.92	5.0684
766.84	22.2274	1002.74	12.8224	1678.03	0.0000
772.60	0.0000	1004.73	5.7016	1690.97	3.0775
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	6.2307
778.90	10.0397	1028.54	0.0000	1063.66	2.7718
783.70	0.0000	1037.84	12.5764	1771.35	6.2380
785.37	17.8835	1038.76	0.0000	1791.20	0.0000
792.07	27.9999	631.29	13.5040	1808.65	1.0460
794.95	25.7823	1048.07	0.0000	1810.72	0.0000
795.86	17.9408	1049.04	9.9083	1836.06	4.2021
810.06	13.5127	1050.41	10.8127		
810.29	14.6398	1063.66	16.2719		
344.28	18.0189	1077.00	0.0000		
810.76	18.0208	1077.34	17.2327		
815.77	0.0000	1085.87	14.5420		
1048.07	0.0000	1093.63	16.3894		
832.01	17.0007	1099.45	14.5889		
834.85	10.2089	1112.07	10.9739		
835.71	12.4806	1112.84	10.0614		
836.80	0.0000	1115.54	8.7867		
846.75	0.0000	1120.29	16.4927		
846.77	11.3822	1120.55	16.4938		
856.80	0.0000	1221.41	16.4971		
860.56	9.1419	1129.67	13.7741		
871.09	19.4847	1131.51	0.0000		
873.19	12.6154	1147.95	0.0000		
875.33	0.0000	1173.23	11.1299		
879.38	10.3396	1177.95	10.2131		
880.51	13.7905	1189.05	14.8926		
883.24	17.2510	1204.77	11.2083		
884.68	8.0539	1221.41	14.9990		
889.28	10.3682	1231.02	10.3333		
894.76	19.6141	1235.36	0.0000		
898.04	13.8579	1238.28	18.0645		
900.72	25.4250	1260.41	0.0000		
903.28	12.7214	1271.87	13.2677		
911.20	11.5898	1274.44	11.3782		
912.08	13.9111	1274.54	12.3264		
923.98	0.0000	1291.59	6.6612		
926.50	3.4915	1298.22	0.0000		
929.11	8.1524	1312.11	0.0000		
937.49	19.2594	1332.49	5.7583		
944.13	0.0000	1362.66	0.0000		
946.00	9.6515	1365.19	9.6606		
949.00	15.8060	1368.63	0.0000		
667.71	0.0000	1384.29	6.7881		
962.31	21.1487	1408.01	6.8201		
964.08	18.3371	1457.56	0.0000		
966.17	22.5813	1460.82	1.9685		
911.20	23.8335	1489.16	4.9478		
968.97	23.8335	1505.03	12.7039		
983.53	0.0000	1584.12	8.0552		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:11:57.99

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235031.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM32.CNF;277
Background date    : 2-OCT-2016 11:01:57.
Sample date       : 26-NOV-2015 14:25:00 Acquisition date : 3-OCT-2016 09:09:51.
Sample ID        : G405235031 Sample quantity      : 1.39617E+02 GRAM
Detector name     : GAM32 Detector geometry      : CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.58 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials   : MXR1
Abundance limit   : 75.00000 Sensitivity        : 3.00000
Batch ID          : 1596249 Detector SN#         :
Matrix Spike ID   : LCS ID                        : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	75.28	98	122	1.19	151.77	148	13	2.71E-02	20.7	4.09E+00
2	1	77.48	171	124	1.29	156.18	148	13	4.74E-02	14.4	
3	0	87.22	50	186	1.07	175.66	171	9	1.40E-02	50.9	
4	0	93.20*	62	172	1.17	187.61	184	8	1.72E-02	40.8	
5	0	144.44	41	124	1.75	290.10	284	10	1.13E-02	54.1	
6	0	186.03*	74	173	1.48	373.27	367	14	2.06E-02	40.1	
7	0	208.93	45	123	0.93	419.07	413	12	1.24E-02	51.9	
8	2	239.03*	405	66	1.28	479.27	472	19	1.12E-01	6.1	2.21E+00
9	2	242.11	76	93	1.59	485.43	472	19	2.12E-02	26.8	
10	0	271.27	33	108	2.19	543.76	536	13	9.10E-03	68.3	
11	0	295.94*	159	98	1.21	593.11	586	14	4.42E-02	15.5	
12	0	328.63	64	57	1.61	658.48	652	15	1.77E-02	28.6	
13	0	338.57	78	84	1.14	678.37	671	12	2.18E-02	26.0	
14	0	352.65*	230	90	1.30	706.53	699	16	6.39E-02	11.6	
15	0	367.02	18	36	2.46	735.27	730	11	4.95E-03	69.2	
16	0	463.71	15	28	0.67	928.65	925	9	4.17E-03	67.9	
17	0	511.32*	49	54	1.45	1023.88	1017	15	1.36E-02	40.0	
18	0	563.44	27	12	1.81	1128.11	1123	12	7.50E-03	32.1	
19	0	572.16	19	26	1.44	1145.56	1140	14	5.32E-03	65.0	
20	0	583.88*	97	45	1.17	1169.00	1163	13	2.71E-02	17.7	
21	0	609.76*	181	40	1.13	1220.77	1215	13	5.02E-02	10.5	
22	0	627.98	16	18	0.82	1257.20	1250	12	4.50E-03	57.9	
23	1	662.26	65	11	1.79	1325.76	1317	22	1.81E-02	16.7	8.01E-01
24	1	666.32	17	9	1.80	1333.89	1317	22	4.76E-03	40.1	
25	0	670.67	9	11	0.67	1342.59	1338	7	2.36E-03	71.9	
26	0	717.06	12	19	4.54	1435.36	1427	13	3.45E-03	78.2	
27	0	727.72*	20	11	1.31	1456.69	1452	9	5.44E-03	40.2	
28	0	768.71	33	23	6.07	1538.68	1531	15	9.03E-03	36.3	
29	0	785.95	14	7	1.61	1573.15	1569	9	3.77E-03	44.3	
30	0	799.40	25	50	4.04	1600.05	1583	29	6.94E-03	84.3	
31	0	883.49	9	2	1.23	1768.23	1764	8	2.54E-03	42.4	
32	0	911.73*	71	26	1.24	1824.72	1819	13	1.96E-02	19.4	
33	0	961.54	11	5	0.81	1924.35	1921	7	2.99E-03	49.4	
34	0	965.08*	14	9	0.96	1931.43	1927	9	4.01E-03	48.5	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	969.78	48	15	1.70	1940.82	1936	13	1.32E-02	22.6	
36	0	1054.10	7	17	3.99	2109.46	2100	11	1.81E-03	127.2	
37	0	1115.94	14	9	1.62	2233.14	2228	9	3.89E-03	47.0	
38	0	1120.87*	42	11	2.43	2243.02	2238	11	1.16E-02	22.1	
39	0	1175.28	8	7	1.28	2351.84	2345	9	2.22E-03	68.7	
40	7	1191.67	20	11	2.92	2384.61	2381	12	5.64E-03	31.6	5.19E+00
41	7	1194.36	8	9	1.83	2390.00	2381	12	2.15E-03	58.4	
42	0	1302.02	14	3	4.15	2605.31	2598	13	3.85E-03	37.9	
43	0	1378.71	10	11	1.52	2758.70	2751	11	2.78E-03	71.6	
44	0	1461.25*	324	0	2.25	2923.80	2917	15	8.99E-02	5.6	
45	0	1765.07*	32	0	2.89	3531.46	3524	13	8.90E-03	18.6	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235031.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 26-NOV-2015 14:25:00 Acquisition date : 3-OCT-2016 09:09:51
 Sample ID : G405235031 Sample quantity : 139.62 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA32 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.58 0.0%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
U-235	143.76	CE-141	145.44
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.119E+00	1.398E+01	1.398E+01	11.23	OK
ZN-65	1115.54	50.60*	1.397E+00	1.045E-01	2.534E-01	93.95	OK
CD-109	88.03	3.70*	4.556E+00	8.954E-01	1.430E+00	220.35	OK
SN-126	64.28	9.60	2.229E+00	----- Line	Not Found	-----	Absent
	86.94	8.90	4.556E+00	3.722E-01	3.722E-01	220.35	OK
	87.57	37.00*	4.556E+00	8.954E-02	8.954E-02	220.35	OK
BA-137M	661.66	89.90*	2.104E+00	1.903E-01	1.941E-01	33.35	OK
CS-137	661.66	85.10*	2.104E+00	2.011E-01	2.051E-01	33.35	OK
CE-141	145.44	48.29*	6.092E+00	5.132E-02	3.958E+01	188.15	OK
TL-208	277.37	6.60	4.277E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.325E+00	2.750E-01	2.750E-01	35.35	OK
	860.56	12.50	1.714E+00	----- Line	Not Found	-----	Absent
BI-212	727.33	6.67*	1.953E+00	8.238E-01	8.238E-01	80.37	OK
	785.37	1.10	1.839E+00	3.649E+00	3.649E+00	88.65	OK
	1620.50	1.47	1.022E+00	----- Line	Not Found	-----	Absent
PB-212	74.82	10.28	3.470E+00	1.154E+00	1.154E+00	65.05	OK
	77.11	17.10	3.695E+00	1.759E+00	1.759E+00	28.75	OK
	238.63	43.60*	4.787E+00	1.162E+00	1.162E+00	12.28	OK
	300.09	3.30	4.016E+00	----- Line	Not Found	-----	Absent
BI-214	609.32	45.49*	2.246E+00	9.824E-01	9.827E-01	20.96	OK
	1120.29	14.92	1.392E+00	1.065E+00	1.065E+00	44.24	OK
	1764.49	15.30	9.460E-01	1.121E+00	1.121E+00	37.23	OK
PB-214	74.82	5.80	3.423E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.695E+00	3.101E+00	3.102E+00	28.75	OK
	87.09	3.41	4.545E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.745E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.062E+00	1.254E+00	1.255E+00	31.06	OK
	351.93	35.60*	3.518E+00	1.068E+00	1.069E+00	23.21	OK
RN-222	609.32	45.49*	2.246E+00	9.824E-01	9.827E-01	20.96	OK
	1120.29	14.92	1.392E+00	1.065E+00	1.065E+00	44.24	OK
	1764.49	15.30	9.460E-01	1.121E+00	1.121E+00	37.23	OK
RA-224	240.99	4.10*	4.743E+00	3.688E-01	3.688E-01	356.75	OK
RA-226	609.32	45.49*	2.246E+00	9.824E-01	9.827E-01	20.96	OK
	1120.29	14.92	1.392E+00	1.065E+00	1.065E+00	44.24	OK
	1764.49	15.30	9.460E-01	1.121E+00	1.121E+00	37.23	OK
AC-228	105.21	1.10	5.586E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.639E+00	1.114E+00	1.114E+00	51.96	OK
	794.95	4.25	1.823E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.753E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.638E+00	8.982E-01	8.982E-01	38.82	OK
	968.97	15.80	1.561E+00	1.031E+00	1.031E+00	45.21	OK
RA-228	105.21	1.10	5.586E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.639E+00	1.114E+00	1.114E+00	51.96	OK
	794.95	4.25	1.823E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.753E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.638E+00	8.982E-01	8.982E-01	38.82	OK
	968.97	15.80	1.561E+00	1.031E+00	1.031E+00	45.21	OK
TH-228	74.82	10.28	3.470E+00	1.154E+00	1.154E+00	65.05	OK
	77.11	17.10	3.695E+00	1.759E+00	1.759E+00	28.75	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	238.63	43.60*	4.787E+00	1.162E+00	1.162E+00	12.28	OK
	300.09	3.30	4.016E+00	-----	Line Not Found	-----	Absent
TH-230	609.32	45.49*	2.246E+00	9.824E-01	9.824E-01	20.96	OK
	1120.29	14.92	1.392E+00	1.065E+00	1.065E+00	44.24	OK
	1764.49	15.30	9.460E-01	1.121E+00	1.121E+00	37.23	OK
TH-232	105.21	1.10	5.586E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.639E+00	1.114E+00	1.114E+00	51.96	OK
	835.71	1.61	1.753E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.638E+00	8.982E-01	8.982E-01	38.82	OK
	968.97	15.80	1.561E+00	1.031E+00	1.031E+00	45.21	OK
U-234	609.32	45.49*	2.246E+00	9.824E-01	9.824E-01	20.96	OK
	1120.29	14.92	1.392E+00	1.065E+00	1.065E+00	44.24	OK
	1764.49	15.30	9.460E-01	1.121E+00	1.121E+00	37.23	OK
U-235	89.96	3.47	4.758E+00	-----	Line Not Found	-----	Absent
	93.35	5.60	4.976E+00	1.429E+00	1.429E+00	81.61	OK
	143.76	10.96*	6.095E+00	-----	Line Not Found	-----	<<INT Reject.
	163.33	5.08	5.924E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	5.605E+00	1.411E-01	1.411E-01	80.25	OK
	205.31	5.01	5.302E+00	-----	Line Not Found	-----	Absent
AM-243	43.53	5.90	1.701E-01	-----	Line Not Found	-----	Absent
	74.66	67.20*	3.470E+00	1.765E-01	1.765E-01	65.05	OK
ANH-511	511.00	100.00*	2.588E+00	1.067E-01	1.067E-01	80.01	OK

Flag: "*" = Keyline


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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235031.CNF;1
* Acquisition date   : 3-OCT-2016 09:09:51 Sensitivity      : 3.000
* Detector ID        : GAM32 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.58 Half life ratio : *****
* Sample date        : 26-NOV-2015 14:25:00 Analyst initials: MXR1
* Sample ID          : G405235031 Sample Quantity : 1.3962E+02 GRAM
* Batch Number       : 1596249 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight       : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 23-AUG-2016 07:56:33 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM32 CAN.CNF;11
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.398E+01	1.539E+00	7.486E-01
ZN-65	2.534E-01	2.333E-01	3.281E-01
CD-109	1.430E+00	3.089E+00	3.077E+00
SN-126	8.954E-02	1.934E-01	1.781E-01
BA-137M	1.941E-01	6.344E-02	5.102E-02
CS-137	2.051E-01	6.702E-02	5.390E-02
CE-141	3.958E+01	7.297E+01	6.698E+01
TL-208	2.750E-01	9.527E-02	6.553E-02
BI-212	8.238E-01	6.489E-01	7.965E-01
PB-212	1.162E+00	1.399E-01	9.344E-02
BI-214	9.827E-01	2.019E-01	1.212E-01
PB-214	1.069E+00	2.431E-01	1.382E-01
RN-222	9.827E-01	2.019E-01	1.212E-01
RA-224	3.688E-01	1.289E+00	1.001E+00
RA-226	9.827E-01	2.019E-01	1.212E-01
AC-228	8.982E-01	3.417E-01	2.730E-01
RA-228	8.982E-01	3.417E-01	2.730E-01
TH-228	1.162E+00	1.399E-01	9.344E-02
TH-230	9.824E-01	2.018E-01	1.211E-01
TH-232	8.982E-01	3.417E-01	2.730E-01
U-234	9.824E-01	2.018E-01	1.211E-01
U-235	3.792E-01	4.020E-01	4.136E-01
AM-243	1.765E-01	1.125E-01	1.255E-01
ANH-511	1.067E-01	8.368E-02	5.400E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-4.375E+00	1.407E+01	2.602E+01	NOT IDENT.
NA-22	2.714E-02	4.918E-02	1.076E-01	NOT IDENT.
NA-24	0.000E+00	1.129E+41	0.000E+00	SHORT HLIF
AL-26	-1.733E-02	3.578E-02	6.485E-02	NOT IDENT.
SC-46	8.642E-02	3.686E-01	7.552E-01	FAIL ABUN
V-48	0.000E+00	2.266E+04	0.000E+00	SHORT HLIF

CR-51	0.000E+00	6.299E+02	0.000E+00	SHORT HLIF
MN-54	-2.251E-02	7.482E-02	1.316E-01	NOT IDENT.
CO-56	6.602E-02	5.547E-01	1.073E+00	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	1.209E-02	5.630E-02	1.028E-01	NOT IDENT.
CO-58	-2.868E-02	6.680E-01	1.267E+00	NOT IDENT.
FE-59	7.864E-01	7.630E+00	1.584E+01	NOT IDENT.
CO-60	-1.891E-02	3.538E-02	6.479E-02	NOT IDENT.
GE-68	-1.027E+00	2.286E+00	4.299E+00	NOT IDENT.
AS-73	9.986E+00	1.955E+01	3.783E+01	NOT IDENT.
AS-74	0.000E+00	1.086E+04	0.000E+00	SHORT HLIF
SE-75	3.508E-02	2.303E-01	4.339E-01	NOT IDENT.
BR-77	0.000E+00	8.219E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	1.012E+03	0.000E+00	SHORT HLIF
RB-83	2.436E-01	6.334E-01	1.312E+00	NOT IDENT.
KR-85	7.363E+00	9.001E+00	1.690E+01	NOT IDENT.
SR-85	8.803E-01	1.078E+00	2.024E+00	NOT IDENT.
RB-86	0.000E+00	4.289E+04	0.000E+00	SHORT HLIF
Y-88	1.089E-01	2.289E-01	5.671E-01	NOT IDENT.
Y-91	-2.296E+02	5.789E+02	1.086E+03	NOT IDENT.
NB-94	2.991E-02	3.730E-02	7.610E-02	NOT IDENT.
NB-95	-5.163E-01	1.193E+00	1.806E+00	NOT IDENT.
NB-95M	-5.773E-01	2.845E+00	4.843E+00	NOT IDENT.
ZR-95	1.562E+00	1.743E+00	3.764E+00	NOT IDENT.
NB-97	0.000E+00	1.672E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	3.638E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.406E+41	0.000E+00	SHORT HLIF
RH-101	8.540E-03	3.671E-02	6.721E-02	NOT IDENT.
RH-102	-4.078E-02	6.598E-02	9.701E-02	NOT IDENT.
RU-103	-5.023E+00	7.687E+00	1.341E+01	FAIL ABUN
RH-106	-6.563E-02	6.005E-01	9.996E-01	NOT IDENT.
RU-106	-6.563E-02	6.005E-01	9.996E-01	NOT IDENT.
AG-108M	1.395E-02	2.864E-02	5.819E-02	NOT IDENT.
AG-110M	9.579E-02	7.959E-02	1.881E-01	FAIL ABUN
SN-113	-5.297E-02	2.842E-01	5.306E-01	NOT IDENT.
CD-115	0.000E+00	1.186E+41	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.777E+05	0.000E+00	SHORT HLIF
TE-123M	-4.232E-02	1.427E-01	2.739E-01	NOT IDENT.
SB-124	3.304E-01	1.813E+00	4.393E+00	NOT IDENT.
SB-125	-8.641E-02	1.115E-01	1.933E-01	FAIL ABUN
TE-125M	7.801E+01	3.956E+02	7.207E+02	NOT IDENT.
I-126	0.000E+00	1.960E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	3.054E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.015E+23	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.427E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	7.858E+40	0.000E+00	SHORT HLIF
TE-132	0.000E+00	5.187E+27	0.000E+00	SHORT HLIF
BA-133	-2.023E-02	4.523E-02	7.292E-02	NOT IDENT.
I-133	0.000E+00	1.376E+41	0.000E+00	SHORT HLIF
CS-134	3.667E-02	6.464E-02	1.284E-01	FAIL ABUN
CS-135	1.759E-02	1.624E-01	2.845E-01	NOT IDENT.
I-135	0.000E+00	1.339E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	7.284E+05	0.000E+00	SHORT HLIF
CE-139	3.429E-02	1.219E-01	2.428E-01	NOT IDENT.
BA-140	0.000E+00	2.846E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	7.893E+05	0.000E+00	SHORT HLIF
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	-3.216E-01	4.212E-01	6.965E-01	NOT IDENT.
PM-144	1.165E-02	6.301E-02	1.217E-01	NOT IDENT.
PR-144	1.018E+00	5.507E+00	1.063E+01	NOT IDENT.
PM-146	3.303E-03	4.718E-02	9.095E-02	NOT IDENT.
ND-147	0.000E+00	6.622E+07	0.000E+00	SHORT HLIF
PM-147	-4.625E+01	9.551E+02	1.705E+03	NOT IDENT.
PM-149	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
EU-150	-4.213E-03	3.597E-02	4.801E-02	FAIL ABUN
EU-152	-2.159E-04	1.060E-01	2.022E-01	FAIL ABUN
GD-153	-5.504E-02	2.355E-01	4.158E-01	NOT IDENT.
EU-154	5.825E-02	1.182E-01	2.571E-01	NOT IDENT.
EU-155	-9.052E-03	1.310E-01	2.344E-01	FAIL ABUN
TB-160	-7.102E-02	2.371E+00	3.997E+00	FAIL ABUN
HO-166M	-3.605E-02	7.798E-02	1.180E-01	NOT IDENT.
TM-171	3.902E+00	4.541E+01	8.493E+01	NOT IDENT.
HF-172	-2.723E-01	2.607E-01	4.192E-01	NOT IDENT.
LU-172	-1.317E-02	7.127E-02	1.412E-01	FAIL ABUN
LU-176	-1.385E-02	2.550E-02	4.650E-02	FAIL ABUN
HF-181	1.333E+00	5.734E+00	1.126E+01	NOT IDENT.
TA-182	1.057E-01	1.024E+00	2.066E+00	FAIL ABUN

RE-183	-1.978E+00	5.353E+00	9.626E+00	NOT IDENT.
RE-184	-5.128E+00	3.263E+01	6.161E+01	NOT IDENT.
W-188	-6.558E+01	1.394E+02	2.270E+02	NOT IDENT.
IR-192	-3.755E-01	5.903E-01	1.062E+00	FAIL ABUN
HG-203	2.157E+00	3.262E+00	6.567E+00	NOT IDENT.
BI-207	-1.820E-02	5.147E-02	9.798E-02	FAIL ABUN
PB-210	3.590E+00	8.738E+00	1.698E+01	NOT IDENT.
BI-211	0.000E+00	3.382E-01	7.893E-01	NOT IDENT.
PB-211	1.608E-01	7.550E-01	1.468E+00	NOT IDENT.
RN-219	-1.209E-01	4.508E-01	8.314E-01	FAIL ABUN
RA-223	6.234E-02	6.689E-01	1.170E+00	FAIL ABUN
AC-227	5.266E-02	2.289E-01	4.523E-01	NOT IDENT.
TH-227	5.266E-02	2.289E-01	4.523E-01	NOT IDENT.
TH-229	8.785E-02	5.032E-01	9.864E-01	FAIL ABUN
PA-231	9.055E-02	5.282E-01	9.263E-01	NOT IDENT.
TH-231	6.234E-02	6.689E-01	1.170E+00	FAIL ABUN
PA-233	-3.171E-03	6.204E-02	1.189E-01	NOT IDENT.
PA-234	6.928E-02	2.412E-01	5.230E-01	FAIL ABUN
PA-234M	-5.147E-01	4.015E+00	8.051E+00	NOT IDENT.
TH-234	1.369E-03	1.948E+00	3.628E+00	FAIL ABUN
NP-237	-3.171E-03	6.204E-02	1.189E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
U-238	1.369E-03	1.948E+00	3.628E+00	FAIL ABUN
NP-239	5.605E-02	2.818E-01	5.145E-01	NOT IDENT.
PU-239	1.082E+02	3.543E+02	6.482E+02	NOT IDENT.
AM-241	-1.804E-01	2.143E-01	3.672E-01	NOT IDENT.
CM-243	2.973E-02	1.157E-01	2.138E-01	NOT IDENT.
BK-247	2.027E-02	7.794E-02	1.404E-01	NOT IDENT.
CM-247	-6.403E-03	3.984E-02	7.448E-02	NOT IDENT.
CF-249	-2.454E-02	3.752E-02	6.666E-02	NOT IDENT.
CF-251	7.552E-02	1.234E-01	2.499E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	310	10.66*	1.119E+00	1.398E+01	1.398E+01	11.23
ZN-65	1115.54	14	50.60*	1.397E+00	1.045E-01	2.534E-01	93.95
CD-109	88.03	60	3.70*	4.556E+00	1.929E+00	3.082E+00	101.77
SN-126	64.28	-----	9.60	2.229E+00	-----	Line Not Found	-----
	86.94	60	8.90	4.556E+00	8.021E-01	8.021E-01	101.77
	87.57	60	37.00*	4.556E+00	1.929E-01	1.929E-01	101.77
BA-137M	661.66	67	89.90*	2.104E+00	1.903E-01	1.941E-01	33.35
CS-137	661.66	67	85.10*	2.104E+00	2.011E-01	2.051E-01	33.35
CE-141	145.44	47	48.29*	6.092E+00	8.607E-02	6.638E+01	108.17
TL-208	277.37	-----	6.60	4.277E+00	-----	Line Not Found	-----
	583.19	101	85.00*	2.325E+00	2.750E-01	2.750E-01	35.35
	860.56	-----	12.50	1.714E+00	-----	Line Not Found	-----
BI-212	727.33	20	6.67*	1.953E+00	8.238E-01	8.238E-01	80.37
	785.37	14	1.10	1.839E+00	3.649E+00	3.649E+00	88.65
	1620.50	-----	1.47	1.022E+00	-----	Line Not Found	-----
PB-212	74.82	119	10.28	3.470E+00	1.787E+00	1.787E+00	41.48
	77.11	207	17.10	3.695E+00	1.759E+00	1.759E+00	28.75
	238.63	451	43.60*	4.787E+00	1.162E+00	1.162E+00	12.28
	300.09	-----	3.30	4.016E+00	-----	Line Not Found	-----
BI-214	609.32	187	45.49*	2.246E+00	9.824E-01	9.827E-01	20.96
	1120.29	41	14.92	1.392E+00	1.065E+00	1.065E+00	44.24
	1764.49	30	15.30	9.460E-01	1.121E+00	1.121E+00	37.23
PB-214	74.82	119	5.80	3.470E+00	3.167E+00	3.168E+00	41.48
	77.11	207	9.70	3.695E+00	3.101E+00	3.102E+00	28.75
	87.09	60	3.41	4.556E+00	2.093E+00	2.094E+00	101.77
	242.00	85	7.25	4.743E+00	1.330E+00	1.331E+00	53.67
	295.22	174	18.42	4.062E+00	1.254E+00	1.255E+00	31.06
	351.93	249	35.60*	3.518E+00	1.068E+00	1.069E+00	23.21
RN-222	609.32	187	45.49*	2.246E+00	9.824E-01	9.827E-01	20.96
	1120.29	41	14.92	1.392E+00	1.065E+00	1.065E+00	44.24
	1764.49	30	15.30	9.460E-01	1.121E+00	1.121E+00	37.23
RA-224	240.99	85	4.10*	4.743E+00	2.353E+00	2.353E+00	53.67
RA-226	609.32	187	45.49*	2.246E+00	9.824E-01	9.827E-01	20.96
	1120.29	41	14.92	1.392E+00	1.065E+00	1.065E+00	44.24
	1764.49	30	15.30	9.460E-01	1.121E+00	1.121E+00	37.23
AC-228	105.21	-----	1.10	5.586E+00	-----	Line Not Found	-----
	338.32	85	11.27	3.639E+00	1.114E+00	1.114E+00	51.96
	794.95	-----	4.25	1.823E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.753E+00	-----	Line Not Found	-----
	911.20	71	25.80*	1.638E+00	8.982E-01	8.982E-01	38.82
	968.97	47	15.80	1.561E+00	1.031E+00	1.031E+00	45.21
RA-228	105.21	-----	1.10	5.586E+00	-----	Line Not Found	-----
	338.32	85	11.27	3.639E+00	1.114E+00	1.114E+00	51.96
	794.95	-----	4.25	1.823E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.753E+00	-----	Line Not Found	-----
	911.20	71	25.80*	1.638E+00	8.982E-01	8.982E-01	38.82
	968.97	47	15.80	1.561E+00	1.031E+00	1.031E+00	45.21

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	119	10.28	3.470E+00	1.787E+00	1.787E+00	41.48
	77.11	207	17.10	3.695E+00	1.759E+00	1.759E+00	28.75
	238.63	451	43.60*	4.787E+00	1.162E+00	1.162E+00	12.28
	300.09	-----	3.30	4.016E+00	-----	Line Not Found	-----
TH-230	609.32	187	45.49*	2.246E+00	9.824E-01	9.824E-01	20.96
	1120.29	41	14.92	1.392E+00	1.065E+00	1.065E+00	44.24
	1764.49	30	15.30	9.460E-01	1.121E+00	1.121E+00	37.23
TH-232	105.21	-----	1.10	5.586E+00	-----	Line Not Found	-----
	338.32	85	11.27	3.639E+00	1.114E+00	1.114E+00	51.96
	835.71	-----	1.61	1.753E+00	-----	Line Not Found	-----
	911.20	71	25.80*	1.638E+00	8.982E-01	8.982E-01	38.82
	968.97	47	15.80	1.561E+00	1.031E+00	1.031E+00	45.21
U-234	609.32	187	45.49*	2.246E+00	9.824E-01	9.824E-01	20.96
	1120.29	41	14.92	1.392E+00	1.065E+00	1.065E+00	44.24
	1764.49	30	15.30	9.460E-01	1.121E+00	1.121E+00	37.23
U-235	89.96	-----	3.47	4.758E+00	-----	Line Not Found	-----
	93.35	74	5.60	4.976E+00	1.429E+00	1.429E+00	81.61
	143.76	47	10.96*	6.092E+00	3.792E-01	3.792E-01	108.17
	163.33	-----	5.08	5.924E+00	-----	Line Not Found	-----
	185.72	84	57.20	5.605E+00	1.411E-01	1.411E-01	80.25
	205.31	-----	5.01	5.302E+00	-----	Line Not Found	-----
AM-243	43.53	-----	5.90	1.701E-01	-----	Line Not Found	-----
	74.66	119	67.20*	3.470E+00	2.733E-01	2.733E-01	41.48
ANH-511	511.00	51	100.00*	2.588E+00	1.067E-01	1.067E-01	80.01

Flag: "*" = Keyline

Total number of lines in spectrum 45
Number of unidentified lines 13
Number of lines tentatively identified by NID 32 71.11%

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	1.398E+01	1.398E+01	0.157E+01	11.23	
ZN-65	244.06D	2.42	1.045E-01	2.534E-01	2.380E-01	93.95	
CD-109	461.40D	1.60	1.929E+00	3.082E+00	3.137E+00	101.77	
SN-126	2.30E+05Y	1.00	1.929E-01	1.929E-01	1.964E-01	101.77	
BA-137M	30.08Y	1.02	1.903E-01	1.941E-01	0.647E-01	33.35	
CS-137	30.08Y	1.02	2.011E-01	2.051E-01	0.684E-01	33.35	
CE-141	32.51D	771.	8.607E-02	6.638E+01	7.180E+01	108.17	
TL-208	1.41E+10Y	1.00	2.750E-01	2.750E-01	0.972E-01	35.35	
BI-212	1.41E+10Y	1.00	8.238E-01	8.238E-01	6.621E-01	80.37	
PB-212	1.41E+10Y	1.00	1.162E+00	1.162E+00	0.143E+00	12.28	
BI-214	1600.00Y	1.00	9.824E-01	9.827E-01	2.060E-01	20.96	
PB-214	1600.00Y	1.00	1.068E+00	1.069E+00	0.248E+00	23.21	
RN-222	1600.00Y	1.00	9.824E-01	9.827E-01	2.060E-01	20.96	
RA-224	1.41E+10Y	1.00	2.353E+00	2.353E+00	1.263E+00	53.67	
RA-226	1600.00Y	1.00	9.824E-01	9.827E-01	2.060E-01	20.96	
AC-228	1.41E+10Y	1.00	8.982E-01	8.982E-01	3.487E-01	38.82	
RA-228	1.41E+10Y	1.00	8.982E-01	8.982E-01	3.487E-01	38.82	
TH-228	1.41E+10Y	1.00	1.162E+00	1.162E+00	0.143E+00	12.28	
TH-230	7.54E+04Y	1.00	9.824E-01	9.824E-01	2.059E-01	20.96	
TH-232	1.41E+10Y	1.00	8.982E-01	8.982E-01	3.487E-01	38.82	
U-234	2.45E+05Y	1.00	9.824E-01	9.824E-01	2.059E-01	20.96	
U-235	7.04E+08Y	1.00	3.792E-01	3.792E-01	4.102E-01	108.17	
AM-243	7370.00Y	1.00	2.733E-01	2.733E-01	1.134E-01	41.48	
ANH-511	1.00E+09Y	1.00	1.067E-01	1.067E-01	0.854E-01	80.01	

Total Activity : 3.189E+01 9.950E+01

Grand Total Activity : 3.189E+01 9.950E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	208.93	50	139	0.93	419.07	413	12	1.24E-02	****	5.24E+00	
0	271.27	36	119	2.19	543.76	536	13	9.10E-03	****	4.35E+00	T
0	328.63	69	62	1.61	658.48	652	15	1.77E-02	57.3	3.73E+00	T
0	367.02	19	39	2.46	735.27	730	11	4.95E-03	****	3.40E+00	T
0	463.71	16	30	0.67	928.65	925	9	4.17E-03	****	2.80E+00	T
0	563.44	28	12	1.81	1128.11	1123	12	7.50E-03	64.2	2.39E+00	T
0	572.16	20	27	1.44	1145.56	1140	14	5.32E-03	****	2.36E+00	
0	627.98	17	18	0.82	1257.20	1250	12	4.50E-03	****	2.19E+00	
1	666.32	18	9	1.80	1333.89	1317	22	4.76E-03	80.2	2.09E+00	T
0	670.67	9	11	0.67	1342.59	1338	7	2.36E-03	****	2.08E+00	
0	717.06	13	19	4.54	1435.36	1427	13	3.45E-03	****	1.98E+00	
0	768.71	33	23	6.07	1538.68	1531	15	9.03E-03	72.7	1.87E+00	
0	799.40	25	51	4.04	1600.05	1583	29	6.94E-03	****	1.81E+00	
0	883.49	9	2	1.23	1768.23	1764	8	2.54E-03	84.8	1.68E+00	T
0	961.54	11	5	0.81	1924.35	1921	7	2.99E-03	98.9	1.57E+00	T
0	965.08	14	9	0.96	1931.43	1927	9	4.01E-03	96.9	1.57E+00	T
0	1054.10	6	16	3.99	2109.46	2100	11	1.81E-03	****	1.46E+00	
0	1175.28	8	7	1.28	2351.84	2345	9	2.22E-03	****	1.34E+00	
7	1191.67	20	10	2.92	2384.61	2381	12	5.64E-03	63.1	1.33E+00	
7	1194.36	8	9	1.83	2390.00	2381	12	2.15E-03	****	1.32E+00	
0	1302.02	13	3	4.15	2605.31	2598	13	3.85E-03	75.8	1.23E+00	
0	1378.71	10	11	1.52	2758.70	2751	11	2.78E-03	****	1.18E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235031.CNF;1
* Acquisition date   : 3-OCT-2016 09:09:51 Sensitivity      : 3.000
* Detector ID        : GAM32 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.58 Half life ratio : *****
* Sample date        : 26-NOV-2015 14:25:00 Nuclide Library : SOLID
* Sample ID          : G405235031 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.3962E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 23-AUG-2016 07:56:33 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM32 CAN.CNF;11
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	3.132E-01
ZN-65	1.389E-01
CD-109	1.467E+00
SN-126	8.456E-02
BA-137M	2.152E-02
CS-137	2.273E-02
CE-141	3.150E+01
TL-208	2.902E-02
BI-212	3.415E-01
PB-212	4.311E-02
BI-214	5.333E-02
PB-214	6.314E-02
RN-222	5.333E-02
RA-224	4.620E-01
RA-226	5.333E-02
AC-228	1.191E-01
RA-228	1.191E-01
TH-228	4.311E-02
TH-230	5.331E-02
TH-232	1.191E-01
U-234	5.331E-02
U-235	1.955E-01
AM-243	5.939E-02
ANH-511	2.413E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.150E+01	NOT IDENT.
NA-22	4.647E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.455E-02	NOT IDENT.
SC-46	3.194E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF

MN-54	5.738E-02	NOT IDENT.
CO-56	4.669E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.814E-02	NOT IDENT.
CO-58	5.461E-01	NOT IDENT.
FE-59	6.740E+00	NOT IDENT.
CO-60	2.563E-02	NOT IDENT.
GE-68	1.797E+00	NOT IDENT.
AS-73	1.777E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.994E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.766E-01	NOT IDENT.
KR-85	7.749E+00	NOT IDENT.
SR-85	9.281E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	2.226E-01	NOT IDENT.
Y-91	4.571E+02	NOT IDENT.
NB-94	3.437E-02	NOT IDENT.
NB-95	7.879E-01	NOT IDENT.
NB-95M	2.238E+00	NOT IDENT.
ZR-95	1.672E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.140E-02	NOT IDENT.
RH-102	4.141E-02	NOT IDENT.
RU-103	5.944E+00	FAIL ABUN
RH-106	4.394E-01	NOT IDENT.
RU-106	4.394E-01	NOT IDENT.
AG-108M	2.631E-02	NOT IDENT.
AG-110M	7.971E-02	FAIL ABUN
SN-113	2.420E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.277E-01	NOT IDENT.
SB-124	1.633E+00	NOT IDENT.
SB-125	8.627E-02	FAIL ABUN
TE-125M	3.391E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.280E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.790E-02	FAIL ABUN
CS-135	1.316E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.137E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-143	0.000E+00	SHORT HLIF
CE-144	3.243E-01	NOT IDENT.
PM-144	5.416E-02	NOT IDENT.
PR-144	4.734E+00	NOT IDENT.
PM-146	4.101E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.965E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.185E-02	FAIL ABUN
EU-152	9.291E-02	FAIL ABUN
GD-153	1.955E-01	NOT IDENT.
EU-154	1.107E-01	NOT IDENT.
EU-155	1.098E-01	FAIL ABUN
TB-160	1.710E+00	FAIL ABUN
HO-166M	5.210E-02	NOT IDENT.
TM-171	3.986E+01	NOT IDENT.
HF-172	1.943E-01	NOT IDENT.
LU-172	5.936E-02	FAIL ABUN
LU-176	2.122E-02	FAIL ABUN
HF-181	5.073E+00	NOT IDENT.
TA-182	8.952E-01	FAIL ABUN
RE-183	4.479E+00	NOT IDENT.

RE-184	2.555E+01	NOT IDENT.
W-188	1.034E+02	NOT IDENT.
IR-192	4.871E-01	FAIL ABUN
HG-203	3.060E+00	NOT IDENT.
BI-207	4.209E-02	FAIL ABUN
PB-210	7.947E+00	NOT IDENT.
BI-211	3.784E-01	NOT IDENT.
PB-211	6.709E-01	NOT IDENT.
RN-219	3.799E-01	FAIL ABUN
RA-223	5.351E-01	FAIL ABUN
AC-227	2.087E-01	NOT IDENT.
TH-227	2.087E-01	NOT IDENT.
TH-229	4.620E-01	FAIL ABUN
PA-231	4.281E-01	NOT IDENT.
TH-231	5.351E-01	FAIL ABUN
PA-233	5.444E-02	NOT IDENT.
PA-234	2.230E-01	FAIL ABUN
PA-234M	3.451E+00	NOT IDENT.
TH-234	1.715E+00	FAIL ABUN
NP-237	5.444E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	1.715E+00	FAIL ABUN
NP-239	2.410E-01	NOT IDENT.
PU-239	3.043E+02	NOT IDENT.
AM-241	1.706E-01	NOT IDENT.
CM-243	1.001E-01	NOT IDENT.
BK-247	6.455E-02	NOT IDENT.
CM-247	3.395E-02	NOT IDENT.
CF-249	2.983E-02	NOT IDENT.
CF-251	1.173E-01	NOT IDENT.

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235031.CNF;1 *
* Acquisition date   : 3-OCT-2016 09:09:51 Sensitivity      : 3.000          *
* Detector ID        : GAM32 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.58 Half life ratio : *****          *
* Sample date        : 26-NOV-2015 14:25:00 Nuclide Library : SOLID        *
* Sample ID          : G405235031 Analyst initials: MXR1         *
* Batch Number       : 1596249 Sample Quantity : 1.3962E+02 GRAM      *
*                               Quantity Err(%) : 1.4325E-03 %        *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000          *
*                               Dry Weight       : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date     : 23-AUG-2016 07:56:33 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM32 CAN.CNF;11        *
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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
              (pCi/GRAM )    (1.96-sigma)  (1.96-sigma)
K-40         1.398E+01      1.703E+00      1.703E+00
ZN-65        2.534E-01      2.335E-01      2.335E-01
CD-109       1.430E+00      3.097E+00      3.097E+00
SN-126       8.950E-02      1.938E-01      1.938E-01
BA-137M      1.941E-01      6.399E-02      6.399E-02
CS-137       2.051E-01      6.759E-02      6.759E-02
CE-141       3.958E+01      7.302E+01      7.302E+01
TL-208       2.750E-01      9.599E-02      9.599E-02
BI-212       8.238E-01      6.502E-01      6.502E-01
PB-212       1.162E+00      1.530E-01      1.530E-01
BI-214       9.827E-01      2.062E-01      2.062E-01
PB-214       1.069E+00      2.472E-01      2.472E-01
RN-222       9.827E-01      2.062E-01      2.062E-01
RA-224       3.680E-01      1.295E+00      1.295E+00
RA-226       9.827E-01      2.062E-01      2.062E-01
AC-228       8.982E-01      3.448E-01      3.448E-01
RA-228       8.982E-01      3.448E-01      3.448E-01
TH-228       1.162E+00      1.530E-01      1.530E-01
TH-230       9.824E-01      2.062E-01      2.062E-01
TH-232       8.982E-01      3.448E-01      3.448E-01
U-234        9.824E-01      2.062E-01      2.062E-01
U-235        3.792E-01      4.025E-01      4.025E-01
AM-243       1.765E-01      1.137E-01      1.137E-01
ANH-511      1.067E-01      8.379E-02      8.379E-02

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

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Nuclide      Key-Line Activity      K.L Act error      TPU
              (pCi/GRAM )    (1.96-sigma)  (1.96-sigma)
BE-7         -4.375E+00      1.408E+01      1.421E+01 NOT IDENT.
NA-22        2.714E-02      4.919E-02      5.068E-02 NOT IDENT.
NA-24        1.000E+41      1.217E+41      0.000E+00 SHORT HLIF
AL-26        -1.733E-02      3.579E-02      3.664E-02 NOT IDENT.
SC-46        8.642E-02      3.686E-01      3.706E-01 FAIL ABUN
V-48         1.544E+04      2.267E+04      2.372E+04 SHORT HLIF

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CR-51	1.417E+02	6.299E+02	6.332E+02	SHORT HLIF
MN-54	-2.251E-02	7.483E-02	7.551E-02	NOT IDENT.
CO-56	6.602E-02	5.547E-01	5.555E-01	NOT IDENT.
MN-56	1.000E+41	7.923E+41	0.000E+00	SHORT HLIF
CO-57	1.209E-02	5.631E-02	5.657E-02	NOT IDENT.
CO-58	-2.868E-02	6.680E-01	6.681E-01	NOT IDENT.
FE-59	7.864E-01	7.630E+00	7.638E+00	NOT IDENT.
CO-60	-1.891E-02	3.539E-02	3.640E-02	NOT IDENT.
GE-68	-1.027E+00	2.286E+00	2.332E+00	NOT IDENT.
AS-73	9.986E+00	1.966E+01	2.017E+01	NOT IDENT.
AS-74	-1.574E+03	1.086E+04	1.089E+04	SHORT HLIF
SE-75	3.508E-02	2.304E-01	2.309E-01	NOT IDENT.
BR-77	6.827E+39	6.144E+40	0.000E+00	SHORT HLIF
SR-82	-4.920E+02	1.013E+03	1.037E+03	SHORT HLIF
RB-83	2.436E-01	6.343E-01	6.437E-01	NOT IDENT.
KR-85	7.363E+00	9.006E+00	9.598E+00	NOT IDENT.
SR-85	8.803E-01	1.079E+00	1.149E+00	NOT IDENT.
RB-86	-1.277E+04	4.289E+04	4.328E+04	SHORT HLIF
Y-88	1.089E-01	2.291E-01	2.343E-01	NOT IDENT.
Y-91	-2.296E+02	5.790E+02	5.882E+02	NOT IDENT.
NB-94	2.991E-02	3.732E-02	3.969E-02	NOT IDENT.
NB-95	-5.163E-01	1.193E+00	1.216E+00	NOT IDENT.
NB-95M	-5.773E-01	2.846E+00	2.858E+00	NOT IDENT.
ZR-95	1.562E+00	1.745E+00	1.881E+00	NOT IDENT.
NB-97	1.000E+41	1.672E+41	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	1.376E+43	0.000E+00	SHORT HLIF
MO-99	-1.495E+33	3.640E+33	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.409E+41	0.000E+00	SHORT HLIF
RH-101	8.540E-03	3.674E-02	3.694E-02	NOT IDENT.
RH-102	-4.078E-02	6.607E-02	6.858E-02	NOT IDENT.
RU-103	-5.023E+00	7.691E+00	8.017E+00	FAIL ABUN
RH-106	-6.563E-02	6.005E-01	6.012E-01	NOT IDENT.
RU-106	-6.563E-02	6.005E-01	6.012E-01	NOT IDENT.
AG-108M	1.395E-02	2.864E-02	2.933E-02	NOT IDENT.
AG-110M	9.579E-02	7.974E-02	9.068E-02	FAIL ABUN
SN-113	-5.297E-02	2.842E-01	2.852E-01	NOT IDENT.
CD-115	6.198E+39	1.186E+41	0.000E+00	SHORT HLIF
SN-117M	9.306E+03	1.777E+05	1.777E+05	SHORT HLIF
TE-123M	-4.232E-02	1.427E-01	1.440E-01	NOT IDENT.
SB-124	3.304E-01	1.813E+00	1.819E+00	NOT IDENT.
SB-125	-8.641E-02	1.115E-01	1.181E-01	FAIL ABUN
TE-125M	7.801E+01	3.957E+02	3.972E+02	NOT IDENT.
I-126	2.494E+06	1.991E+06	2.287E+06	SHORT HLIF
SB-126	-1.412E+06	3.066E+06	3.131E+06	SHORT HLIF
SB-127	-1.142E+22	2.021E+23	0.000E+00	SHORT HLIF
I-131	9.326E+09	1.427E+10	1.488E+10	SHORT HLIF
I-132	1.000E+41	1.923E+42	0.000E+00	SHORT HLIF
TE-132	7.335E+26	5.197E+27	0.000E+00	SHORT HLIF
BA-133	-2.023E-02	4.524E-02	4.615E-02	NOT IDENT.
I-133	-1.000E+41	2.331E+41	0.000E+00	SHORT HLIF
CS-134	3.667E-02	6.466E-02	6.674E-02	FAIL ABUN
CS-135	1.759E-02	1.624E-01	1.626E-01	NOT IDENT.
I-135	1.000E+41	7.171E+41	0.000E+00	SHORT HLIF
CS-136	2.163E+04	7.284E+05	7.285E+05	SHORT HLIF
CE-139	3.429E-02	1.221E-01	1.231E-01	NOT IDENT.
BA-140	3.653E+05	2.846E+06	2.851E+06	SHORT HLIF
LA-140	-4.757E+05	7.896E+05	8.183E+05	SHORT HLIF
CE-143	1.000E+41	2.451E+41	0.000E+00	SHORT HLIF
CE-144	-3.216E-01	4.216E-01	4.458E-01	NOT IDENT.
PM-144	1.165E-02	6.301E-02	6.323E-02	NOT IDENT.
PR-144	1.018E+00	5.508E+00	5.527E+00	NOT IDENT.
PM-146	3.303E-03	4.718E-02	4.720E-02	NOT IDENT.
ND-147	-1.085E+07	6.622E+07	6.640E+07	SHORT HLIF
PM-147	-4.625E+01	9.551E+02	9.553E+02	NOT IDENT.
PM-149	-1.000E+41	2.143E+41	0.000E+00	SHORT HLIF
EU-150	-4.213E-03	3.597E-02	3.602E-02	FAIL ABUN
EU-152	-2.159E-04	1.060E-01	1.060E-01	FAIL ABUN
GD-153	-5.504E-02	2.355E-01	2.368E-01	NOT IDENT.
EU-154	5.825E-02	1.182E-01	1.211E-01	NOT IDENT.
EU-155	-9.052E-03	1.310E-01	1.310E-01	FAIL ABUN
TB-160	-7.102E-02	2.371E+00	2.371E+00	FAIL ABUN
HO-166M	-3.605E-02	7.800E-02	7.968E-02	NOT IDENT.
TM-171	3.902E+00	4.541E+01	4.544E+01	NOT IDENT.
HF-172	-2.723E-01	2.644E-01	2.915E-01	NOT IDENT.
LU-172	-1.317E-02	7.129E-02	7.153E-02	FAIL ABUN
LU-176	-1.385E-02	2.550E-02	2.626E-02	FAIL ABUN
HF-181	1.333E+00	5.735E+00	5.766E+00	NOT IDENT.
TA-182	1.057E-01	1.024E+00	1.025E+00	FAIL ABUN

RE-183	-1.978E+00	5.363E+00	5.436E+00	NOT IDENT.
RE-184	-5.128E+00	3.265E+01	3.273E+01	NOT IDENT.
W-188	-6.558E+01	1.396E+02	1.427E+02	NOT IDENT.
IR-192	-3.755E-01	5.905E-01	6.143E-01	FAIL ABUN
HG-203	2.157E+00	3.264E+00	3.406E+00	NOT IDENT.
BI-207	-1.820E-02	5.147E-02	5.212E-02	FAIL ABUN
PB-210	3.590E+00	8.744E+00	8.893E+00	NOT IDENT.
BI-211	1.660E+00	3.463E-01	8.244E-01	NOT IDENT.
PB-211	1.608E-01	7.550E-01	7.585E-01	NOT IDENT.
RN-219	-1.209E-01	4.511E-01	4.544E-01	FAIL ABUN
RA-223	6.234E-02	6.689E-01	6.695E-01	FAIL ABUN
AC-227	5.266E-02	2.290E-01	2.302E-01	NOT IDENT.
TH-227	5.266E-02	2.290E-01	2.302E-01	NOT IDENT.
TH-229	8.785E-02	5.032E-01	5.048E-01	FAIL ABUN
PA-231	9.055E-02	5.285E-01	5.301E-01	NOT IDENT.
TH-231	6.234E-02	6.689E-01	6.695E-01	FAIL ABUN
PA-233	-3.171E-03	6.204E-02	6.206E-02	NOT IDENT.
PA-234	6.928E-02	2.539E-01	2.558E-01	FAIL ABUN
PA-234M	-5.147E-01	4.015E+00	4.022E+00	NOT IDENT.
TH-234	1.369E-03	1.948E+00	1.948E+00	FAIL ABUN
NP-237	-3.171E-03	6.204E-02	6.206E-02	FAIL ABUN
NP-238	1.000E+41	3.763E+41	0.000E+00	SHORT HLIF
U-238	1.369E-03	1.948E+00	1.948E+00	FAIL ABUN
NP-239	5.605E-02	2.818E-01	2.829E-01	NOT IDENT.
PU-239	1.082E+02	3.543E+02	3.577E+02	NOT IDENT.
AM-241	-1.804E-01	2.147E-01	2.296E-01	NOT IDENT.
CM-243	2.973E-02	1.157E-01	1.165E-01	NOT IDENT.
BK-247	2.027E-02	7.804E-02	7.858E-02	NOT IDENT.
CM-247	-6.403E-03	3.985E-02	3.995E-02	NOT IDENT.
CF-249	-2.454E-02	3.757E-02	3.916E-02	NOT IDENT.
CF-251	7.552E-02	1.237E-01	1.283E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	67.9872	87.09	116.4670	136.47	80.9586
45.60	57.0555	87.57	116.5350	140.51	0.0000
46.54	56.0303	88.03	139.6028	143.76	77.2956
49.72	0.0000	88.34	139.6547	144.24	77.3293
51.35	74.5733	88.47	142.8516	145.44	83.3016
51.87	73.5071	89.96	124.0261	152.43	64.3407
52.39	75.8340	1093.63	97.8692	153.25	0.0000
52.97	66.8429	91.11	0.0000	323.87	71.2228
53.44	68.0280	92.59	122.0207	156.02	0.0000
54.07	78.3123	93.35	122.1289	158.56	0.0000
57.36	0.0000	94.56	92.7254	159.00	69.8098
57.53	66.1910	94.65	92.7349	162.33	72.5644
57.98	68.5213	94.67	92.7372	162.66	0.0000
59.27	68.6579	94.87	92.7585	163.33	73.4793
59.32	76.6738	97.43	89.0211	165.86	65.9259
59.54	77.8445	98.43	97.5526	176.31	68.2073
60.96	73.4236	98.44	97.5539	176.60	0.0000
61.17	70.0040	99.53	74.7626	177.52	64.8148
62.93	87.4475	100.11	69.9848	181.07	0.0000
63.29	87.4939	102.03	89.4818	181.52	65.0169
63.58	82.9244	103.18	70.2233	184.41	67.7676
64.28	94.5386	103.37	66.6049	143.76	67.8350
66.73	83.3038	105.21	76.4462	193.51	69.1073
67.24	91.4697	105.31	76.4549	197.03	69.2865
125.81	90.3684	106.12	83.8095	198.01	69.3364
67.75	90.3773	106.47	75.3354	201.83	62.4876
69.67	91.7834	109.28	79.2183	203.43	59.4759
70.83	97.7492	111.00	84.2464	205.31	71.4666
72.81	108.9050	111.76	0.0000	210.85	50.4885
72.87	105.8018	114.06	71.0419	215.65	47.1023
74.66	104.1074	116.30	0.0000	222.11	55.3449
74.82	104.1298	116.74	68.7806	227.09	51.0521
74.97	104.1509	119.76	68.9908	227.38	47.4786
77.11	104.4463	121.12	69.0848	228.16	0.0000
78.74	101.9242	121.22	69.0917	228.18	51.0892
79.69	87.9193	121.78	72.8335	116.74	51.0892
80.12	78.5426	122.06	66.6797	235.69	54.0448
80.19	0.0000	122.92	61.7928	235.96	54.0540
80.57	110.0230	123.07	61.8019	238.63	47.8307
81.00	84.9210	265.00	66.7860	238.98	0.0000
81.07	84.9287	125.81	79.3188	240.99	47.9035
81.75	113.3364	127.23	62.0529	242.00	47.9342
83.79	80.4859	127.91	73.2708	244.70	54.3591
84.00	71.0353	129.30	70.8812	252.40	0.0000
85.43	105.9518	131.20	64.7810	252.80	49.1726
86.55	116.3900	133.02	67.3879	254.15	0.0000
86.79	116.4243	133.52	79.9043	256.23	43.8020
86.94	116.4460	136.00	72.5805	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	40.7262	355.39	0.0000	584.27	20.1334
264.80	38.5282	356.01	34.7073	595.83	0.0000
265.00	38.5325	364.49	0.0000	427.87	22.3792
268.22	48.2585	366.42	0.0000	602.52	0.0000
269.46	46.9150	372.51	31.4890	604.72	22.4108
270.03	46.9305	375.05	30.1650	607.14	17.6232
271.23	46.9637	377.52	33.1229	609.32	18.1711
273.65	0.0000	356.01	28.3368	610.33	18.1773
276.40	58.7464	388.16	34.2687	614.28	17.6662
277.37	49.9076	388.63	0.0000	618.01	22.5125
277.60	48.9898	391.69	39.2285	620.36	17.1660
278.00	46.2270	264.66	30.5282	621.93	19.3220
279.20	49.0351	401.81	42.3675	630.19	0.0000
279.54	59.2240	402.40	38.4366	631.29	19.3828
279.70	59.2292	404.85	34.5329	633.25	9.6976
280.46	67.5880	410.95	38.5858	634.78	0.0000
283.69	41.7426	413.71	28.7274	635.95	17.2559
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	50.1405	423.72	0.0000	645.85	11.9019
285.90	0.0000	427.09	34.8768	657.76	9.7760
287.50	35.3258	427.87	34.8889	657.90	0.0000
290.67	44.7031	433.94	22.9874	661.66	9.7881
293.27	0.0000	439.40	17.0308	664.57	0.0000
351.93	42.9509	453.88	27.2153	666.33	0.0000
295.96	42.9687	463.37	23.2751	666.50	0.0000
879.38	63.1439	468.07	27.3763	667.71	0.0000
299.98	42.1289	473.00	0.0000	677.62	17.4902
300.09	42.1317	475.06	18.3029	685.70	0.0000
300.13	42.1326	476.78	27.4735	695.00	0.0000
301.36	46.3770	477.60	23.4113	696.49	19.7930
302.85	49.6972	482.18	24.4741	696.51	19.7930
256.23	39.4186	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	20.8980
306.78	46.0462	497.08	29.7487	697.49	20.8995
308.46	36.6823	505.52	15.4382	702.65	16.5259
311.90	40.5207	507.63	0.0000	706.68	28.6798
316.51	52.9022	511.00	23.7225	711.68	26.5146
319.41	0.0000	514.00	26.3311	720.70	0.0000
320.08	0.0000	514.00	26.3311	721.93	0.0000
321.04	46.4011	520.40	13.4570	722.78	11.6395
323.87	36.9870	520.69	0.0000	722.91	14.9656
325.23	48.4019	522.65	0.0000	723.31	13.3042
328.76	0.0000	527.90	0.0000	724.19	19.9614
333.37	37.1711	528.26	13.4972	727.33	12.2103
333.97	37.1822	529.59	17.6585	733.00	6.6714
334.37	31.4686	529.87	0.0000	735.93	8.9030
338.28	42.9977	531.02	0.0000	333.97	17.8145
338.32	42.9987	537.26	0.0000	739.50	0.0000
311.90	45.9160	546.56	0.0000	747.24	6.6997
340.48	45.9160	552.55	34.5724	748.06	12.2859
340.55	0.0000	563.25	18.9309	752.31	12.3011
344.28	43.1296	569.33	27.4049	753.82	0.0000
345.93	48.3461	946.00	27.4060	756.73	11.1975
351.06	37.5067	569.70	27.4081	756.80	11.1979
351.93	37.5234	583.19	20.1257	884.68	6.7327

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	21.8931	1274.44	7.1567	1620.50	4.0481
766.42	21.3356	1001.03	10.7476	1621.92	6.0736
766.84	21.3379	1002.74	6.2720	1678.03	0.0000
772.60	0.0000	1004.73	12.5499	1690.97	2.0475
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	2.0714
778.90	12.3965	1028.54	0.0000	1063.66	9.3296
783.70	0.0000	1037.84	12.6473	1771.35	2.0736
785.37	10.1613	1038.76	0.0000	1791.20	0.0000
792.07	16.9678	631.29	5.7934	1808.65	6.2563
794.95	20.3782	1048.07	0.0000	1810.72	0.0000
795.86	20.3833	1049.04	15.9414	1836.06	2.0941
810.06	15.9169	1050.41	11.5977		
810.29	15.9180	1063.66	12.7234		
344.28	13.6445	1077.00	0.0000		
810.76	13.6455	1077.34	12.7627		
815.77	0.0000	1085.87	10.0473		
1048.07	0.0000	1093.63	10.9797		
832.01	12.5818	1099.45	10.0775		
834.85	18.3151	1112.07	11.7594		
835.71	14.8847	1112.84	7.3511		
836.80	0.0000	1115.54	10.2977		
846.75	0.0000	1120.29	10.3079		
846.77	13.7808	1120.55	10.3086		
856.80	0.0000	1221.41	10.3106		
860.56	12.6794	1129.67	11.0669		
871.09	8.0912	1131.51	0.0000		
873.19	9.2523	1147.95	0.0000		
875.33	0.0000	1173.23	7.4473		
879.38	12.1633	1177.95	5.9641		
880.51	15.6429	1189.05	4.4833		
883.24	8.1171	1204.77	13.1199		
884.68	5.2200	1221.41	13.1643		
889.28	8.1299	1231.02	11.3064		
894.76	8.1413	1235.36	0.0000		
898.04	16.2969	1238.28	16.9849		
900.72	6.9890	1260.41	0.0000		
903.28	9.3249	1271.87	14.2502		
911.20	15.7676	1274.44	8.5545		
912.08	15.7714	1274.54	8.5545		
923.98	0.0000	1291.59	10.4911		
926.50	7.9146	1298.22	0.0000		
929.11	18.4795	1312.11	0.0000		
937.49	17.6367	1332.49	8.6523		
944.13	0.0000	1362.66	0.0000		
946.00	8.8370	1365.19	9.6735		
949.00	12.3812	1368.63	0.0000		
667.71	0.0000	1384.29	4.8541		
962.31	0.0000	1408.01	6.8257		
964.08	0.0000	1457.56	0.0000		
966.17	10.6575	1460.82	8.8610		
911.20	11.3758	1489.16	3.9583		
968.97	11.3758	1505.03	8.9308		
983.53	0.0000	1584.12	8.0474		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:12:46.63

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235032.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM39.CNF;134
Background date    : 2-OCT-2016 11:02:13.
Sample date       : 23-NOV-2015 11:48:00 Acquisition date : 3-OCT-2016 09:10:21.
Sample ID        : G405235032 Sample quantity : 1.46947E+02 GRAM
Detector name    : GAM39 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:07.00 0.2%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596249 Detector SN# :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.54*	79	173	2.05	92.93	87	12	2.18E-02	36.2	
2	0	63.44*	93	303	1.39	126.72	119	14	2.60E-02	42.0	
3	3	74.79*	238	179	1.55	149.42	142	16	6.62E-02	13.0	3.58E+00
4	3	77.18*	305	135	1.08	154.20	142	16	8.47E-02	9.1	
5	0	84.33*	35	167	1.03	168.50	164	8	9.69E-03	68.1	
6	0	86.94	63	157	0.82	173.72	172	7	1.75E-02	35.2	
7	0	92.93*	83	163	1.29	185.71	182	9	2.30E-02	32.5	
8	0	185.82*	83	83	1.33	371.48	366	10	2.32E-02	24.5	
9	0	195.09	21	76	0.52	390.02	384	8	5.83E-03	75.8	
10	0	210.13	46	109	2.74	420.11	415	12	1.28E-02	47.9	
11	4	238.80*	373	65	1.33	477.45	469	21	1.03E-01	6.6	3.79E-01
12	4	241.85	115	59	1.90	483.56	469	21	3.21E-02	21.0	
13	0	295.22*	119	41	1.36	590.29	584	11	3.32E-02	14.2	
14	0	300.60*	23	57	0.93	601.04	596	9	6.32E-03	64.4	
15	0	327.47	57	45	2.41	654.79	648	12	1.59E-02	26.8	
16	0	338.81*	65	62	1.34	677.47	672	11	1.81E-02	27.4	
17	0	352.21*	164	79	1.40	704.28	699	13	4.57E-02	14.0	
18	0	463.35	30	17	1.02	926.56	923	7	8.26E-03	29.6	
19	0	511.57*	37	32	2.17	1023.02	1015	16	1.04E-02	47.1	
20	0	583.73*	86	42	1.27	1167.35	1160	14	2.39E-02	19.8	
21	0	601.68	21	6	1.81	1203.24	1200	7	5.73E-03	30.4	
22	0	609.44*	153	17	0.90	1218.76	1212	12	4.25E-02	10.1	
23	0	661.59	57	41	1.51	1323.08	1315	15	1.58E-02	28.0	
24	0	694.50	26	38	5.16	1388.89	1381	17	7.17E-03	58.3	
25	0	727.35*	39	16	1.72	1454.62	1448	13	1.07E-02	28.1	
26	0	785.08	30	15	1.43	1570.07	1563	13	8.24E-03	33.3	
27	0	870.59	16	13	0.75	1741.13	1736	13	4.44E-03	52.8	
28	0	875.67	8	6	0.75	1751.27	1748	7	2.35E-03	56.9	
29	0	911.48*	71	13	0.84	1822.90	1817	16	1.99E-02	16.9	
30	0	969.95*	27	34	1.59	1939.87	1931	14	7.59E-03	50.3	
31	0	1027.79	7	3	1.06	2055.57	2052	6	2.00E-03	52.9	
32	0	1095.58	7	12	1.47	2191.17	2186	9	2.08E-03	89.1	
33	0	1102.55	20	0	1.28	2205.10	2200	11	5.56E-03	22.4	
34	0	1120.45	28	9	0.68	2240.91	2236	9	7.83E-03	26.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1276.45	13	5	1.55	2552.96	2547	11	3.64E-03	43.9	
36	0	1378.17*	14	8	2.49	2756.43	2750	11	3.89E-03	50.0	
37	0	1408.72*	7	3	1.58	2817.55	2810	11	1.98E-03	63.9	
38	0	1461.03*	271	7	1.82	2922.19	2915	14	7.52E-02	6.5	
39	0	1764.74*	23	0	1.60	3529.75	3523	12	6.40E-03	21.9	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235032.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 23-NOV-2015 11:48:00 Acquisition date : 3-OCT-2016 09:10:21
Sample ID : G405235032 Sample quantity : 146.95 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA39 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:07.00 0.2%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	8.983E-01	1.391E+01	1.391E+01	13.08	OK
CD-109	88.03	3.70*	6.756E+00	6.225E-01	9.991E-01	186.05	OK
SN-126	64.28	9.60	6.928E+00	9.148E-01	9.148E-01	84.02	OK
	86.94	8.90	6.756E+00	2.588E-01	2.588E-01	186.05	OK
	87.57	37.00*	6.756E+00	6.225E-02	6.225E-02	186.05	OK
BA-137M	661.66	89.90*	1.758E+00	1.909E-01	1.947E-01	56.06	OK
CS-137	661.66	85.10*	1.758E+00	2.017E-01	2.057E-01	56.06	OK
TL-208	277.37	6.60	3.709E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	1.951E+00	2.793E-01	2.793E-01	39.69	OK
	860.56	12.50	1.416E+00	----- Line	Not Found	-----	Absent
PB-210	46.54	4.25*	6.818E+00	1.809E+00	1.858E+00	72.39	OK
BI-212	727.33	6.67*	1.626E+00	1.877E+00	1.877E+00	56.14	OK
	785.37	1.10	1.527E+00	9.243E+00	9.243E+00	66.67	OK
	1620.50	1.47	8.143E-01	----- Line	Not Found	-----	Absent
PB-212	74.82	10.28	6.812E+00	1.591E+00	1.591E+00	37.30	OK
	77.11	17.10	6.799E+00	1.682E+00	1.682E+00	18.11	OK
	238.63	43.60*	4.209E+00	1.185E+00	1.185E+00	13.14	OK
	300.09	3.30	3.460E+00	1.139E+00	1.139E+00	128.73	OK
BI-214	609.32	45.49*	1.882E+00	9.574E-01	9.578E-01	20.12	OK
	1120.29	14.92	1.136E+00	8.399E-01	8.402E-01	53.71	OK
	1764.49	15.30	7.484E-01	9.708E-01	9.711E-01	43.82	OK
PB-214	74.82	5.80	6.812E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	6.799E+00	2.965E+00	2.967E+00	18.11	OK
	87.09	3.41	6.755E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.163E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	3.514E+00	1.058E+00	1.058E+00	28.48	OK
	351.93	35.60*	3.012E+00	8.653E-01	8.656E-01	27.98	OK
RN-222	609.32	45.49*	1.882E+00	9.574E-01	9.578E-01	20.12	OK
	1120.29	14.92	1.136E+00	8.399E-01	8.402E-01	53.71	OK
	1764.49	15.30	7.484E-01	9.708E-01	9.711E-01	43.82	OK
RA-224	240.99	4.10*	4.165E+00	2.073E+00	2.073E+00	84.04	OK
RA-226	609.32	45.49*	1.882E+00	9.574E-01	9.578E-01	20.12	OK
	1120.29	14.92	1.136E+00	8.399E-01	8.402E-01	53.71	OK
	1764.49	15.30	7.484E-01	9.708E-01	9.711E-01	43.82	OK
AC-228	105.21	1.10	6.612E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.116E+00	1.051E+00	1.051E+00	54.90	OK
	794.95	4.25	1.512E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.451E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.351E+00	1.058E+00	1.058E+00	33.79	OK
	968.97	15.80	1.283E+00	6.913E-01	6.913E-01	100.57	OK
RA-228	105.21	1.10	6.612E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.116E+00	1.051E+00	1.051E+00	54.90	OK
	794.95	4.25	1.512E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.451E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.351E+00	1.058E+00	1.058E+00	33.79	OK
	968.97	15.80	1.283E+00	6.913E-01	6.913E-01	100.57	OK
TH-228	74.82	10.28	6.812E+00	1.591E+00	1.591E+00	37.30	OK
	77.11	17.10	6.799E+00	1.682E+00	1.682E+00	18.11	OK
	238.63	43.60*	4.209E+00	1.185E+00	1.185E+00	13.14	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected	Decay Corr	2-Sigma	Status
				pCi/GRAM	pCi/GRAM	%Error	
TH-230	300.09	3.30	3.460E+00	1.139E+00	1.139E+00	128.73	OK
	609.32	45.49*	1.882E+00	9.574E-01	9.574E-01	20.12	OK
	1120.29	14.92	1.136E+00	8.399E-01	8.399E-01	53.71	OK
	1764.49	15.30	7.484E-01	9.708E-01	9.708E-01	43.82	OK
PA-231	283.69	1.70	3.638E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	3.460E+00	7.028E-01	7.028E-01	128.73	OK
TH-232	105.21	1.10	6.612E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.116E+00	1.051E+00	1.051E+00	54.90	OK
	835.71	1.61	1.451E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.351E+00	1.058E+00	1.058E+00	33.79	OK
TH-234	968.97	15.80	1.283E+00	6.913E-01	6.913E-01	100.57	OK
	63.29	3.70*	6.928E+00	2.373E+00	2.373E+00	84.02	OK
	92.59	4.23	6.722E+00	1.838E+00	1.838E+00	65.07	OK
	609.32	45.49*	1.882E+00	9.574E-01	9.574E-01	20.12	OK
U-234	1120.29	14.92	1.136E+00	8.399E-01	8.399E-01	53.71	OK
	1764.49	15.30	7.484E-01	9.708E-01	9.708E-01	43.82	OK
	63.29	3.70*	6.928E+00	2.373E+00	2.373E+00	84.02	OK
U-238	92.59	4.23	6.722E+00	1.838E+00	1.838E+00	65.07	OK
	43.53	5.90	6.236E+00	----- Line	Not Found	-----	Absent
AM-243	74.66	67.20*	6.812E+00	2.434E-01	2.434E-01	37.30	OK
	511.00	100.00*	2.181E+00	9.366E-02	9.366E-02	94.28	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235032.CNF;1    *
* Acquisition date   : 3-OCT-2016 09:10:21 Sensitivity      : 3.000              *
* Detector ID        : GAM39 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:07.00 Half life ratio : *****          *
* Sample date        : 23-NOV-2015 11:48:00 Analyst initials: MXR1        *
* Sample ID          : G405235032 Sample Quantity : 1.4695E+02 GRAM      *
* Batch Number       : 1596249 Wet Weight      : 0.00000        *
* Wet wt corr        : 1.00000 Dry Weight      : 0.00000        *
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 27-JUL-2016 13:04:01 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM39 CAN.CNF;4          *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.391E+01	1.783E+00	7.664E-01
CD-109	9.991E-01	1.822E+00	1.959E+00
SN-126	6.225E-02	1.135E-01	1.220E-01
BA-137M	1.947E-01	1.070E-01	8.901E-02
CS-137	2.057E-01	1.130E-01	9.403E-02
TL-208	2.793E-01	1.086E-01	7.193E-02
PB-210	1.858E+00	1.318E+00	8.477E-01
BI-212	1.877E+00	1.033E+00	1.120E+00
PB-212	1.185E+00	1.527E-01	9.966E-02
BI-214	9.578E-01	1.889E-01	1.435E-01
PB-214	8.656E-01	2.374E-01	1.405E-01
RN-222	9.578E-01	1.889E-01	1.435E-01
RA-224	2.073E+00	1.707E+00	1.069E+00
RA-226	9.578E-01	1.889E-01	1.435E-01
AC-228	1.058E+00	3.503E-01	2.695E-01
RA-228	1.058E+00	3.503E-01	2.695E-01
TH-228	1.185E+00	1.527E-01	9.966E-02
TH-230	9.574E-01	1.888E-01	1.434E-01
PA-231	7.028E-01	8.866E-01	9.121E-01
TH-232	1.058E+00	3.503E-01	2.695E-01
TH-234	2.373E+00	1.954E+00	1.100E+00
U-234	9.574E-01	1.888E-01	1.434E-01
U-238	2.373E+00	1.954E+00	1.100E+00
AM-243	2.434E-01	8.898E-02	5.812E-02
ANH-511	9.366E-02	8.653E-02	5.689E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-6.462E+00	1.861E+01	3.370E+01	NOT IDENT.
NA-22	-7.868E-03	7.425E-02	1.247E-01	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	3.435E-03	3.741E-02	8.253E-02	NOT IDENT.
SC-46	1.055E-01	5.506E-01	1.131E+00	FAIL ABUN

V-48	0.000E+00	3.276E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	6.835E+02	0.000E+00	SHORT HLIF
MN-54	-1.174E-02	8.448E-02	1.652E-01	NOT IDENT.
CO-56	3.179E-03	6.325E-01	1.279E+00	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-7.879E-02	5.591E-02	8.788E-02	NOT IDENT.
CO-58	3.985E-01	7.408E-01	1.630E+00	NOT IDENT.
FE-59	6.214E+00	1.021E+01	1.841E+01	NOT IDENT.
CO-60	6.175E-03	4.475E-02	9.417E-02	NOT IDENT.
ZN-65	3.938E-02	2.435E-01	4.421E-01	NOT IDENT.
GE-68	-5.495E-02	3.006E+00	5.989E+00	NOT IDENT.
AS-73	-2.061E+00	3.140E+00	5.570E+00	NOT IDENT.
AS-74	0.000E+00	1.278E+04	0.000E+00	SHORT HLIF
SE-75	-6.568E-02	2.402E-01	4.567E-01	NOT IDENT.
BR-77	0.000E+00	2.221E+39	0.000E+00	SHORT HLIF
SR-82	0.000E+00	1.445E+03	0.000E+00	SHORT HLIF
RB-83	1.496E-01	8.844E-01	1.730E+00	NOT IDENT.
KR-85	6.786E+00	8.496E+00	1.650E+01	NOT IDENT.
SR-85	8.362E-01	1.051E+00	2.040E+00	NOT IDENT.
RB-86	0.000E+00	5.737E+04	0.000E+00	SHORT HLIF
Y-88	1.282E-01	1.653E-01	5.428E-01	NOT IDENT.
Y-91	-5.732E+02	8.145E+02	1.406E+03	NOT IDENT.
NB-94	-1.139E-02	4.232E-02	7.572E-02	FAIL ABUN
NB-95	2.377E-01	1.270E+00	2.436E+00	NOT IDENT.
NB-95M	3.200E-01	3.371E+00	5.933E+00	NOT IDENT.
ZR-95	1.020E+00	2.112E+00	4.292E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.022E+34	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.577E+41	0.000E+00	SHORT HLIF
RH-101	-3.871E-02	3.819E-02	6.240E-02	NOT IDENT.
RH-102	-6.147E-03	7.564E-02	1.414E-01	NOT IDENT.
RU-103	-5.187E+00	8.262E+00	1.445E+01	FAIL ABUN
RH-106	5.840E-01	5.986E-01	1.305E+00	NOT IDENT.
RU-106	5.840E-01	5.986E-01	1.305E+00	NOT IDENT.
AG-108M	-9.803E-03	3.101E-02	5.742E-02	NOT IDENT.
AG-110M	8.754E-03	1.377E-01	2.771E-01	NOT IDENT.
SN-113	-3.520E-01	3.081E-01	5.111E-01	NOT IDENT.
CD-115	0.000E+00	1.538E+41	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	2.127E+05	0.000E+00	SHORT HLIF
TE-123M	-4.061E-02	1.430E-01	2.772E-01	NOT IDENT.
SB-124	9.029E-01	2.943E+00	6.773E+00	NOT IDENT.
SB-125	-8.656E-02	1.246E-01	2.182E-01	FAIL ABUN
TE-125M	-2.878E+02	3.106E+02	5.160E+02	NOT IDENT.
I-126	0.000E+00	3.079E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	3.433E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	4.114E+23	0.000E+00	SHORT HLIF
I-131	0.000E+00	2.263E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.110E+28	0.000E+00	SHORT HLIF
BA-133	-1.616E-02	5.183E-02	8.539E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	3.412E-04	6.250E-02	1.251E-01	NOT IDENT.
CS-135	-5.162E-02	1.712E-01	3.214E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	8.142E+05	0.000E+00	SHORT HLIF
CE-139	-1.305E-01	1.262E-01	2.299E-01	NOT IDENT.
BA-140	0.000E+00	3.535E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	1.380E+06	0.000E+00	SHORT HLIF
CE-141	-2.275E+01	3.372E+01	6.394E+01	NOT IDENT.
CE-143	0.000E+00	1.100E+41	0.000E+00	SHORT HLIF
CE-144	-6.124E-02	3.475E-01	6.852E-01	NOT IDENT.
PM-144	7.378E-02	7.863E-02	1.639E-01	NOT IDENT.
PR-144	6.445E+00	6.882E+00	1.434E+01	NOT IDENT.
PM-146	-4.878E-03	5.283E-02	9.995E-02	NOT IDENT.
ND-147	0.000E+00	1.137E+08	0.000E+00	SHORT HLIF
PM-147	-4.251E+02	8.860E+02	1.531E+03	NOT IDENT.
PM-149	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
EU-150	4.225E-03	3.281E-02	5.755E-02	FAIL ABUN
EU-152	4.650E-02	1.115E-01	2.152E-01	FAIL ABUN
GD-153	-1.553E-01	1.940E-01	2.981E-01	NOT IDENT.
EU-154	-3.456E-02	1.781E-01	2.931E-01	NOT IDENT.
EU-155	6.434E-02	1.064E-01	2.031E-01	FAIL ABUN
TB-160	4.028E-01	2.971E+00	5.426E+00	FAIL ABUN
HO-166M	2.250E-02	6.452E-02	1.299E-01	FAIL ABUN
TM-171	3.074E+00	5.872E+00	1.137E+01	NOT IDENT.
HF-172	-3.020E-01	2.639E-01	4.258E-01	FAIL ABUN
LU-172	5.645E-02	9.457E-02	1.930E-01	FAIL ABUN

LU-176	1.050E-02	2.740E-02	5.351E-02	FAIL ABUN
HF-181	5.006E+00	6.683E+00	1.395E+01	NOT IDENT.
TA-182	-4.823E-01	1.278E+00	2.355E+00	FAIL ABUN
RE-183	4.347E-01	1.419E+00	2.509E+00	NOT IDENT.
RE-184	3.156E+01	4.974E+01	1.085E+02	NOT IDENT.
W-188	-4.407E+01	1.548E+02	2.596E+02	FAIL ABUN
IR-192	1.918E-01	5.619E-01	1.134E+00	FAIL ABUN
HG-203	1.718E+00	3.512E+00	7.062E+00	NOT IDENT.
BI-207	9.375E-03	6.418E-02	1.294E-01	FAIL ABUN
BI-211	0.000E+00	6.539E-01	8.785E-01	FAIL ABUN
PB-211	6.792E-01	8.782E-01	1.794E+00	NOT IDENT.
RN-219	-8.680E-02	5.175E-01	9.636E-01	NOT IDENT.
RA-223	-4.522E-01	7.949E-01	1.265E+00	FAIL ABUN
AC-227	2.963E-02	2.816E-01	5.478E-01	FAIL ABUN
TH-227	2.963E-02	2.816E-01	5.478E-01	FAIL ABUN
TH-229	1.113E-01	4.786E-01	9.562E-01	FAIL ABUN
TH-231	-4.522E-01	7.949E-01	1.265E+00	FAIL ABUN
PA-233	-1.112E-02	6.766E-02	1.287E-01	FAIL ABUN
PA-234	-7.373E-02	3.457E-01	6.699E-01	NOT IDENT.
PA-234M	1.247E+00	4.672E+00	9.997E+00	NOT IDENT.
U-235	-3.449E-03	1.867E-01	3.696E-01	FAIL ABUN
NP-237	-1.112E-02	6.766E-02	1.287E-01	FAIL ABUN
NP-238	0.000E+00	1.535E+41	0.000E+00	SHORT HLIF
NP-239	9.117E-03	2.591E-01	4.694E-01	NOT IDENT.
PU-239	5.093E+02	3.321E+02	6.720E+02	NOT IDENT.
AM-241	-1.444E-02	6.603E-02	1.108E-01	NOT IDENT.
CM-243	-3.460E-03	9.758E-02	1.769E-01	NOT IDENT.
BK-247	-5.904E-02	7.827E-02	1.414E-01	FAIL ABUN
CM-247	-1.206E-02	4.764E-02	8.791E-02	NOT IDENT.
CF-249	-2.708E-03	4.882E-02	9.238E-02	NOT IDENT.
CF-251	-4.573E-02	1.222E-01	2.336E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	261	10.66*	8.983E-01	1.391E+01	1.391E+01	13.08
CD-109	88.03	78	3.70*	6.756E+00	1.597E+00	2.563E+00	70.40
SN-126	64.28	119	9.60	6.928E+00	9.148E-01	9.148E-01	84.02
	86.94	78	8.90	6.756E+00	6.640E-01	6.640E-01	70.40
	87.57	78	37.00*	6.756E+00	1.597E-01	1.597E-01	70.40
BA-137M	661.66	59	89.90*	1.758E+00	1.909E-01	1.947E-01	56.06
CS-137	661.66	59	85.10*	1.758E+00	2.017E-01	2.057E-01	56.06
TL-208	277.37	-----	6.60	3.709E+00	-----	Line Not Found	-----
	583.19	91	85.00*	1.951E+00	2.793E-01	2.793E-01	39.69
	860.56	-----	12.50	1.416E+00	-----	Line Not Found	-----
PB-210	46.54	103	4.25*	6.818E+00	1.809E+00	1.858E+00	72.39
BI-211	72.87	-----	1.23	6.824E+00	-----	Line Not Found	-----
	351.06	182	12.92*	3.012E+00	2.384E+00	2.384E+00	27.98
BI-212	727.33	40	6.67*	1.626E+00	1.877E+00	1.877E+00	56.14
	785.37	30	1.10	1.527E+00	9.243E+00	9.243E+00	66.67
	1620.50	-----	1.47	8.143E-01	-----	Line Not Found	-----
PB-212	74.82	300	10.28	6.812E+00	2.188E+00	2.188E+00	25.99
	77.11	383	17.10	6.799E+00	1.682E+00	1.682E+00	18.11
	238.63	426	43.60*	4.209E+00	1.185E+00	1.185E+00	13.14
	300.09	25	3.30	3.460E+00	1.139E+00	1.139E+00	128.73
BI-214	609.32	160	45.49*	1.882E+00	9.574E-01	9.578E-01	20.12
	1120.29	28	14.92	1.136E+00	8.399E-01	8.402E-01	53.71
	1764.49	22	15.30	7.484E-01	9.708E-01	9.711E-01	43.82
PB-214	74.82	300	5.80	6.812E+00	3.877E+00	3.879E+00	25.99
	77.11	383	9.70	6.799E+00	2.965E+00	2.967E+00	18.11
	87.09	78	3.41	6.756E+00	1.733E+00	1.734E+00	70.40
	242.00	132	7.25	4.165E+00	2.230E+00	2.231E+00	42.07
	295.22	134	18.42	3.514E+00	1.058E+00	1.058E+00	28.48
	351.93	182	35.60*	3.012E+00	8.653E-01	8.656E-01	27.98
RN-222	609.32	160	45.49*	1.882E+00	9.574E-01	9.578E-01	20.12
	1120.29	28	14.92	1.136E+00	8.399E-01	8.402E-01	53.71
	1764.49	22	15.30	7.484E-01	9.708E-01	9.711E-01	43.82
RA-224	240.99	132	4.10*	4.165E+00	3.943E+00	3.943E+00	42.07
RA-226	609.32	160	45.49*	1.882E+00	9.574E-01	9.578E-01	20.12
	1120.29	28	14.92	1.136E+00	8.399E-01	8.402E-01	53.71
	1764.49	22	15.30	7.484E-01	9.708E-01	9.711E-01	43.82
AC-228	105.21	-----	1.10	6.612E+00	-----	Line Not Found	-----
	338.32	72	11.27	3.116E+00	1.051E+00	1.051E+00	54.90
	794.95	-----	4.25	1.512E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.451E+00	-----	Line Not Found	-----
	911.20	72	25.80*	1.351E+00	1.058E+00	1.058E+00	33.79
	968.97	27	15.80	1.283E+00	6.913E-01	6.913E-01	100.57
RA-228	105.21	-----	1.10	6.612E+00	-----	Line Not Found	-----
	338.32	72	11.27	3.116E+00	1.051E+00	1.051E+00	54.90
	794.95	-----	4.25	1.512E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.451E+00	-----	Line Not Found	-----
	911.20	72	25.80*	1.351E+00	1.058E+00	1.058E+00	33.79

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	968.97	27	15.80	1.283E+00	6.913E-01	6.913E-01	100.57
	74.82	300	10.28	6.812E+00	2.188E+00	2.188E+00	25.99
	77.11	383	17.10	6.799E+00	1.682E+00	1.682E+00	18.11
	238.63	426	43.60*	4.209E+00	1.185E+00	1.185E+00	13.14
TH-230	300.09	25	3.30	3.460E+00	1.139E+00	1.139E+00	128.73
	609.32	160	45.49*	1.882E+00	9.574E-01	9.574E-01	20.12
	1120.29	28	14.92	1.136E+00	8.399E-01	8.399E-01	53.71
	1764.49	22	15.30	7.484E-01	9.708E-01	9.708E-01	43.82
PA-231	283.69	-----	1.70	3.638E+00	-----	Line Not Found	-----
TH-232	301.36	25	5.35*	3.460E+00	7.028E-01	7.028E-01	128.73
	105.21	-----	1.10	6.612E+00	-----	Line Not Found	-----
	338.32	72	11.27	3.116E+00	1.051E+00	1.051E+00	54.90
	835.71	-----	1.61	1.451E+00	-----	Line Not Found	-----
TH-234	911.20	72	25.80*	1.351E+00	1.058E+00	1.058E+00	33.79
	968.97	27	15.80	1.283E+00	6.913E-01	6.913E-01	100.57
	63.29	119	3.70*	6.928E+00	2.373E+00	2.373E+00	84.02
	92.59	102	4.23	6.722E+00	1.838E+00	1.838E+00	65.07
U-234	609.32	160	45.49*	1.882E+00	9.574E-01	9.574E-01	20.12
	1120.29	28	14.92	1.136E+00	8.399E-01	8.399E-01	53.71
	1764.49	22	15.30	7.484E-01	9.708E-01	9.708E-01	43.82
U-238	63.29	119	3.70*	6.928E+00	2.373E+00	2.373E+00	84.02
	92.59	102	4.23	6.722E+00	1.838E+00	1.838E+00	65.07
AM-243	43.53	-----	5.90	6.236E+00	-----	Line Not Found	-----
ANH-511	74.66	300	67.20*	6.812E+00	3.347E-01	3.347E-01	25.99
	511.00	40	100.00*	2.181E+00	9.366E-02	9.366E-02	94.28

Flag: "*" = Keyline

Total number of lines in spectrum 39
Number of unidentified lines 5
Number of lines tentatively identified by NID 34 87.18%

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	1.391E+01	1.391E+01	0.182E+01	13.08	
CD-109	461.40D	1.60	1.597E+00	2.563E+00	1.805E+00	70.40	
SN-126	2.30E+05Y	1.00	1.597E-01	1.597E-01	1.124E-01	70.40	
BA-137M	30.08Y	1.02	1.909E-01	1.947E-01	1.092E-01	56.06	
CS-137	30.08Y	1.02	2.017E-01	2.057E-01	1.153E-01	56.06	
TL-208	1.41E+10Y	1.00	2.793E-01	2.793E-01	1.109E-01	39.69	
PB-210	22.20Y	1.03	1.809E+00	1.858E+00	1.345E+00	72.39	
BI-211	7.04E+08Y	1.00	2.384E+00	2.384E+00	0.667E+00	27.98	
BI-212	1.41E+10Y	1.00	1.877E+00	1.877E+00	1.054E+00	56.14	
PB-212	1.41E+10Y	1.00	1.185E+00	1.185E+00	0.156E+00	13.14	
BI-214	1600.00Y	1.00	9.574E-01	9.578E-01	1.927E-01	20.12	
PB-214	1600.00Y	1.00	8.653E-01	8.656E-01	2.422E-01	27.98	
RN-222	1600.00Y	1.00	9.574E-01	9.578E-01	1.927E-01	20.12	
RA-224	1.41E+10Y	1.00	3.943E+00	3.943E+00	1.659E+00	42.07	
RA-226	1600.00Y	1.00	9.574E-01	9.578E-01	1.927E-01	20.12	
AC-228	1.41E+10Y	1.00	1.058E+00	1.058E+00	0.357E+00	33.79	
RA-228	1.41E+10Y	1.00	1.058E+00	1.058E+00	0.357E+00	33.79	
TH-228	1.41E+10Y	1.00	1.185E+00	1.185E+00	0.156E+00	13.14	
TH-230	7.54E+04Y	1.00	9.574E-01	9.574E-01	1.927E-01	20.12	
PA-231	7.04E+08Y	1.00	7.028E-01	7.028E-01	9.047E-01	128.73	
TH-232	1.41E+10Y	1.00	1.058E+00	1.058E+00	0.357E+00	33.79	
TH-234	4.47E+09Y	1.00	2.373E+00	2.373E+00	1.994E+00	84.02	
U-234	2.45E+05Y	1.00	9.574E-01	9.574E-01	1.927E-01	20.12	
U-238	4.47E+09Y	1.00	2.373E+00	2.373E+00	1.994E+00	84.02	
AM-243	7370.00Y	1.00	3.347E-01	3.347E-01	0.870E-01	25.99	
ANH-511	1.00E+09Y	1.00	9.366E-02	9.366E-02	8.830E-02	94.28	

Total Activity : 4.343E+01 4.445E+01

Grand Total Activity : 4.343E+01 4.445E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	84.33	43	209	1.03	168.50	164	8	9.69E-03	****	6.77E+00	T
0	185.82	97	96	1.33	371.48	366	10	2.32E-02	49.0	5.11E+00	T
0	195.09	24	88	0.52	390.02	384	8	5.83E-03	****	4.93E+00	
0	210.13	53	126	2.74	420.11	415	12	1.28E-02	95.9	4.66E+00	T
0	327.47	64	50	2.41	654.79	648	12	1.59E-02	53.6	3.21E+00	T
0	463.35	32	19	1.02	926.56	923	7	8.26E-03	59.2	2.37E+00	T
0	601.68	22	7	1.81	1203.24	1200	7	5.73E-03	60.8	1.90E+00	T
0	694.50	27	40	5.16	1388.89	1381	17	7.17E-03	****	1.69E+00	T
0	870.59	16	13	0.75	1741.13	1736	13	4.44E-03	****	1.40E+00	T
0	875.67	9	6	0.75	1751.27	1748	7	2.35E-03	****	1.40E+00	T
0	1027.79	7	3	1.06	2055.57	2052	6	2.00E-03	****	1.22E+00	T
0	1095.58	7	11	1.47	2191.17	2186	9	2.08E-03	****	1.16E+00	
0	1102.55	20	0	1.28	2205.10	2200	11	5.56E-03	44.7	1.15E+00	
0	1276.45	13	5	1.55	2552.96	2547	11	3.64E-03	87.8	1.01E+00	
0	1378.17	14	8	2.49	2756.43	2750	11	3.89E-03	****	9.48E-01	
0	1408.72	7	3	1.58	2817.55	2810	11	1.98E-03	****	9.29E-01	T

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                               *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235032.CNF;1    *
* Acquisition date   : 3-OCT-2016 09:10:21 Sensitivity      : 3.000              *
* Detector ID        : GAM39 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:07.00 Half life ratio : *****      *
* Sample date        : 23-NOV-2015 11:48:00 Nuclide Library : SOLID      *
* Sample ID          : G405235032 Analyst initials: MXR1         *
* Batch Number       : 1596249 Sample Quantity : 1.4695E+02 GRAM      *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000          *
*                               Dry Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                       *
*                               *                                               *
* Eff. Cal. date     : 27-JUL-2016 13:04:01 Eff. Geometry  : CAN        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM39 CAN.CNF;4          *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	3.107E-01
CD-109	9.323E-01
SN-126	5.806E-02
BA-137M	3.995E-02
CS-137	4.220E-02
TL-208	3.169E-02
PB-210	3.974E-01
BI-212	4.950E-01
PB-212	4.590E-02
BI-214	6.348E-02
PB-214	6.355E-02
RN-222	6.348E-02
RA-224	4.924E-01
RA-226	6.348E-02
AC-228	1.146E-01
RA-228	1.146E-01
TH-228	4.590E-02
TH-230	6.346E-02
PA-231	4.171E-01
TH-232	1.146E-01
TH-234	5.213E-01
U-234	6.346E-02
U-238	5.213E-01
AM-243	2.745E-02
ANH-511	2.519E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.507E+01	NOT IDENT.
NA-22	5.372E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	3.177E-02	NOT IDENT.
SC-46	4.966E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF

CR-51	0.000E+00	SHORT HLIF
MN-54	7.287E-02	NOT IDENT.
CO-56	5.566E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.094E-02	NOT IDENT.
CO-58	7.117E-01	NOT IDENT.
FE-59	7.757E+00	NOT IDENT.
CO-60	3.910E-02	NOT IDENT.
ZN-65	1.914E-01	NOT IDENT.
GE-68	2.581E+00	NOT IDENT.
AS-73	2.631E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	2.087E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	7.729E-01	NOT IDENT.
KR-85	7.451E+00	NOT IDENT.
SR-85	9.215E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.963E-01	NOT IDENT.
Y-91	5.984E+02	NOT IDENT.
NB-94	3.364E-02	FAIL ABUN
NB-95	1.081E+00	NOT IDENT.
NB-95M	2.760E+00	NOT IDENT.
ZR-95	1.897E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.915E-02	NOT IDENT.
RH-102	6.258E-02	NOT IDENT.
RU-103	6.318E+00	FAIL ABUN
RH-106	5.832E-01	NOT IDENT.
RU-106	5.832E-01	NOT IDENT.
AG-108M	2.557E-02	NOT IDENT.
AG-110M	1.218E-01	NOT IDENT.
SN-113	2.288E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.290E-01	NOT IDENT.
SB-124	2.687E+00	NOT IDENT.
SB-125	9.742E-02	FAIL ABUN
TE-125M	2.394E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.860E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.528E-02	NOT IDENT.
CS-135	1.489E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.069E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.987E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.196E-01	NOT IDENT.
PM-144	7.426E-02	NOT IDENT.
PR-144	6.498E+00	NOT IDENT.
PM-146	4.492E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.149E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.637E-02	FAIL ABUN
EU-152	9.847E-02	FAIL ABUN
GD-153	1.397E-01	NOT IDENT.
EU-154	1.256E-01	NOT IDENT.
EU-155	9.561E-02	FAIL ABUN
TB-160	2.370E+00	FAIL ABUN
HO-166M	5.707E-02	FAIL ABUN
TM-171	5.381E+00	NOT IDENT.
HF-172	1.988E-01	FAIL ABUN
LU-172	8.332E-02	FAIL ABUN
LU-176	2.450E-02	FAIL ABUN

HF-181	6.313E+00	NOT IDENT.
TA-182	1.013E+00	FAIL ABUN
RE-183	1.185E+00	NOT IDENT.
RE-184	4.783E+01	NOT IDENT.
W-188	1.183E+02	FAIL ABUN
IR-192	5.164E-01	FAIL ABUN
HG-203	3.272E+00	NOT IDENT.
BI-207	5.667E-02	FAIL ABUN
BI-211	4.211E-01	FAIL ABUN
PB-211	8.262E-01	NOT IDENT.
RN-219	4.415E-01	NOT IDENT.
RA-223	5.771E-01	FAIL ABUN
AC-227	2.548E-01	FAIL ABUN
TH-227	2.548E-01	FAIL ABUN
TH-229	4.450E-01	FAIL ABUN
TH-231	5.771E-01	FAIL ABUN
PA-233	5.881E-02	FAIL ABUN
PA-234	2.903E-01	NOT IDENT.
PA-234M	4.331E+00	NOT IDENT.
U-235	1.737E-01	FAIL ABUN
NP-237	5.881E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.204E-01	NOT IDENT.
PU-239	3.175E+02	NOT IDENT.
AM-241	5.245E-02	NOT IDENT.
CM-243	8.307E-02	NOT IDENT.
BK-247	6.448E-02	FAIL ABUN
CM-247	4.026E-02	NOT IDENT.
CF-249	4.228E-02	NOT IDENT.
CF-251	1.088E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235032.CNF;1
* Acquisition date   : 3-OCT-2016 09:10:21 Sensitivity      : 3.000
* Detector ID        : GAM39 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:07.00 Half life ratio : *****
* Sample date       : 23-NOV-2015 11:48:00 Nuclide Library : SOLID
* Sample ID         : G405235032 Analyst initials: MXR1
* Batch Number      : 1596249 Sample Quantity : 1.4695E+02 GRAM
*                               Quantity Err(%) : 1.3610E-03 %
* Wet wt corr       : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 27-JUL-2016 13:04:01 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM39 CAN.CNF;4
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.391E+01	1.925E+00	1.925E+00
CD-109	9.991E-01	1.834E+00	1.834E+00
SN-126	6.225E-02	1.142E-01	1.142E-01
BA-137M	1.947E-01	1.073E-01	1.073E-01
CS-137	2.057E-01	1.134E-01	1.134E-01
TL-208	2.793E-01	1.093E-01	1.093E-01
PB-210	1.858E+00	1.328E+00	1.328E+00
BI-212	1.877E+00	1.037E+00	1.037E+00
PB-212	1.185E+00	1.651E-01	1.651E-01
BI-214	9.578E-01	1.933E-01	1.933E-01
PB-214	8.656E-01	2.401E-01	2.401E-01
RN-222	9.578E-01	1.933E-01	1.933E-01
RA-224	2.073E+00	1.715E+00	1.715E+00
RA-226	9.578E-01	1.933E-01	1.933E-01
AC-228	1.058E+00	3.544E-01	3.544E-01
RA-228	1.058E+00	3.544E-01	3.544E-01
TH-228	1.185E+00	1.651E-01	1.651E-01
TH-230	9.574E-01	1.933E-01	1.933E-01
PA-231	7.028E-01	8.992E-01	8.992E-01
TH-232	1.058E+00	3.544E-01	3.544E-01
TH-234	2.373E+00	2.024E+00	2.024E+00
U-234	9.574E-01	1.933E-01	1.933E-01
U-238	2.373E+00	2.024E+00	2.024E+00
AM-243	2.434E-01	9.096E-02	9.096E-02
ANH-511	9.366E-02	8.662E-02	8.662E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-6.462E+00	1.861E+01	1.884E+01	NOT IDENT.
NA-22	-7.868E-03	7.425E-02	7.433E-02	NOT IDENT.
NA-24	-1.000E+41	4.673E+41	0.000E+00	SHORT HLIF
AL-26	3.435E-03	3.741E-02	3.744E-02	NOT IDENT.
SC-46	1.055E-01	5.507E-01	5.527E-01	FAIL ABUN

V-48	-4.997E+02	3.276E+04	3.276E+04	SHORT HLIF
CR-51	9.148E+01	6.835E+02	6.848E+02	SHORT HLIF
MN-54	-1.174E-02	8.448E-02	8.464E-02	NOT IDENT.
CO-56	3.179E-03	6.325E-01	6.325E-01	NOT IDENT.
MN-56	-1.000E+41	3.858E+43	0.000E+00	SHORT HLIF
CO-57	-7.879E-02	5.602E-02	6.633E-02	NOT IDENT.
CO-58	3.985E-01	7.410E-01	7.624E-01	NOT IDENT.
FE-59	6.214E+00	1.022E+01	1.060E+01	NOT IDENT.
CO-60	6.175E-03	4.475E-02	4.483E-02	NOT IDENT.
ZN-65	3.938E-02	2.435E-01	2.441E-01	NOT IDENT.
GE-68	-5.495E-02	3.006E+00	3.006E+00	NOT IDENT.
AS-73	-2.061E+00	3.169E+00	3.302E+00	NOT IDENT.
AS-74	-1.214E+03	1.278E+04	1.279E+04	SHORT HLIF
SE-75	-6.568E-02	2.402E-01	2.420E-01	NOT IDENT.
BR-77	1.724E+40	1.567E+41	0.000E+00	SHORT HLIF
SR-82	8.449E+02	1.445E+03	1.494E+03	SHORT HLIF
RB-83	1.496E-01	8.846E-01	8.872E-01	NOT IDENT.
KR-85	6.786E+00	8.501E+00	9.034E+00	NOT IDENT.
SR-85	8.362E-01	1.052E+00	1.117E+00	NOT IDENT.
RB-86	-7.807E+03	5.738E+04	5.748E+04	SHORT HLIF
Y-88	1.282E-01	1.655E-01	1.753E-01	NOT IDENT.
Y-91	-5.732E+02	8.147E+02	8.547E+02	NOT IDENT.
NB-94	-1.139E-02	4.232E-02	4.263E-02	FAIL ABUN
NB-95	2.377E-01	1.270E+00	1.274E+00	NOT IDENT.
NB-95M	3.200E-01	3.371E+00	3.374E+00	NOT IDENT.
ZR-95	1.020E+00	2.112E+00	2.162E+00	NOT IDENT.
NB-97	1.000E+41	1.625E+42	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	7.286E+41	0.000E+00	SHORT HLIF
MO-99	-6.571E+32	1.022E+34	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	1.580E+41	0.000E+00	SHORT HLIF
RH-101	-3.871E-02	3.883E-02	4.257E-02	NOT IDENT.
RH-102	-6.147E-03	7.564E-02	7.569E-02	NOT IDENT.
RU-103	-5.187E+00	8.266E+00	8.591E+00	FAIL ABUN
RH-106	5.840E-01	5.997E-01	6.549E-01	NOT IDENT.
RU-106	5.840E-01	5.997E-01	6.549E-01	NOT IDENT.
AG-108M	-9.803E-03	3.102E-02	3.133E-02	NOT IDENT.
AG-110M	8.754E-03	1.377E-01	1.378E-01	NOT IDENT.
SN-113	-3.520E-01	3.084E-01	3.468E-01	NOT IDENT.
CD-115	-1.000E+41	1.549E+41	0.000E+00	SHORT HLIF
SN-117M	-9.578E+04	2.130E+05	2.173E+05	SHORT HLIF
TE-123M	-4.061E-02	1.430E-01	1.442E-01	NOT IDENT.
SB-124	9.029E-01	2.944E+00	2.972E+00	NOT IDENT.
SB-125	-8.656E-02	1.246E-01	1.306E-01	FAIL ABUN
TE-125M	-2.878E+02	3.111E+02	3.371E+02	NOT IDENT.
I-126	-8.599E+05	3.082E+06	3.106E+06	SHORT HLIF
SB-126	-1.382E+06	3.444E+06	3.499E+06	SHORT HLIF
SB-127	-2.333E+23	5.316E+23	0.000E+00	SHORT HLIF
I-131	-2.147E+09	2.263E+10	2.265E+10	SHORT HLIF
I-132	1.000E+41	5.818E+42	0.000E+00	SHORT HLIF
TE-132	-7.447E+27	1.154E+28	0.000E+00	SHORT HLIF
BA-133	-1.616E-02	5.183E-02	5.234E-02	NOT IDENT.
I-133	-1.000E+41	3.252E+41	0.000E+00	SHORT HLIF
CS-134	3.412E-04	6.250E-02	6.250E-02	NOT IDENT.
CS-135	-5.162E-02	1.712E-01	1.728E-01	NOT IDENT.
I-135	-1.000E+41	1.021E+42	0.000E+00	SHORT HLIF
CS-136	-1.013E+05	8.143E+05	8.155E+05	SHORT HLIF
CE-139	-1.305E-01	1.289E-01	1.417E-01	NOT IDENT.
BA-140	-1.522E+05	3.535E+06	3.536E+06	SHORT HLIF
LA-140	-1.806E+06	1.383E+06	1.605E+06	SHORT HLIF
CE-141	-2.275E+01	3.374E+01	3.526E+01	NOT IDENT.
CE-143	1.000E+41	1.105E+41	0.000E+00	SHORT HLIF
CE-144	-6.124E-02	3.476E-01	3.487E-01	NOT IDENT.
PM-144	7.378E-02	7.877E-02	8.550E-02	NOT IDENT.
PR-144	6.445E+00	6.888E+00	7.476E+00	NOT IDENT.
PM-146	-4.878E-03	5.283E-02	5.287E-02	NOT IDENT.
ND-147	-6.719E+07	1.137E+08	1.177E+08	SHORT HLIF
PM-147	-4.251E+02	8.862E+02	9.067E+02	NOT IDENT.
PM-149	1.000E+41	4.643E+41	0.000E+00	SHORT HLIF
EU-150	4.225E-03	3.281E-02	3.287E-02	FAIL ABUN
EU-152	4.650E-02	1.115E-01	1.135E-01	FAIL ABUN
GD-153	-1.553E-01	1.942E-01	2.064E-01	NOT IDENT.
EU-154	-3.456E-02	1.781E-01	1.788E-01	NOT IDENT.
EU-155	6.434E-02	1.065E-01	1.104E-01	FAIL ABUN
TB-160	4.028E-01	2.972E+00	2.977E+00	FAIL ABUN
HO-166M	2.250E-02	6.453E-02	6.532E-02	FAIL ABUN
TM-171	3.074E+00	5.878E+00	6.039E+00	NOT IDENT.
HF-172	-3.020E-01	2.685E-01	3.010E-01	FAIL ABUN
LU-172	5.645E-02	9.475E-02	9.810E-02	FAIL ABUN

LU-176	1.050E-02	2.740E-02	2.780E-02	FAIL ABUN
HF-181	5.006E+00	6.686E+00	7.057E+00	NOT IDENT.
TA-182	-4.823E-01	1.278E+00	1.296E+00	FAIL ABUN
RE-183	4.347E-01	1.420E+00	1.434E+00	NOT IDENT.
RE-184	3.156E+01	5.036E+01	5.233E+01	NOT IDENT.
W-188	-4.407E+01	1.549E+02	1.562E+02	FAIL ABUN
IR-192	1.918E-01	5.620E-01	5.686E-01	FAIL ABUN
HG-203	1.718E+00	3.513E+00	3.597E+00	NOT IDENT.
BI-207	9.375E-03	6.418E-02	6.432E-02	FAIL ABUN
BI-211	2.384E+00	6.625E-01	1.263E+00	FAIL ABUN
PB-211	6.792E-01	8.789E-01	9.307E-01	NOT IDENT.
RN-219	-8.680E-02	5.176E-01	5.190E-01	NOT IDENT.
RA-223	-4.522E-01	7.953E-01	8.210E-01	FAIL ABUN
AC-227	2.963E-02	2.817E-01	2.820E-01	FAIL ABUN
TH-227	2.963E-02	2.817E-01	2.820E-01	FAIL ABUN
TH-229	1.113E-01	4.786E-01	4.812E-01	FAIL ABUN
TH-231	-4.522E-01	7.953E-01	8.210E-01	FAIL ABUN
PA-233	-1.112E-02	6.766E-02	6.785E-02	FAIL ABUN
PA-234	-7.373E-02	3.558E-01	3.574E-01	NOT IDENT.
PA-234M	1.247E+00	4.672E+00	4.706E+00	NOT IDENT.
U-235	-3.449E-03	1.867E-01	1.867E-01	FAIL ABUN
NP-237	-1.112E-02	6.766E-02	6.785E-02	FAIL ABUN
NP-238	-1.000E+41	1.536E+41	0.000E+00	SHORT HLIF
NP-239	9.117E-03	2.591E-01	2.591E-01	NOT IDENT.
PU-239	5.093E+02	3.328E+02	4.044E+02	NOT IDENT.
AM-241	-1.444E-02	6.604E-02	6.636E-02	NOT IDENT.
CM-243	-3.460E-03	9.759E-02	9.760E-02	NOT IDENT.
BK-247	-5.904E-02	7.917E-02	8.352E-02	FAIL ABUN
CM-247	-1.206E-02	4.768E-02	4.799E-02	NOT IDENT.
CF-249	-2.708E-03	4.882E-02	4.883E-02	NOT IDENT.
CF-251	-4.573E-02	1.223E-01	1.240E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	96.7190	87.09	129.2920	136.47	64.3860
45.60	75.0593	87.57	129.3771	140.51	0.0000
46.54	75.2030	88.03	129.4596	143.76	69.0807
49.72	0.0000	88.34	140.5708	144.24	73.3284
51.35	90.8022	88.47	140.5953	145.44	70.8853
51.87	83.8145	89.96	135.3411	152.43	59.4791
52.39	78.3038	1093.63	102.1932	153.25	0.0000
52.97	91.8274	91.11	0.0000	323.87	83.4133
53.44	105.3581	92.59	106.0352	156.02	0.0000
54.07	96.5040	93.35	106.1418	158.56	0.0000
57.36	0.0000	94.56	82.8195	159.00	66.6940
57.53	111.4159	94.65	84.4218	162.33	61.7563
57.98	87.3956	94.67	84.4245	162.66	0.0000
59.27	111.7584	94.87	84.4466	163.33	49.7942
59.32	111.7682	97.43	97.5172	165.86	81.7508
59.54	111.8111	98.43	90.0393	176.31	68.6243
60.96	107.9212	98.44	90.0404	176.60	0.0000
61.17	107.9600	99.53	72.1326	177.52	70.4366
62.93	108.2840	100.11	62.5609	181.07	0.0000
63.29	108.3500	102.03	92.8627	181.52	70.6822
63.58	108.4027	103.18	79.7109	184.41	55.9870
64.28	108.5297	103.37	79.7300	143.76	56.0495
66.73	116.2327	105.21	70.2251	193.51	55.5364
67.24	120.9213	105.31	70.2339	197.03	68.9594
125.81	114.8804	106.12	71.5155	198.01	53.0884
67.75	94.9785	106.47	71.5461	201.83	71.8918
69.67	102.9543	109.28	77.8740	203.43	62.2092
70.83	110.8396	111.00	52.4289	205.31	64.0825
72.81	96.1264	111.76	0.0000	210.85	49.1668
72.87	96.1353	114.06	67.3025	215.65	52.4913
74.66	96.3994	116.30	0.0000	222.11	57.7109
74.82	96.4228	116.74	78.5596	227.09	53.4015
74.97	96.4443	119.76	72.6719	227.38	57.0341
77.11	96.7552	121.12	78.9517	228.16	0.0000
78.74	105.9484	121.22	78.9604	228.18	60.6918
79.69	102.9753	121.78	99.9974	116.74	60.6918
80.12	74.9380	122.06	100.0289	235.69	57.3847
80.19	0.0000	122.92	55.6248	235.96	45.5521
80.57	117.1677	123.07	54.3978	238.63	45.6406
81.00	103.1720	265.00	76.7034	238.98	0.0000
81.07	106.3088	125.81	96.7246	240.99	45.7179
81.75	100.1536	127.23	94.3906	242.00	45.7509
83.79	100.4456	127.91	88.2462	244.70	30.2537
84.00	100.4753	129.30	58.5042	252.40	0.0000
85.43	94.3854	131.20	88.5593	252.80	47.9444
86.55	94.5331	133.02	73.7347	254.15	0.0000
86.79	94.5642	133.52	68.3550	256.23	57.3000
86.94	108.7720	136.00	62.6831	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	42.7572	355.39	0.0000	584.27	18.5356
264.80	47.4099	356.01	35.3672	595.83	0.0000
265.00	49.2756	364.49	0.0000	427.87	23.0405
268.22	59.6302	366.42	0.0000	602.52	0.0000
269.46	49.4222	372.51	36.6748	604.72	6.5933
270.03	46.6420	375.05	30.7692	607.14	16.4978
271.23	44.8125	377.52	29.8151	609.32	19.8135
273.65	0.0000	356.01	25.9259	610.33	28.0805
276.40	54.3325	388.16	39.9748	614.28	21.5051
277.37	61.8656	388.63	0.0000	618.01	23.1909
277.60	55.3125	391.69	43.0516	620.36	27.6326
278.00	43.1362	264.66	32.1849	621.93	12.1655
279.20	44.1084	401.81	43.2738	630.19	0.0000
279.54	60.0755	402.40	44.2936	631.29	21.0851
279.70	60.0820	404.85	32.2533	633.25	21.1005
280.46	53.5372	410.95	16.1758	634.78	0.0000
283.69	50.8250	413.71	27.3340	635.95	17.7858
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	45.2275	423.72	0.0000	645.85	24.5432
285.90	0.0000	427.09	30.5701	657.76	21.8470
287.50	39.6271	427.87	33.6398	657.90	0.0000
290.67	41.1246	433.94	26.5813	661.66	25.8039
293.27	0.0000	439.40	21.5255	664.57	0.0000
351.93	31.2873	453.88	27.8635	666.33	0.0000
295.96	31.3021	463.37	25.9125	666.50	0.0000
879.38	28.5028	468.07	20.7743	667.71	0.0000
299.98	38.5117	473.00	0.0000	677.62	21.4353
300.09	38.5142	475.06	29.1758	685.70	0.0000
300.13	38.5150	476.78	31.2836	695.00	0.0000
301.36	38.5447	477.60	27.1225	696.49	18.1680
302.85	34.2935	482.18	19.8609	696.51	18.1680
256.23	44.3402	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	27.2598
306.78	31.5109	497.08	24.1993	697.49	27.2607
308.46	33.4548	505.52	17.4238	702.65	25.0329
311.90	40.2295	507.63	0.0000	706.68	20.5093
316.51	29.7752	511.00	20.1106	711.68	13.6958
319.41	0.0000	514.00	17.4869	720.70	0.0000
320.08	0.0000	514.00	17.4869	721.93	0.0000
321.04	23.1138	520.40	21.2533	722.78	15.4649
323.87	47.7517	520.69	0.0000	722.91	15.4655
325.23	39.1001	522.65	0.0000	723.31	15.4677
328.76	0.0000	527.90	0.0000	724.19	10.3147
333.37	32.0104	528.26	24.5217	727.33	19.5034
333.97	37.8431	529.59	18.1351	733.00	15.5165
334.37	37.8519	529.87	0.0000	735.93	13.8062
338.28	35.9913	531.02	0.0000	333.97	17.2662
338.32	35.9920	537.26	0.0000	739.50	0.0000
311.90	42.3663	546.56	0.0000	747.24	12.7017
340.48	42.3663	552.55	23.6892	748.06	11.5503
340.55	0.0000	563.25	27.0355	752.31	16.1926
344.28	31.6235	569.33	28.1847	753.82	0.0000
345.93	42.0088	946.00	27.1016	756.73	13.8989
351.06	30.3718	569.70	27.1037	756.80	13.8994
351.93	30.3863	583.19	18.5280	884.68	16.2524

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:15:51.19

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235033.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM25.CNF;357
Background date    : 2-OCT-2016 11:01:25.
Sample date       : 23-NOV-2015 11:53:00 Acquisition date : 3-OCT-2016 09:15:18.
Sample ID        : G405235033 Sample quantity : 1.66788E+02 GRAM
Detector name     : GAM25 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.54 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1596249 Detector SN# :
Matrix Spike ID   : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.58*	56	183	0.97	92.67	89	9	1.55E-02	47.3	
2	0	57.57*	18	141	0.98	114.63	113	6	5.03E-03	107.1	
3	0	63.27*	32	267	0.75	126.04	122	9	8.96E-03	96.2	
4	2	74.83*	229	166	0.95	149.16	143	15	6.37E-02	11.1	5.16E-01
5	2	77.19*	344	126	0.87	153.88	143	15	9.54E-02	7.5	
6	0	84.07*	63	140	2.09	167.62	164	7	1.76E-02	34.2	
7	0	88.48	219	216	3.77	176.45	171	11	6.07E-02	14.7	
8	0	92.91*	143	169	1.22	185.31	182	9	3.96E-02	19.6	
9	0	128.95	19	124	0.96	257.38	253	8	5.23E-03	105.5	
10	0	177.16	13	46	1.25	353.79	351	5	3.49E-03	84.9	
11	0	178.79	20	75	1.10	357.04	356	7	5.64E-03	72.6	
12	0	185.90*	100	127	1.58	371.27	365	11	2.78E-02	24.8	
13	0	191.54	14	52	0.90	382.54	379	6	3.84E-03	87.0	
14	0	210.34	60	76	0.98	420.14	416	10	1.66E-02	30.4	
15	4	238.76*	408	61	1.11	476.99	470	19	1.13E-01	6.0	1.33E+00
16	4	241.75	102	89	1.65	482.96	470	19	2.83E-02	22.7	
17	0	270.37	50	62	2.58	540.20	535	9	1.39E-02	31.9	
18	2	293.03	25	38	1.49	585.52	582	16	6.85E-03	50.3	5.34E-01
19	2	295.35*	131	45	1.15	590.16	582	16	3.63E-02	12.6	
20	0	300.61	22	68	0.99	600.67	597	10	6.11E-03	73.1	
21	0	338.48*	59	54	1.23	676.42	672	10	1.65E-02	27.0	
22	0	352.02*	252	50	1.18	703.49	698	11	6.99E-02	8.4	
23	0	422.96	11	25	0.63	845.40	841	6	2.98E-03	80.3	
24	0	463.13	26	16	1.45	925.75	922	8	7.29E-03	33.6	
25	0	511.36*	61	38	2.79	1022.21	1014	17	1.69E-02	30.6	
26	0	527.08	16	15	1.41	1053.66	1049	10	4.44E-03	51.7	
27	0	563.56	16	13	1.89	1126.63	1122	10	4.46E-03	48.3	
28	0	583.36*	91	42	0.99	1166.25	1160	12	2.52E-02	18.0	
29	0	609.42*	166	36	1.27	1218.37	1212	13	4.61E-02	10.9	
30	0	662.06	19	17	2.14	1323.68	1320	8	5.39E-03	43.7	
31	0	683.77	7	24	3.26	1367.12	1359	10	2.03E-03	132.6	
32	0	704.20	20	32	4.88	1408.00	1400	16	5.56E-03	67.1	
33	0	770.18	6	39	0.59	1539.99	1530	14	1.77E-03	210.2	
34	0	796.52	8	24	1.17	1592.69	1587	9	2.13E-03	122.1	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	805.08	15	10	4.41	1609.82	1602	14	4.10E-03	53.2	
36	0	814.59	9	11	0.60	1628.84	1624	8	2.40E-03	76.7	
37	0	860.60	26	18	2.74	1720.91	1715	12	7.11E-03	38.6	
38	0	911.28*	95	6	1.76	1822.33	1816	15	2.63E-02	12.3	
39	0	969.67*	34	24	1.56	1939.15	1933	13	9.51E-03	35.9	
40	0	981.44	9	4	1.46	1962.71	1958	9	2.59E-03	51.7	
41	0	1105.03	31	19	6.14	2210.03	2195	25	8.62E-03	41.6	
42	0	1121.65*	27	57	0.97	2243.29	2234	20	7.59E-03	69.6	
43	0	1239.96	7	30	0.67	2480.08	2471	12	2.05E-03	152.7	
44	0	1260.11	15	6	1.61	2520.40	2513	13	4.14E-03	43.5	
45	0	1265.43	16	0	1.39	2531.06	2526	10	4.44E-03	25.0	
46	0	1376.80	21	2	2.39	2753.97	2749	11	5.74E-03	26.8	
47	0	1389.44	7	2	1.56	2779.27	2775	8	1.91E-03	52.3	
48	0	1460.79*	342	0	2.43	2922.11	2915	16	9.50E-02	5.5	
49	0	1764.68*	30	0	2.15	3530.50	3524	13	8.28E-03	19.2	

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

VMS Nuclide Identification Report V3.1 Generated 3-OCT-2016 10:15:53

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235033.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 23-NOV-2015 11:53:00 Acquisition date : 3-OCT-2016 09:15:18
Sample ID : G405235033 Sample quantity : 166.79 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA25 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.54 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	87.09	TH-229	88.47
PB-214	87.09	U-235	89.96
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.131E+00	1.245E+01	1.245E+01	10.91	OK
CD-109	88.03	3.70*	9.261E+00	3.116E+00	5.000E+00	37.19	OK
SN-126	64.28	9.60	9.543E+00	2.217E-01	2.217E-01	192.38	OK
	86.94	8.90	9.280E+00	----- Line	Not Found	-----	Absent
	87.57	37.00*	9.261E+00	3.116E-01	3.116E-01	37.19	OK
BA-137M	661.66	89.90*	2.256E+00	4.661E-02	4.754E-02	87.40	OK
CS-137	661.66	85.10*	2.256E+00	4.924E-02	5.023E-02	87.40	OK
TL-208	277.37	6.60	4.809E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.510E+00	2.099E-01	2.099E-01	36.00	OK
	860.56	12.50	1.810E+00	5.330E-01	5.330E-01	77.30	OK
PB-210	46.54	4.25*	9.147E+00	9.292E-01	9.546E-01	94.62	OK
BI-211	72.87	1.23	9.424E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	3.893E+00	3.254E-01	3.254E-01	224.40	OK
PB-212	74.82	10.28	9.405E+00	9.975E-01	9.975E-01	34.80	OK
	77.11	17.10	9.382E+00	1.322E+00	1.322E+00	14.98	OK
	238.63	43.60*	5.476E+00	9.371E-01	9.371E-01	11.95	OK
	300.09	3.30	4.479E+00	7.962E-01	7.962E-01	146.20	OK
BI-214	609.32	45.49*	2.419E+00	7.421E-01	7.424E-01	21.77	OK
	1120.29	14.92	1.442E+00	5.778E-01	5.780E-01	139.21	OK
	1764.49	15.30	9.335E-01	8.916E-01	8.919E-01	38.47	OK
PB-214	74.82	5.80	9.405E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	9.382E+00	2.331E+00	2.332E+00	14.98	OK
	87.09	3.41	9.279E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	5.413E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.550E+00	8.355E-01	8.358E-01	25.28	OK
	351.93	35.60*	3.894E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	2.419E+00	7.421E-01	7.424E-01	21.77	OK
	1120.29	14.92	1.442E+00	5.778E-01	5.780E-01	139.21	OK
	1764.49	15.30	9.335E-01	8.916E-01	8.919E-01	38.47	OK
RA-224	240.99	4.10*	5.418E+00	1.039E+00	1.039E+00	115.47	OK
RA-226	609.32	45.49*	2.419E+00	7.421E-01	7.424E-01	21.77	OK
	1120.29	14.92	1.442E+00	5.778E-01	5.780E-01	139.21	OK
	1764.49	15.30	9.335E-01	8.916E-01	8.919E-01	38.47	OK
AC-228	105.21	1.10	8.977E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.031E+00	6.879E-01	6.879E-01	54.05	OK
	794.95	4.25	1.935E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.856E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.725E+00	9.939E-01	9.939E-01	24.61	OK
	968.97	15.80	1.636E+00	6.143E-01	6.143E-01	71.84	OK
RA-228	105.21	1.10	8.977E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.031E+00	6.879E-01	6.879E-01	54.05	OK
	794.95	4.25	1.935E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.856E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.725E+00	9.939E-01	9.939E-01	24.61	OK
	968.97	15.80	1.636E+00	6.143E-01	6.143E-01	71.84	OK
TH-228	74.82	10.28	9.405E+00	9.975E-01	9.975E-01	34.80	OK
	77.11	17.10	9.382E+00	1.322E+00	1.322E+00	14.98	OK
	238.63	43.60*	5.476E+00	9.371E-01	9.371E-01	11.95	OK
	300.09	3.30	4.479E+00	7.962E-01	7.962E-01	146.20	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-229	85.43	14.70	9.313E+00	2.827E-01	2.828E-01	68.42	OK
	88.47	24.00	9.261E+00	4.803E-01	4.804E-01	37.19	OK
	193.51	4.41*	6.496E+00	-----	Line Not Found	-----	Absent
	210.85	2.80	6.083E+00	1.951E+00	1.951E+00	60.83	OK
TH-230	609.32	45.49*	2.419E+00	7.421E-01	7.421E-01	21.77	OK
	1120.29	14.92	1.442E+00	5.778E-01	5.778E-01	139.21	OK
	1764.49	15.30	9.335E-01	8.916E-01	8.916E-01	38.47	OK
PA-231	283.69	1.70	4.715E+00	-----	Line Not Found	-----	Absent
	301.36	5.35*	4.479E+00	4.911E-01	4.911E-01	146.20	OK
TH-232	105.21	1.10	8.977E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.031E+00	6.879E-01	6.879E-01	54.05	OK
	835.71	1.61	1.856E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.725E+00	9.939E-01	9.939E-01	24.61	OK
	968.97	15.80	1.636E+00	6.143E-01	6.143E-01	71.84	OK
TH-234	63.29	3.70*	9.543E+00	5.752E-01	5.752E-01	192.38	OK
	92.59	4.23	9.200E+00	2.221E+00	2.221E+00	39.28	OK
U-234	609.32	45.49*	2.419E+00	7.421E-01	7.421E-01	21.77	OK
	1120.29	14.92	1.442E+00	5.778E-01	5.778E-01	139.21	OK
	1764.49	15.30	9.335E-01	8.916E-01	8.916E-01	38.47	OK
U-235	89.96	3.47	9.261E+00	3.322E+00	3.322E+00	37.19	OK
	93.35	5.60	9.200E+00	1.677E+00	1.677E+00	39.28	OK
	143.76	10.96*	7.922E+00	-----	Line Not Found	-----	Absent
	163.33	5.08	7.333E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	6.696E+00	1.475E-01	1.475E-01	49.63	OK
	205.31	5.01	6.202E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	9.543E+00	5.752E-01	5.752E-01	192.38	OK
	92.59	4.23	9.200E+00	2.221E+00	2.221E+00	39.28	OK
AM-243	43.53	5.90	8.344E+00	-----	Line Not Found	-----	Absent
	74.66	67.20*	9.405E+00	1.526E-01	1.526E-01	34.80	OK
ANH-511	511.00	100.00*	2.808E+00	1.086E-01	1.086E-01	61.15	OK

Flag: "*" = Keyline

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

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

Page 3645 of 5809

AL-26	-4.657E-03	2.551E-02	5.368E-02	NOT IDENT.
SC-46	-7.630E-02	3.097E-01	6.142E-01	FAIL ABUN
V-48	0.000E+00	2.247E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.591E+02	0.000E+00	SHORT HLIF
MN-54	2.332E-02	6.353E-02	1.317E-01	NOT IDENT.
CO-56	-1.888E-02	4.738E-01	9.496E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-1.701E-02	2.807E-02	5.350E-02	NOT IDENT.
CO-58	1.488E-01	5.994E-01	1.018E+00	NOT IDENT.
FE-59	-1.548E+00	6.509E+00	1.292E+01	NOT IDENT.
CO-60	-2.902E-02	3.783E-02	6.229E-02	NOT IDENT.
ZN-65	6.868E-02	1.823E-01	3.398E-01	NOT IDENT.
GE-68	-2.094E-01	2.278E+00	4.427E+00	NOT IDENT.
AS-73	-5.035E-02	1.581E+00	3.319E+00	NOT IDENT.
AS-74	0.000E+00	9.573E+03	0.000E+00	SHORT HLIF
SE-75	1.970E-02	1.682E-01	3.197E-01	NOT IDENT.
BR-77	0.000E+00	1.596E+39	0.000E+00	SHORT HLIF
SR-82	0.000E+00	8.813E+02	0.000E+00	SHORT HLIF
RB-83	-3.363E-01	5.111E-01	9.174E-01	NOT IDENT.
KR-85	5.943E+00	5.607E+00	1.228E+01	NOT IDENT.
SR-85	7.311E-01	6.935E-01	1.518E+00	NOT IDENT.
RB-86	0.000E+00	4.543E+04	0.000E+00	SHORT HLIF
Y-88	-8.004E-02	2.411E-01	4.697E-01	NOT IDENT.
Y-91	-4.258E+02	6.690E+02	1.157E+03	NOT IDENT.
NB-94	2.705E-02	2.873E-02	6.112E-02	NOT IDENT.
NB-95	5.409E-01	7.547E-01	1.530E+00	NOT IDENT.
NB-95M	5.313E-01	2.103E+00	3.768E+00	NOT IDENT.
ZR-95	-1.002E-01	1.520E+00	2.857E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	5.757E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	7.546E-04	2.171E-02	4.029E-02	NOT IDENT.
RH-102	2.362E-02	5.353E-02	1.090E-01	NOT IDENT.
RU-103	-2.313E+00	5.470E+00	9.940E+00	FAIL ABUN
RH-106	5.091E-02	4.445E-01	8.725E-01	NOT IDENT.
RU-106	5.091E-02	4.445E-01	8.725E-01	NOT IDENT.
AG-108M	1.429E-02	2.158E-02	4.623E-02	NOT IDENT.
AG-110M	-5.220E-02	8.605E-02	1.581E-01	NOT IDENT.
SN-113	-1.333E-01	1.932E-01	3.581E-01	NOT IDENT.
CD-115	0.000E+00	1.014E+41	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.365E+05	0.000E+00	SHORT HLIF
TE-123M	2.838E-02	9.220E-02	1.852E-01	NOT IDENT.
SB-124	1.014E+00	2.487E+00	5.684E+00	NOT IDENT.
SB-125	-3.301E-03	8.494E-02	1.681E-01	FAIL ABUN
TE-125M	-1.522E+01	1.787E+02	3.591E+02	NOT IDENT.
I-126	0.000E+00	2.039E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.894E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.779E+23	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.408E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	7.686E+27	0.000E+00	SHORT HLIF
BA-133	1.032E-02	3.173E-02	6.073E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	2.949E-02	7.056E-02	1.044E-01	FAIL ABUN
CS-135	4.657E-02	1.153E-01	2.086E-01	NOT IDENT.
I-135	0.000E+00	8.535E+40	0.000E+00	SHORT HLIF
CS-136	0.000E+00	6.666E+05	0.000E+00	SHORT HLIF
CE-139	-5.265E-02	8.435E-02	1.548E-01	NOT IDENT.
BA-140	0.000E+00	2.373E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	9.283E+05	0.000E+00	SHORT HLIF
CE-141	-8.118E+00	2.186E+01	4.142E+01	NOT IDENT.
CE-143	0.000E+00	9.855E+40	0.000E+00	SHORT HLIF
CE-144	-1.102E-01	2.362E-01	4.502E-01	NOT IDENT.
PM-144	3.034E-02	4.212E-02	9.126E-02	NOT IDENT.
PR-144	2.670E+00	3.690E+00	7.997E+00	NOT IDENT.
PM-146	3.413E-04	2.975E-02	6.018E-02	NOT IDENT.
ND-147	0.000E+00	6.760E+07	0.000E+00	SHORT HLIF
PM-147	1.649E+02	4.869E+02	1.002E+03	NOT IDENT.
PM-149	0.000E+00	1.569E+41	0.000E+00	SHORT HLIF
EU-150	3.398E-02	1.919E-02	4.289E-02	FAIL ABUN
EU-152	1.815E-03	6.684E-02	1.362E-01	NOT IDENT.
GD-153	-3.060E-02	9.651E-02	1.895E-01	NOT IDENT.
EU-154	2.098E-02	1.075E-01	2.170E-01	NOT IDENT.
EU-155	2.049E-02	6.031E-02	1.249E-01	NOT IDENT.
TB-160	1.399E+00	1.713E+00	3.908E+00	FAIL ABUN
HO-166M	-2.306E-02	4.847E-02	8.553E-02	FAIL ABUN
TM-171	2.265E+00	2.968E+00	6.558E+00	NOT IDENT.

HF-172	1.815E-02	1.438E-01	2.703E-01	FAIL ABUN
LU-172	5.152E-02	6.525E-02	1.442E-01	FAIL ABUN
LU-176	-5.952E-03	2.034E-02	3.604E-02	FAIL ABUN
HF-181	-5.165E-01	4.276E+00	8.363E+00	FAIL ABUN
TA-182	1.570E-01	8.981E-01	1.797E+00	FAIL ABUN
RE-183	7.872E-01	1.652E+00	1.672E+00	FAIL ABUN
RE-184	-5.474E+00	3.609E+01	7.085E+01	NOT IDENT.
W-188	-7.519E+00	1.050E+02	1.775E+02	FAIL ABUN
IR-192	-9.633E-02	4.069E-01	8.085E-01	FAIL ABUN
HG-203	-1.666E+00	2.574E+00	4.423E+00	NOT IDENT.
BI-207	-7.231E-03	4.892E-02	9.341E-02	FAIL ABUN
PB-211	-6.909E-02	4.916E-01	9.714E-01	NOT IDENT.
BI-212	5.654E-01	5.254E-01	1.093E+00	NOT IDENT.
RN-219	2.788E-02	2.881E-01	5.832E-01	FAIL ABUN
RA-223	-1.224E-01	4.698E-01	9.264E-01	FAIL ABUN
AC-227	-2.602E-02	1.727E-01	3.182E-01	FAIL ABUN
TH-227	-2.602E-02	1.727E-01	3.182E-01	FAIL ABUN
TH-231	-1.224E-01	4.698E-01	9.264E-01	FAIL ABUN
PA-233	-2.878E-02	4.547E-02	8.707E-02	FAIL ABUN
PA-234	1.176E-01	2.449E-01	5.230E-01	NOT IDENT.
PA-234M	-1.218E+00	3.796E+00	7.333E+00	NOT IDENT.
NP-237	-2.878E-02	4.547E-02	8.707E-02	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-6.581E-02	1.366E-01	2.642E-01	NOT IDENT.
PU-239	2.092E+02	4.327E+02	4.054E+02	FAIL ABUN
AM-241	-2.037E-02	3.827E-02	6.426E-02	NOT IDENT.
CM-243	1.669E-02	5.052E-02	1.054E-01	NOT IDENT.
BK-247	9.306E-03	5.382E-02	1.029E-01	FAIL ABUN
CM-247	1.127E-02	2.593E-02	5.447E-02	NOT IDENT.
CF-249	-2.139E-02	2.847E-02	5.241E-02	NOT IDENT.
CF-251	5.937E-02	9.882E-02	1.334E-01	FAIL ABUN

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	333	10.66*	1.131E+00	1.245E+01	1.245E+01	10.91
CD-109	88.03	296	3.70*	9.261E+00	3.886E+00	6.236E+00	29.40
SN-126	64.28	45	9.60	9.543E+00	2.217E-01	2.217E-01	192.38
	86.94	-----	8.90	9.280E+00	-----	Line Not Found	-----
	87.57	296	37.00*	9.261E+00	3.886E-01	3.886E-01	29.40
BA-137M	661.66	21	89.90*	2.256E+00	4.661E-02	4.754E-02	87.40
CS-137	661.66	21	85.10*	2.256E+00	4.924E-02	5.023E-02	87.40
TL-208	277.37	-----	6.60	4.809E+00	-----	Line Not Found	-----
	583.19	99	85.00*	2.510E+00	2.099E-01	2.099E-01	36.00
	860.56	27	12.50	1.810E+00	5.330E-01	5.330E-01	77.30
PB-210	46.54	80	4.25*	9.147E+00	9.292E-01	9.546E-01	94.62
BI-211	72.87	-----	1.23	9.424E+00	-----	Line Not Found	-----
	351.06	294	12.92*	3.893E+00	2.628E+00	2.628E+00	16.79
PB-212	74.82	316	10.28	9.405E+00	1.469E+00	1.469E+00	22.20
	77.11	471	17.10	9.382E+00	1.322E+00	1.322E+00	14.98
	238.63	497	43.60*	5.476E+00	9.371E-01	9.371E-01	11.95
	300.09	26	3.30	4.479E+00	7.962E-01	7.962E-01	146.20
BI-214	609.32	181	45.49*	2.419E+00	7.421E-01	7.424E-01	21.77
	1120.29	28	14.92	1.442E+00	5.778E-01	5.780E-01	139.21
	1764.49	28	15.30	9.335E-01	8.916E-01	8.919E-01	38.47
PB-214	74.82	316	5.80	9.405E+00	2.604E+00	2.605E+00	22.20
	77.11	471	9.70	9.382E+00	2.331E+00	2.332E+00	14.98
	87.09	296	3.41	9.261E+00	4.216E+00	4.218E+00	29.40
	242.00	124	7.25	5.418E+00	1.423E+00	1.424E+00	45.30
	295.22	156	18.42	4.550E+00	8.355E-01	8.358E-01	25.28
	351.93	294	35.60*	3.893E+00	9.536E-01	9.540E-01	16.79
RN-222	609.32	181	45.49*	2.419E+00	7.421E-01	7.424E-01	21.77
	1120.29	28	14.92	1.442E+00	5.778E-01	5.780E-01	139.21
	1764.49	28	15.30	9.335E-01	8.916E-01	8.919E-01	38.47
RA-224	240.99	124	4.10*	5.418E+00	2.516E+00	2.516E+00	45.30
RA-226	609.32	181	45.49*	2.419E+00	7.421E-01	7.424E-01	21.77
	1120.29	28	14.92	1.442E+00	5.778E-01	5.780E-01	139.21
	1764.49	28	15.30	9.335E-01	8.916E-01	8.919E-01	38.47
AC-228	105.21	-----	1.10	8.977E+00	-----	Line Not Found	-----
	338.32	69	11.27	4.031E+00	6.879E-01	6.879E-01	54.05
	794.95	-----	4.25	1.935E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.856E+00	-----	Line Not Found	-----
	911.20	98	25.80*	1.725E+00	9.939E-01	9.939E-01	24.61
	968.97	35	15.80	1.636E+00	6.143E-01	6.143E-01	71.84
RA-228	105.21	-----	1.10	8.977E+00	-----	Line Not Found	-----
	338.32	69	11.27	4.031E+00	6.879E-01	6.879E-01	54.05
	794.95	-----	4.25	1.935E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.856E+00	-----	Line Not Found	-----
	911.20	98	25.80*	1.725E+00	9.939E-01	9.939E-01	24.61
	968.97	35	15.80	1.636E+00	6.143E-01	6.143E-01	71.84
TH-228	74.82	316	10.28	9.405E+00	1.469E+00	1.469E+00	22.20
	77.11	471	17.10	9.382E+00	1.322E+00	1.322E+00	14.98

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	238.63	497	43.60*	5.476E+00	9.371E-01	9.371E-01	11.95
	300.09	26	3.30	4.479E+00	7.962E-01	7.962E-01	146.20
TH-229	85.43	86	14.70	9.313E+00	2.827E-01	2.828E-01	68.42
	88.47	296	24.00	9.261E+00	5.990E-01	5.991E-01	29.40
	193.51	-----	4.41*	6.496E+00	-----	Line Not Found	-----
	210.85	74	2.80	6.083E+00	1.951E+00	1.951E+00	60.83
TH-230	609.32	181	45.49*	2.419E+00	7.421E-01	7.421E-01	21.77
	1120.29	28	14.92	1.442E+00	5.778E-01	5.778E-01	139.21
	1764.49	28	15.30	9.335E-01	8.916E-01	8.916E-01	38.47
PA-231	283.69	-----	1.70	4.715E+00	-----	Line Not Found	-----
	301.36	26	5.35*	4.479E+00	4.911E-01	4.911E-01	146.20
TH-232	105.21	-----	1.10	8.977E+00	-----	Line Not Found	-----
	338.32	69	11.27	4.031E+00	6.879E-01	6.879E-01	54.05
	835.71	-----	1.61	1.856E+00	-----	Line Not Found	-----
	911.20	98	25.80*	1.725E+00	9.939E-01	9.939E-01	24.61
	968.97	35	15.80	1.636E+00	6.143E-01	6.143E-01	71.84
TH-234	63.29	45	3.70*	9.543E+00	5.752E-01	5.752E-01	192.38
	92.59	192	4.23	9.200E+00	2.221E+00	2.221E+00	39.28
U-234	609.32	181	45.49*	2.419E+00	7.421E-01	7.421E-01	21.77
	1120.29	28	14.92	1.442E+00	5.778E-01	5.778E-01	139.21
	1764.49	28	15.30	9.335E-01	8.916E-01	8.916E-01	38.47
U-235	89.96	296	3.47	9.261E+00	4.143E+00	4.143E+00	29.40
	93.35	192	5.60	9.200E+00	1.677E+00	1.677E+00	39.28
	143.76	-----	10.96*	7.922E+00	-----	Line Not Found	-----
	163.33	-----	5.08	7.333E+00	-----	Line Not Found	-----
	185.72	125	57.20	6.696E+00	1.475E-01	1.475E-01	49.63
	205.31	-----	5.01	6.202E+00	-----	Line Not Found	-----
U-238	63.29	45	3.70*	9.543E+00	5.752E-01	5.752E-01	192.38
	92.59	192	4.23	9.200E+00	2.221E+00	2.221E+00	39.28
AM-243	43.53	-----	5.90	8.344E+00	-----	Line Not Found	-----
	74.66	316	67.20*	9.405E+00	2.247E-01	2.247E-01	22.20
ANH-511	511.00	68	100.00*	2.808E+00	1.086E-01	1.086E-01	61.15

Flag: "*" = Keyline

Total number of lines in spectrum 49
Number of unidentified lines 12
Number of lines tentatively identified by NID 37 75.51%

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	1.245E+01	1.245E+01	0.136E+01	10.91	
CD-109	461.40D	1.60	3.886E+00	6.236E+00	1.833E+00	29.40	
SN-126	2.30E+05Y	1.00	3.886E-01	3.886E-01	1.142E-01	29.40	
BA-137M	30.08Y	1.02	4.661E-02	4.754E-02	4.155E-02	87.40	
CS-137	30.08Y	1.02	4.924E-02	5.023E-02	4.390E-02	87.40	
TL-208	1.41E+10Y	1.00	2.099E-01	2.099E-01	0.756E-01	36.00	
PB-210	22.20Y	1.03	9.292E-01	9.546E-01	9.033E-01	94.62	
BI-211	7.04E+08Y	1.00	2.628E+00	2.628E+00	0.441E+00	16.79	
PB-212	1.41E+10Y	1.00	9.371E-01	9.371E-01	1.120E-01	11.95	
BI-214	1600.00Y	1.00	7.421E-01	7.424E-01	1.616E-01	21.77	
PB-214	1600.00Y	1.00	9.536E-01	9.540E-01	1.602E-01	16.79	
RN-222	1600.00Y	1.00	7.421E-01	7.424E-01	1.616E-01	21.77	
RA-224	1.41E+10Y	1.00	2.516E+00	2.516E+00	1.140E+00	45.30	
RA-226	1600.00Y	1.00	7.421E-01	7.424E-01	1.616E-01	21.77	
AC-228	1.41E+10Y	1.00	9.939E-01	9.939E-01	2.446E-01	24.61	
RA-228	1.41E+10Y	1.00	9.939E-01	9.939E-01	2.446E-01	24.61	
TH-228	1.41E+10Y	1.00	9.371E-01	9.371E-01	1.120E-01	11.95	
TH-229	7340.00Y	1.00	5.990E-01	5.991E-01	1.761E-01	29.40	K
TH-230	7.54E+04Y	1.00	7.421E-01	7.421E-01	1.616E-01	21.77	
PA-231	7.04E+08Y	1.00	4.911E-01	4.911E-01	7.180E-01	146.20	
TH-232	1.41E+10Y	1.00	9.939E-01	9.939E-01	2.446E-01	24.61	
TH-234	4.47E+09Y	1.00	5.752E-01	5.752E-01	11.06E-01	192.38	
U-234	2.45E+05Y	1.00	7.421E-01	7.421E-01	1.616E-01	21.77	
U-235	7.04E+08Y	1.00	1.475E-01	1.475E-01	0.732E-01	49.63	K
U-238	4.47E+09Y	1.00	5.752E-01	5.752E-01	11.06E-01	192.38	
AM-243	7370.00Y	1.00	2.247E-01	2.247E-01	0.499E-01	22.20	
ANH-511	1.00E+09Y	1.00	1.086E-01	1.086E-01	0.664E-01	61.15	

Total Activity : 3.534E+01 3.772E+01

Grand Total Activity : 3.534E+01 3.772E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	57.57	26	199	0.98	114.63	113	6	5.03E-03	****	9.63E+00	T
0	128.95	25	162	0.96	257.38	253	8	5.23E-03	****	8.36E+00	T
0	177.16	16	58	1.25	353.79	351	5	3.49E-03	****	6.93E+00	T
0	178.79	26	94	1.10	357.04	356	7	5.64E-03	****	6.89E+00	
0	191.54	17	65	0.90	382.54	379	6	3.84E-03	****	6.55E+00	
0	270.37	60	75	2.58	540.20	535	9	1.39E-02	63.9	4.92E+00	T
2	293.03	29	45	1.49	585.52	582	16	6.85E-03	****	4.58E+00	T
0	422.96	12	29	0.63	845.40	841	6	2.98E-03	****	3.31E+00	T
0	463.13	30	18	1.45	925.75	922	8	7.29E-03	67.3	3.06E+00	T
0	527.08	18	17	1.41	1053.66	1049	10	4.44E-03	****	2.74E+00	T
0	563.56	18	14	1.89	1126.63	1122	10	4.46E-03	96.6	2.58E+00	T
0	683.77	8	26	3.26	1367.12	1359	10	2.03E-03	****	2.20E+00	
0	704.20	21	34	4.88	1408.00	1400	16	5.56E-03	****	2.14E+00	
0	770.18	7	41	0.59	1539.99	1530	14	1.77E-03	****	1.99E+00	
0	796.52	8	26	1.17	1592.69	1587	9	2.13E-03	****	1.93E+00	T
0	805.08	16	11	4.41	1609.82	1602	14	4.10E-03	****	1.91E+00	
0	814.59	9	12	0.60	1628.84	1624	8	2.40E-03	****	1.90E+00	T
0	981.44	10	4	1.46	1962.71	1958	9	2.59E-03	****	1.62E+00	
0	1105.03	31	19	6.14	2210.03	2195	25	8.62E-03	83.3	1.46E+00	
0	1239.96	7	30	0.67	2480.08	2471	12	2.05E-03	****	1.32E+00	
0	1260.11	15	6	1.61	2520.40	2513	13	4.14E-03	87.1	1.30E+00	T
0	1265.43	16	0	1.39	2531.06	2526	10	4.44E-03	50.0	1.29E+00	
0	1376.80	20	2	2.39	2753.97	2749	11	5.74E-03	53.5	1.20E+00	
0	1389.44	7	2	1.56	2779.27	2775	8	1.91E-03	****	1.19E+00	

Flags: "T" = Tentatively associated


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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235033.CNF;1
* Acquisition date   : 3-OCT-2016 09:15:18 Sensitivity      : 3.000
* Detector ID        : GAM25 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.54 Half life ratio : *****
* Sample date        : 23-NOV-2015 11:53:00 Nuclide Library : SOLID
* Sample ID          : G405235033 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.6679E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 1-AUG-2016 08:41:33 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM25 CAN.CNF;15
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.044E-01
CD-109	4.300E-01
SN-126	2.676E-02
BA-137M	2.747E-02
CS-137	2.902E-02
TL-208	2.282E-02
PB-210	2.549E-01
BI-211	1.067E-01
PB-212	3.415E-02
BI-214	4.573E-02
PB-214	1.324E-01
RN-222	4.573E-02
RA-224	3.667E-01
RA-226	4.573E-02
AC-228	8.086E-02
RA-228	8.086E-02
TH-228	3.415E-02
TH-229	2.830E-01
TH-230	4.571E-02
PA-231	2.613E-01
TH-232	8.086E-02
TH-234	3.311E-01
U-234	4.571E-02
U-235	1.066E-01
U-238	3.311E-01
AM-243	1.797E-02
ANH-511	1.698E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.090E+01	NOT IDENT.
NA-22	3.827E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.009E-02	NOT IDENT.

SC-46	2.590E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.906E-02	NOT IDENT.
CO-56	4.172E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	2.473E-02	NOT IDENT.
CO-58	4.369E-01	NOT IDENT.
FE-59	5.448E+00	NOT IDENT.
CO-60	2.554E-02	NOT IDENT.
ZN-65	1.492E-01	NOT IDENT.
GE-68	1.924E+00	NOT IDENT.
AS-73	1.556E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.463E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	3.944E-01	NOT IDENT.
KR-85	5.584E+00	NOT IDENT.
SR-85	6.903E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.815E-01	NOT IDENT.
Y-91	5.053E+02	NOT IDENT.
NB-94	2.762E-02	NOT IDENT.
NB-95	6.696E-01	NOT IDENT.
NB-95M	1.741E+00	NOT IDENT.
ZR-95	1.255E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	1.876E-02	NOT IDENT.
RH-102	4.887E-02	NOT IDENT.
RU-103	4.338E+00	FAIL ABUN
RH-106	3.881E-01	NOT IDENT.
RU-106	3.881E-01	NOT IDENT.
AG-108M	2.094E-02	NOT IDENT.
AG-110M	6.742E-02	NOT IDENT.
SN-113	1.605E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	8.605E-02	NOT IDENT.
SB-124	2.347E+00	NOT IDENT.
SB-125	7.593E-02	FAIL ABUN
TE-125M	1.672E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.752E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	4.714E-02	FAIL ABUN
CS-135	9.612E-02	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	7.188E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.928E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.096E-01	NOT IDENT.
PM-144	4.029E-02	NOT IDENT.
PR-144	3.531E+00	NOT IDENT.
PM-146	2.658E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	4.670E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.978E-02	FAIL ABUN
EU-152	6.172E-02	NOT IDENT.
GD-153	8.850E-02	NOT IDENT.
EU-154	9.379E-02	NOT IDENT.
EU-155	5.849E-02	NOT IDENT.
TB-160	1.715E+00	FAIL ABUN
HO-166M	3.728E-02	FAIL ABUN
TM-171	3.075E+00	NOT IDENT.
HF-172	1.256E-01	FAIL ABUN

LU-172	6.290E-02	FAIL ABUN
LU-176	1.646E-02	FAIL ABUN
HF-181	3.720E+00	FAIL ABUN
TA-182	7.831E-01	FAIL ABUN
RE-183	7.901E-01	FAIL ABUN
RE-184	3.093E+01	NOT IDENT.
W-188	8.078E+01	FAIL ABUN
IR-192	3.692E-01	FAIL ABUN
HG-203	2.032E+00	NOT IDENT.
BI-207	4.109E-02	FAIL ABUN
PB-211	4.365E-01	NOT IDENT.
BI-212	5.014E-01	NOT IDENT.
RN-219	2.636E-01	FAIL ABUN
RA-223	4.248E-01	FAIL ABUN
AC-227	1.459E-01	FAIL ABUN
TH-227	1.459E-01	FAIL ABUN
TH-231	4.248E-01	FAIL ABUN
PA-233	3.967E-02	FAIL ABUN
PA-234	2.304E-01	NOT IDENT.
PA-234M	3.201E+00	NOT IDENT.
NP-237	3.967E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.225E-01	NOT IDENT.
PU-239	1.902E+02	FAIL ABUN
AM-241	3.017E-02	NOT IDENT.
CM-243	4.913E-02	NOT IDENT.
BK-247	4.712E-02	FAIL ABUN
CM-247	2.467E-02	NOT IDENT.
CF-249	2.348E-02	NOT IDENT.
CF-251	6.124E-02	FAIL ABUN

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235033.CNF;1
* Acquisition date   : 3-OCT-2016 09:15:18 Sensitivity      : 3.000
* Detector ID        : GAM25 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.54 Half life ratio : *****
* Sample date        : 23-NOV-2015 11:53:00 Nuclide Library : SOLID
* Sample ID          : G405235033 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.6679E+02 GRAM
*                               Quantity Err(%) : 1.1991E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 1-AUG-2016 08:41:33 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM25 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.245E+01	1.481E+00	1.481E+00
CD-109	5.000E+00	1.874E+00	1.874E+00
SN-126	3.116E-01	1.156E-01	1.156E-01
BA-137M	4.754E-02	4.077E-02	4.077E-02
CS-137	5.023E-02	4.307E-02	4.307E-02
TL-208	2.099E-01	7.458E-02	7.458E-02
PB-210	9.546E-01	8.888E-01	8.888E-01
BI-211	3.254E-01	7.294E-01	7.294E-01
PB-212	9.371E-01	1.204E-01	1.204E-01
BI-214	7.424E-01	1.616E-01	1.616E-01
PB-214	9.540E-01	1.619E-01	1.619E-01
RN-222	7.424E-01	1.616E-01	1.616E-01
RA-224	1.039E+00	1.181E+00	1.181E+00
RA-226	7.424E-01	1.616E-01	1.616E-01
AC-228	9.939E-01	2.450E-01	2.450E-01
RA-228	9.939E-01	2.450E-01	2.450E-01
TH-228	9.371E-01	1.204E-01	1.204E-01
TH-229	-1.356E-01	3.616E-01	3.616E-01
TH-230	7.421E-01	1.615E-01	1.615E-01
PA-231	4.911E-01	7.114E-01	7.114E-01
TH-232	9.939E-01	2.450E-01	2.450E-01
TH-234	5.752E-01	1.092E+00	1.092E+00
U-234	7.421E-01	1.615E-01	1.615E-01
U-235	-6.673E-02	1.224E-01	1.224E-01
U-238	5.752E-01	1.092E+00	1.092E+00
AM-243	1.526E-01	5.366E-02	5.366E-02
ANH-511	1.086E-01	6.524E-02	6.524E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)
BE-7	5.797E+00	1.151E+01	1.180E+01 NOT IDENT.
NA-22	7.739E-03	4.402E-02	4.416E-02 NOT IDENT.
NA-24	-1.000E+41	6.763E+41	0.000E+00 SHORT HLIF

AL-26	-4.657E-03	2.551E-02	2.560E-02	NOT IDENT.
SC-46	-7.630E-02	3.097E-01	3.116E-01	FAIL ABUN
V-48	-1.526E+03	2.247E+04	2.248E+04	SHORT HLIF
CR-51	-1.861E+02	4.592E+02	4.668E+02	SHORT HLIF
MN-54	2.332E-02	6.354E-02	6.440E-02	NOT IDENT.
CO-56	-1.888E-02	4.738E-01	4.739E-01	NOT IDENT.
MN-56	-1.000E+41	3.414E+42	0.000E+00	SHORT HLIF
CO-57	-1.701E-02	2.808E-02	2.911E-02	NOT IDENT.
CO-58	1.488E-01	5.994E-01	6.032E-01	NOT IDENT.
FE-59	-1.548E+00	6.510E+00	6.547E+00	NOT IDENT.
CO-60	-2.902E-02	3.784E-02	4.004E-02	NOT IDENT.
ZN-65	6.868E-02	1.823E-01	1.849E-01	NOT IDENT.
GE-68	-2.094E-01	2.278E+00	2.280E+00	NOT IDENT.
AS-73	-5.035E-02	1.581E+00	1.582E+00	NOT IDENT.
AS-74	-6.126E+02	9.573E+03	9.577E+03	SHORT HLIF
SE-75	1.970E-02	1.682E-01	1.685E-01	NOT IDENT.
BR-77	1.363E+40	1.239E+41	0.000E+00	SHORT HLIF
SR-82	-2.913E+02	8.814E+02	8.911E+02	SHORT HLIF
RB-83	-3.363E-01	5.131E-01	5.351E-01	NOT IDENT.
KR-85	5.943E+00	5.612E+00	6.219E+00	NOT IDENT.
SR-85	7.311E-01	6.941E-01	7.684E-01	NOT IDENT.
RB-86	-1.944E+01	4.543E+04	4.543E+04	SHORT HLIF
Y-88	-8.004E-02	2.411E-01	2.438E-01	NOT IDENT.
Y-91	-4.258E+02	6.692E+02	6.961E+02	NOT IDENT.
NB-94	2.705E-02	2.875E-02	3.123E-02	NOT IDENT.
NB-95	5.409E-01	7.551E-01	7.935E-01	NOT IDENT.
NB-95M	5.313E-01	2.103E+00	2.117E+00	NOT IDENT.
ZR-95	-1.002E-01	1.520E+00	1.521E+00	NOT IDENT.
NB-97	1.000E+41	2.735E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	6.038E+41	0.000E+00	SHORT HLIF
MO-99	-5.458E+32	5.757E+33	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	1.017E+42	0.000E+00	SHORT HLIF
RH-101	7.546E-04	2.171E-02	2.171E-02	NOT IDENT.
RH-102	2.362E-02	5.357E-02	5.462E-02	NOT IDENT.
RU-103	-2.313E+00	5.471E+00	5.569E+00	FAIL ABUN
RH-106	5.091E-02	4.445E-01	4.451E-01	NOT IDENT.
RU-106	5.091E-02	4.445E-01	4.451E-01	NOT IDENT.
AG-108M	1.429E-02	2.159E-02	2.253E-02	NOT IDENT.
AG-110M	-5.220E-02	8.609E-02	8.925E-02	NOT IDENT.
SN-113	-1.333E-01	1.933E-01	2.024E-01	NOT IDENT.
CD-115	1.000E+41	1.031E+41	0.000E+00	SHORT HLIF
SN-117M	6.966E+04	1.368E+05	1.403E+05	SHORT HLIF
TE-123M	2.838E-02	9.221E-02	9.309E-02	NOT IDENT.
SB-124	1.014E+00	2.488E+00	2.530E+00	NOT IDENT.
SB-125	-3.301E-03	8.494E-02	8.496E-02	FAIL ABUN
TE-125M	-1.522E+01	1.787E+02	1.789E+02	NOT IDENT.
I-126	8.265E+05	2.043E+06	2.077E+06	SHORT HLIF
SB-126	3.727E+05	1.895E+06	1.903E+06	SHORT HLIF
SB-127	2.244E+22	2.797E+23	0.000E+00	SHORT HLIF
I-131	7.160E+08	1.408E+10	1.408E+10	SHORT HLIF
I-132	1.000E+41	4.736E+42	0.000E+00	SHORT HLIF
TE-132	4.058E+27	7.878E+27	0.000E+00	SHORT HLIF
BA-133	1.032E-02	3.174E-02	3.208E-02	NOT IDENT.
I-133	-1.000E+41	8.397E+41	0.000E+00	SHORT HLIF
CS-134	2.949E-02	7.057E-02	7.181E-02	FAIL ABUN
CS-135	4.657E-02	1.154E-01	1.172E-01	NOT IDENT.
I-135	1.000E+41	7.166E+41	0.000E+00	SHORT HLIF
CS-136	-4.422E+05	6.684E+05	6.975E+05	SHORT HLIF
CE-139	-5.265E-02	8.502E-02	8.827E-02	NOT IDENT.
BA-140	-5.634E+05	2.373E+06	2.386E+06	SHORT HLIF
LA-140	-2.105E+05	9.284E+05	9.332E+05	SHORT HLIF
CE-141	-8.118E+00	2.186E+01	2.217E+01	NOT IDENT.
CE-143	1.000E+41	9.912E+40	0.000E+00	SHORT HLIF
CE-144	-1.102E-01	2.363E-01	2.414E-01	NOT IDENT.
PM-144	3.034E-02	4.216E-02	4.432E-02	NOT IDENT.
PR-144	2.670E+00	3.692E+00	3.883E+00	NOT IDENT.
PM-146	3.413E-04	2.975E-02	2.975E-02	NOT IDENT.
ND-147	-4.752E+05	6.760E+07	6.760E+07	SHORT HLIF
PM-147	1.649E+02	4.870E+02	4.926E+02	NOT IDENT.
PM-149	-1.000E+41	1.585E+41	0.000E+00	SHORT HLIF
EU-150	3.398E-02	1.924E-02	2.460E-02	FAIL ABUN
EU-152	1.815E-03	6.684E-02	6.685E-02	NOT IDENT.
GD-153	-3.060E-02	9.653E-02	9.751E-02	NOT IDENT.
EU-154	2.098E-02	1.075E-01	1.079E-01	NOT IDENT.
EU-155	2.049E-02	6.033E-02	6.103E-02	NOT IDENT.
TB-160	1.399E+00	1.715E+00	1.827E+00	FAIL ABUN
HO-166M	-2.306E-02	4.848E-02	4.958E-02	FAIL ABUN
TM-171	2.265E+00	2.974E+00	3.144E+00	NOT IDENT.

HF-172	1.815E-02	1.438E-01	1.440E-01	FAIL ABUN
LU-172	5.152E-02	6.546E-02	6.946E-02	FAIL ABUN
LU-176	-5.952E-03	2.034E-02	2.052E-02	FAIL ABUN
HF-181	-5.165E-01	4.276E+00	4.282E+00	FAIL ABUN
TA-182	1.570E-01	8.981E-01	9.009E-01	FAIL ABUN
RE-183	7.872E-01	1.657E+00	1.694E+00	FAIL ABUN
RE-184	-5.474E+00	3.611E+01	3.620E+01	NOT IDENT.
W-188	-7.519E+00	1.050E+02	1.050E+02	FAIL ABUN
IR-192	-9.633E-02	4.069E-01	4.092E-01	FAIL ABUN
HG-203	-1.666E+00	2.575E+00	2.682E+00	NOT IDENT.
BI-207	-7.231E-03	4.892E-02	4.903E-02	FAIL ABUN
PB-211	-6.909E-02	4.916E-01	4.926E-01	NOT IDENT.
BI-212	5.654E-01	5.262E-01	5.846E-01	NOT IDENT.
RN-219	2.788E-02	2.881E-01	2.884E-01	FAIL ABUN
RA-223	-1.224E-01	4.699E-01	4.731E-01	FAIL ABUN
AC-227	-2.602E-02	1.728E-01	1.732E-01	FAIL ABUN
TH-227	-2.602E-02	1.728E-01	1.732E-01	FAIL ABUN
TH-231	-1.224E-01	4.699E-01	4.731E-01	FAIL ABUN
PA-233	-2.878E-02	4.549E-02	4.730E-02	FAIL ABUN
PA-234	1.176E-01	2.794E-01	2.844E-01	NOT IDENT.
PA-234M	-1.218E+00	3.796E+00	3.835E+00	NOT IDENT.
NP-237	-2.878E-02	4.549E-02	4.730E-02	FAIL ABUN
NP-238	-1.000E+41	9.347E+41	0.000E+00	SHORT HLIF
NP-239	-6.581E-02	1.367E-01	1.399E-01	NOT IDENT.
PU-239	2.092E+02	4.328E+02	4.430E+02	FAIL ABUN
AM-241	-2.037E-02	3.830E-02	3.938E-02	NOT IDENT.
CM-243	1.669E-02	5.054E-02	5.110E-02	NOT IDENT.
BK-247	9.306E-03	5.386E-02	5.402E-02	FAIL ABUN
CM-247	1.127E-02	2.599E-02	2.649E-02	NOT IDENT.
CF-249	-2.139E-02	2.852E-02	3.011E-02	NOT IDENT.
CF-251	5.937E-02	9.904E-02	1.026E-01	FAIL ABUN

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	53.3078	87.09	63.1127	136.47	52.2037
45.60	66.9659	87.57	63.2048	140.51	0.0000
46.54	67.2744	88.03	63.2928	143.76	68.7161
49.72	0.0000	88.34	63.3521	144.24	61.9060
51.35	77.7822	88.47	63.3770	145.44	59.1028
51.87	68.9688	89.96	63.6598	152.43	65.9285
52.39	56.3553	1093.63	63.7880	153.25	0.0000
52.97	55.7473	91.11	0.0000	323.87	62.1495
53.44	73.9804	92.59	63.5753	156.02	0.0000
54.07	77.9694	93.35	63.7152	158.56	0.0000
57.36	0.0000	94.56	63.9373	159.00	51.5953
57.53	70.6758	94.65	54.6512	162.33	70.2455
57.98	70.8071	94.67	54.6545	162.66	0.0000
59.27	89.7519	94.87	54.6856	163.33	53.0370
59.32	89.7701	97.43	70.3174	165.86	70.7056
59.54	89.8506	98.43	66.9876	176.31	62.6450
60.96	90.3644	98.44	66.9894	176.60	0.0000
61.17	90.4400	99.53	56.5820	177.52	20.9256
62.93	100.4888	100.11	55.7864	181.07	0.0000
63.29	100.6294	102.03	65.8696	181.52	61.1037
63.58	100.7422	103.18	55.3583	184.41	58.2281
64.28	101.0137	103.37	55.3867	143.76	58.3561
66.73	80.7121	105.21	64.6342	193.51	60.1853
67.24	87.2493	105.31	64.6512	197.03	52.9612
125.81	97.5157	106.12	61.1892	198.01	62.7861
67.75	98.3403	106.47	63.0466	201.83	62.0767
69.67	90.9806	109.28	62.5981	203.43	56.7734
70.83	86.2386	111.00	70.1613	205.31	62.4142
72.81	95.2553	111.76	0.0000	210.85	50.7968
72.87	95.2749	114.06	67.0268	215.65	57.8367
74.66	95.8659	116.30	0.0000	222.11	46.0362
74.82	95.9176	116.74	64.6957	227.09	56.5437
74.97	95.9667	119.76	60.5120	227.38	57.6987
77.11	96.6630	121.12	56.0371	228.16	0.0000
78.74	79.7424	121.22	56.0504	228.18	45.3052
79.69	91.1005	121.78	61.7365	116.74	45.3052
80.12	83.4404	122.06	62.7133	235.69	44.2570
80.19	0.0000	122.92	49.7089	235.96	44.2735
80.57	85.2329	123.07	46.9116	238.63	52.8632
81.00	71.4050	265.00	53.5549	238.98	0.0000
81.07	71.4212	125.81	55.3921	240.99	53.0331
81.75	73.8136	127.23	60.6226	242.00	53.1054
83.79	83.2967	127.91	59.7679	244.70	50.9811
84.00	83.3516	129.30	59.9546	252.40	0.0000
85.43	71.2781	131.20	62.4393	252.80	50.3578
86.55	63.0089	133.02	63.3292	254.15	0.0000
86.79	63.0546	133.52	71.0834	256.23	43.5237
86.94	63.0839	136.00	55.0483	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	36.8579	355.39	0.0000	584.27	19.9107
264.80	35.6754	356.01	26.2988	595.83	0.0000
265.00	36.8740	364.49	0.0000	427.87	20.1171
268.22	38.2158	366.42	0.0000	602.52	0.0000
269.46	33.4901	372.51	40.9678	604.72	14.3300
270.03	33.5140	375.05	35.7088	607.14	14.3514
271.23	35.1619	377.52	38.4753	609.32	21.2907
273.65	0.0000	356.01	33.3009	610.33	21.3037
276.40	39.8069	388.16	36.1426	614.28	17.6179
277.37	48.3069	388.63	0.0000	618.01	20.3336
277.60	48.3203	391.69	35.3517	620.36	12.8604
278.00	42.3006	264.66	26.4978	621.93	20.3816
279.20	53.2544	401.81	28.3542	630.19	0.0000
279.54	56.9083	402.40	24.7083	631.29	19.4180
279.70	56.9198	404.85	28.4299	633.25	24.8409
280.46	46.0620	410.95	37.8010	634.78	0.0000
283.69	48.6731	413.71	25.8769	635.95	12.9810
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	53.6492	423.72	0.0000	645.85	11.9686
285.90	0.0000	427.09	20.5637	657.76	18.0778
287.50	39.1133	427.87	29.9303	657.90	0.0000
290.67	35.9863	433.94	21.6210	661.66	25.2555
293.27	0.0000	439.40	22.6621	664.57	0.0000
351.93	34.5309	453.88	19.1064	666.33	0.0000
295.96	34.5599	463.37	24.0621	666.50	0.0000
879.38	29.7114	468.07	28.0141	667.71	0.0000
299.98	34.7180	473.00	0.0000	677.62	14.9584
300.09	34.7223	475.06	29.1364	685.70	0.0000
300.13	34.7240	476.78	20.4219	695.00	0.0000
301.36	31.4602	477.60	19.4617	696.49	11.1963
302.85	38.1471	482.18	23.4351	696.51	11.1967
256.23	43.2021	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	16.8024
306.78	42.4792	497.08	19.7469	697.49	16.8036
308.46	42.5581	505.52	20.8620	702.65	16.8512
311.90	46.0694	507.63	0.0000	706.68	21.9542
316.51	41.2490	511.00	18.9497	711.68	21.4492
319.41	0.0000	514.00	18.9900	720.70	0.0000
320.08	0.0000	514.00	18.9907	721.93	0.0000
321.04	42.2963	520.40	20.0806	722.78	15.8981
323.87	42.4235	520.69	0.0000	722.91	15.8993
325.23	46.7330	522.65	0.0000	723.31	17.0386
328.76	0.0000	527.90	0.0000	724.19	29.5473
333.37	31.8779	528.26	16.6584	727.33	23.9044
333.97	18.0067	529.59	15.1575	733.00	27.4014
334.37	24.4475	529.87	0.0000	735.93	16.0081
338.28	39.6183	531.02	0.0000	333.97	14.8768
338.32	39.6192	537.26	0.0000	739.50	0.0000
311.90	44.0222	546.56	0.0000	747.24	21.8528
340.48	44.0222	552.55	13.3438	748.06	24.1633
340.55	0.0000	563.25	14.4728	752.31	20.7568
344.28	31.1946	569.33	29.0618	753.82	0.0000
345.93	32.9817	946.00	22.8361	756.73	18.4922
351.06	23.5541	569.70	22.8397	756.80	18.4928
351.93	23.5745	583.19	19.8976	884.68	13.9199

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	8.7079	1274.44	18.3361	1620.50	3.7621
766.42	13.9370	1001.03	16.4371	1621.92	4.7043
766.84	19.7482	1002.74	14.5129	1678.03	0.0000
772.60	0.0000	1004.73	10.6512	1690.97	4.7864
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	4.8721
778.90	18.4064	1028.54	0.0000	1063.66	8.7820
783.70	0.0000	1037.84	9.8083	1771.35	5.8562
785.37	13.1895	1038.76	0.0000	1791.20	0.0000
792.07	16.9383	631.29	18.6985	1808.65	3.9383
794.95	19.7887	1048.07	0.0000	1810.72	0.0000
795.86	15.9088	1049.04	19.7009	1836.06	5.9446
810.06	7.1191	1050.41	12.8120		
810.29	10.6798	1063.66	19.8096		
344.28	10.6809	1077.00	0.0000		
810.76	9.4954	1077.34	15.9287		
815.77	0.0000	1085.87	13.9821		
1048.07	0.0000	1093.63	8.0122		
832.01	28.7734	1099.45	9.0330		
834.85	20.7083	1112.07	14.5195		
835.71	18.9153	1112.84	12.9094		
836.80	0.0000	1115.54	12.9219		
846.75	0.0000	1120.29	14.1572		
846.77	18.1067	1120.55	14.1589		
856.80	0.0000	1221.41	14.1624		
860.56	10.9329	1129.67	19.4813		
871.09	17.3927	1131.51	0.0000		
873.19	11.9114	1147.95	0.0000		
875.33	0.0000	1173.23	14.4230		
879.38	9.1879	1177.95	11.3505		
880.51	10.1118	1189.05	16.5723		
883.24	15.6465	1204.77	23.9490		
884.68	17.4982	1221.41	13.6118		
889.28	11.9967	1231.02	18.9075		
894.76	12.9507	1235.36	0.0000		
898.04	12.0431	1238.28	21.0583		
900.72	16.6943	1260.41	0.0000		
903.28	17.6414	1271.87	11.7083		
911.20	11.1801	1274.44	11.7177		
912.08	11.1844	1274.54	11.7184		
923.98	0.0000	1291.59	9.6394		
926.50	15.9427	1298.22	0.0000		
929.11	12.2050	1312.11	0.0000		
937.49	28.2651	1332.49	14.1013		
944.13	0.0000	1362.66	0.0000		
946.00	13.2374	1365.19	7.6686		
949.00	14.2003	1368.63	0.0000		
667.71	0.0000	1384.29	8.8140		
962.31	19.9900	1408.01	3.3283		
964.08	15.2417	1457.56	0.0000		
966.17	16.7804	1460.82	5.4064		
911.20	18.1355	1489.16	10.8984		
968.97	18.1355	1505.03	8.2099		
983.53	0.0000	1584.12	6.5218		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:16:40.80

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235034.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM28.CNF;265
Background date    : 2-OCT-2016 11:01:35.
Sample date       : 23-NOV-2015 11:20:00 Acquisition date : 3-OCT-2016 09:15:46.
Sample ID        : G405235034 Sample quantity   : 1.52487E+02 GRAM
Detector name     : GAM28 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.42 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity      : 3.00000
Batch ID          : 1596249 Detector SN#       :
Matrix Spike ID   : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	60.47	29	26	1.08	121.00	120	19	8.11E-03	24.6	3.57E+00
2	2	63.24*	42	114	1.32	126.54	120	19	1.17E-02	50.2	
3	2	75.22*	141	147	1.32	150.53	143	21	3.93E-02	18.8	1.93E+00
4	2	77.22	258	142	1.35	154.53	143	21	7.18E-02	10.8	
5	0	87.28	44	133	0.86	174.66	172	6	1.21E-02	44.7	
6	0	89.87	41	96	1.33	179.85	178	5	1.15E-02	39.0	
7	0	92.97*	87	151	1.64	186.05	183	8	2.41E-02	28.7	
8	0	109.97	41	94	1.49	220.08	217	8	1.13E-02	43.8	
9	0	186.34*	82	137	1.80	372.94	368	12	2.29E-02	31.7	
10	3	238.92*	450	58	1.55	478.17	474	25	1.25E-01	5.7	2.65E+00
11	3	242.24	86	65	1.80	484.82	474	25	2.39E-02	27.6	
12	0	277.86	31	70	1.26	556.11	551	10	8.54E-03	54.6	
13	0	295.76	146	69	1.32	591.93	587	10	4.05E-02	13.6	
14	0	301.27	41	78	0.98	602.97	598	11	1.13E-02	45.2	
15	0	338.61	78	66	0.92	677.70	674	9	2.16E-02	21.8	
16	0	352.21*	258	63	1.58	704.91	699	12	7.17E-02	8.9	
17	0	371.44	23	34	1.52	743.40	739	9	6.26E-03	52.1	
18	0	511.41*	46	47	3.26	1023.57	1014	17	1.29E-02	43.2	
19	0	564.49	27	32	2.23	1129.79	1123	14	7.58E-03	47.7	
20	0	579.28	19	22	1.34	1159.39	1153	9	5.15E-03	51.6	
21	0	583.86*	120	35	1.60	1168.57	1163	12	3.33E-02	13.7	
22	0	609.82*	153	42	1.87	1220.53	1214	14	4.26E-02	12.4	
23	0	662.78*	41	53	1.69	1326.52	1320	12	1.14E-02	39.8	
24	0	729.51	37	60	3.28	1460.08	1450	26	1.02E-02	59.3	
25	0	767.85*	22	21	0.74	1536.82	1530	12	6.08E-03	47.9	
26	0	861.59	35	16	2.06	1724.45	1715	16	9.85E-03	30.2	
27	0	886.67	9	7	1.16	1774.63	1771	8	2.52E-03	58.4	
28	0	911.97*	90	18	1.79	1825.28	1818	15	2.50E-02	15.1	
29	0	969.38	71	39	5.81	1940.18	1925	26	1.99E-02	26.7	
30	0	1002.53*	13	23	0.71	2006.54	1999	19	3.62E-03	95.9	
31	3	1014.01	14	0	1.39	2029.50	2028	11	3.88E-03	14.3	9.90E-01
32	3	1016.81	19	0	1.70	2035.10	2028	11	5.25E-03	22.4	
33	0	1102.17	11	5	1.23	2205.96	2200	10	3.11E-03	47.7	
34	0	1121.77*	48	34	2.03	2245.18	2238	18	1.33E-02	31.4	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1157.11	8	13	1.16	2315.93	2311	9	2.34E-03	85.0	
36	0	1189.83	49	0	4.71	2381.41	2371	18	1.36E-02	14.3	
37	0	1345.72	24	0	2.53	2693.42	2684	17	6.67E-03	20.4	
38	0	1461.78*	369	15	1.86	2925.71	2919	14	1.03E-01	5.7	
39	0	1592.90	5	5	0.48	3188.16	3186	6	1.39E-03	81.9	
40	0	1730.16	16	3	2.30	3462.88	3457	11	4.52E-03	31.6	
41	0	1765.64*	37	0	1.95	3533.88	3526	15	1.03E-02	17.3	

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

VMS Nuclide Identification Report V3.1 Generated 3-OCT-2016 10:16:42

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235034.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 23-NOV-2015 11:20:00 Acquisition date : 3-OCT-2016 09:15:46
Sample ID : G405235034 Sample quantity : 152.49 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA28 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.42 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
TL-208	277.37	HG-203	279.20
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.237E+00	1.332E+01	1.332E+01	11.33	OK
CD-109	88.03	3.70*	5.423E+00	4.194E-01	6.731E-01	296.78	OK
TE-125M	109.28	0.27*	6.445E+00	1.441E+01	6.460E+02	87.60	OK
SN-126	64.28	9.60	2.991E+00	9.454E-01	9.454E-01	100.42	OK
	86.94	8.90	5.423E+00	1.744E-01	1.744E-01	296.78	OK
	87.57	37.00*	5.423E+00	4.194E-02	4.194E-02	296.78	OK
BA-137M	661.66	89.90*	2.303E+00	1.028E-01	1.048E-01	79.68	OK
CS-137	661.66	85.10*	2.303E+00	1.086E-01	1.107E-01	79.68	OK
HG-203	70.83	3.69	3.912E+00	-----	Line Not Found	-----	Absent
	72.87	6.19	4.138E+00	-----	Line Not Found	-----	Absent
	279.20	81.56*	4.559E+00	2.198E-02	2.382E+00	234.08	OK
TL-208	277.37	6.60	4.566E+00	-----	Line Not Found	-----	<<INT Reject
	583.19	85.00*	2.539E+00	2.920E-01	2.920E-01	27.44	OK
	860.56	12.50	1.886E+00	7.583E-01	7.583E-01	60.47	OK
BI-211	72.87	1.23	4.138E+00	-----	Line Not Found	-----	Absent
	351.06	12.92*	3.783E+00	1.015E-01	1.015E-01	910.10	OK
PB-212	74.82	10.28	4.384E+00	1.417E+00	1.417E+00	54.14	OK
	77.11	17.10	4.583E+00	2.090E+00	2.090E+00	21.68	OK
	238.63	43.60*	5.101E+00	1.160E+00	1.160E+00	11.38	OK
	300.09	3.30	4.282E+00	1.613E+00	1.613E+00	90.48	OK
BI-214	609.32	45.49*	2.455E+00	7.170E-01	7.173E-01	24.75	OK
	1120.29	14.92	1.538E+00	1.025E+00	1.025E+00	62.84	OK
	1764.49	15.30	1.044E+00	1.085E+00	1.086E+00	34.63	OK
PB-214	74.82	5.80	4.343E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	4.583E+00	3.684E+00	3.685E+00	21.68	OK
	87.09	3.41	5.409E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	5.054E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	4.344E+00	1.022E+00	1.023E+00	27.12	OK
	351.93	35.60*	3.786E+00	-----	Line Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	2.455E+00	7.170E-01	7.173E-01	24.75	OK
	1120.29	14.92	1.538E+00	1.025E+00	1.025E+00	62.84	OK
	1764.49	15.30	1.044E+00	1.085E+00	1.086E+00	34.63	OK
RA-224	240.99	4.10*	5.051E+00	5.683E-01	5.683E-01	246.02	OK
RA-226	609.32	45.49*	2.455E+00	7.170E-01	7.173E-01	24.75	OK
	1120.29	14.92	1.538E+00	1.025E+00	1.025E+00	62.84	OK
	1764.49	15.30	1.044E+00	1.085E+00	1.086E+00	34.63	OK
AC-228	105.21	1.10	6.315E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.904E+00	9.786E-01	9.786E-01	43.53	OK
	794.95	4.25	2.005E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.930E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.806E+00	9.674E-01	9.674E-01	30.11	OK
	968.97	15.80	1.723E+00	1.306E+00	1.306E+00	53.35	OK
RA-228	105.21	1.10	6.315E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.904E+00	9.786E-01	9.786E-01	43.53	OK
	794.95	4.25	2.005E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.930E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.806E+00	9.674E-01	9.674E-01	30.11	OK
	968.97	15.80	1.723E+00	1.306E+00	1.306E+00	53.35	OK
TH-228	74.82	10.28	4.384E+00	1.417E+00	1.417E+00	54.14	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	77.11	17.10	4.583E+00	2.090E+00	2.090E+00	21.68	OK
	238.63	43.60*	5.101E+00	1.160E+00	1.160E+00	11.38	OK
	300.09	3.30	4.282E+00	1.613E+00	1.613E+00	90.48	OK
TH-230	609.32	45.49*	2.455E+00	7.170E-01	7.170E-01	24.75	OK
	1120.29	14.92	1.538E+00	1.025E+00	1.025E+00	62.84	OK
	1764.49	15.30	1.044E+00	1.085E+00	1.085E+00	34.63	OK
PA-231	283.69	1.70	4.487E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	4.282E+00	9.950E-01	9.950E-01	90.48	OK
TH-232	105.21	1.10	6.315E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.904E+00	9.786E-01	9.786E-01	43.53	OK
	835.71	1.61	1.930E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.806E+00	9.674E-01	9.674E-01	30.11	OK
	968.97	15.80	1.723E+00	1.306E+00	1.306E+00	53.35	OK
TH-234	63.29	3.70*	2.991E+00	2.453E+00	2.453E+00	100.42	OK
	92.59	4.23	5.783E+00	2.212E+00	2.212E+00	57.47	OK
U-234	609.32	45.49*	2.455E+00	7.170E-01	7.170E-01	24.75	OK
	1120.29	14.92	1.538E+00	1.025E+00	1.025E+00	62.84	OK
	1764.49	15.30	1.044E+00	1.085E+00	1.085E+00	34.63	OK
U-235	89.96	3.47	5.597E+00	1.330E+00	1.330E+00	77.94	OK
	93.35	5.60	5.783E+00	1.671E+00	1.671E+00	57.47	OK
	143.76	10.96*	6.593E+00	----- Line	Not Found	-----	Absent
	163.33	5.08	6.352E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	5.975E+00	1.413E-01	1.413E-01	63.45	OK
	205.31	5.01	5.647E+00	----- Line	Not Found	-----	Absent
U-238	63.29	3.70*	2.991E+00	2.453E+00	2.453E+00	100.42	OK
	92.59	4.23	5.783E+00	2.212E+00	2.212E+00	57.47	OK
AM-241	59.54	35.90*	2.628E+00	2.003E-01	2.006E-01	49.14	OK
AM-243	43.53	5.90	4.883E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	4.384E+00	2.168E-01	2.168E-01	54.14	OK
ANH-511	511.00	100.00*	2.814E+00	8.764E-02	8.764E-02	86.30	OK

Flag: "*" = Keyline

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235034.CNF;1 *
* Acquisition date   : 3-OCT-2016 09:15:46 Sensitivity      : 3.000          *
* Detector ID        : GAM28 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit: 75.000 *
* Elapsed real time  : 0 01:00:00.42 Half life ratio: ***** *
* Sample date       : 23-NOV-2015 11:20:00 Analyst initials: MXR1          *
* Sample ID         : G405235034 Sample Quantity: 1.5249E+02 GRAM          *
* Batch Number      : 1596249 Wet Weight : 0.00000          *
* Wet wt corr       : 1.00000 Dry Weight : 0.00000          *
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date    : 1-AUG-2016 10:02:35 Eff. Geometry   : CAN          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM28 CAN.CNF;10          *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.332E+01	1.478E+00	6.426E-01
CD-109	6.731E-01	1.958E+00	2.032E+00
TE-125M	6.460E+02	5.546E+02	5.213E+02
SN-126	4.194E-02	1.220E-01	1.273E-01
BA-137M	1.048E-01	8.185E-02	7.083E-02
CS-137	1.107E-01	8.646E-02	7.483E-02
HG-203	2.382E+00	5.463E+00	4.560E+00
TL-208	2.920E-01	7.852E-02	4.606E-02
BI-211	1.015E-01	9.051E-01	3.331E-01
PB-212	1.160E+00	1.293E-01	8.924E-02
BI-214	7.173E-01	1.739E-01	1.093E-01
PB-214	1.059E+00	1.847E-01	3.126E-01
RN-222	7.173E-01	1.739E-01	1.093E-01
RA-224	5.683E-01	1.370E+00	9.563E-01
RA-226	7.173E-01	1.739E-01	1.093E-01
AC-228	9.674E-01	2.854E-01	1.962E-01
RA-228	9.674E-01	2.854E-01	1.962E-01
TH-228	1.160E+00	1.293E-01	8.924E-02
TH-230	7.170E-01	1.739E-01	1.093E-01
PA-231	9.950E-01	8.823E-01	6.843E-01
TH-232	9.674E-01	2.854E-01	1.962E-01
TH-234	2.453E+00	2.414E+00	2.094E+00
U-234	7.170E-01	1.739E-01	1.092E-01
U-235	-1.439E-03	1.846E-01	3.356E-01
U-238	2.453E+00	2.414E+00	2.094E+00
AM-241	2.006E-01	9.659E-02	2.451E-01
AM-243	2.168E-01	1.151E-01	8.252E-02
ANH-511	8.764E-02	7.412E-02	4.272E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	8.348E-01	1.271E+01	2.481E+01	NOT IDENT.
NA-22	-4.777E-02	4.131E-02	6.204E-02	NOT IDENT.

NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	1.547E-02	2.448E-02	6.358E-02	NOT IDENT.
SC-46	-2.201E-01	3.903E-01	6.050E-01	FAIL ABUN
V-48	0.000E+00	2.604E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	6.097E+02	0.000E+00	SHORT HLIF
MN-54	2.235E-02	5.521E-02	1.175E-01	NOT IDENT.
CO-56	-1.782E-01	5.096E-01	9.679E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-1.905E-02	4.852E-02	8.596E-02	NOT IDENT.
CO-58	3.946E-02	6.144E-01	1.245E+00	NOT IDENT.
FE-59	-5.883E+00	8.378E+00	1.201E+01	NOT IDENT.
CO-60	1.348E-02	3.622E-02	7.706E-02	NOT IDENT.
ZN-65	-8.759E-02	1.973E-01	3.060E-01	NOT IDENT.
GE-68	-5.803E-01	2.493E+00	4.821E+00	NOT IDENT.
AS-73	-8.156E+00	9.830E+00	1.737E+01	NOT IDENT.
AS-74	0.000E+00	1.183E+04	0.000E+00	SHORT HLIF
SE-75	1.688E-01	2.081E-01	4.340E-01	NOT IDENT.
BR-77	0.000E+00	1.894E+39	0.000E+00	SHORT HLIF
SR-82	0.000E+00	9.634E+02	0.000E+00	SHORT HLIF
RB-83	-9.954E-02	6.778E-01	1.272E+00	NOT IDENT.
KR-85	8.167E+00	6.956E+00	1.395E+01	NOT IDENT.
SR-85	1.011E+00	8.612E-01	1.727E+00	NOT IDENT.
RB-86	0.000E+00	4.938E+04	0.000E+00	SHORT HLIF
Y-88	3.775E-02	1.239E-01	3.491E-01	NOT IDENT.
Y-91	5.339E+02	5.828E+02	1.290E+03	NOT IDENT.
NB-94	1.047E-02	2.836E-02	5.633E-02	NOT IDENT.
NB-95	-6.412E-02	9.401E-01	1.676E+00	NOT IDENT.
NB-95M	5.124E-01	2.638E+00	4.747E+00	NOT IDENT.
ZR-95	4.297E-01	1.518E+00	3.168E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.037E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	9.763E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-6.833E-03	3.482E-02	6.242E-02	NOT IDENT.
RH-102	-2.568E-02	5.892E-02	1.040E-01	FAIL ABUN
RU-103	2.388E-01	6.790E+00	1.308E+01	FAIL ABUN
RH-106	-3.706E-02	4.378E-01	8.279E-01	NOT IDENT.
RU-106	-3.706E-02	4.378E-01	8.279E-01	NOT IDENT.
AG-108M	1.296E-04	2.579E-02	4.959E-02	NOT IDENT.
AG-110M	-6.847E-02	1.028E-01	1.550E-01	NOT IDENT.
SN-113	-2.662E-02	2.129E-01	4.078E-01	NOT IDENT.
CD-115	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	2.107E+05	0.000E+00	SHORT HLIF
TE-123M	-5.996E-02	1.441E-01	2.499E-01	NOT IDENT.
SB-124	1.555E-01	2.448E+00	5.061E+00	NOT IDENT.
SB-125	-1.639E-03	9.043E-02	1.746E-01	NOT IDENT.
I-126	0.000E+00	2.107E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	2.542E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	3.288E+23	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.683E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.823E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	9.151E+27	0.000E+00	SHORT HLIF
BA-133	3.794E-03	4.035E-02	7.104E-02	FAIL ABUN
I-133	0.000E+00	1.207E+41	0.000E+00	SHORT HLIF
CS-134	4.324E-02	4.652E-02	1.030E-01	FAIL ABUN
CS-135	-1.680E-01	1.393E-01	2.434E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	6.571E+05	0.000E+00	SHORT HLIF
CE-139	-4.221E-02	1.100E-01	2.133E-01	NOT IDENT.
BA-140	0.000E+00	2.742E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	1.076E+06	0.000E+00	SHORT HLIF
CE-141	-8.592E+00	3.332E+01	5.893E+01	NOT IDENT.
CE-143	0.000E+00	1.292E+41	0.000E+00	SHORT HLIF
CE-144	-9.719E-02	3.463E-01	6.169E-01	NOT IDENT.
PM-144	-1.774E-02	6.166E-02	1.095E-01	NOT IDENT.
PR-144	-1.539E+00	5.400E+00	9.596E+00	NOT IDENT.
PM-146	3.158E-02	4.136E-02	8.603E-02	NOT IDENT.
ND-147	0.000E+00	8.050E+07	0.000E+00	SHORT HLIF
PM-147	-3.560E+02	8.368E+02	1.478E+03	NOT IDENT.
PM-149	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
EU-150	8.007E-03	2.395E-02	4.590E-02	FAIL ABUN
EU-152	-4.794E-02	9.410E-02	1.721E-01	NOT IDENT.
GD-153	-1.638E-01	1.877E-01	3.242E-01	NOT IDENT.
EU-154	-1.140E-01	1.009E-01	1.531E-01	NOT IDENT.
EU-155	6.302E-02	1.069E-01	2.070E-01	FAIL ABUN
TB-160	6.260E-02	2.053E+00	4.109E+00	FAIL ABUN
HO-166M	-5.778E-02	5.685E-02	8.882E-02	NOT IDENT.
TM-171	1.286E+01	1.988E+01	4.027E+01	NOT IDENT.

HF-172	-1.829E-01	2.340E-01	3.986E-01	FAIL ABUN
LU-172	-3.839E-02	6.747E-02	1.212E-01	FAIL ABUN
LU-176	-8.265E-03	2.379E-02	4.245E-02	FAIL ABUN
HF-181	3.274E+00	5.054E+00	1.047E+01	NOT IDENT.
TA-182	-2.729E-01	9.655E-01	1.790E+00	FAIL ABUN
RE-183	-1.981E-01	3.687E+00	6.503E+00	FAIL ABUN
RE-184	-2.086E+00	3.266E+01	6.572E+01	NOT IDENT.
W-188	-1.149E+01	1.219E+02	2.131E+02	FAIL ABUN
IR-192	2.380E-01	4.900E-01	9.945E-01	FAIL ABUN
BI-207	2.278E-02	4.652E-02	9.781E-02	FAIL ABUN
PB-210	2.036E+00	3.637E+00	7.284E+00	NOT IDENT.
PB-211	-5.210E-02	6.358E-01	1.208E+00	NOT IDENT.
BI-212	1.109E+00	6.120E-01	1.318E+00	NOT IDENT.
RN-219	2.893E-02	3.732E-01	7.197E-01	NOT IDENT.
RA-223	-8.507E-03	5.594E-01	1.080E+00	FAIL ABUN
AC-227	-2.436E-02	1.927E-01	3.749E-01	FAIL ABUN
TH-227	-2.436E-02	1.927E-01	3.749E-01	FAIL ABUN
TH-229	-2.682E-01	4.271E-01	8.053E-01	FAIL ABUN
TH-231	-8.507E-03	5.594E-01	1.080E+00	FAIL ABUN
PA-233	-1.896E-02	5.582E-02	1.048E-01	FAIL ABUN
PA-234	-1.484E-01	2.345E-01	4.231E-01	FAIL ABUN
PA-234M	3.134E+00	3.917E+00	8.979E+00	FAIL ABUN
NP-237	-1.896E-02	5.582E-02	1.048E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-1.174E-01	2.442E-01	4.301E-01	FAIL ABUN
PU-239	1.029E+02	3.251E+02	6.050E+02	NOT IDENT.
CM-243	4.367E-02	9.608E-02	1.848E-01	FAIL ABUN
BK-247	3.465E-02	6.670E-02	1.359E-01	NOT IDENT.
CM-247	1.436E-02	3.556E-02	7.047E-02	FAIL ABUN
CF-249	1.748E-02	3.125E-02	6.464E-02	NOT IDENT.
CF-251	8.237E-02	1.084E-01	2.250E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	357	10.66*	1.237E+00	1.332E+01	1.332E+01	11.33
CD-109	88.03	55	3.70*	5.423E+00	1.361E+00	2.185E+00	89.48
TE-125M	109.28	51	0.27*	6.445E+00	1.441E+01	6.460E+02	87.60
SN-126	64.28	55	9.60	2.991E+00	9.454E-01	9.454E-01	100.42
	86.94	55	8.90	5.423E+00	5.660E-01	5.660E-01	89.48
	87.57	55	37.00*	5.423E+00	1.361E-01	1.361E-01	89.48
BA-137M	661.66	43	89.90*	2.303E+00	1.028E-01	1.048E-01	79.68
CS-137	661.66	43	85.10*	2.303E+00	1.086E-01	1.107E-01	79.68
HG-203	70.83	-----	3.69	3.912E+00	-----	Line Not Found	-----
	72.87	-----	6.19	4.138E+00	-----	Line Not Found	-----
	279.20	35	81.56*	4.559E+00	4.672E-02	5.063E+00	109.26
TL-208	277.37	35	6.60	4.559E+00	5.774E-01	5.774E-01	109.26
	583.19	128	85.00*	2.539E+00	2.920E-01	2.920E-01	27.44
	860.56	36	12.50	1.886E+00	7.583E-01	7.583E-01	60.47
BI-211	72.87	-----	1.23	4.138E+00	-----	Line Not Found	-----
	351.06	290	12.92*	3.783E+00	2.918E+00	2.918E+00	17.79
PB-212	74.82	183	10.28	4.384E+00	1.994E+00	1.994E+00	37.68
	77.11	333	17.10	4.583E+00	2.090E+00	2.090E+00	21.68
	238.63	524	43.60*	5.101E+00	1.160E+00	1.160E+00	11.38
	300.09	46	3.30	4.282E+00	1.613E+00	1.613E+00	90.48
BI-214	609.32	163	45.49*	2.455E+00	7.170E-01	7.173E-01	24.75
	1120.29	48	14.92	1.538E+00	1.025E+00	1.025E+00	62.84
	1764.49	35	15.30	1.044E+00	1.085E+00	1.086E+00	34.63
PB-214	74.82	183	5.80	4.384E+00	3.534E+00	3.536E+00	37.68
	77.11	333	9.70	4.583E+00	3.684E+00	3.685E+00	21.68
	87.09	55	3.41	5.423E+00	1.477E+00	1.478E+00	89.48
	242.00	100	7.25	5.051E+00	1.344E+00	1.344E+00	55.12
	295.22	166	18.42	4.344E+00	1.022E+00	1.023E+00	27.12
	351.93	290	35.60*	3.783E+00	1.059E+00	1.059E+00	17.79
RN-222	609.32	163	45.49*	2.455E+00	7.170E-01	7.173E-01	24.75
	1120.29	48	14.92	1.538E+00	1.025E+00	1.025E+00	62.84
	1764.49	35	15.30	1.044E+00	1.085E+00	1.086E+00	34.63
RA-224	240.99	100	4.10*	5.051E+00	2.376E+00	2.376E+00	55.12
RA-226	609.32	163	45.49*	2.455E+00	7.170E-01	7.173E-01	24.75
	1120.29	48	14.92	1.538E+00	1.025E+00	1.025E+00	62.84
	1764.49	35	15.30	1.044E+00	1.085E+00	1.086E+00	34.63
AC-228	105.21	-----	1.10	6.315E+00	-----	Line Not Found	-----
	338.32	87	11.27	3.904E+00	9.786E-01	9.786E-01	43.53
	794.95	-----	4.25	2.005E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.930E+00	-----	Line Not Found	-----
	911.20	92	25.80*	1.806E+00	9.674E-01	9.674E-01	30.11
	968.97	72	15.80	1.723E+00	1.306E+00	1.306E+00	53.35
RA-228	105.21	-----	1.10	6.315E+00	-----	Line Not Found	-----
	338.32	87	11.27	3.904E+00	9.786E-01	9.786E-01	43.53
	794.95	-----	4.25	2.005E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.930E+00	-----	Line Not Found	-----
	911.20	92	25.80*	1.806E+00	9.674E-01	9.674E-01	30.11

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	968.97	72	15.80	1.723E+00	1.306E+00	1.306E+00	53.35
	74.82	183	10.28	4.384E+00	1.994E+00	1.994E+00	37.68
	77.11	333	17.10	4.583E+00	2.090E+00	2.090E+00	21.68
	238.63	524	43.60*	5.101E+00	1.160E+00	1.160E+00	11.38
TH-230	300.09	46	3.30	4.282E+00	1.613E+00	1.613E+00	90.48
	609.32	163	45.49*	2.455E+00	7.170E-01	7.170E-01	24.75
	1120.29	48	14.92	1.538E+00	1.025E+00	1.025E+00	62.84
	1764.49	35	15.30	1.044E+00	1.085E+00	1.085E+00	34.63
PA-231	283.69	-----	1.70	4.487E+00	-----	Line Not Found	-----
TH-232	301.36	46	5.35*	4.282E+00	9.950E-01	9.950E-01	90.48
	105.21	-----	1.10	6.315E+00	-----	Line Not Found	-----
	338.32	87	11.27	3.904E+00	9.786E-01	9.786E-01	43.53
	835.71	-----	1.61	1.930E+00	-----	Line Not Found	-----
TH-234	911.20	92	25.80*	1.806E+00	9.674E-01	9.674E-01	30.11
	968.97	72	15.80	1.723E+00	1.306E+00	1.306E+00	53.35
	63.29	55	3.70*	2.991E+00	2.453E+00	2.453E+00	100.42
	92.59	110	4.23	5.783E+00	2.212E+00	2.212E+00	57.47
U-234	609.32	163	45.49*	2.455E+00	7.170E-01	7.170E-01	24.75
	1120.29	48	14.92	1.538E+00	1.025E+00	1.025E+00	62.84
	1764.49	35	15.30	1.044E+00	1.085E+00	1.085E+00	34.63
	89.96	52	3.47	5.597E+00	1.330E+00	1.330E+00	77.94
U-235	93.35	110	5.60	5.783E+00	1.671E+00	1.671E+00	57.47
	143.76	-----	10.96*	6.593E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.352E+00	-----	Line Not Found	-----
	185.72	98	57.20	5.975E+00	1.413E-01	1.413E-01	63.45
U-238	205.31	-----	5.01	5.647E+00	-----	Line Not Found	-----
	63.29	55	3.70*	2.991E+00	2.453E+00	2.453E+00	100.42
	92.59	110	4.23	5.783E+00	2.212E+00	2.212E+00	57.47
	59.54	38	35.90*	2.628E+00	2.003E-01	2.006E-01	49.14
AM-241	43.53	-----	5.90	4.883E-01	-----	Line Not Found	-----
AM-243	74.66	183	67.20*	4.384E+00	3.050E-01	3.051E-01	37.68
ANH-511	511.00	50	100.00*	2.814E+00	8.764E-02	8.764E-02	86.30

Flag: "*" = Keyline

Total number of lines in spectrum 41
Number of unidentified lines 10
Number of lines tentatively identified by NID 31 75.61%

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	1.332E+01	1.332E+01	0.151E+01	11.33	
CD-109	461.40D	1.60	1.361E+00	2.185E+00	1.955E+00	89.48	
TE-125M	57.40D	44.8	1.441E+01	6.460E+02	5.659E+02	87.60	
SN-126	2.30E+05Y	1.00	1.361E-01	1.361E-01	1.218E-01	89.48	
BA-137M	30.08Y	1.02	1.028E-01	1.048E-01	0.835E-01	79.68	
CS-137	30.08Y	1.02	1.086E-01	1.107E-01	0.882E-01	79.68	
HG-203	46.59D	108.	4.672E-02	5.063E+00	5.532E+00	109.26	
TL-208	1.41E+10Y	1.00	2.920E-01	2.920E-01	0.801E-01	27.44	
BI-211	7.04E+08Y	1.00	2.918E+00	2.918E+00	0.519E+00	17.79	
PB-212	1.41E+10Y	1.00	1.160E+00	1.160E+00	0.132E+00	11.38	
BI-214	1600.00Y	1.00	7.170E-01	7.173E-01	1.775E-01	24.75	
PB-214	1600.00Y	1.00	1.059E+00	1.059E+00	0.189E+00	17.79	
RN-222	1600.00Y	1.00	7.170E-01	7.173E-01	1.775E-01	24.75	
RA-224	1.41E+10Y	1.00	2.376E+00	2.376E+00	1.309E+00	55.12	
RA-226	1600.00Y	1.00	7.170E-01	7.173E-01	1.775E-01	24.75	
AC-228	1.41E+10Y	1.00	9.674E-01	9.674E-01	2.913E-01	30.11	
RA-228	1.41E+10Y	1.00	9.674E-01	9.674E-01	2.913E-01	30.11	
TH-228	1.41E+10Y	1.00	1.160E+00	1.160E+00	0.132E+00	11.38	
TH-230	7.54E+04Y	1.00	7.170E-01	7.170E-01	1.774E-01	24.75	
PA-231	7.04E+08Y	1.00	9.950E-01	9.950E-01	9.003E-01	90.48	
TH-232	1.41E+10Y	1.00	9.674E-01	9.674E-01	2.913E-01	30.11	
TH-234	4.47E+09Y	1.00	2.453E+00	2.453E+00	2.463E+00	100.42	
U-234	2.45E+05Y	1.00	7.170E-01	7.170E-01	1.774E-01	24.75	
U-235	7.04E+08Y	1.00	1.413E-01	1.413E-01	0.897E-01	63.45	K
U-238	4.47E+09Y	1.00	2.453E+00	2.453E+00	2.463E+00	100.42	
AM-241	432.60Y	1.00	2.003E-01	2.006E-01	0.986E-01	49.14	
AM-243	7370.00Y	1.00	3.050E-01	3.051E-01	1.149E-01	37.68	
ANH-511	1.00E+09Y	1.00	8.764E-02	8.764E-02	7.563E-02	86.30	

Total Activity : 5.157E+01 6.890E+02

Grand Total Activity : 5.157E+01 6.890E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	371.44	25	38	1.52	743.40	739	9	6.26E-03	****	3.63E+00	T
0	564.49	29	34	2.23	1129.79	1123	14	7.58E-03	95.4	2.61E+00	T
0	579.28	20	24	1.34	1159.39	1153	9	5.15E-03	****	2.55E+00	
0	729.51	38	63	3.28	1460.08	1450	26	1.02E-02	****	2.14E+00	
0	767.85	23	22	0.74	1536.82	1530	12	6.08E-03	95.7	2.06E+00	T
0	886.67	9	7	1.16	1774.63	1771	8	2.52E-03	****	1.85E+00	
0	1002.53	13	23	0.71	2006.54	1999	19	3.62E-03	****	1.68E+00	T
3	1014.01	14	0	1.39	2029.50	2028	11	3.88E-03	28.7	1.66E+00	
3	1016.81	19	0	1.70	2035.10	2028	11	5.25E-03	44.9	1.66E+00	
0	1102.17	11	5	1.23	2205.96	2200	10	3.11E-03	95.4	1.56E+00	
0	1157.11	8	12	1.16	2315.93	2311	9	2.34E-03	****	1.50E+00	
0	1189.83	48	0	4.71	2381.41	2371	18	1.36E-02	28.6	1.47E+00	T
0	1345.72	23	0	2.53	2693.42	2684	17	6.67E-03	40.8	1.33E+00	
0	1592.90	5	5	0.48	3188.16	3186	6	1.39E-03	****	1.15E+00	
0	1730.16	15	3	2.30	3462.88	3457	11	4.52E-03	63.3	1.06E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235034.CNF;1
* Acquisition date   : 3-OCT-2016 09:15:46 Sensitivity      : 3.000
* Detector ID        : GAM28 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.42 Half life ratio : *****
* Sample date        : 23-NOV-2015 11:20:00 Nuclide Library : SOLID
* Sample ID          : G405235034 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.5249E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 1-AUG-2016 10:02:35 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM28 CAN.CNF;10
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.705E-01
CD-109	9.592E-01
TE-125M	2.423E+02
SN-126	6.010E-02
BA-137M	3.206E-02
CS-137	3.387E-02
HG-203	2.076E+00
TL-208	1.985E-02
BI-211	1.524E-01
PB-212	4.148E-02
BI-214	4.852E-02
PB-214	1.512E-01
RN-222	4.852E-02
RA-224	4.446E-01
RA-226	4.852E-02
AC-228	8.353E-02
RA-228	8.353E-02
TH-228	4.148E-02
TH-230	4.850E-02
PA-231	3.118E-01
TH-232	8.353E-02
TH-234	9.822E-01
U-234	4.850E-02
U-235	1.580E-01
U-238	9.822E-01
AM-241	1.145E-01
AM-243	3.879E-02
ANH-511	1.892E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.106E+01	NOT IDENT.
NA-22	2.492E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF

AL-26	2.524E-02	NOT IDENT.
SC-46	2.526E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.165E-02	NOT IDENT.
CO-56	4.239E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.019E-02	NOT IDENT.
CO-58	5.473E-01	NOT IDENT.
FE-59	4.971E+00	NOT IDENT.
CO-60	3.291E-02	NOT IDENT.
ZN-65	1.319E-01	NOT IDENT.
GE-68	2.115E+00	NOT IDENT.
AS-73	8.050E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	2.015E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.666E-01	NOT IDENT.
KR-85	6.377E+00	NOT IDENT.
SR-85	7.895E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.228E-01	NOT IDENT.
Y-91	5.708E+02	NOT IDENT.
NB-94	2.506E-02	NOT IDENT.
NB-95	7.378E-01	NOT IDENT.
NB-95M	2.208E+00	NOT IDENT.
ZR-95	1.402E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.934E-02	NOT IDENT.
RH-102	4.598E-02	FAIL ABUN
RU-103	5.859E+00	FAIL ABUN
RH-106	3.627E-01	NOT IDENT.
RU-106	3.627E-01	NOT IDENT.
AG-108M	2.241E-02	NOT IDENT.
AG-110M	6.538E-02	NOT IDENT.
SN-113	1.835E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.168E-01	NOT IDENT.
SB-124	2.046E+00	NOT IDENT.
SB-125	7.844E-02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.237E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	4.620E-02	FAIL ABUN
CS-135	1.124E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.982E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.763E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.878E-01	NOT IDENT.
PM-144	4.912E-02	NOT IDENT.
PR-144	4.304E+00	NOT IDENT.
PM-146	3.919E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	6.916E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.109E-02	FAIL ABUN
EU-152	7.897E-02	NOT IDENT.
GD-153	1.520E-01	NOT IDENT.
EU-154	6.169E-02	NOT IDENT.
EU-155	9.744E-02	FAIL ABUN
TB-160	1.806E+00	FAIL ABUN
HO-166M	3.862E-02	NOT IDENT.
TM-171	1.877E+01	NOT IDENT.
HF-172	1.863E-01	FAIL ABUN

LU-172	5.122E-02	FAIL ABUN
LU-176	1.946E-02	FAIL ABUN
HF-181	4.734E+00	NOT IDENT.
TA-182	7.783E-01	FAIL ABUN
RE-183	3.044E+00	FAIL ABUN
RE-184	2.820E+01	NOT IDENT.
W-188	9.759E+01	FAIL ABUN
IR-192	4.580E-01	FAIL ABUN
BI-207	4.316E-02	FAIL ABUN
PB-210	3.425E+00	NOT IDENT.
PB-211	5.501E-01	NOT IDENT.
BI-212	6.117E-01	NOT IDENT.
RN-219	3.291E-01	NOT IDENT.
RA-223	4.968E-01	FAIL ABUN
AC-227	1.723E-01	FAIL ABUN
TH-227	1.723E-01	FAIL ABUN
TH-229	3.754E-01	FAIL ABUN
TH-231	4.968E-01	FAIL ABUN
PA-233	4.806E-02	FAIL ABUN
PA-234	1.794E-01	FAIL ABUN
PA-234M	4.011E+00	FAIL ABUN
NP-237	4.806E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.015E-01	FAIL ABUN
PU-239	2.857E+02	NOT IDENT.
CM-243	8.683E-02	FAIL ABUN
BK-247	6.302E-02	NOT IDENT.
CM-247	3.242E-02	FAIL ABUN
CF-249	2.932E-02	NOT IDENT.
CF-251	1.059E-01	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.332E+01	1.635E+00	1.635E+00
CD-109	6.731E-01	1.968E+00	1.968E+00
TE-125M	6.460E+02	5.559E+02	5.559E+02
SN-126	4.194E-02	1.226E-01	1.226E-01
BA-137M	1.048E-01	8.197E-02	8.197E-02
CS-137	1.107E-01	8.660E-02	8.660E-02
HG-203	2.379E+00	5.472E+00	5.472E+00
TL-208	2.920E-01	7.952E-02	7.952E-02
BI-211	1.015E-01	9.217E-01	9.217E-01
PB-212	1.160E+00	1.434E-01	1.434E-01
BI-214	7.173E-01	1.767E-01	1.767E-01
PB-214	1.059E+00	1.900E-01	1.900E-01
RN-222	7.173E-01	1.767E-01	1.767E-01
RA-224	5.683E-01	1.376E+00	1.376E+00
RA-226	7.173E-01	1.767E-01	1.767E-01
AC-228	9.674E-01	2.898E-01	2.898E-01
RA-228	9.674E-01	2.898E-01	2.898E-01
TH-228	1.160E+00	1.434E-01	1.434E-01
TH-230	7.170E-01	1.766E-01	1.766E-01
PA-231	9.950E-01	9.075E-01	9.075E-01
TH-232	9.674E-01	2.898E-01	2.898E-01
TH-234	2.453E+00	2.474E+00	2.474E+00
U-234	7.170E-01	1.766E-01	1.766E-01
U-235	-1.439E-03	1.846E-01	1.846E-01
U-238	2.453E+00	2.474E+00	2.474E+00
AM-241	2.006E-01	9.769E-02	9.769E-02
AM-243	2.168E-01	1.164E-01	1.164E-01
ANH-511	8.764E-02	7.421E-02	7.421E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)		
BE-7	8.348E-01	1.271E+01	1.272E+01	NOT	IDENT.
NA-22	-4.777E-02	4.135E-02	4.662E-02	NOT	IDENT.

NA-24	-1.000E+41	2.042E+41	0.000E+00	SHORT HLIF
AL-26	1.547E-02	2.450E-02	2.547E-02	NOT IDENT.
SC-46	-2.201E-01	3.904E-01	4.028E-01	FAIL ABUN
V-48	-1.653E+04	2.605E+04	2.710E+04	SHORT HLIF
CR-51	3.092E+02	6.099E+02	6.256E+02	SHORT HLIF
MN-54	2.235E-02	5.522E-02	5.613E-02	NOT IDENT.
CO-56	-1.782E-01	5.097E-01	5.160E-01	NOT IDENT.
MN-56	-1.000E+41	2.861E+41	0.000E+00	SHORT HLIF
CO-57	-1.905E-02	4.853E-02	4.929E-02	NOT IDENT.
CO-58	3.946E-02	6.144E-01	6.147E-01	NOT IDENT.
FE-59	-5.883E+00	8.389E+00	8.798E+00	NOT IDENT.
CO-60	1.348E-02	3.622E-02	3.673E-02	NOT IDENT.
ZN-65	-8.759E-02	1.973E-01	2.012E-01	NOT IDENT.
GE-68	-5.803E-01	2.493E+00	2.506E+00	NOT IDENT.
AS-73	-8.156E+00	9.972E+00	1.063E+01	NOT IDENT.
AS-74	-1.144E+04	1.187E+04	1.294E+04	SHORT HLIF
SE-75	1.688E-01	2.083E-01	2.217E-01	NOT IDENT.
BR-77	1.698E+40	1.544E+41	0.000E+00	SHORT HLIF
SR-82	-4.785E+02	9.636E+02	9.875E+02	SHORT HLIF
RB-83	-9.954E-02	6.779E-01	6.794E-01	NOT IDENT.
KR-85	8.167E+00	6.964E+00	7.877E+00	NOT IDENT.
SR-85	1.011E+00	8.622E-01	9.752E-01	NOT IDENT.
RB-86	6.148E+03	4.939E+04	4.946E+04	SHORT HLIF
Y-88	3.775E-02	1.239E-01	1.251E-01	NOT IDENT.
Y-91	5.339E+02	5.832E+02	6.309E+02	NOT IDENT.
NB-94	1.047E-02	2.837E-02	2.876E-02	NOT IDENT.
NB-95	-6.412E-02	9.401E-01	9.405E-01	NOT IDENT.
NB-95M	5.124E-01	2.638E+00	2.648E+00	NOT IDENT.
ZR-95	4.297E-01	1.518E+00	1.531E+00	NOT IDENT.
NB-97	1.000E+41	1.041E+42	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.038E+41	0.000E+00	SHORT HLIF
MO-99	-6.793E+33	9.776E+33	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	2.389E+42	0.000E+00	SHORT HLIF
RH-101	-6.833E-03	3.484E-02	3.497E-02	NOT IDENT.
RH-102	-2.568E-02	5.896E-02	6.008E-02	FAIL ABUN
RU-103	2.388E-01	6.790E+00	6.791E+00	FAIL ABUN
RH-106	-3.706E-02	4.378E-01	4.381E-01	NOT IDENT.
RU-106	-3.706E-02	4.378E-01	4.381E-01	NOT IDENT.
AG-108M	1.296E-04	2.579E-02	2.579E-02	NOT IDENT.
AG-110M	-6.847E-02	1.029E-01	1.074E-01	NOT IDENT.
SN-113	-2.662E-02	2.130E-01	2.133E-01	NOT IDENT.
CD-115	6.312E+40	3.113E+41	0.000E+00	SHORT HLIF
SN-117M	-5.127E+04	2.108E+05	2.120E+05	SHORT HLIF
TE-123M	-5.996E-02	1.442E-01	1.467E-01	NOT IDENT.
SB-124	1.555E-01	2.448E+00	2.449E+00	NOT IDENT.
SB-125	-1.639E-03	9.043E-02	9.043E-02	NOT IDENT.
I-126	1.378E+06	2.116E+06	2.205E+06	SHORT HLIF
SB-126	-6.778E+05	2.545E+06	2.564E+06	SHORT HLIF
SB-127	1.364E+23	3.833E+23	0.000E+00	SHORT HLIF
I-131	-1.753E+10	1.685E+10	1.861E+10	SHORT HLIF
I-132	-1.000E+41	1.950E+42	0.000E+00	SHORT HLIF
TE-132	-8.859E+27	9.898E+27	0.000E+00	SHORT HLIF
BA-133	3.794E-03	4.035E-02	4.039E-02	FAIL ABUN
I-133	-1.000E+41	2.251E+41	0.000E+00	SHORT HLIF
CS-134	4.324E-02	4.656E-02	5.048E-02	FAIL ABUN
CS-135	-1.680E-01	1.398E-01	1.590E-01	NOT IDENT.
I-135	-1.000E+41	9.394E+41	0.000E+00	SHORT HLIF
CS-136	-5.567E+05	6.601E+05	7.062E+05	SHORT HLIF
CE-139	-4.221E-02	1.104E-01	1.120E-01	NOT IDENT.
BA-140	-1.147E+06	2.743E+06	2.791E+06	SHORT HLIF
LA-140	9.198E+04	1.076E+06	1.077E+06	SHORT HLIF
CE-141	-8.592E+00	3.332E+01	3.354E+01	NOT IDENT.
CE-143	1.000E+41	1.297E+41	0.000E+00	SHORT HLIF
CE-144	-9.719E-02	3.463E-01	3.491E-01	NOT IDENT.
PM-144	-1.774E-02	6.167E-02	6.219E-02	NOT IDENT.
PR-144	-1.539E+00	5.401E+00	5.445E+00	NOT IDENT.
PM-146	3.158E-02	4.142E-02	4.380E-02	NOT IDENT.
ND-147	-4.384E+07	8.053E+07	8.292E+07	SHORT HLIF
PM-147	-3.560E+02	8.369E+02	8.522E+02	NOT IDENT.
PM-149	1.000E+41	2.522E+41	0.000E+00	SHORT HLIF
EU-150	8.007E-03	2.395E-02	2.422E-02	FAIL ABUN
EU-152	-4.794E-02	9.414E-02	9.659E-02	NOT IDENT.
GD-153	-1.638E-01	1.880E-01	2.019E-01	NOT IDENT.
EU-154	-1.140E-01	1.010E-01	1.134E-01	NOT IDENT.
EU-155	6.302E-02	1.070E-01	1.107E-01	FAIL ABUN
TB-160	6.260E-02	2.053E+00	2.053E+00	FAIL ABUN
HO-166M	-5.778E-02	5.693E-02	6.261E-02	NOT IDENT.
TM-171	1.286E+01	1.991E+01	2.074E+01	NOT IDENT.

HF-172	-1.829E-01	2.359E-01	2.499E-01	FAIL ABUN
LU-172	-3.839E-02	6.758E-02	6.977E-02	FAIL ABUN
LU-176	-8.265E-03	2.379E-02	2.408E-02	FAIL ABUN
HF-181	3.274E+00	5.056E+00	5.267E+00	NOT IDENT.
TA-182	-2.729E-01	9.656E-01	9.734E-01	FAIL ABUN
RE-183	-1.981E-01	3.687E+00	3.688E+00	FAIL ABUN
RE-184	-2.086E+00	3.267E+01	3.268E+01	NOT IDENT.
W-188	-1.149E+01	1.219E+02	1.220E+02	FAIL ABUN
IR-192	2.380E-01	4.901E-01	5.017E-01	FAIL ABUN
BI-207	2.278E-02	4.653E-02	4.765E-02	FAIL ABUN
PB-210	2.036E+00	3.642E+00	3.755E+00	NOT IDENT.
PB-211	-5.210E-02	6.358E-01	6.362E-01	NOT IDENT.
BI-212	1.109E+00	6.146E-01	7.922E-01	NOT IDENT.
RN-219	2.893E-02	3.732E-01	3.735E-01	NOT IDENT.
RA-223	-8.507E-03	5.594E-01	5.594E-01	FAIL ABUN
AC-227	-2.436E-02	1.928E-01	1.931E-01	FAIL ABUN
TH-227	-2.436E-02	1.928E-01	1.931E-01	FAIL ABUN
TH-229	-2.682E-01	4.273E-01	4.441E-01	FAIL ABUN
TH-231	-8.507E-03	5.594E-01	5.594E-01	FAIL ABUN
PA-233	-1.896E-02	5.582E-02	5.648E-02	FAIL ABUN
PA-234	-1.484E-01	2.895E-01	2.972E-01	FAIL ABUN
PA-234M	3.134E+00	3.919E+00	4.166E+00	FAIL ABUN
NP-237	-1.896E-02	5.582E-02	5.648E-02	FAIL ABUN
NP-238	-1.000E+41	4.811E+41	0.000E+00	SHORT HLIF
NP-239	-1.174E-01	2.444E-01	2.501E-01	FAIL ABUN
PU-239	1.029E+02	3.252E+02	3.285E+02	NOT IDENT.
CM-243	4.367E-02	9.617E-02	9.816E-02	FAIL ABUN
BK-247	3.465E-02	6.706E-02	6.886E-02	NOT IDENT.
CM-247	1.436E-02	3.564E-02	3.622E-02	FAIL ABUN
CF-249	1.748E-02	3.128E-02	3.226E-02	NOT IDENT.
CF-251	8.237E-02	1.088E-01	1.150E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	67.7320	87.09	106.0090	136.47	72.9840
45.60	79.5984	87.57	95.4818	140.51	0.0000
46.54	64.0330	88.03	95.5523	143.76	79.7523
49.72	0.0000	88.34	95.6004	144.24	71.2035
51.35	59.4449	88.47	95.6202	145.44	82.3668
51.87	52.0750	89.96	100.4113	152.43	66.9158
52.39	45.7516	1093.63	82.2431	153.25	0.0000
52.97	53.2681	91.11	0.0000	323.87	62.0819
53.44	69.3204	92.59	80.9670	156.02	0.0000
54.07	64.0764	93.35	81.0624	158.56	0.0000
57.36	0.0000	94.56	87.3433	159.00	78.6366
57.53	62.4014	94.65	87.3549	162.33	60.9648
57.98	73.2290	94.67	87.3578	162.66	0.0000
59.27	66.2270	94.87	87.3845	163.33	64.3750
59.32	67.6737	97.43	93.4962	165.86	80.4756
59.54	67.7043	98.43	77.4524	176.31	76.2680
60.96	75.8466	98.44	77.4534	176.60	0.0000
61.17	75.8789	99.53	60.2111	177.52	67.0283
62.93	76.1473	100.11	74.1694	181.07	0.0000
63.29	76.2016	102.03	84.8384	181.52	70.2799
63.58	76.2453	103.18	68.6828	184.41	76.8887
64.28	76.3505	103.37	69.8666	143.76	75.2768
66.73	76.7136	105.21	71.2193	193.51	77.5699
67.24	76.7884	105.31	71.2293	197.03	51.0212
125.81	76.8530	106.12	73.2601	198.01	57.1270
67.75	76.8626	106.47	67.0589	201.83	65.1489
69.67	83.7535	109.28	57.9307	203.43	61.7653
70.83	77.3070	111.00	69.4476	205.31	74.9438
72.81	82.0215	111.76	0.0000	210.85	74.4459
72.87	82.0300	114.06	75.6499	215.65	70.3670
74.66	82.2947	116.30	0.0000	222.11	61.0362
74.82	82.3179	116.74	85.4138	227.09	58.6329
74.97	82.3399	119.76	75.0370	227.38	66.6451
77.11	82.6516	121.12	82.3302	228.16	0.0000
78.74	82.8858	121.22	82.3407	228.18	67.5793
79.69	83.0213	121.78	84.7897	116.74	67.5793
80.12	83.0823	122.06	78.8473	235.69	55.0331
80.19	0.0000	122.92	56.2112	235.96	55.0450
80.57	83.1461	123.07	55.0261	238.63	58.3065
81.00	97.4491	265.00	65.8437	238.98	0.0000
81.07	97.4610	125.81	88.8320	240.99	58.4196
81.75	103.5772	127.23	86.5863	242.00	58.4679
83.79	90.3748	127.91	75.8284	244.70	58.5968
84.00	88.8997	129.30	86.8118	252.40	0.0000
85.43	110.2537	131.20	83.3925	252.80	50.8121
86.55	110.4550	133.02	62.9878	254.15	0.0000
86.79	110.4980	133.52	71.5101	256.23	45.4908
86.94	105.9827	136.00	86.3146	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	41.2106	355.39	0.0000	584.27	13.1577
264.80	43.0470	356.01	33.6451	595.83	0.0000
265.00	44.8858	364.49	0.0000	427.87	41.9583
268.22	74.3802	366.42	0.0000	602.52	0.0000
269.46	65.2596	372.51	31.0309	604.72	16.5912
270.03	62.5284	375.05	34.0381	607.14	19.9292
271.23	53.3814	377.52	32.6066	609.32	21.0557
273.65	0.0000	356.01	33.7205	610.33	21.0650
276.40	51.2792	388.16	23.8628	614.28	21.6550
277.37	40.6833	388.63	0.0000	618.01	17.7956
277.60	40.6896	391.69	28.8938	620.36	14.4727
278.00	40.7021	264.66	39.0579	621.93	17.8242
279.20	34.7198	401.81	37.0790	630.19	0.0000
279.54	34.7290	402.40	37.0918	631.29	25.7206
279.70	34.7328	404.85	36.1392	633.25	21.2644
280.46	33.3625	410.95	26.1904	634.78	0.0000
283.69	40.8731	413.71	44.3903	635.95	16.8060
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	38.1339	423.72	0.0000	645.85	22.4976
285.90	0.0000	427.09	25.4084	657.76	22.0391
287.50	40.9859	427.87	26.4359	657.90	0.0000
290.67	36.4117	433.94	29.5829	661.66	30.5629
293.27	0.0000	439.40	30.6927	664.57	0.0000
351.93	46.3660	453.88	23.7113	666.33	0.0000
295.96	46.3901	463.37	32.1157	666.50	0.0000
879.38	33.8005	468.07	18.6929	667.71	0.0000
299.98	35.2440	473.00	0.0000	677.62	22.7799
300.09	35.2463	475.06	18.7592	685.70	0.0000
300.13	35.2470	476.78	23.9906	695.00	0.0000
301.36	35.2776	477.60	21.9135	696.49	29.8276
302.85	39.5519	482.18	20.9176	696.51	29.8276
256.23	32.5269	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	20.6565
306.78	47.5925	497.08	24.2325	697.49	20.6580
308.46	44.4335	505.52	22.2159	702.65	17.2485
311.90	47.3806	507.63	0.0000	706.68	23.0322
316.51	37.0735	511.00	20.1529	711.68	28.8442
319.41	0.0000	514.00	19.1191	720.70	0.0000
320.08	0.0000	514.00	19.1191	721.93	0.0000
321.04	36.2327	520.40	24.5039	722.78	27.8047
323.87	44.8992	520.69	0.0000	722.91	27.8057
325.23	57.3694	522.65	0.0000	723.31	20.8572
328.76	0.0000	527.90	0.0000	724.19	10.4319
333.37	52.8706	528.26	17.1094	727.33	23.2088
333.97	36.9281	529.59	25.6797	733.00	23.2568
334.37	33.1860	529.87	0.0000	735.93	19.2070
338.28	55.9326	531.02	0.0000	333.97	26.2061
338.32	55.9338	537.26	0.0000	739.50	0.0000
311.90	40.5602	546.56	0.0000	747.24	15.7791
340.48	40.5602	552.55	20.5439	748.06	14.9066
340.55	0.0000	563.25	19.5564	752.31	16.6859
344.28	51.3071	569.33	29.4126	753.82	0.0000
345.93	36.8249	946.00	27.7806	756.73	16.7120
351.06	38.8892	569.70	27.7838	756.80	16.7126
351.93	38.9103	583.19	13.1519	884.68	9.8766

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	16.9424	1274.44	7.5930	1620.50	5.4907
766.42	21.1824	1001.03	8.5537	1621.92	4.3938
766.84	21.1853	1002.74	8.5578	1678.03	0.0000
772.60	0.0000	1004.73	8.5627	1690.97	5.5652
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	1.8051
778.90	17.7289	1028.54	0.0000	1063.66	0.0000
783.70	0.0000	1037.84	12.4835	1771.35	7.2293
785.37	23.0991	1038.76	0.0000	1791.20	0.0000
792.07	22.2618	631.29	5.7759	1808.65	1.8194
794.95	14.2617	1048.07	0.0000	1810.72	0.0000
795.86	14.2661	1049.04	21.1917	1836.06	0.9141
810.06	17.0228	1050.41	15.4180		
810.29	17.0239	1063.66	13.5394		
344.28	17.0245	1077.00	0.0000		
810.76	17.0268	1077.34	16.5020		
815.77	0.0000	1085.87	15.5674		
1048.07	0.0000	1093.63	15.5996		
832.01	17.1474	1099.45	15.6230		
834.85	13.5498	1112.07	13.7163		
835.71	15.3611	1112.84	15.6787		
836.80	0.0000	1115.54	18.8273		
846.75	0.0000	1120.29	13.7454		
846.77	20.8578	1120.55	13.7462		
856.80	0.0000	1221.41	13.7488		
860.56	9.1092	1129.67	17.3218		
871.09	11.8816	1131.51	0.0000		
873.19	12.8041	1147.95	0.0000		
875.33	0.0000	1173.23	13.9333		
879.38	17.4113	1177.95	20.9244		
880.51	11.9173	1189.05	8.9923		
883.24	10.2758	1204.77	10.0305		
884.68	17.6238	1221.41	18.1285		
889.28	14.7075	1231.02	18.1714		
894.76	13.8121	1235.36	0.0000		
898.04	12.9045	1238.28	18.2032		
900.72	13.8377	1260.41	0.0000		
903.28	12.9255	1271.87	8.1553		
911.20	11.1061	1274.44	16.3203		
912.08	11.1090	1274.54	16.3213		
923.98	0.0000	1291.59	8.1929		
926.50	12.0875	1298.22	0.0000		
929.11	11.1665	1312.11	0.0000		
937.49	17.7255	1332.49	8.2705		
944.13	0.0000	1362.66	0.0000		
946.00	16.8349	1365.19	5.2072		
949.00	14.9780	1368.63	0.0000		
667.71	0.0000	1384.29	5.2295		
962.31	19.5482	1408.01	4.2053		
964.08	7.5225	1457.56	0.0000		
966.17	7.5271	1460.82	9.5696		
911.20	7.5332	1489.16	2.1392		
968.97	7.5332	1505.03	4.2925		
983.53	0.0000	1584.12	8.7231		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:17:30.81

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235035.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM33.CNF;235
Background date    : Z-OCT-2016 11:02:02.
Sample date       : 23-NOV-2015 11:06:00 Acquisition date : 3-OCT-2016 09:16:17.
Sample ID        : G405235035 Sample quantity : 1.64073E+02 GRAM
Detector name    : GAM33 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.73 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596249 Detector SN# :
Matrix Spike ID : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	40.90	20	82	1.43	81.97	76	8	5.54E-03	83.0	
2	0	64.05*	13	201	1.23	128.21	123	11	3.50E-03	224.5	
3	0	68.49	29	70	0.94	137.07	135	5	8.00E-03	47.8	
4	1	75.06*	75	124	1.10	150.20	143	16	2.10E-02	28.5	7.47E-01
5	1	77.06	157	107	1.11	154.20	143	16	4.35E-02	14.4	
6	8	87.03	43	192	1.33	174.11	169	25	1.19E-02	51.6	5.71E+00
7	8	89.83	46	179	1.43	179.69	169	25	1.27E-02	53.8	
8	8	94.27	59	90	1.25	188.57	169	25	1.65E-02	39.4	
9	0	118.51	29	67	0.92	236.98	234	7	7.98E-03	51.1	
10	0	128.82	20	95	0.93	257.58	255	7	5.55E-03	83.9	
11	0	154.68	20	36	1.34	309.23	307	5	5.54E-03	51.3	
12	6	163.47*	28	84	2.01	326.79	323	12	7.71E-03	60.8	1.98E+00
13	6	166.25	22	52	1.05	332.34	323	12	6.18E-03	58.4	
14	0	186.12*	44	102	1.06	372.05	368	10	1.22E-02	49.8	
15	0	209.48	73	82	1.63	418.71	414	10	2.02E-02	26.4	
16	0	224.37	47	105	3.68	448.45	442	13	1.32E-02	46.7	
17	5	238.59*	353	72	1.19	476.86	469	18	9.79E-02	6.8	1.56E+00
18	5	241.74	70	59	1.44	483.14	469	18	1.95E-02	22.5	
19	0	270.13	49	64	1.19	539.87	535	10	1.35E-02	34.2	
20	0	295.21	129	56	0.88	589.97	585	10	3.58E-02	14.1	
21	0	300.05	26	46	1.44	599.64	596	9	7.28E-03	50.2	
22	0	338.80*	72	46	1.05	677.07	673	10	2.00E-02	22.0	
23	0	351.99*	181	88	1.49	703.44	696	16	5.04E-02	13.8	
24	0	424.65	21	13	0.87	848.63	845	7	5.80E-03	36.6	
25	0	462.97	22	13	1.05	925.21	922	7	6.02E-03	35.6	
26	0	510.89*	25	38	2.74	1020.98	1014	14	6.83E-03	70.3	
27	0	562.17	17	7	1.41	1123.47	1120	7	4.70E-03	35.6	
28	0	583.40*	89	38	1.26	1165.92	1161	10	2.48E-02	17.5	
29	0	597.97	15	29	0.57	1195.04	1190	12	4.08E-03	81.4	
30	0	609.40*	138	48	1.36	1217.88	1213	12	3.83E-02	13.4	
31	0	644.53	8	25	2.18	1288.12	1283	12	2.31E-03	123.0	
32	0	661.59	9	36	0.60	1322.22	1319	9	2.50E-03	124.7	
33	0	705.95	11	14	0.95	1410.91	1408	7	3.06E-03	64.0	
34	0	727.69	23	12	2.01	1454.37	1451	8	6.27E-03	35.1	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	767.90	25	24	1.14	1534.78	1529	11	6.84E-03	43.9	
36	0	786.15	16	8	1.00	1571.25	1567	10	4.52E-03	40.2	
37	0	795.80	8	18	0.54	1590.56	1585	9	2.18E-03	107.6	
38	0	806.45	7	12	1.17	1611.85	1605	9	1.95E-03	100.0	
39	0	821.53	18	5	3.01	1642.01	1637	11	4.86E-03	34.8	
40	0	860.72	19	11	1.08	1720.37	1715	11	5.28E-03	40.9	
41	0	911.09*	88	6	1.57	1821.10	1814	13	2.44E-02	12.5	
42	3	965.06	37	7	2.28	1929.05	1921	22	1.03E-02	22.4	1.49E+00
43	3	969.50*	40	6	1.82	1937.94	1921	22	1.10E-02	20.6	
44	0	1121.12*	29	28	0.63	2241.23	2232	16	7.94E-03	45.9	
45	0	1137.59	7	2	1.41	2274.18	2271	7	1.96E-03	49.2	
46	0	1378.42	15	6	1.62	2756.10	2749	11	4.03E-03	40.9	
47	0	1406.85*	10	0	1.49	2813.00	2806	11	2.75E-03	35.8	
48	0	1460.88*	335	3	2.07	2921.16	2913	15	9.30E-02	5.7	
49	0	1501.18	7	2	1.36	3001.84	2998	7	2.04E-03	47.4	
50	0	1764.68*	27	0	2.61	3529.43	3522	13	7.45E-03	20.7	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235035.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 23-NOV-2015 11:06:00 Acquisition date : 3-OCT-2016 09:16:17
 Sample ID : G405235035 Sample quantity : 164.07 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA33 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.73 0.0%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.134E+00	1.233E+01	1.233E+01	11.33	OK
CD-109	88.03	3.70*	4.887E+00	5.956E-01	9.559E-01	255.58	OK
SN-126	64.28	9.60	2.549E+00	3.248E-01	3.248E-01	448.91	OK
	86.94	8.90	4.887E+00	2.476E-01	2.476E-01	255.58	OK
	87.57	37.00*	4.887E+00	5.956E-02	5.956E-02	255.58	OK
BA-137M	661.66	89.90*	2.115E+00	2.331E-02	2.378E-02	249.44	OK
CS-137	661.66	85.10*	2.115E+00	2.462E-02	2.512E-02	249.44	OK
CE-139	165.86	80.00*	5.922E+00	2.700E-02	1.319E-01	116.79	OK
TL-208	277.37	6.60	4.258E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	2.334E+00	2.253E-01	2.253E-01	35.00	OK
	860.56	12.50	1.727E+00	4.197E-01	4.197E-01	81.71	OK
BI-212	727.33	6.67*	1.965E+00	8.389E-01	8.389E-01	70.29	OK
	785.37	1.10	1.851E+00	3.852E+00	3.852E+00	80.37	OK
	1620.50	1.47	1.036E+00	-----	Line Not Found	-----	Absent
PB-212	74.82	10.28	3.825E+00	6.676E-01	6.676E-01	104.28	OK
	77.11	17.10	4.028E+00	1.410E+00	1.410E+00	28.90	OK
	238.63	43.60*	4.776E+00	9.366E-01	9.366E-01	13.53	OK
	300.09	3.30	4.000E+00	1.071E+00	1.071E+00	100.50	OK
BI-214	609.32	45.49*	2.255E+00	6.677E-01	6.679E-01	26.76	OK
	1120.29	14.92	1.407E+00	6.277E-01	6.279E-01	91.79	OK
	1764.49	15.30	9.591E-01	7.932E-01	7.935E-01	41.37	OK
PB-214	74.82	5.80	3.800E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	4.028E+00	2.485E+00	2.486E+00	28.90	OK
	87.09	3.41	4.892E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	4.727E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	4.052E+00	9.326E-01	9.330E-01	28.15	OK
	351.93	35.60*	3.512E+00	7.685E-01	7.688E-01	27.69	OK
RN-222	609.32	45.49*	2.255E+00	6.677E-01	6.679E-01	26.76	OK
	1120.29	14.92	1.407E+00	6.277E-01	6.279E-01	91.79	OK
	1764.49	15.30	9.591E-01	7.932E-01	7.935E-01	41.37	OK
RA-224	240.99	4.10*	4.731E+00	3.453E-01	3.453E-01	292.72	OK
RA-226	609.32	45.49*	2.255E+00	6.677E-01	6.679E-01	26.76	OK
	1120.29	14.92	1.407E+00	6.277E-01	6.279E-01	91.79	OK
	1764.49	15.30	9.591E-01	7.932E-01	7.935E-01	41.37	OK
AC-228	105.21	1.10	5.839E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.624E+00	9.380E-01	9.380E-01	44.00	OK
	794.95	4.25	1.834E+00	4.858E-01	4.858E-01	215.11	OK
	835.71	1.61	1.766E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.653E+00	9.736E-01	9.736E-01	25.07	OK
	968.97	15.80	1.576E+00	7.468E-01	7.468E-01	41.20	OK
RA-228	105.21	1.10	5.839E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.624E+00	9.380E-01	9.380E-01	44.00	OK
	794.95	4.25	1.834E+00	4.858E-01	4.858E-01	215.11	OK
	835.71	1.61	1.766E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.653E+00	9.736E-01	9.736E-01	25.07	OK
	968.97	15.80	1.576E+00	7.468E-01	7.468E-01	41.20	OK
TH-228	74.82	10.28	3.825E+00	6.676E-01	6.676E-01	104.28	OK
	77.11	17.10	4.028E+00	1.410E+00	1.410E+00	28.90	OK
	238.63	43.60*	4.776E+00	9.366E-01	9.366E-01	13.53	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	300.09	3.30	4.000E+00	1.071E+00	1.071E+00	100.50	OK
	609.32	45.49*	2.255E+00	6.677E-01	6.677E-01	26.76	OK
	1120.29	14.92	1.407E+00	6.277E-01	6.277E-01	91.79	OK
	1764.49	15.30	9.591E-01	7.932E-01	7.932E-01	41.37	OK
PA-231	283.69	1.70	4.183E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	4.000E+00	6.604E-01	6.604E-01	100.50	OK
TH-232	105.21	1.10	5.839E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.624E+00	9.380E-01	9.380E-01	44.00	OK
	835.71	1.61	1.766E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.653E+00	9.736E-01	9.736E-01	25.07	OK
U-234	968.97	15.80	1.576E+00	7.468E-01	7.468E-01	41.20	OK
	609.32	45.49*	2.255E+00	6.677E-01	6.677E-01	26.76	OK
	1120.29	14.92	1.407E+00	6.277E-01	6.277E-01	91.79	OK
	1764.49	15.30	9.591E-01	7.932E-01	7.932E-01	41.37	OK
U-235	89.96	3.47	5.083E+00	1.587E+00	1.587E+00	107.70	OK
	93.35	5.60	5.355E+00	1.203E+00	1.203E+00	78.78	OK
	143.76	10.96*	6.181E+00	----- Line	Not Found	-----	Absent
	163.33	5.08	5.962E+00	5.276E-01	5.276E-01	121.65	OK
AM-243	185.72	57.20	5.611E+00	7.762E-02	7.762E-02	99.67	OK
	205.31	5.01	5.295E+00	----- Line	Not Found	-----	Absent
	43.53	5.90	2.461E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.825E+00	1.021E-01	1.021E-01	104.28	OK
ANH-511	511.00	100.00*	2.593E+00	4.819E-02	4.819E-02	140.62	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235035.CNF;1
* Acquisition date   : 3-OCT-2016 09:16:17 Sensitivity      : 3.000
* Detector ID        : GAM33 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.73 Half life ratio : *****
* Sample date        : 23-NOV-2015 11:06:00 Analyst initials: MXR1
* Sample ID          : G405235035 Sample Quantity : 1.6407E+02 GRAM
* Batch Number       : 1596249 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 10-JUN-2016 07:00:49 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM33 CAN.CNF;8
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.233E+01	1.369E+00	5.330E-01
CD-109	9.559E-01	2.394E+00	1.911E+00
SN-126	5.956E-02	1.492E-01	1.198E-01
BA-137M	2.378E-02	5.812E-02	6.443E-02
CS-137	2.512E-02	6.140E-02	6.806E-02
CE-139	1.319E-01	1.510E-01	1.884E-01
TL-208	2.253E-01	7.729E-02	6.325E-02
BI-212	8.389E-01	5.778E-01	1.017E+00
PB-212	9.366E-01	1.241E-01	8.057E-02
BI-214	6.679E-01	1.752E-01	1.140E-01
PB-214	7.688E-01	2.086E-01	1.131E-01
RN-222	6.679E-01	1.752E-01	1.140E-01
RA-224	3.453E-01	9.906E-01	8.635E-01
RA-226	6.679E-01	1.752E-01	1.140E-01
AC-228	9.736E-01	2.392E-01	1.926E-01
RA-228	9.736E-01	2.392E-01	1.926E-01
TH-228	9.366E-01	1.241E-01	8.057E-02
TH-230	6.677E-01	1.751E-01	1.139E-01
PA-231	6.604E-01	6.504E-01	7.170E-01
TH-232	9.736E-01	2.392E-01	1.926E-01
U-234	6.677E-01	1.751E-01	1.139E-01
U-235	4.831E-02	1.566E-01	3.110E-01
AM-243	1.021E-01	1.044E-01	8.539E-02
ANH-511	4.819E-02	6.640E-02	4.704E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	2.251E+00	1.393E+01	2.804E+01	NOT IDENT.
NA-22	1.208E-02	3.855E-02	8.363E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	-1.033E-02	1.972E-02	3.617E-02	NOT IDENT.
SC-46	-8.621E-02	3.710E-01	7.030E-01	FAIL ABUN
V-48	0.000E+00	2.508E+04	0.000E+00	SHORT HLIF

CR-51	0.000E+00	4.792E+02	0.000E+00	SHORT HLIF
MN-54	3.984E-03	6.251E-02	1.212E-01	NOT IDENT.
CO-56	-1.071E-02	4.907E-01	9.465E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	4.350E-04	4.306E-02	7.707E-02	NOT IDENT.
CO-58	7.502E-01	5.416E-01	1.311E+00	NOT IDENT.
FE-59	3.728E+00	8.452E+00	1.799E+01	NOT IDENT.
CO-60	-1.357E-02	3.719E-02	7.075E-02	NOT IDENT.
ZN-65	6.778E-03	1.415E-01	2.661E-01	NOT IDENT.
GE-68	2.070E+00	2.329E+00	5.264E+00	NOT IDENT.
AS-73	-2.675E+00	1.010E+01	2.023E+01	NOT IDENT.
AS-74	0.000E+00	1.073E+04	0.000E+00	SHORT HLIF
SE-75	-8.750E-02	2.047E-01	3.577E-01	NOT IDENT.
BR-77	0.000E+00	1.823E+39	0.000E+00	SHORT HLIF
SR-82	0.000E+00	8.272E+02	0.000E+00	SHORT HLIF
RB-83	-7.747E-02	5.927E-01	1.167E+00	NOT IDENT.
KR-85	5.968E+00	6.150E+00	1.267E+01	NOT IDENT.
SR-85	7.378E-01	7.613E-01	1.568E+00	NOT IDENT.
RB-86	0.000E+00	4.446E+04	0.000E+00	SHORT HLIF
Y-88	3.215E-02	2.316E-01	5.087E-01	NOT IDENT.
Y-91	1.332E+02	5.795E+02	1.202E+03	NOT IDENT.
NB-94	2.102E-02	3.131E-02	6.092E-02	NOT IDENT.
NB-95	1.323E-01	9.351E-01	1.693E+00	NOT IDENT.
NB-95M	1.782E+00	2.459E+00	4.848E+00	NOT IDENT.
ZR-95	-2.318E-01	1.610E+00	3.050E+00	NOT IDENT.
NB-97	0.000E+00	1.382E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	7.175E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-9.528E-04	3.162E-02	5.582E-02	NOT IDENT.
RH-102	3.375E-03	4.645E-02	9.395E-02	FAIL ABUN
RU-103	2.025E-01	6.227E+00	1.250E+01	FAIL ABUN
RH-106	-3.279E-01	4.390E-01	7.670E-01	NOT IDENT.
RU-106	-3.279E-01	4.390E-01	7.670E-01	NOT IDENT.
AG-108M	-4.500E-03	2.260E-02	4.435E-02	NOT IDENT.
AG-110M	4.260E-02	8.491E-02	1.825E-01	FAIL ABUN
SN-113	-2.090E-02	2.126E-01	4.222E-01	NOT IDENT.
CD-115	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.735E+05	0.000E+00	SHORT HLIF
TE-123M	-2.574E-02	1.175E-01	2.185E-01	NOT IDENT.
SB-124	1.221E+00	1.653E+00	4.539E+00	FAIL ABUN
SB-125	6.022E-02	1.010E-01	1.967E-01	FAIL ABUN
TE-125M	1.209E+02	2.995E+02	5.946E+02	NOT IDENT.
I-126	0.000E+00	1.922E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	2.329E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.768E+23	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.576E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.305E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	9.843E+27	0.000E+00	SHORT HLIF
BA-133	-9.869E-03	3.413E-02	5.972E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	3.225E-02	6.798E-02	9.161E-02	FAIL ABUN
CS-135	-1.342E-02	1.440E-01	2.388E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	4.578E+05	0.000E+00	SHORT HLIF
BA-140	0.000E+00	2.224E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	8.643E+05	0.000E+00	SHORT HLIF
CE-141	-1.916E+01	2.777E+01	4.947E+01	NOT IDENT.
CE-143	0.000E+00	1.256E+41	0.000E+00	SHORT HLIF
CE-144	5.756E-02	2.980E-01	5.831E-01	NOT IDENT.
PM-144	-4.602E-02	4.686E-02	7.668E-02	NOT IDENT.
PR-144	-4.000E+00	4.108E+00	6.735E+00	NOT IDENT.
PM-146	1.194E-02	3.579E-02	7.471E-02	NOT IDENT.
ND-147	0.000E+00	6.337E+07	0.000E+00	SHORT HLIF
PM-147	4.642E+01	7.112E+02	1.284E+03	NOT IDENT.
PM-149	0.000E+00	9.353E+40	0.000E+00	SHORT HLIF
EU-150	-6.931E-03	2.125E-02	3.955E-02	FAIL ABUN
EU-152	-1.637E-02	7.724E-02	1.458E-01	FAIL ABUN
GD-153	2.156E-02	1.643E-01	2.997E-01	FAIL ABUN
EU-154	3.822E-02	9.576E-02	2.096E-01	NOT IDENT.
EU-155	4.946E-02	1.059E-01	2.114E-01	FAIL ABUN
TB-160	8.292E-01	2.053E+00	4.211E+00	FAIL ABUN
HO-166M	2.036E-02	4.253E-02	9.148E-02	NOT IDENT.
TM-171	2.748E-01	2.331E+01	4.782E+01	NOT IDENT.
HF-172	1.131E-01	2.229E-01	4.148E-01	FAIL ABUN
LU-172	3.522E-02	6.618E-02	1.466E-01	FAIL ABUN
LU-176	-9.939E-03	1.988E-02	3.838E-02	FAIL ABUN
HF-181	-1.409E+00	4.890E+00	9.378E+00	NOT IDENT.

TA-182	-1.830E-03	8.743E-01	1.762E+00	FAIL ABUN
RE-183	-2.048E-01	3.389E+00	6.845E+00	FAIL ABUN
RE-184	-3.690E+00	3.036E+01	5.885E+01	NOT IDENT.
W-188	-8.986E+01	1.154E+02	1.901E+02	FAIL ABUN
IR-192	8.661E-02	4.353E-01	8.989E-01	FAIL ABUN
HG-203	-5.679E-01	2.352E+00	4.686E+00	NOT IDENT.
BI-207	1.311E-02	4.401E-02	9.336E-02	FAIL ABUN
PB-210	3.521E-01	4.807E+00	9.913E+00	NOT IDENT.
BI-211	0.000E+00	5.746E-01	7.122E-01	FAIL ABUN
PB-211	2.560E-01	5.632E-01	1.182E+00	NOT IDENT.
RN-219	4.562E-02	2.849E-01	5.887E-01	FAIL ABUN
RA-223	1.418E-02	4.697E-01	9.545E-01	FAIL ABUN
AC-227	4.818E-02	2.123E-01	3.996E-01	FAIL ABUN
TH-227	4.818E-02	2.123E-01	3.996E-01	FAIL ABUN
TH-229	-2.067E-01	4.153E-01	7.369E-01	FAIL ABUN
TH-231	1.418E-02	4.697E-01	9.545E-01	FAIL ABUN
PA-233	-2.122E-02	4.464E-02	8.664E-02	FAIL ABUN
PA-234	1.512E-01	2.361E-01	5.108E-01	FAIL ABUN
PA-234M	3.563E+00	4.139E+00	9.064E+00	FAIL ABUN
TH-234	8.427E-01	3.707E+00	2.795E+00	FAIL ABUN
NP-237	-2.122E-02	4.464E-02	8.664E-02	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
U-238	8.427E-01	3.707E+00	2.795E+00	FAIL ABUN
NP-239	-6.923E-03	2.110E-01	3.769E-01	NOT IDENT.
PU-239	2.999E+02	4.929E+02	5.588E+02	FAIL ABUN
AM-241	1.337E-02	1.443E-01	2.730E-01	NOT IDENT.
CM-243	-1.303E-02	9.263E-02	1.774E-01	NOT IDENT.
BK-247	-8.280E-03	6.511E-02	1.181E-01	FAIL ABUN
CM-247	-5.190E-03	2.683E-02	5.300E-02	NOT IDENT.
CF-249	-1.475E-02	3.155E-02	6.008E-02	NOT IDENT.
CF-251	-2.099E-02	9.731E-02	1.793E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	326	10.66*	1.134E+00	1.233E+01	1.233E+01	11.33
CD-109	88.03	58	3.70*	4.887E+00	1.455E+00	2.335E+00	103.28
SN-126	64.28	17	9.60	2.549E+00	3.248E-01	3.248E-01	448.91
	86.94	58	8.90	4.887E+00	6.049E-01	6.049E-01	103.28
	87.57	58	37.00*	4.887E+00	1.455E-01	1.455E-01	103.28
BA-137M	661.66	10	89.90*	2.115E+00	2.331E-02	2.378E-02	249.44
CS-137	661.66	10	85.10*	2.115E+00	2.462E-02	2.512E-02	249.44
CE-139	165.86	28	80.00*	5.922E+00	2.700E-02	1.319E-01	116.79
TL-208	277.37	-----	6.60	4.258E+00	-----	Line Not Found	-----
	583.19	98	85.00*	2.334E+00	2.253E-01	2.253E-01	35.00
	860.56	20	12.50	1.727E+00	4.197E-01	4.197E-01	81.71
BI-211	72.87	-----	1.23	3.591E+00	-----	Line Not Found	-----
	351.06	210	12.92*	3.512E+00	2.118E+00	2.118E+00	27.69
BI-212	727.33	24	6.67*	1.965E+00	8.389E-01	8.389E-01	70.29
	785.37	17	1.10	1.851E+00	3.852E+00	3.852E+00	80.37
	1620.50	-----	1.47	1.036E+00	-----	Line Not Found	-----
PB-212	74.82	103	10.28	3.825E+00	1.194E+00	1.194E+00	56.98
	77.11	212	17.10	4.028E+00	1.410E+00	1.410E+00	28.90
	238.63	426	43.60*	4.776E+00	9.366E-01	9.366E-01	13.53
	300.09	31	3.30	4.000E+00	1.071E+00	1.071E+00	100.50
BI-214	609.32	150	45.49*	2.255E+00	6.677E-01	6.679E-01	26.76
	1120.29	29	14.92	1.407E+00	6.277E-01	6.279E-01	91.79
	1764.49	25	15.30	9.591E-01	7.932E-01	7.935E-01	41.37
PB-214	74.82	103	5.80	3.825E+00	2.116E+00	2.117E+00	56.98
	77.11	212	9.70	4.028E+00	2.485E+00	2.486E+00	28.90
	87.09	58	3.41	4.887E+00	1.579E+00	1.579E+00	103.28
	242.00	85	7.25	4.731E+00	1.128E+00	1.128E+00	45.02
	295.22	152	18.42	4.052E+00	9.326E-01	9.330E-01	28.15
	351.93	210	35.60*	3.512E+00	7.685E-01	7.688E-01	27.69
RN-222	609.32	150	45.49*	2.255E+00	6.677E-01	6.679E-01	26.76
	1120.29	29	14.92	1.407E+00	6.277E-01	6.279E-01	91.79
	1764.49	25	15.30	9.591E-01	7.932E-01	7.935E-01	41.37
RA-224	240.99	85	4.10*	4.731E+00	1.994E+00	1.994E+00	45.02
RA-226	609.32	150	45.49*	2.255E+00	6.677E-01	6.679E-01	26.76
	1120.29	29	14.92	1.407E+00	6.277E-01	6.279E-01	91.79
	1764.49	25	15.30	9.591E-01	7.932E-01	7.935E-01	41.37
AC-228	105.21	-----	1.10	5.839E+00	-----	Line Not Found	-----
	338.32	84	11.27	3.624E+00	9.380E-01	9.380E-01	44.00
	794.95	8	4.25	1.834E+00	4.858E-01	4.858E-01	215.11
	835.71	-----	1.61	1.766E+00	-----	Line Not Found	-----
	911.20	91	25.80*	1.653E+00	9.736E-01	9.736E-01	25.07
	968.97	41	15.80	1.576E+00	7.468E-01	7.468E-01	41.20
RA-228	105.21	-----	1.10	5.839E+00	-----	Line Not Found	-----
	338.32	84	11.27	3.624E+00	9.380E-01	9.380E-01	44.00
	794.95	8	4.25	1.834E+00	4.858E-01	4.858E-01	215.11
	835.71	-----	1.61	1.766E+00	-----	Line Not Found	-----
	911.20	91	25.80*	1.653E+00	9.736E-01	9.736E-01	25.07

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	968.97	41	15.80	1.576E+00	7.468E-01	7.468E-01	41.20
	74.82	103	10.28	3.825E+00	1.194E+00	1.194E+00	56.98
	77.11	212	17.10	4.028E+00	1.410E+00	1.410E+00	28.90
	238.63	426	43.60*	4.776E+00	9.366E-01	9.366E-01	13.53
TH-230	300.09	31	3.30	4.000E+00	1.071E+00	1.071E+00	100.50
	609.32	150	45.49*	2.255E+00	6.677E-01	6.677E-01	26.76
	1120.29	29	14.92	1.407E+00	6.277E-01	6.277E-01	91.79
	1764.49	25	15.30	9.591E-01	7.932E-01	7.932E-01	41.37
PA-231	283.69	-----	1.70	4.183E+00	-----	Line Not Found	-----
	301.36	31	5.35*	4.000E+00	6.604E-01	6.604E-01	100.50
TH-232	105.21	-----	1.10	5.839E+00	-----	Line Not Found	-----
	338.32	84	11.27	3.624E+00	9.380E-01	9.380E-01	44.00
	835.71	-----	1.61	1.766E+00	-----	Line Not Found	-----
	911.20	91	25.80*	1.653E+00	9.736E-01	9.736E-01	25.07
U-234	968.97	41	15.80	1.576E+00	7.468E-01	7.468E-01	41.20
	609.32	150	45.49*	2.255E+00	6.677E-01	6.677E-01	26.76
	1120.29	29	14.92	1.407E+00	6.277E-01	6.277E-01	91.79
	1764.49	25	15.30	9.591E-01	7.932E-01	7.932E-01	41.37
U-235	89.96	61	3.47	5.083E+00	1.587E+00	1.587E+00	107.70
	93.35	79	5.60	5.355E+00	1.203E+00	1.203E+00	78.78
	143.76	-----	10.96*	6.181E+00	-----	Line Not Found	-----
	163.33	35	5.08	5.962E+00	5.276E-01	5.276E-01	121.65
AM-243	185.72	54	57.20	5.611E+00	7.762E-02	7.762E-02	99.67
	205.31	-----	5.01	5.295E+00	-----	Line Not Found	-----
	43.53	-----	5.90	2.461E-01	-----	Line Not Found	-----
	74.66	103	67.20*	3.825E+00	1.826E-01	1.826E-01	56.98
ANH-511	511.00	27	100.00*	2.593E+00	4.819E-02	4.819E-02	140.62

Flag: "*" = Keyline

Total number of lines in spectrum 50
Number of unidentified lines 8
Number of lines tentatively identified by NID 42 84.00%

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	1.233E+01	1.233E+01	0.140E+01	11.33	
CD-109	461.40D	1.61	1.455E+00	2.335E+00	2.412E+00	103.28	
SN-126	2.30E+05Y	1.00	1.455E-01	1.455E-01	1.503E-01	103.28	
BA-137M	30.08Y	1.02	2.331E-02	2.378E-02	5.931E-02	249.44	
CS-137	30.08Y	1.02	2.462E-02	2.512E-02	6.265E-02	249.44	
CE-139	137.64D	4.88	2.700E-02	1.319E-01	1.540E-01	116.79	
TL-208	1.41E+10Y	1.00	2.253E-01	2.253E-01	0.789E-01	35.00	
BI-211	7.04E+08Y	1.00	2.118E+00	2.118E+00	0.586E+00	27.69	
BI-212	1.41E+10Y	1.00	8.389E-01	8.389E-01	5.896E-01	70.29	
PB-212	1.41E+10Y	1.00	9.366E-01	9.366E-01	1.267E-01	13.53	
BI-214	1600.00Y	1.00	6.677E-01	6.679E-01	1.787E-01	26.76	
PB-214	1600.00Y	1.00	7.685E-01	7.688E-01	2.129E-01	27.69	
RN-222	1600.00Y	1.00	6.677E-01	6.679E-01	1.787E-01	26.76	
RA-224	1.41E+10Y	1.00	1.994E+00	1.994E+00	0.898E+00	45.02	
RA-226	1600.00Y	1.00	6.677E-01	6.679E-01	1.787E-01	26.76	
AC-228	1.41E+10Y	1.00	9.736E-01	9.736E-01	2.441E-01	25.07	
RA-228	1.41E+10Y	1.00	9.736E-01	9.736E-01	2.441E-01	25.07	
TH-228	1.41E+10Y	1.00	9.366E-01	9.366E-01	1.267E-01	13.53	
TH-230	7.54E+04Y	1.00	6.677E-01	6.677E-01	1.787E-01	26.76	
PA-231	7.04E+08Y	1.00	6.604E-01	6.604E-01	6.637E-01	100.50	
TH-232	1.41E+10Y	1.00	9.736E-01	9.736E-01	2.441E-01	25.07	
U-234	2.45E+05Y	1.00	6.677E-01	6.677E-01	1.787E-01	26.76	
U-235	7.04E+08Y	1.00	7.762E-02	7.762E-02	7.737E-02	99.67	K
AM-243	7370.00Y	1.00	1.826E-01	1.826E-01	1.041E-01	56.98	
ANH-511	1.00E+09Y	1.00	4.819E-02	4.819E-02	6.776E-02	140.62	

Total Activity : 2.905E+01 3.004E+01

Grand Total Activity : 2.905E+01 3.004E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	40.90	29	118	1.43	81.97	76	8	5.54E-03	****	1.12E-01	
0	68.49	39	96	0.94	137.07	135	5	8.00E-03	95.7	3.09E+00	T
0	118.51	37	87	0.92	236.98	234	7	7.98E-03	****	6.14E+00	T
0	128.82	26	123	0.93	257.58	255	7	5.55E-03	****	6.22E+00	T
0	154.68	25	46	1.34	309.23	307	5	5.54E-03	****	6.08E+00	T
0	209.48	89	101	1.63	418.71	414	10	2.02E-02	52.7	5.23E+00	T
0	224.37	58	127	3.68	448.45	442	13	1.32E-02	93.3	4.99E+00	
0	270.13	58	77	1.19	539.87	535	10	1.35E-02	68.3	4.35E+00	T
0	424.65	24	15	0.87	848.63	845	7	5.80E-03	73.3	3.01E+00	T
0	462.97	24	15	1.05	925.21	922	7	6.02E-03	71.2	2.81E+00	T
0	562.17	19	8	1.41	1123.47	1120	7	4.70E-03	71.2	2.40E+00	T
0	597.97	16	32	0.57	1195.04	1190	12	4.08E-03	****	2.29E+00	
0	644.53	9	27	2.18	1288.12	1283	12	2.31E-03	****	2.16E+00	T
0	705.95	12	15	0.95	1410.91	1408	7	3.06E-03	****	2.01E+00	T
0	767.90	26	26	1.14	1534.78	1529	11	6.84E-03	87.8	1.88E+00	T
0	806.45	7	13	1.17	1611.85	1605	9	1.95E-03	****	1.82E+00	
0	821.53	18	5	3.01	1642.01	1637	11	4.86E-03	69.6	1.79E+00	
3	965.06	38	7	2.28	1929.05	1921	22	1.03E-02	44.8	1.58E+00	T
0	1137.59	7	2	1.41	2274.18	2271	7	1.96E-03	98.5	1.39E+00	
0	1378.42	14	5	1.62	2756.10	2749	11	4.03E-03	81.7	1.19E+00	
0	1406.85	10	0	1.49	2813.00	2806	11	2.75E-03	71.6	1.17E+00	T
0	1501.18	7	2	1.36	3001.84	2998	7	2.04E-03	94.7	1.11E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235035.CNF;1
* Acquisition date   : 3-OCT-2016 09:16:17 Sensitivity      : 3.000
* Detector ID        : GAM33 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.73 Half life ratio : *****
* Sample date        : 23-NOV-2015 11:06:00 Nuclide Library : SOLID
* Sample ID          : G405235035 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.6407E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 10-JUN-2016 07:00:49 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM33 CAN.CNF;8
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.148E-01
CD-109	8.963E-01
SN-126	5.620E-02
BA-137M	2.878E-02
CS-137	3.041E-02
CE-139	8.734E-02
TL-208	2.839E-02
BI-212	4.600E-01
PB-212	3.713E-02
BI-214	5.074E-02
PB-214	5.135E-02
RN-222	5.074E-02
RA-224	3.979E-01
RA-226	5.074E-02
AC-228	8.142E-02
RA-228	8.142E-02
TH-228	3.713E-02
TH-230	5.072E-02
PA-231	3.278E-01
TH-232	8.142E-02
U-234	5.072E-02
U-235	1.457E-01
AM-243	4.003E-02
ANH-511	2.104E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.265E+01	NOT IDENT.
NA-22	3.559E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.143E-02	NOT IDENT.
SC-46	3.005E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF

MN-54	5.335E-02	NOT IDENT.
CO-56	4.119E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	3.571E-02	NOT IDENT.
CO-58	5.784E-01	NOT IDENT.
FE-59	7.941E+00	NOT IDENT.
CO-60	2.964E-02	NOT IDENT.
ZN-65	1.115E-01	NOT IDENT.
GE-68	2.330E+00	NOT IDENT.
AS-73	9.277E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.633E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.130E-01	NOT IDENT.
KR-85	5.726E+00	NOT IDENT.
SR-85	7.087E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	2.019E-01	NOT IDENT.
Y-91	5.251E+02	NOT IDENT.
NB-94	2.729E-02	NOT IDENT.
NB-95	7.441E-01	NOT IDENT.
NB-95M	2.258E+00	NOT IDENT.
ZR-95	1.339E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.602E-02	NOT IDENT.
RH-102	4.085E-02	FAIL ABUN
RU-103	5.553E+00	FAIL ABUN
RH-106	3.311E-01	NOT IDENT.
RU-106	3.311E-01	NOT IDENT.
AG-108M	1.975E-02	NOT IDENT.
AG-110M	7.885E-02	FAIL ABUN
SN-113	1.904E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.010E-01	NOT IDENT.
SB-124	1.777E+00	FAIL ABUN
SB-125	8.936E-02	FAIL ABUN
TE-125M	2.786E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.667E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	4.039E-02	FAIL ABUN
CS-135	1.100E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.289E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.707E-01	NOT IDENT.
PM-144	3.257E-02	NOT IDENT.
PR-144	2.862E+00	NOT IDENT.
PM-146	3.347E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	5.942E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.789E-02	FAIL ABUN
EU-152	6.575E-02	FAIL ABUN
GD-153	1.394E-01	FAIL ABUN
EU-154	8.968E-02	NOT IDENT.
EU-155	9.952E-02	FAIL ABUN
TB-160	1.851E+00	FAIL ABUN
HO-166M	3.983E-02	NOT IDENT.
TM-171	2.207E+01	NOT IDENT.
HF-172	1.943E-01	FAIL ABUN
LU-172	6.369E-02	FAIL ABUN
LU-176	1.741E-02	FAIL ABUN
HF-181	4.180E+00	NOT IDENT.
TA-182	7.619E-01	FAIL ABUN

RE-183	3.169E+00	FAIL ABUN
RE-184	2.465E+01	NOT IDENT.
W-188	8.598E+01	FAIL ABUN
IR-192	4.098E-01	FAIL ABUN
HG-203	2.138E+00	NOT IDENT.
BI-207	4.081E-02	FAIL ABUN
PB-210	4.604E+00	NOT IDENT.
BI-211	3.419E-01	FAIL ABUN
PB-211	5.360E-01	NOT IDENT.
RN-219	2.631E-01	FAIL ABUN
RA-223	4.337E-01	FAIL ABUN
AC-227	1.846E-01	FAIL ABUN
TH-227	1.846E-01	FAIL ABUN
TH-229	3.411E-01	FAIL ABUN
TH-231	4.337E-01	FAIL ABUN
PA-233	3.894E-02	FAIL ABUN
PA-234	2.226E-01	FAIL ABUN
PA-234M	4.043E+00	FAIL ABUN
TH-234	1.322E+00	FAIL ABUN
NP-237	3.894E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	1.322E+00	FAIL ABUN
NP-239	1.746E-01	NOT IDENT.
PU-239	2.624E+02	FAIL ABUN
AM-241	1.268E-01	NOT IDENT.
CM-243	8.303E-02	NOT IDENT.
BK-247	5.409E-02	FAIL ABUN
CM-247	2.364E-02	NOT IDENT.
CF-249	2.700E-02	NOT IDENT.
CF-251	8.297E-02	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235035.CNF;1
* Acquisition date   : 3-OCT-2016 09:16:17 Sensitivity      : 3.000
* Detector ID        : GAM33 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.73 Half life ratio : *****
* Sample date        : 23-NOV-2015 11:06:00 Nuclide Library: SOLID
* Sample ID          : G405235035 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.6407E+02 GRAM
*                               Quantity Err(%) : 1.2190E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 10-JUN-2016 07:00:49 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM33 CAN.CNF;8
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
      (pCi/GRAM )      (1.96-sigma)      (1.96-sigma)
K-40          1.233E+01      1.512E+00      1.512E+00
CD-109         9.559E-01      2.402E+00      2.402E+00
SN-126         5.956E-02      1.496E-01      1.496E-01
BA-137M        2.378E-02      5.813E-02      5.813E-02
CS-137         2.512E-02      6.141E-02      6.141E-02
CE-139         1.319E-01      1.533E-01      1.533E-01
TL-208         2.253E-01      7.787E-02      7.787E-02
BI-212         8.389E-01      5.794E-01      5.794E-01
PB-212         9.366E-01      1.336E-01      1.336E-01
BI-214         6.679E-01      1.775E-01      1.775E-01
PB-214         7.688E-01      2.110E-01      2.110E-01
RN-222         6.679E-01      1.775E-01      1.775E-01
RA-224         3.453E-01      9.966E-01      9.966E-01
RA-226         6.679E-01      1.775E-01      1.775E-01
AC-228         9.736E-01      2.443E-01      2.443E-01
RA-228         9.736E-01      2.443E-01      2.443E-01
TH-228         9.366E-01      1.336E-01      1.336E-01
TH-230         6.677E-01      1.774E-01      1.774E-01
PA-231         6.604E-01      6.655E-01      6.655E-01
TH-232         9.736E-01      2.443E-01      2.443E-01
U-234         6.677E-01      1.774E-01      1.774E-01
U-235         4.831E-02      1.566E-01      1.566E-01
AM-243         1.021E-01      1.051E-01      1.051E-01
ANH-511        4.819E-02      6.643E-02      6.643E-02

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

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Nuclide      Key-Line
              Activity      K.L Act error      TPU
              (pCi/GRAM )      (1.96-sigma)      (1.96-sigma)
BE-7          2.251E+00      1.393E+01      1.396E+01 NOT IDENT.
NA-22         1.208E-02      3.855E-02      3.893E-02 NOT IDENT.
NA-24         1.000E+41      7.360E+41      0.000E+00 SHORT HLIF
AL-26         -1.033E-02      1.973E-02      2.027E-02 NOT IDENT.
SC-46         -8.621E-02      3.710E-01      3.730E-01 FAIL ABUN
V-48         -1.048E+04      2.509E+04      2.553E+04 SHORT HLIF

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CR-51	-4.693E+02	4.796E+02	5.242E+02	SHORT HLIF
MN-54	3.984E-03	6.251E-02	6.254E-02	NOT IDENT.
CO-56	-1.071E-02	4.907E-01	4.907E-01	NOT IDENT.
MN-56	-1.000E+41	3.439E+42	0.000E+00	SHORT HLIF
CO-57	4.350E-04	4.306E-02	4.306E-02	NOT IDENT.
CO-58	7.502E-01	5.425E-01	6.393E-01	NOT IDENT.
FE-59	3.728E+00	8.456E+00	8.622E+00	NOT IDENT.
CO-60	-1.357E-02	3.719E-02	3.769E-02	NOT IDENT.
ZN-65	6.778E-03	1.415E-01	1.415E-01	NOT IDENT.
GE-68	2.070E+00	2.330E+00	2.510E+00	NOT IDENT.
AS-73	-2.675E+00	1.011E+01	1.018E+01	NOT IDENT.
AS-74	2.573E+03	1.073E+04	1.079E+04	SHORT HLIF
SE-75	-8.750E-02	2.048E-01	2.086E-01	NOT IDENT.
BR-77	1.376E+40	1.251E+41	0.000E+00	SHORT HLIF
SR-82	1.210E+01	8.272E+02	8.272E+02	SHORT HLIF
RB-83	-7.747E-02	5.928E-01	5.938E-01	NOT IDENT.
KR-85	5.968E+00	6.155E+00	6.717E+00	NOT IDENT.
SR-85	7.378E-01	7.619E-01	8.314E-01	NOT IDENT.
RB-86	4.167E+04	4.450E+04	4.831E+04	SHORT HLIF
Y-88	3.215E-02	2.316E-01	2.321E-01	NOT IDENT.
Y-91	1.332E+02	5.795E+02	5.826E+02	NOT IDENT.
NB-94	2.102E-02	3.132E-02	3.272E-02	NOT IDENT.
NB-95	1.323E-01	9.351E-01	9.370E-01	NOT IDENT.
NB-95M	1.782E+00	2.463E+00	2.591E+00	NOT IDENT.
ZR-95	-2.318E-01	1.610E+00	1.614E+00	NOT IDENT.
NB-97	1.000E+41	1.383E+41	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	2.944E+42	0.000E+00	SHORT HLIF
MO-99	-4.416E+33	7.182E+33	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	8.984E+41	0.000E+00	SHORT HLIF
RH-101	-9.528E-04	3.162E-02	3.162E-02	NOT IDENT.
RH-102	3.375E-03	4.645E-02	4.648E-02	FAIL ABUN
RU-103	2.025E-01	6.227E+00	6.227E+00	FAIL ABUN
RH-106	-3.279E-01	4.394E-01	4.636E-01	NOT IDENT.
RU-106	-3.279E-01	4.394E-01	4.636E-01	NOT IDENT.
AG-108M	-4.500E-03	2.260E-02	2.269E-02	NOT IDENT.
AG-110M	4.260E-02	8.494E-02	8.708E-02	FAIL ABUN
SN-113	-2.090E-02	2.126E-01	2.128E-01	NOT IDENT.
CD-115	5.774E+40	2.786E+41	0.000E+00	SHORT HLIF
SN-117M	-6.967E+04	1.737E+05	1.765E+05	SHORT HLIF
TE-123M	-2.574E-02	1.175E-01	1.181E-01	NOT IDENT.
SB-124	1.221E+00	1.654E+00	1.743E+00	FAIL ABUN
SB-125	6.022E-02	1.010E-01	1.046E-01	FAIL ABUN
TE-125M	1.209E+02	2.996E+02	3.045E+02	NOT IDENT.
I-126	-1.058E+06	1.927E+06	1.986E+06	SHORT HLIF
SB-126	-5.671E+05	2.332E+06	2.346E+06	SHORT HLIF
SB-127	8.054E+22	3.002E+23	0.000E+00	SHORT HLIF
I-131	-7.539E+09	1.576E+10	1.613E+10	SHORT HLIF
I-132	-1.000E+41	1.946E+42	0.000E+00	SHORT HLIF
TE-132	-3.492E+27	9.955E+27	0.000E+00	SHORT HLIF
BA-133	-9.869E-03	3.413E-02	3.442E-02	NOT IDENT.
I-133	1.000E+41	3.751E+41	0.000E+00	SHORT HLIF
CS-134	3.225E-02	6.799E-02	6.953E-02	FAIL ABUN
CS-135	-1.342E-02	1.440E-01	1.441E-01	NOT IDENT.
I-135	-1.000E+41	2.184E+42	0.000E+00	SHORT HLIF
CS-136	-3.336E+05	4.593E+05	4.833E+05	SHORT HLIF
BA-140	3.406E+05	2.224E+06	2.230E+06	SHORT HLIF
LA-140	-1.752E+05	8.643E+05	8.679E+05	SHORT HLIF
CE-141	-1.916E+01	2.778E+01	2.910E+01	NOT IDENT.
CE-143	1.000E+41	1.261E+41	0.000E+00	SHORT HLIF
CE-144	5.756E-02	2.981E-01	2.992E-01	NOT IDENT.
PM-144	-4.602E-02	4.695E-02	5.133E-02	NOT IDENT.
PR-144	-4.000E+00	4.111E+00	4.489E+00	NOT IDENT.
PM-146	1.194E-02	3.580E-02	3.620E-02	NOT IDENT.
ND-147	-2.038E+07	6.338E+07	6.404E+07	SHORT HLIF
PM-147	4.642E+01	7.113E+02	7.116E+02	NOT IDENT.
PM-149	-1.000E+41	9.623E+40	0.000E+00	SHORT HLIF
EU-150	-6.931E-03	2.125E-02	2.148E-02	FAIL ABUN
EU-152	-1.637E-02	7.725E-02	7.760E-02	FAIL ABUN
GD-153	2.156E-02	1.643E-01	1.646E-01	FAIL ABUN
EU-154	3.822E-02	9.577E-02	9.731E-02	NOT IDENT.
EU-155	4.946E-02	1.060E-01	1.083E-01	FAIL ABUN
TB-160	8.292E-01	2.054E+00	2.087E+00	FAIL ABUN
HO-166M	2.036E-02	4.254E-02	4.352E-02	NOT IDENT.
TM-171	2.748E-01	2.331E+01	2.331E+01	NOT IDENT.
HF-172	1.131E-01	2.236E-01	2.294E-01	FAIL ABUN
LU-172	3.522E-02	6.628E-02	6.816E-02	FAIL ABUN
LU-176	-9.939E-03	1.989E-02	2.039E-02	FAIL ABUN
HF-181	-1.409E+00	4.890E+00	4.931E+00	NOT IDENT.

TA-182	-1.830E-03	8.743E-01	8.743E-01	FAIL ABUN
RE-183	-2.048E-01	3.389E+00	3.391E+00	FAIL ABUN
RE-184	-3.690E+00	3.038E+01	3.042E+01	NOT IDENT.
W-188	-8.986E+01	1.158E+02	1.227E+02	FAIL ABUN
IR-192	8.661E-02	4.353E-01	4.371E-01	FAIL ABUN
HG-203	-5.679E-01	2.352E+00	2.366E+00	NOT IDENT.
BI-207	1.311E-02	4.401E-02	4.441E-02	FAIL ABUN
PB-210	3.521E-01	4.807E+00	4.809E+00	NOT IDENT.
BI-211	2.118E+00	5.822E-01	1.118E+00	FAIL ABUN
PB-211	2.560E-01	5.633E-01	5.750E-01	NOT IDENT.
RN-219	4.562E-02	2.850E-01	2.857E-01	FAIL ABUN
RA-223	1.418E-02	4.697E-01	4.697E-01	FAIL ABUN
AC-227	4.818E-02	2.124E-01	2.135E-01	FAIL ABUN
TH-227	4.818E-02	2.124E-01	2.135E-01	FAIL ABUN
TH-229	-2.067E-01	4.154E-01	4.257E-01	FAIL ABUN
TH-231	1.418E-02	4.697E-01	4.697E-01	FAIL ABUN
PA-233	-2.122E-02	4.465E-02	4.566E-02	FAIL ABUN
PA-234	1.512E-01	2.927E-01	3.005E-01	FAIL ABUN
PA-234M	3.563E+00	4.141E+00	4.442E+00	FAIL ABUN
TH-234	8.427E-01	3.712E+00	3.731E+00	FAIL ABUN
NP-237	-2.122E-02	4.465E-02	4.566E-02	FAIL ABUN
NP-238	-1.000E+41	4.750E+41	0.000E+00	SHORT HLIF
U-238	8.427E-01	3.712E+00	3.731E+00	FAIL ABUN
NP-239	-6.923E-03	2.110E-01	2.110E-01	NOT IDENT.
PU-239	2.999E+02	4.931E+02	5.113E+02	FAIL ABUN
AM-241	1.337E-02	1.443E-01	1.444E-01	NOT IDENT.
CM-243	-1.303E-02	9.264E-02	9.282E-02	NOT IDENT.
BK-247	-8.280E-03	6.513E-02	6.524E-02	FAIL ABUN
CM-247	-5.190E-03	2.685E-02	2.695E-02	NOT IDENT.
CF-249	-1.475E-02	3.157E-02	3.227E-02	NOT IDENT.
CF-251	-2.099E-02	9.734E-02	9.780E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	43.6508	87.09	76.6525	136.47	51.5361
45.60	51.7159	87.57	76.7138	140.51	0.0000
46.54	55.6064	88.03	76.7721	143.76	50.8881
49.72	0.0000	88.34	76.8113	144.24	46.4899
51.35	45.7623	88.47	76.8276	145.44	66.5085
51.87	46.7719	89.96	77.0153	152.43	61.0929
52.39	47.7835	1093.63	77.1000	153.25	0.0000
52.97	46.8899	91.11	0.0000	323.87	45.9129
53.44	45.9820	92.59	77.3426	156.02	0.0000
54.07	45.0879	93.35	77.4359	158.56	0.0000
57.36	0.0000	94.56	77.5846	159.00	55.1691
57.53	49.2998	94.65	77.5955	162.33	57.2567
57.98	53.2179	94.67	77.5978	162.66	0.0000
59.27	55.6287	94.87	77.6224	163.33	54.3025
59.32	55.6346	97.43	54.0332	165.86	54.4526
59.54	55.6604	98.43	58.2794	176.31	51.6193
60.96	63.6164	98.44	58.2802	176.60	0.0000
61.17	66.2421	99.53	67.7597	177.52	56.2779
62.93	69.0899	100.11	67.8193	181.07	0.0000
63.29	69.1408	102.03	71.1553	181.52	62.2760
63.58	69.1815	103.18	74.4218	184.41	55.5190
64.28	69.2794	103.37	74.4430	143.76	50.9596
66.73	70.9321	105.21	74.6461	193.51	63.0258
67.24	71.0030	105.31	74.6569	197.03	57.3852
125.81	71.0640	106.12	82.1148	198.01	64.4733
67.75	71.0739	106.47	92.6896	201.83	65.8848
69.67	87.1917	109.28	60.2820	203.43	60.0932
70.83	65.5383	111.00	71.0316	205.31	55.0848
72.81	74.7528	111.76	0.0000	210.85	33.2209
72.87	74.7614	114.06	61.7551	215.65	48.8589
74.66	75.0086	116.30	0.0000	222.11	49.1423
74.82	75.0309	116.74	54.1476	227.09	49.7594
74.97	75.0515	119.76	55.8011	227.38	48.1665
77.11	75.3433	121.12	44.4360	228.16	0.0000
78.74	64.4800	121.22	50.1765	228.18	51.4134
79.69	76.6987	121.78	50.2139	116.74	51.4134
80.12	79.4499	122.06	53.1032	235.69	46.0872
80.19	0.0000	122.92	63.5810	235.96	46.0980
80.57	63.3403	123.07	63.5936	238.63	46.2023
81.00	55.2956	265.00	66.8811	238.98	0.0000
81.07	55.3023	125.81	60.5784	240.99	46.2939
81.75	85.0773	127.23	63.5801	242.00	46.3334
83.79	93.5070	127.91	67.9749	244.70	24.4406
84.00	93.5400	129.30	61.9384	252.40	0.0000
85.43	76.4402	131.20	56.6433	252.80	44.2864
86.55	76.5839	133.02	42.5801	254.15	0.0000
86.79	76.6142	133.52	52.4392	256.23	44.4089
86.94	76.6336	136.00	63.5605	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	44.7067	355.39	0.0000	584.27	10.4462
264.80	42.2281	356.01	27.8092	595.83	0.0000
265.00	42.2344	364.49	0.0000	427.87	18.0359
268.22	48.1516	366.42	0.0000	602.52	0.0000
269.46	41.1352	372.51	22.2992	604.72	22.5842
270.03	41.1533	375.05	33.9473	607.14	15.0720
271.23	41.6077	377.52	27.7355	609.32	22.1262
273.65	0.0000	356.01	34.1290	610.33	22.1352
276.40	45.9497	388.16	33.3167	614.28	16.6296
277.37	47.6554	388.63	0.0000	618.01	17.1605
277.60	47.6635	391.69	29.7773	620.36	14.1458
278.00	35.9681	264.66	20.8634	621.93	22.2444
279.20	40.1865	401.81	21.7847	630.19	0.0000
279.54	43.5470	402.40	25.4246	631.29	14.2108
279.70	41.0397	404.85	25.4604	633.25	16.2539
280.46	35.1965	410.95	31.0249	634.78	0.0000
283.69	34.4419	413.71	31.0733	635.95	12.2041
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	36.1684	423.72	0.0000	645.85	12.2534
285.90	0.0000	427.09	24.8621	657.76	15.3906
287.50	25.2728	427.87	23.4912	657.90	0.0000
290.67	44.3311	433.94	24.9565	661.66	23.6364
293.27	0.0000	439.40	21.3224	664.57	0.0000
351.93	27.9579	453.88	20.5547	666.33	0.0000
295.96	27.9727	463.37	16.9017	666.50	0.0000
879.38	20.3823	468.07	22.5908	667.71	0.0000
299.98	30.6042	473.00	0.0000	677.62	16.5469
300.09	30.6072	475.06	23.6170	685.70	0.0000
300.13	30.6079	476.78	25.5289	695.00	0.0000
301.36	38.2938	477.60	26.4858	696.49	21.8776
302.85	38.3340	482.18	26.5474	696.51	21.8776
256.23	28.1445	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	14.5896
306.78	40.1497	497.08	21.0153	697.49	14.5907
308.46	30.7896	505.52	23.0215	702.65	15.6635
311.90	33.4355	507.63	0.0000	706.68	14.1191
316.51	32.6825	511.00	24.0448	711.68	10.4781
319.41	0.0000	514.00	15.8924	720.70	0.0000
320.08	0.0000	514.00	15.8924	721.93	0.0000
321.04	30.1963	520.40	19.3229	722.78	26.5156
323.87	32.8480	520.69	0.0000	722.91	26.5166
325.23	32.8781	522.65	0.0000	723.31	20.5220
328.76	0.0000	527.90	0.0000	724.19	15.7916
333.37	34.7982	528.26	17.4565	727.33	30.0389
333.97	35.5083	529.59	15.5267	733.00	20.0677
334.37	30.0331	529.87	0.0000	735.93	15.8600
338.28	32.2929	531.02	0.0000	333.97	12.6953
338.32	32.2937	537.26	0.0000	739.50	0.0000
311.90	26.2213	546.56	0.0000	747.24	15.9259
340.48	26.2213	552.55	10.7892	748.06	7.4344
340.55	0.0000	563.25	19.2191	752.31	24.4646
344.28	31.5439	569.33	19.7664	753.82	0.0000
345.93	30.2619	946.00	19.7681	756.73	19.1770
351.06	32.5617	569.70	18.7812	756.80	19.1777
351.93	32.5798	583.19	25.8551	884.68	16.0223

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	14.4300	1274.44	11.5108	1620.50	3.0031
766.42	22.4509	1001.03	9.2214	1621.92	8.0103
766.84	22.4543	1002.74	16.1453	1678.03	0.0000
772.60	0.0000	1004.73	13.8467	1690.97	1.0148
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	1.0287
778.90	8.5908	1028.54	0.0000	1063.66	7.2089
783.70	0.0000	1037.84	10.4839	1771.35	3.0901
785.37	11.3011	1038.76	0.0000	1791.20	0.0000
792.07	17.8005	631.29	10.5095	1808.65	3.1111
794.95	16.1981	1048.07	0.0000	1810.72	0.0000
795.86	8.1018	1049.04	10.5168	1836.06	4.1685
810.06	11.7237	1050.41	7.8904		
810.29	10.4219	1063.66	12.3192		
344.28	8.6852	1077.00	0.0000		
810.76	5.4289	1077.34	10.5989		
815.77	0.0000	1085.87	9.7385		
1048.07	0.0000	1093.63	9.7586		
832.01	12.0299	1099.45	14.2168		
834.85	17.5143	1112.07	13.3731		
835.71	17.5195	1112.84	14.2676		
836.80	0.0000	1115.54	8.5670		
846.75	0.0000	1120.29	15.1894		
846.77	15.3860	1120.55	15.1904		
856.80	0.0000	1221.41	15.1935		
860.56	8.8319	1129.67	10.7490		
871.09	11.0775	1131.51	0.0000		
873.19	14.4108	1147.95	0.0000		
875.33	0.0000	1173.23	7.2471		
879.38	13.3286	1177.95	10.8838		
880.51	8.8890	1189.05	10.9146		
883.24	17.7936	1204.77	13.6972		
884.68	8.9007	1221.41	13.7540		
889.28	12.2568	1231.02	18.3826		
894.76	13.3940	1235.36	0.0000		
898.04	12.2909	1238.28	11.9701		
900.72	14.5377	1260.41	0.0000		
903.28	10.0726	1271.87	10.2111		
911.20	10.0975	1274.44	8.3595		
912.08	10.1005	1274.54	8.3595		
923.98	0.0000	1291.59	6.5283		
926.50	6.7637	1298.22	0.0000		
929.11	11.2821	1312.11	0.0000		
937.49	18.0977	1332.49	12.2407		
944.13	0.0000	1362.66	0.0000		
946.00	9.0723	1365.19	6.6403		
949.00	13.6206	1368.63	0.0000		
667.71	0.0000	1384.29	2.8581		
962.31	5.1282	1408.01	4.5973		
964.08	4.5609	1457.56	0.0000		
966.17	4.5636	1460.82	5.8129		
911.20	4.5674	1489.16	3.8984		
968.97	4.5674	1505.03	10.9525		
983.53	0.0000	1584.12	7.9507		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:18:21.50

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235036.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM36.CNF;52
Sample date      : 23-NOV-2015 11:12:00      Background date : 2-OCT-2016 11:02:08.
Sample ID        : G405235036                Acquisition date  : 3-OCT-2016 09:16:44.
Detector name    : GAM36                     Sample quantity   : 1.62257E+02 GRAM
Elapsed live time: 0 01:00:00.00             Detector geometry:  CAN
Energy tolerance : 1.50000 keV               Elapsed real time:  0 01:00:00.33   0.0%
Abundance limit  : 75.00000                  Analyst Initials   :  MXR1
Batch ID         : 1596249                    Sensitivity        :  3.00000
Matrix Spike ID  :                           Detector SN#      :
LCS ID           :                           LCS ID         : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	74.95*	71	98	0.87	149.88	146	12	1.98E-02	23.6	1.27E+00
2	1	77.10*	142	98	0.93	154.17	146	12	3.93E-02	14.4	
3	0	87.19	70	103	1.37	174.36	172	7	1.94E-02	26.7	
4	0	92.82*	40	128	1.50	185.62	182	8	1.11E-02	54.0	
5	0	137.93	30	71	1.27	275.85	272	8	8.20E-03	53.0	
6	0	147.89	22	44	0.75	295.77	293	6	6.02E-03	53.8	
7	0	186.09*	42	106	0.86	372.16	367	10	1.16E-02	50.7	
8	0	209.98	24	77	1.49	419.94	414	10	6.72E-03	71.0	
9	5	238.63*	256	31	0.93	477.25	472	16	7.12E-02	7.4	1.08E+00
10	5	241.61	71	38	1.78	483.20	472	16	1.96E-02	21.3	
11	0	245.61	22	30	1.35	491.21	488	7	6.11E-03	46.4	
12	0	270.50	26	49	0.77	540.98	536	8	7.11E-03	51.7	
13	0	295.45*	90	58	1.08	590.88	585	12	2.50E-02	20.3	
14	0	300.31	32	41	0.59	600.60	597	10	8.89E-03	41.1	
15	0	305.63	10	29	1.40	611.24	606	9	2.64E-03	112.4	
16	0	338.51	46	66	1.85	677.00	669	14	1.27E-02	40.7	
17	0	349.45	10	21	1.16	698.88	692	8	2.79E-03	86.2	
18	0	351.99*	137	33	1.28	703.96	700	10	3.81E-02	11.6	
19	0	409.99	19	22	1.70	819.95	815	10	5.20E-03	52.7	
20	0	464.25	11	35	1.29	928.46	923	12	2.99E-03	112.0	
21	5	515.57	16	12	2.21	1031.10	1014	22	4.52E-03	57.1	1.07E+00
22	0	538.68	12	36	5.95	1077.29	1062	18	3.45E-03	116.7	
23	0	543.65	22	7	2.36	1087.24	1083	10	6.09E-03	31.5	
24	0	562.29	8	1	0.71	1124.52	1123	5	2.13E-03	45.4	
25	0	583.75*	59	34	1.17	1167.42	1161	13	1.65E-02	24.2	
26	0	603.12	15	8	1.84	1206.16	1200	11	4.16E-03	45.1	
27	0	609.47*	106	8	1.28	1218.86	1214	11	2.95E-02	11.5	
28	0	727.30	22	11	0.77	1454.47	1450	10	6.19E-03	34.2	
29	0	900.61	13	0	0.83	1801.00	1797	8	3.61E-03	27.7	
30	0	905.40*	10	2	2.72	1810.56	1806	9	2.72E-03	45.1	
31	0	911.55*	50	5	2.04	1822.86	1818	10	1.39E-02	17.0	
32	4	966.14	9	7	1.83	1932.00	1930	12	2.62E-03	42.8	1.71E+00
33	4	969.14	15	7	1.68	1938.00	1930	12	4.25E-03	44.3	
34	0	1120.69*	27	8	2.39	2240.98	2233	16	7.60E-03	30.5	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1280.68*	5	9	0.47	2560.83	2554	9	1.52E-03	109.5	
36	0	1291.10	7	2	1.38	2581.65	2578	7	2.01E-03	48.1	
37	0	1461.09*	164	7	2.06	2921.44	2914	13	4.57E-02	8.5	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235036.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 23-NOV-2015 11:12:00 Acquisition date : 3-OCT-2016 09:16:44
 Sample ID : G405235036 Sample quantity : 162.26 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA36 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.33 0.0%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	6.546E-01	1.060E+01	1.060E+01	17.07	OK
CD-109	88.03	3.70*	4.292E+00	1.850E+00	2.970E+00	80.29	OK
SN-126	64.28	9.60	2.567E+00	----- Line	Not Found	-----	Absent
	86.94	8.90	4.292E+00	7.693E-01	7.693E-01	80.29	OK
	87.57	37.00*	4.292E+00	1.850E-01	1.850E-01	80.29	OK
TL-208	277.37	6.60	3.041E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	1.495E+00	2.349E-01	2.349E-01	48.40	OK
	860.56	12.50	1.058E+00	----- Line	Not Found	-----	Absent
PB-212	74.82	10.28	3.493E+00	7.135E-01	7.135E-01	87.15	OK
	77.11	17.10	3.655E+00	1.410E+00	1.410E+00	28.78	OK
	238.63	43.60*	3.499E+00	9.340E-01	9.340E-01	14.72	OK
	300.09	3.30	2.817E+00	1.868E+00	1.868E+00	82.17	OK
BI-214	609.32	45.49*	1.437E+00	8.142E-01	8.145E-01	22.99	OK
	1120.29	14.92	8.369E-01	1.019E+00	1.019E+00	60.99	OK
	1764.49	15.30	5.419E-01	----- Line	Not Found	-----	Absent
PB-214	74.82	5.80	3.482E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.655E+00	2.485E+00	2.486E+00	28.78	OK
	87.09	3.41	4.287E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	3.455E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	2.862E+00	9.287E-01	9.290E-01	40.66	OK
	351.93	35.60*	2.414E+00	8.501E-01	8.504E-01	23.27	OK
RN-222	609.32	45.49*	1.437E+00	8.142E-01	8.145E-01	22.99	OK
	1120.29	14.92	8.369E-01	1.019E+00	1.019E+00	60.99	OK
	1764.49	15.30	5.419E-01	----- Line	Not Found	-----	Absent
RA-224	240.99	4.10*	3.460E+00	1.123E+00	1.123E+00	120.72	OK
RA-226	609.32	45.49*	1.437E+00	8.142E-01	8.145E-01	22.99	OK
	1120.29	14.92	8.369E-01	1.019E+00	1.019E+00	60.99	OK
	1764.49	15.30	5.419E-01	----- Line	Not Found	-----	Absent
AC-228	105.21	1.10	4.933E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	2.507E+00	8.644E-01	8.644E-01	81.42	OK
	794.95	4.25	1.134E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.085E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.005E+00	9.219E-01	9.219E-01	34.07	OK
	968.97	15.80	9.524E-01	4.816E-01	4.816E-01	88.69	OK
RA-228	105.21	1.10	4.933E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	2.507E+00	8.644E-01	8.644E-01	81.42	OK
	794.95	4.25	1.134E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.085E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.005E+00	9.219E-01	9.219E-01	34.07	OK
	968.97	15.80	9.524E-01	4.816E-01	4.816E-01	88.69	OK
TH-228	74.82	10.28	3.493E+00	7.135E-01	7.135E-01	87.15	OK
	77.11	17.10	3.655E+00	1.410E+00	1.410E+00	28.78	OK
	238.63	43.60*	3.499E+00	9.340E-01	9.340E-01	14.72	OK
	300.09	3.30	2.817E+00	1.868E+00	1.868E+00	82.17	OK
TH-230	609.32	45.49*	1.437E+00	8.142E-01	8.142E-01	22.99	OK
	1120.29	14.92	8.369E-01	1.019E+00	1.019E+00	60.99	OK
	1764.49	15.30	5.419E-01	----- Line	Not Found	-----	Absent
PA-231	283.69	1.70	2.976E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	2.817E+00	1.152E+00	1.152E+00	82.17	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-232	105.21	1.10	4.933E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	2.507E+00	8.644E-01	8.644E-01	81.42	OK
	835.71	1.61	1.085E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.005E+00	9.219E-01	9.219E-01	34.07	OK
	968.97	15.80	9.524E-01	4.816E-01	4.816E-01	88.69	OK
U-234	609.32	45.49*	1.437E+00	8.142E-01	8.142E-01	22.99	OK
	1120.29	14.92	8.369E-01	1.019E+00	1.019E+00	60.99	OK
	1764.49	15.30	5.419E-01	----- Line	Not Found	-----	Absent
	43.53	5.90	5.957E-01	----- Line	Not Found	-----	Absent
AM-243	74.66	67.20*	3.493E+00	1.091E-01	1.092E-01	87.15	OK

Flag: "*" = Keyline


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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235036.CNF;1
* Acquisition date   : 3-OCT-2016 09:16:44 Sensitivity      : 3.000
* Detector ID        : GAM36 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.33 Half life ratio : *****
* Sample date        : 23-NOV-2015 11:12:00 Analyst initials: MXR1
* Sample ID          : G405235036 Sample Quantity : 1.6226E+02 GRAM
* Batch Number       : 1596249 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight       : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 1-JUN-2016 09:39:12 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM36 CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.060E+01	1.773E+00	7.126E-01
CD-109	2.970E+00	2.337E+00	2.096E+00
SN-126	1.850E-01	1.456E-01	1.313E-01
TL-208	2.349E-01	1.114E-01	5.556E-02
PB-212	9.340E-01	1.347E-01	9.819E-02
BI-214	8.145E-01	1.835E-01	1.360E-01
PB-214	8.504E-01	1.939E-01	1.167E-01
RN-222	8.145E-01	1.835E-01	1.360E-01
RA-224	1.123E+00	1.329E+00	1.054E+00
RA-226	8.145E-01	1.835E-01	1.360E-01
AC-228	9.219E-01	3.078E-01	2.486E-01
RA-228	9.219E-01	3.078E-01	2.486E-01
TH-228	9.340E-01	1.347E-01	9.819E-02
TH-230	8.142E-01	1.835E-01	1.359E-01
PA-231	1.152E+00	9.281E-01	6.582E-01
TH-232	9.219E-01	3.078E-01	2.486E-01
U-234	8.142E-01	1.835E-01	1.359E-01
AM-243	1.092E-01	9.322E-02	8.170E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.064E+01	1.355E+01	2.471E+01	NOT IDENT.
NA-22	3.170E-02	5.942E-02	1.290E-01	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	3.627E-02	4.312E-02	1.172E-01	NOT IDENT.
SC-46	2.299E-01	4.645E-01	1.052E+00	FAIL ABUN
V-48	0.000E+00	3.529E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	6.254E+02	0.000E+00	SHORT HLIF
MN-54	1.838E-02	7.036E-02	1.509E-01	NOT IDENT.
CO-56	-3.226E-02	5.935E-01	1.195E+00	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	2.380E-02	3.952E-02	8.466E-02	FAIL ABUN
CO-58	-1.390E-01	7.991E-01	1.559E+00	NOT IDENT.

FE-59	9.008E-01	8.271E+00	1.861E+01	FAIL ABUN
CO-60	-2.800E-02	4.645E-02	8.517E-02	NOT IDENT.
ZN-65	-5.428E-02	2.233E-01	3.929E-01	NOT IDENT.
GE-68	3.071E+00	3.110E+00	7.350E+00	NOT IDENT.
AS-73	-3.276E+00	7.927E+00	1.631E+01	NOT IDENT.
AS-74	0.000E+00	1.195E+04	0.000E+00	SHORT HLIF
SE-75	-1.110E-01	2.086E-01	3.721E-01	NOT IDENT.
BR-77	0.000E+00	1.977E+39	0.000E+00	SHORT HLIF
SR-82	0.000E+00	1.131E+03	0.000E+00	SHORT HLIF
RB-83	-1.912E-01	8.405E-01	1.607E+00	NOT IDENT.
KR-85	6.430E+00	7.474E+00	1.698E+01	NOT IDENT.
SR-85	7.952E-01	9.253E-01	2.102E+00	NOT IDENT.
RB-86	0.000E+00	6.654E+04	0.000E+00	SHORT HLIF
Y-88	-7.376E-03	2.799E-01	6.479E-01	NOT IDENT.
Y-91	4.011E+02	7.878E+02	1.777E+03	NOT IDENT.
NB-94	1.108E-02	3.145E-02	6.887E-02	NOT IDENT.
NB-95	-1.178E-01	1.104E+00	2.183E+00	NOT IDENT.
NB-95M	1.968E+00	2.817E+00	5.479E+00	NOT IDENT.
ZR-95	1.042E+00	1.878E+00	4.217E+00	NOT IDENT.
NB-97	0.000E+00	1.718E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.913E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	9.814E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-1.598E-02	3.391E-02	6.459E-02	NOT IDENT.
RH-102	1.880E-02	7.656E-02	1.591E-01	NOT IDENT.
RU-103	-1.082E+00	6.248E+00	1.296E+01	FAIL ABUN
RH-106	9.562E-02	5.111E-01	1.109E+00	NOT IDENT.
RU-106	9.562E-02	5.111E-01	1.109E+00	NOT IDENT.
AG-108M	-5.279E-03	2.571E-02	5.252E-02	NOT IDENT.
AG-110M	3.206E-02	9.701E-02	2.211E-01	NOT IDENT.
SN-113	1.611E-01	2.368E-01	5.396E-01	NOT IDENT.
CD-115	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.982E+05	0.000E+00	SHORT HLIF
TE-123M	-7.255E-02	1.257E-01	2.334E-01	NOT IDENT.
SB-124	6.176E-01	2.853E+00	6.988E+00	NOT IDENT.
SB-125	1.210E-01	1.242E-01	2.806E-01	FAIL ABUN
TE-125M	1.274E+02	3.096E+02	6.431E+02	NOT IDENT.
I-126	0.000E+00	2.122E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	3.012E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	4.174E+23	0.000E+00	SHORT HLIF
I-131	0.000E+00	2.142E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.394E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.056E+28	0.000E+00	SHORT HLIF
BA-133	-3.443E-03	4.624E-02	7.943E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	6.324E-02	5.968E-02	1.407E-01	FAIL ABUN
CS-135	6.958E-02	1.497E-01	2.835E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	6.074E+05	0.000E+00	SHORT HLIF
BA-137M	1.080E-02	3.802E-02	8.088E-02	NOT IDENT.
CS-137	1.141E-02	4.016E-02	8.544E-02	NOT IDENT.
CE-139	-1.998E-02	1.070E-01	2.065E-01	NOT IDENT.
BA-140	0.000E+00	1.003E+07	0.000E+00	SHORT HLIF
LA-140	0.000E+00	1.224E+06	0.000E+00	SHORT HLIF
CE-141	-6.765E+00	3.143E+01	5.496E+01	NOT IDENT.
CE-143	0.000E+00	1.726E+41	0.000E+00	SHORT HLIF
CE-144	1.124E-01	3.258E-01	6.706E-01	NOT IDENT.
PM-144	2.471E-03	6.715E-02	1.358E-01	NOT IDENT.
PR-144	2.396E-01	5.884E+00	1.191E+01	NOT IDENT.
PM-146	1.672E-02	4.152E-02	9.215E-02	NOT IDENT.
ND-147	0.000E+00	1.051E+08	0.000E+00	SHORT HLIF
PM-147	3.096E+02	7.296E+02	1.523E+03	NOT IDENT.
PM-149	0.000E+00	1.409E+41	0.000E+00	SHORT HLIF
EU-150	5.709E-03	3.261E-02	5.769E-02	FAIL ABUN
EU-152	-6.003E-02	1.197E-01	1.872E-01	FAIL ABUN
GD-153	-1.144E-01	1.635E-01	3.115E-01	NOT IDENT.
EU-154	6.950E-02	1.426E-01	3.077E-01	NOT IDENT.
EU-155	-1.761E-02	8.967E-02	1.793E-01	FAIL ABUN
TB-160	2.992E-01	2.082E+00	4.508E+00	FAIL ABUN
HO-166M	-1.913E-02	5.611E-02	1.080E-01	FAIL ABUN
TM-171	2.088E+00	1.620E+01	3.503E+01	NOT IDENT.
HF-172	1.068E-01	2.175E-01	4.515E-01	NOT IDENT.
LU-172	3.250E-02	8.303E-02	1.852E-01	FAIL ABUN
LU-176	1.985E-02	4.371E-02	3.638E-02	FAIL ABUN
HF-181	-3.044E+00	5.261E+00	9.995E+00	NOT IDENT.
TA-182	8.676E-01	1.177E+00	2.777E+00	FAIL ABUN
RE-183	-5.533E-01	2.781E+00	5.793E+00	NOT IDENT.
RE-184	2.855E+01	2.503E+01	7.678E+01	NOT IDENT.

W-188	7.686E+01	1.278E+02	2.514E+02	NOT IDENT.
IR-192	-4.386E-02	5.485E-01	1.033E+00	FAIL ABUN
HG-203	-2.129E+00	2.928E+00	5.016E+00	NOT IDENT.
BI-207	1.217E-03	5.013E-02	1.032E-01	FAIL ABUN
PB-210	1.423E-01	2.128E+00	4.604E+00	NOT IDENT.
BI-211	0.000E+00	5.342E-01	8.095E-01	FAIL ABUN
PB-211	3.558E-01	7.958E-01	1.656E+00	NOT IDENT.
BI-212	1.336E+00	8.951E-01	1.624E+00	FAIL ABUN
RN-219	5.605E-02	3.895E-01	8.222E-01	FAIL ABUN
RA-223	-3.544E-01	6.451E-01	1.119E+00	FAIL ABUN
AC-227	-3.757E-02	2.338E-01	4.388E-01	FAIL ABUN
TH-227	-3.757E-02	2.338E-01	4.388E-01	FAIL ABUN
TH-229	-3.053E-01	4.171E-01	7.455E-01	FAIL ABUN
TH-231	-3.544E-01	6.451E-01	1.119E+00	FAIL ABUN
PA-233	1.871E-02	6.343E-02	1.254E-01	FAIL ABUN
PA-234	1.488E-01	2.550E-01	6.124E-01	NOT IDENT.
PA-234M	3.609E+00	4.654E+00	1.117E+01	NOT IDENT.
TH-234	-1.884E-01	1.035E+00	2.145E+00	FAIL ABUN
U-235	4.722E-02	1.592E-01	3.157E-01	FAIL ABUN
NP-237	1.871E-02	6.343E-02	1.254E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
U-238	-1.884E-01	1.035E+00	2.145E+00	FAIL ABUN
NP-239	-8.077E-02	2.142E-01	4.165E-01	NOT IDENT.
PU-239	2.454E+02	2.999E+02	6.329E+02	NOT IDENT.
AM-241	2.294E-02	1.074E-01	2.313E-01	NOT IDENT.
CM-243	-2.489E-02	8.694E-02	1.720E-01	NOT IDENT.
BK-247	-1.090E-02	6.476E-02	1.227E-01	NOT IDENT.
CM-247	-4.952E-03	3.793E-02	7.696E-02	NOT IDENT.
CF-249	8.157E-04	3.414E-02	7.213E-02	NOT IDENT.
CF-251	4.614E-03	1.028E-01	2.027E-01	NOT IDENT.
ANH-511	-1.687E-02	4.760E-02	1.088E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	160	10.66*	6.546E-01	1.060E+01	1.060E+01	17.07
CD-109	88.03	93	3.70*	4.292E+00	2.706E+00	4.344E+00	53.37
SN-126	64.28	-----	9.60	2.567E+00	-----	Line Not Found	-----
	86.94	93	8.90	4.292E+00	1.125E+00	1.125E+00	53.37
	87.57	93	37.00*	4.292E+00	2.706E-01	2.706E-01	53.37
TL-208	277.37	-----	6.60	3.041E+00	-----	Line Not Found	-----
	583.19	64	85.00*	1.495E+00	2.349E-01	2.349E-01	48.40
	860.56	-----	12.50	1.058E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.327E+00	-----	Line Not Found	-----
	351.06	158	12.92*	2.414E+00	2.342E+00	2.342E+00	23.27
PB-212	74.82	96	10.28	3.493E+00	1.237E+00	1.237E+00	47.20
	77.11	190	17.10	3.655E+00	1.410E+00	1.410E+00	28.78
	238.63	308	43.60*	3.499E+00	9.340E-01	9.340E-01	14.72
	300.09	38	3.30	2.817E+00	1.868E+00	1.868E+00	82.17
BI-214	609.32	115	45.49*	1.437E+00	8.142E-01	8.142E-01	22.99
	1120.29	27	14.92	8.369E-01	1.019E+00	1.019E+00	60.99
	1764.49	-----	15.30	5.419E-01	-----	Line Not Found	-----
PB-214	74.82	96	5.80	3.493E+00	2.193E+00	2.194E+00	47.20
	77.11	190	9.70	3.655E+00	2.485E+00	2.486E+00	28.78
	87.09	93	3.41	4.292E+00	2.936E+00	2.938E+00	53.37
	242.00	85	7.25	3.460E+00	1.564E+00	1.564E+00	42.68
	295.22	106	18.42	2.862E+00	9.287E-01	9.290E-01	40.66
	351.93	158	35.60*	2.414E+00	8.501E-01	8.504E-01	23.27
RN-222	609.32	115	45.49*	1.437E+00	8.142E-01	8.145E-01	22.99
	1120.29	27	14.92	8.369E-01	1.019E+00	1.019E+00	60.99
	1764.49	-----	15.30	5.419E-01	-----	Line Not Found	-----
RA-224	240.99	85	4.10*	3.460E+00	2.765E+00	2.765E+00	42.68
RA-226	609.32	115	45.49*	1.437E+00	8.142E-01	8.145E-01	22.99
	1120.29	27	14.92	8.369E-01	1.019E+00	1.019E+00	60.99
	1764.49	-----	15.30	5.419E-01	-----	Line Not Found	-----
AC-228	105.21	-----	1.10	4.933E+00	-----	Line Not Found	-----
	338.32	53	11.27	2.507E+00	8.644E-01	8.644E-01	81.42
	794.95	-----	4.25	1.134E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.085E+00	-----	Line Not Found	-----
	911.20	52	25.80*	1.005E+00	9.219E-01	9.219E-01	34.07
	968.97	16	15.80	9.524E-01	4.816E-01	4.816E-01	88.69
RA-228	105.21	-----	1.10	4.933E+00	-----	Line Not Found	-----
	338.32	53	11.27	2.507E+00	8.644E-01	8.644E-01	81.42
	794.95	-----	4.25	1.134E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.085E+00	-----	Line Not Found	-----
	911.20	52	25.80*	1.005E+00	9.219E-01	9.219E-01	34.07
	968.97	16	15.80	9.524E-01	4.816E-01	4.816E-01	88.69
TH-228	74.82	96	10.28	3.493E+00	1.237E+00	1.237E+00	47.20
	77.11	190	17.10	3.655E+00	1.410E+00	1.410E+00	28.78
	238.63	308	43.60*	3.499E+00	9.340E-01	9.340E-01	14.72
	300.09	38	3.30	2.817E+00	1.868E+00	1.868E+00	82.17
TH-230	609.32	115	45.49*	1.437E+00	8.142E-01	8.142E-01	22.99

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	1120.29	27	14.92	8.369E-01	1.019E+00	1.019E+00	60.99
	1764.49	-----	15.30	5.419E-01	-----	Line Not Found	-----
PA-231	283.69	-----	1.70	2.976E+00	-----	Line Not Found	-----
	301.36	38	5.35*	2.817E+00	1.152E+00	1.152E+00	82.17
TH-232	105.21	-----	1.10	4.933E+00	-----	Line Not Found	-----
	338.32	53	11.27	2.507E+00	8.644E-01	8.644E-01	81.42
	835.71	-----	1.61	1.085E+00	-----	Line Not Found	-----
	911.20	52	25.80*	1.005E+00	9.219E-01	9.219E-01	34.07
	968.97	16	15.80	9.524E-01	4.816E-01	4.816E-01	88.69
U-234	609.32	115	45.49*	1.437E+00	8.142E-01	8.142E-01	22.99
	1120.29	27	14.92	8.369E-01	1.019E+00	1.019E+00	60.99
	1764.49	-----	15.30	5.419E-01	-----	Line Not Found	-----
AM-243	43.53	-----	5.90	5.957E-01	-----	Line Not Found	-----
	74.66	96	67.20*	3.493E+00	1.893E-01	1.893E-01	47.20

Flag: "*" = Keyline

Total number of lines in spectrum 37
Number of unidentified lines 6
Number of lines tentatively identified by NID 31 83.78%

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	1.060E+01	1.060E+01	0.181E+01	17.07	
CD-109	461.40D	1.61	2.706E+00	4.344E+00	2.318E+00	53.37	
SN-126	2.30E+05Y	1.00	2.706E-01	2.706E-01	1.444E-01	53.37	
TL-208	1.41E+10Y	1.00	2.349E-01	2.349E-01	1.137E-01	48.40	
BI-211	7.04E+08Y	1.00	2.342E+00	2.342E+00	0.545E+00	23.27	
PB-212	1.41E+10Y	1.00	9.340E-01	9.340E-01	1.375E-01	14.72	
BI-214	1600.00Y	1.00	8.142E-01	8.145E-01	1.873E-01	22.99	
PB-214	1600.00Y	1.00	8.501E-01	8.504E-01	1.979E-01	23.27	
RN-222	1600.00Y	1.00	8.142E-01	8.145E-01	1.873E-01	22.99	
RA-224	1.41E+10Y	1.00	2.765E+00	2.765E+00	1.180E+00	42.68	
RA-226	1600.00Y	1.00	8.142E-01	8.145E-01	1.873E-01	22.99	
AC-228	1.41E+10Y	1.00	9.219E-01	9.219E-01	3.141E-01	34.07	
RA-228	1.41E+10Y	1.00	9.219E-01	9.219E-01	3.141E-01	34.07	
TH-228	1.41E+10Y	1.00	9.340E-01	9.340E-01	1.375E-01	14.72	
TH-230	7.54E+04Y	1.00	8.142E-01	8.142E-01	1.872E-01	22.99	
PA-231	7.04E+08Y	1.00	1.152E+00	1.152E+00	0.947E+00	82.17	
TH-232	1.41E+10Y	1.00	9.219E-01	9.219E-01	3.141E-01	34.07	
U-234	2.45E+05Y	1.00	8.142E-01	8.142E-01	1.872E-01	22.99	
AM-243	7370.00Y	1.00	1.893E-01	1.893E-01	0.894E-01	47.20	

Total Activity : 2.982E+01 3.146E+01

Grand Total Activity : 2.982E+01 3.146E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.82	53	169	1.50	185.62	182	8	1.11E-02	****	4.56E+00	T
0	137.93	38	91	1.27	275.85	272	8	8.20E-03	****	5.02E+00	T
0	147.89	27	56	0.75	295.77	293	6	6.02E-03	****	4.90E+00	
0	186.09	51	131	0.86	372.16	367	10	1.16E-02	****	4.30E+00	T
0	209.98	29	94	1.49	419.94	414	10	6.72E-03	****	3.91E+00	T
0	245.61	26	36	1.35	491.21	488	7	6.11E-03	92.8	3.41E+00	T
0	270.50	30	59	0.77	540.98	536	8	7.11E-03	****	3.11E+00	T
0	305.63	11	33	1.40	611.24	606	9	2.64E-03	****	2.77E+00	T
0	349.45	12	24	1.16	698.88	692	8	2.79E-03	****	2.43E+00	
0	409.99	21	25	1.70	819.95	815	10	5.20E-03	****	2.08E+00	T
0	464.25	12	39	1.29	928.46	923	12	2.99E-03	****	1.85E+00	T
5	515.57	18	14	2.21	1031.10	1014	22	4.52E-03	****	1.68E+00	
0	538.68	14	39	5.95	1077.29	1062	18	3.45E-03	****	1.61E+00	T
0	543.65	24	8	2.36	1087.24	1083	10	6.09E-03	63.0	1.60E+00	
0	562.29	8	1	0.71	1124.52	1123	5	2.13E-03	90.8	1.55E+00	T
0	603.12	16	9	1.84	1206.16	1200	11	4.16E-03	90.3	1.45E+00	T
0	727.30	24	11	0.77	1454.47	1450	10	6.19E-03	68.4	1.23E+00	T
0	900.61	13	0	0.83	1801.00	1797	8	3.61E-03	55.5	1.02E+00	T
0	905.40	10	2	2.72	1810.56	1806	9	2.72E-03	90.2	1.01E+00	
4	966.14	10	7	1.83	1932.00	1930	12	2.62E-03	85.5	9.55E-01	T
0	1280.68	5	9	0.47	2560.83	2554	9	1.52E-03	****	7.41E-01	
0	1291.10	7	2	1.38	2581.65	2578	7	2.01E-03	96.2	7.36E-01	T

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235036.CNF;1  *
* Acquisition date   : 3-OCT-2016 09:16:44 Sensitivity      : 3.000          *
* Detector ID        : GAM36 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 01:00:00.33 Half life ratio : *****      *
* Sample date        : 23-NOV-2015 11:12:00 Nuclide Library : SOLID      *
* Sample ID          : G405235036 Analyst initials: MXR1        *
* Batch Number       : 1596249 Sample Quantity : 1.6226E+02 GRAM  *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000          *
*                    : Dry Weight : 0.00000                    *
*****
*                                     CALIBRATION INFORMATION                  *
*
* Eff. Cal. date     : 1-JUN-2016 09:39:12 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM36 CAN.CNF;7          *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.657E-01
CD-109	9.797E-01
SN-126	6.136E-02
TL-208	2.267E-02
PB-212	4.474E-02
BI-214	5.806E-02
PB-214	5.069E-02
RN-222	5.806E-02
RA-224	4.805E-01
RA-226	5.806E-02
AC-228	9.958E-02
RA-228	9.958E-02
TH-228	4.474E-02
TH-230	5.804E-02
PA-231	2.851E-01
TH-232	9.958E-02
U-234	5.804E-02
AM-243	3.791E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.026E+01	NOT IDENT.
NA-22	5.380E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	4.667E-02	NOT IDENT.
SC-46	4.416E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	6.354E-02	NOT IDENT.
CO-56	4.963E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	3.887E-02	FAIL ABUN
CO-58	6.532E-01	NOT IDENT.
FE-59	7.515E+00	FAIL ABUN

CO-60	3.264E-02	NOT IDENT.
ZN-65	1.598E-01	NOT IDENT.
GE-68	3.164E+00	NOT IDENT.
AS-73	7.481E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.641E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.938E-01	NOT IDENT.
KR-85	7.544E+00	NOT IDENT.
SR-85	9.338E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	2.295E-01	NOT IDENT.
Y-91	7.586E+02	NOT IDENT.
NB-94	2.932E-02	NOT IDENT.
NB-95	9.250E-01	NOT IDENT.
NB-95M	2.511E+00	NOT IDENT.
ZR-95	1.806E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.996E-02	NOT IDENT.
RH-102	6.983E-02	NOT IDENT.
RU-103	5.403E+00	FAIL ABUN
RH-106	4.712E-01	NOT IDENT.
RU-106	4.712E-01	NOT IDENT.
AG-108M	2.258E-02	NOT IDENT.
AG-110M	9.003E-02	NOT IDENT.
SN-113	2.388E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.062E-01	NOT IDENT.
SB-124	2.616E+00	NOT IDENT.
SB-125	1.267E-01	FAIL ABUN
TE-125M	2.991E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.501E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	6.150E-02	FAIL ABUN
CS-135	1.285E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.494E-02	NOT IDENT.
CS-137	3.691E-02	NOT IDENT.
CE-139	9.442E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.515E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.094E-01	NOT IDENT.
PM-144	5.863E-02	NOT IDENT.
PR-144	5.141E+00	NOT IDENT.
PM-146	4.014E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.029E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.610E-02	FAIL ABUN
EU-152	8.312E-02	FAIL ABUN
GD-153	1.435E-01	NOT IDENT.
EU-154	1.277E-01	NOT IDENT.
EU-155	8.223E-02	FAIL ABUN
TB-160	1.833E+00	FAIL ABUN
HO-166M	4.445E-02	FAIL ABUN
TM-171	1.609E+01	NOT IDENT.
HF-172	2.096E-01	NOT IDENT.
LU-172	7.634E-02	FAIL ABUN
LU-176	1.563E-02	FAIL ABUN
HF-181	4.214E+00	NOT IDENT.
TA-182	1.184E+00	FAIL ABUN
RE-183	2.664E+00	NOT IDENT.
RE-184	3.047E+01	NOT IDENT.
W-188	1.128E+02	NOT IDENT.

IR-192	4.590E-01	FAIL ABUN
HG-203	2.217E+00	NOT IDENT.
BI-207	4.169E-02	FAIL ABUN
PB-210	2.106E+00	NOT IDENT.
BI-211	3.838E-01	FAIL ABUN
PB-211	7.459E-01	NOT IDENT.
BI-212	7.333E-01	FAIL ABUN
RN-219	3.643E-01	FAIL ABUN
RA-223	4.964E-01	FAIL ABUN
AC-227	1.981E-01	FAIL ABUN
TH-227	1.981E-01	FAIL ABUN
TH-229	3.364E-01	FAIL ABUN
TH-231	4.964E-01	FAIL ABUN
PA-233	5.637E-02	FAIL ABUN
PA-234	2.513E-01	NOT IDENT.
PA-234M	4.763E+00	NOT IDENT.
TH-234	9.972E-01	FAIL ABUN
U-235	1.455E-01	FAIL ABUN
NP-237	5.637E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	9.972E-01	FAIL ABUN
NP-239	1.914E-01	NOT IDENT.
PU-239	2.954E+02	NOT IDENT.
AM-241	1.065E-01	NOT IDENT.
CM-243	7.924E-02	NOT IDENT.
BK-247	5.437E-02	NOT IDENT.
CM-247	3.419E-02	NOT IDENT.
CF-249	3.153E-02	NOT IDENT.
CF-251	9.264E-02	NOT IDENT.
ANH-511	5.056E-02	NOT IDENT.

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*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                           *
*                               Charleston, SC 29407                       *
*                               *                                           *
*****
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                           *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235036.CNF;1 *
* Acquisition date   : 3-OCT-2016 09:16:44 Sensitivity      : 3.000          *
* Detector ID        : GAM36 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.33 Half life ratio : *****          *
* Sample date        : 23-NOV-2015 11:12:00 Nuclide Library : SOLID      *
* Sample ID          : G405235036 Analyst initials: MXR1         *
* Batch Number       : 1596249 Sample Quantity : 1.6226E+02 GRAM      *
*                               Quantity Err(%) : 1.2326E-03 %          *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000            *
*                               Dry Weight : 0.00000            *
*****
*                               CALIBRATION INFORMATION                   *
*                               *                                           *
* Eff. Cal. date     : 1-JUN-2016 09:39:12 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM36 CAN.CNF;7          *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.060E+01	1.858E+00	1.858E+00
CD-109	2.970E+00	2.356E+00	2.356E+00
SN-126	1.850E-01	1.464E-01	1.464E-01
TL-208	2.349E-01	1.119E-01	1.119E-01
PB-212	9.340E-01	1.435E-01	1.435E-01
BI-214	8.145E-01	1.869E-01	1.869E-01
PB-214	8.504E-01	1.971E-01	1.971E-01
RN-222	8.145E-01	1.869E-01	1.869E-01
RA-224	1.123E+00	1.335E+00	1.335E+00
RA-226	8.145E-01	1.869E-01	1.869E-01
AC-228	9.219E-01	3.114E-01	3.114E-01
RA-228	9.219E-01	3.114E-01	3.114E-01
TH-228	9.340E-01	1.435E-01	1.435E-01
TH-230	8.142E-01	1.868E-01	1.868E-01
PA-231	1.152E+00	9.601E-01	9.601E-01
TH-232	9.219E-01	3.114E-01	3.114E-01
U-234	8.142E-01	1.868E-01	1.868E-01
AM-243	1.092E-01	9.402E-02	9.402E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-1.064E+01	1.356E+01	1.438E+01	NOT IDENT.
NA-22	3.170E-02	5.944E-02	6.113E-02	NOT IDENT.
NA-24	1.000E+41	2.638E+41	0.000E+00	SHORT HLIF
AL-26	3.627E-02	4.318E-02	4.618E-02	NOT IDENT.
SC-46	2.299E-01	4.646E-01	4.760E-01	FAIL ABUN
V-48	-4.571E+04	3.533E+04	4.090E+04	SHORT HLIF
CR-51	-3.855E+02	6.256E+02	6.493E+02	SHORT HLIF
MN-54	1.838E-02	7.037E-02	7.085E-02	NOT IDENT.
CO-56	-3.226E-02	5.935E-01	5.937E-01	NOT IDENT.
MN-56	-1.000E+41	1.555E+42	0.000E+00	SHORT HLIF
CO-57	2.380E-02	3.954E-02	4.097E-02	FAIL ABUN
CO-58	-1.390E-01	7.991E-01	8.016E-01	NOT IDENT.

FE-59	9.008E-01	8.271E+00	8.281E+00	FAIL ABUN
CO-60	-2.800E-02	4.646E-02	4.814E-02	NOT IDENT.
ZN-65	-5.428E-02	2.233E-01	2.246E-01	NOT IDENT.
GE-68	3.071E+00	3.112E+00	3.406E+00	NOT IDENT.
AS-73	-3.276E+00	7.955E+00	8.091E+00	NOT IDENT.
AS-74	4.053E+03	1.195E+04	1.209E+04	SHORT HLIF
SE-75	-1.110E-01	2.086E-01	2.145E-01	NOT IDENT.
BR-77	1.370E+40	1.246E+41	0.000E+00	SHORT HLIF
SR-82	4.368E+02	1.132E+03	1.149E+03	SHORT HLIF
RB-83	-1.912E-01	8.409E-01	8.453E-01	NOT IDENT.
KR-85	6.430E+00	7.479E+00	8.021E+00	NOT IDENT.
SR-85	7.952E-01	9.259E-01	9.928E-01	NOT IDENT.
RB-86	3.988E+04	6.656E+04	6.895E+04	SHORT HLIF
Y-88	-7.376E-03	2.799E-01	2.799E-01	NOT IDENT.
Y-91	4.011E+02	7.880E+02	8.084E+02	NOT IDENT.
NB-94	1.108E-02	3.145E-02	3.185E-02	NOT IDENT.
NB-95	-1.178E-01	1.104E+00	1.105E+00	NOT IDENT.
NB-95M	1.968E+00	2.821E+00	2.957E+00	NOT IDENT.
ZR-95	1.042E+00	1.878E+00	1.936E+00	NOT IDENT.
NB-97	-1.000E+41	1.719E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.914E+41	0.000E+00	SHORT HLIF
MO-99	3.797E+33	9.818E+33	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	6.280E+41	0.000E+00	SHORT HLIF
RH-101	-1.598E-02	3.404E-02	3.479E-02	NOT IDENT.
RH-102	1.880E-02	7.657E-02	7.704E-02	NOT IDENT.
RU-103	-1.082E+00	6.248E+00	6.267E+00	FAIL ABUN
RH-106	9.562E-02	5.111E-01	5.129E-01	NOT IDENT.
RU-106	9.562E-02	5.111E-01	5.129E-01	NOT IDENT.
AG-108M	-5.279E-03	2.571E-02	2.582E-02	NOT IDENT.
AG-110M	3.206E-02	9.702E-02	9.809E-02	NOT IDENT.
SN-113	1.611E-01	2.369E-01	2.478E-01	NOT IDENT.
CD-115	-7.985E+39	3.858E+41	0.000E+00	SHORT HLIF
SN-117M	-2.346E+05	2.003E+05	2.265E+05	SHORT HLIF
TE-123M	-7.255E-02	1.257E-01	1.299E-01	NOT IDENT.
SB-124	6.176E-01	2.853E+00	2.867E+00	NOT IDENT.
SB-125	1.210E-01	1.243E-01	1.357E-01	FAIL ABUN
TE-125M	1.274E+02	3.097E+02	3.150E+02	NOT IDENT.
I-126	2.106E+05	2.122E+06	2.124E+06	SHORT HLIF
SB-126	-1.624E+06	3.028E+06	3.115E+06	SHORT HLIF
SB-127	2.055E+23	5.121E+23	0.000E+00	SHORT HLIF
I-131	-2.268E+10	2.145E+10	2.376E+10	SHORT HLIF
I-132	-1.000E+41	1.946E+42	0.000E+00	SHORT HLIF
TE-132	1.296E+27	1.057E+28	0.000E+00	SHORT HLIF
BA-133	-3.443E-03	4.624E-02	4.626E-02	NOT IDENT.
I-133	-1.000E+41	8.737E+41	0.000E+00	SHORT HLIF
CS-134	6.324E-02	5.974E-02	6.619E-02	FAIL ABUN
CS-135	6.958E-02	1.498E-01	1.530E-01	NOT IDENT.
I-135	-1.000E+41	7.734E+41	0.000E+00	SHORT HLIF
CS-136	1.507E+05	6.076E+05	6.114E+05	SHORT HLIF
BA-137M	1.080E-02	3.802E-02	3.833E-02	NOT IDENT.
CS-137	1.141E-02	4.016E-02	4.049E-02	NOT IDENT.
CE-139	-1.998E-02	1.070E-01	1.074E-01	NOT IDENT.
BA-140	4.387E+06	1.004E+07	1.023E+07	SHORT HLIF
LA-140	-8.774E+05	1.224E+06	1.287E+06	SHORT HLIF
CE-141	-6.765E+00	3.143E+01	3.158E+01	NOT IDENT.
CE-143	1.000E+41	1.729E+41	0.000E+00	SHORT HLIF
CE-144	1.124E-01	3.259E-01	3.298E-01	NOT IDENT.
PM-144	2.471E-03	6.715E-02	6.716E-02	NOT IDENT.
PR-144	2.396E-01	5.884E+00	5.885E+00	NOT IDENT.
PM-146	1.672E-02	4.154E-02	4.222E-02	NOT IDENT.
ND-147	-6.125E+07	1.051E+08	1.087E+08	SHORT HLIF
PM-147	3.096E+02	7.297E+02	7.429E+02	NOT IDENT.
PM-149	1.000E+41	1.427E+41	0.000E+00	SHORT HLIF
EU-150	5.709E-03	3.261E-02	3.271E-02	FAIL ABUN
EU-152	-6.003E-02	1.197E-01	1.227E-01	FAIL ABUN
GD-153	-1.144E-01	1.636E-01	1.716E-01	NOT IDENT.
EU-154	6.950E-02	1.426E-01	1.460E-01	NOT IDENT.
EU-155	-1.761E-02	8.968E-02	9.003E-02	FAIL ABUN
TB-160	2.992E-01	2.082E+00	2.087E+00	FAIL ABUN
HO-166M	-1.913E-02	5.612E-02	5.678E-02	FAIL ABUN
TM-171	2.088E+00	1.620E+01	1.623E+01	NOT IDENT.
HF-172	1.068E-01	2.182E-01	2.234E-01	NOT IDENT.
LU-172	3.250E-02	8.310E-02	8.438E-02	FAIL ABUN
LU-176	1.985E-02	4.371E-02	4.462E-02	FAIL ABUN
HF-181	-3.044E+00	5.263E+00	5.439E+00	NOT IDENT.
TA-182	8.676E-01	1.178E+00	1.241E+00	FAIL ABUN
RE-183	-5.533E-01	2.782E+00	2.794E+00	NOT IDENT.
RE-184	2.855E+01	2.603E+01	2.904E+01	NOT IDENT.

W-188	7.686E+01	1.281E+02	1.327E+02	NOT IDENT.
IR-192	-4.386E-02	5.485E-01	5.488E-01	FAIL ABUN
HG-203	-2.129E+00	2.929E+00	3.083E+00	NOT IDENT.
BI-207	1.217E-03	5.013E-02	5.013E-02	FAIL ABUN
PB-210	1.423E-01	2.128E+00	2.129E+00	NOT IDENT.
BI-211	2.342E+00	5.443E-01	1.188E+00	FAIL ABUN
PB-211	3.558E-01	7.960E-01	8.120E-01	NOT IDENT.
BI-212	1.336E+00	8.976E-01	1.081E+00	FAIL ABUN
RN-219	5.605E-02	3.895E-01	3.904E-01	FAIL ABUN
RA-223	-3.544E-01	6.455E-01	6.649E-01	FAIL ABUN
AC-227	-3.757E-02	2.339E-01	2.345E-01	FAIL ABUN
TH-227	-3.757E-02	2.339E-01	2.345E-01	FAIL ABUN
TH-229	-3.053E-01	4.173E-01	4.394E-01	FAIL ABUN
TH-231	-3.544E-01	6.455E-01	6.649E-01	FAIL ABUN
PA-233	1.871E-02	6.344E-02	6.400E-02	FAIL ABUN
PA-234	1.488E-01	3.066E-01	3.139E-01	NOT IDENT.
PA-234M	3.609E+00	4.657E+00	4.933E+00	NOT IDENT.
TH-234	-1.884E-01	1.036E+00	1.039E+00	FAIL ABUN
U-235	4.722E-02	1.592E-01	1.606E-01	FAIL ABUN
NP-237	1.871E-02	6.344E-02	6.400E-02	FAIL ABUN
NP-238	1.000E+41	1.904E+42	0.000E+00	SHORT HLIF
U-238	-1.884E-01	1.036E+00	1.039E+00	FAIL ABUN
NP-239	-8.077E-02	2.143E-01	2.174E-01	NOT IDENT.
PU-239	2.454E+02	3.001E+02	3.199E+02	NOT IDENT.
AM-241	2.294E-02	1.074E-01	1.079E-01	NOT IDENT.
CM-243	-2.489E-02	8.697E-02	8.769E-02	NOT IDENT.
BK-247	-1.090E-02	6.479E-02	6.498E-02	NOT IDENT.
CM-247	-4.952E-03	3.794E-02	3.800E-02	NOT IDENT.
CF-249	8.157E-04	3.414E-02	3.414E-02	NOT IDENT.
CF-251	4.614E-03	1.028E-01	1.028E-01	NOT IDENT.
ANH-511	-1.687E-02	4.760E-02	4.821E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	22.6668	87.09	68.7588	136.47	39.9849
45.60	35.4275	87.57	68.8320	140.51	0.0000
46.54	30.8024	88.03	68.9016	143.76	39.1449
49.72	0.0000	88.34	68.9486	144.24	36.2361
51.35	44.9328	88.47	83.7051	145.44	41.8639
51.87	43.3996	89.96	72.7416	152.43	58.5067
52.39	40.2504	1093.63	58.6345	153.25	0.0000
52.97	47.5817	91.11	0.0000	323.87	48.7189
53.44	48.4589	92.59	74.9381	156.02	0.0000
54.07	32.3686	93.35	75.0592	158.56	0.0000
57.36	0.0000	94.56	48.9728	159.00	44.0557
57.53	31.8897	94.65	48.9820	162.33	43.2605
57.98	47.4881	94.67	48.9840	162.66	0.0000
59.27	36.1609	94.87	46.6140	163.33	42.3147
59.32	36.1661	97.43	50.4667	165.86	41.4548
59.54	41.9464	98.43	46.0549	176.31	44.1049
60.96	43.7685	98.44	46.0561	176.60	0.0000
61.17	55.3630	99.53	52.4935	177.52	36.9849
62.93	51.4845	100.11	56.1795	181.07	0.0000
63.29	53.1981	102.03	45.4803	181.52	45.4435
63.58	46.5856	103.18	56.5243	184.41	45.6154
64.28	48.3422	103.37	51.0734	143.76	45.6926
66.73	48.6631	105.21	44.8504	193.51	40.9037
67.24	52.9299	105.31	44.8593	197.03	45.2964
125.81	56.3559	106.12	46.7635	198.01	36.9141
67.75	56.3661	106.47	44.9603	201.83	32.8481
69.67	53.2682	109.28	50.7375	203.43	33.9736
70.83	61.0593	111.00	55.5295	205.31	39.7253
72.81	62.5033	111.76	0.0000	210.85	29.9905
72.87	62.5128	114.06	44.6766	215.65	26.9272
74.66	55.6565	116.30	0.0000	222.11	36.8923
74.82	55.6784	116.74	50.5072	227.09	33.8254
74.97	55.6992	119.76	47.0196	227.38	40.3852
77.11	55.9903	121.12	46.1902	228.16	0.0000
78.74	58.8038	121.22	40.5415	228.18	32.7740
79.69	54.3141	121.78	32.0874	116.74	32.7740
80.12	56.6827	122.06	32.1033	235.69	27.9039
80.19	0.0000	122.92	43.4991	235.96	24.9739
80.57	61.3745	123.07	43.5103	238.63	35.3589
81.00	49.5549	265.00	49.2380	238.98	0.0000
81.07	49.5628	125.81	46.5680	240.99	35.4478
81.75	60.9632	127.23	64.7811	242.00	35.4858
83.79	56.0000	127.91	61.9950	244.70	17.7935
84.00	57.1941	129.30	48.7565	252.40	0.0000
85.43	67.9186	131.20	65.2161	252.80	26.9154
86.55	64.5673	133.02	43.2875	254.15	0.0000
86.79	68.7124	133.52	41.3977	256.23	31.5111
86.94	68.7356	136.00	41.2435	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	26.1038	355.39	0.0000	584.27	6.6440
264.80	26.1073	356.01	19.6787	595.83	0.0000
265.00	22.7063	364.49	0.0000	427.87	12.9238
268.22	24.2969	366.42	0.0000	602.52	0.0000
269.46	34.2096	372.51	23.6688	604.72	2.8781
270.03	34.2279	375.05	22.4665	607.14	0.0000
271.23	31.9836	377.52	23.3419	609.32	11.5396
273.65	0.0000	356.01	16.7517	610.33	11.5454
276.40	26.4035	388.16	15.9648	614.28	13.0150
277.37	16.0867	388.63	0.0000	618.01	9.6590
277.60	19.5380	391.69	12.6364	620.36	9.6704
278.00	25.2945	264.66	24.5897	621.93	7.7425
279.20	29.9276	401.81	18.6699	630.19	0.0000
279.54	28.7857	402.40	22.9224	631.29	14.5856
279.70	26.4871	404.85	19.3906	633.25	13.6263
280.46	11.5244	410.95	13.6663	634.78	0.0000
283.69	21.9630	413.71	20.5391	635.95	8.7715
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	18.5249	423.72	0.0000	645.85	6.8556
285.90	0.0000	427.09	15.5475	657.76	9.8507
287.50	18.5610	427.87	16.4201	657.90	0.0000
290.67	17.0644	433.94	14.7522	661.66	10.8559
293.27	0.0000	439.40	12.1933	664.57	0.0000
351.93	26.4823	453.88	11.4308	666.33	0.0000
295.96	26.4996	463.37	13.2703	666.50	0.0000
879.38	16.4063	468.07	14.6413	667.71	0.0000
299.98	14.0804	473.00	0.0000	677.62	9.9443
300.09	14.0819	475.06	12.4779	685.70	0.0000
300.13	14.0823	476.78	12.4913	695.00	0.0000
301.36	14.0977	477.60	15.1756	696.49	13.0418
302.85	23.5278	482.18	15.2188	696.51	13.0418
256.23	29.8452	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	14.0501
306.78	15.7402	497.08	9.9376	697.49	14.0513
308.46	9.4580	505.52	9.5342	702.65	8.0482
311.90	22.5306	507.63	0.0000	706.68	8.0632
316.51	22.6205	511.00	11.8427	711.68	10.1017
319.41	0.0000	514.00	11.8638	720.70	0.0000
320.08	0.0000	514.00	11.8638	721.93	0.0000
321.04	22.7086	520.40	14.2898	722.78	6.0913
323.87	28.7542	520.69	0.0000	722.91	10.6602
325.23	32.3855	522.65	0.0000	723.31	12.1855
328.76	0.0000	527.90	0.0000	724.19	9.1428
333.37	25.7630	528.26	13.2510	727.33	8.1383
333.97	27.3870	529.59	11.0508	733.00	9.1783
334.37	27.3960	529.87	0.0000	735.93	13.2751
338.28	26.6762	531.02	0.0000	333.97	10.2185
338.32	26.6769	537.26	0.0000	739.50	0.0000
311.90	29.1533	546.56	0.0000	747.24	9.2358
340.48	29.1533	552.55	13.0612	748.06	9.2391
340.55	0.0000	563.25	12.6689	752.31	12.3413
344.28	29.2434	569.33	13.1820	753.82	0.0000
345.93	22.7751	946.00	13.1831	756.73	7.2131
351.06	14.7015	569.70	14.1260	756.80	6.1826
351.93	14.7118	583.19	6.6403	884.68	11.3697

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	11.3787	1274.44	5.6460	1620.50	1.0057
766.42	12.4165	1001.03	3.3931	1621.92	1.0060
766.84	8.2790	1002.74	11.3167	1678.03	0.0000
772.60	0.0000	1004.73	13.5894	1690.97	2.0430
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	1.0377
778.90	9.3615	1028.54	0.0000	1063.66	3.1166
783.70	0.0000	1037.84	6.8706	1771.35	2.0782
785.37	13.5586	1038.76	0.0000	1791.20	0.0000
792.07	9.4131	631.29	8.0385	1808.65	1.0472
794.95	7.3298	1048.07	0.0000	1810.72	0.0000
795.86	6.2852	1049.04	6.8955	1836.06	2.1061
810.06	10.5363	1050.41	3.4495		
810.29	8.4297	1063.66	5.7739		
344.28	7.3765	1077.00	0.0000		
810.76	10.5391	1077.34	4.6393		
815.77	0.0000	1085.87	8.1410		
1048.07	0.0000	1093.63	4.6634		
832.01	8.5036	1099.45	5.2562		
834.85	7.4492	1112.07	4.3973		
835.71	11.7099	1112.84	4.0215		
836.80	0.0000	1115.54	8.4521		
846.75	0.0000	1120.29	7.0537		
846.77	8.5534	1120.55	7.0542		
856.80	0.0000	1221.41	7.0562		
860.56	7.5244	1129.67	7.0742		
871.09	9.7134	1131.51	0.0000		
873.19	9.7211	1147.95	0.0000		
875.33	0.0000	1173.23	4.4800		
879.38	5.4134	1177.95	10.7673		
880.51	8.6650	1189.05	6.3015		
883.24	3.2528	1204.77	7.2349		
884.68	4.3394	1221.41	5.4525		
889.28	5.4338	1231.02	8.2013		
894.76	7.6229	1235.36	0.0000		
898.04	8.1772	1238.28	10.0446		
900.72	8.1854	1260.41	0.0000		
903.28	0.0000	1271.87	8.2958		
911.20	5.4781	1274.44	4.4276		
912.08	5.4799	1274.54	4.4279		
923.98	0.0000	1291.59	7.4146		
926.50	7.7124	1298.22	0.0000		
929.11	11.0282	1312.11	0.0000		
937.49	4.4246	1332.49	7.4971		
944.13	0.0000	1362.66	0.0000		
946.00	3.3286	1365.19	3.7810		
949.00	14.4393	1368.63	0.0000		
667.71	0.0000	1384.29	2.8499		
962.31	5.0219	1408.01	4.7787		
964.08	8.3749	1457.56	0.0000		
966.17	18.4383	1460.82	2.9055		
911.20	16.7786	1489.16	3.9009		
968.97	16.7786	1505.03	2.9370		
983.53	0.0000	1584.12	3.9895		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:19:12.36

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235037.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM41.CNF;119
Sample date       : 30-NOV-2015 11:19:00      Background date   : 2-OCT-2016 11:02:18.
Sample ID        : G405235037                Acquisition date  : 3-OCT-2016 09:17:13.
Detector name    : GAM41                     Sample quantity   : 1.78756E+02 GRAM
Elapsed live time: 0 01:00:00.00             Detector geometry: CAN
Energy tolerance : 1.50000 keV               Elapsed real time: 0 01:00:05.72 0.2%
Abundance limit  : 75.00000                  Analyst Initials  : MXR1
Batch ID        : 1596249                    Sensitivity       : 3.00000
Matrix Spike ID  :                           Detector SN#    :
LCS ID          : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.55*	39	87	0.98	93.39	90	7	1.09E-02	47.4	
2	2	61.13	25	121	1.32	122.54	120	18	6.90E-03	69.8	1.95E+00
3	2	63.48*	82	111	1.04	127.24	120	18	2.27E-02	25.8	
4	5	74.97*	179	168	1.14	150.21	145	15	4.96E-02	13.8	3.45E+00
5	5	77.27*	223	109	0.85	154.81	145	15	6.19E-02	9.9	
6	0	87.41	92	79	1.12	175.10	173	5	2.56E-02	17.8	
7	0	90.02	62	94	1.19	180.30	178	6	1.72E-02	27.9	
8	0	93.06*	110	130	1.18	186.39	183	10	3.06E-02	24.4	
9	0	143.25*	24	112	3.86	286.74	281	11	6.73E-03	89.4	
10	0	186.02*	101	95	1.20	372.24	365	14	2.81E-02	23.8	
11	0	210.01	26	83	0.92	420.23	415	9	7.11E-03	67.3	
12	0	230.38	23	52	0.87	460.95	458	8	6.36E-03	57.8	
13	0	238.99*	275	70	0.95	478.17	473	9	7.65E-02	8.3	
14	0	242.05	81	44	1.50	484.29	482	7	2.24E-02	17.8	
15	0	277.81	33	40	1.63	555.80	552	9	9.03E-03	38.7	
16	0	286.06	22	57	0.89	572.28	568	10	6.08E-03	68.1	
17	0	296.16	90	62	1.27	592.49	584	11	2.50E-02	19.6	
18	0	301.08	19	70	1.00	602.32	596	12	5.26E-03	90.9	
19	0	322.00	19	44	1.82	644.16	637	11	5.28E-03	71.4	
20	0	329.47*	14	52	0.89	659.08	653	9	3.80E-03	101.0	
21	0	338.97	38	58	0.92	678.08	674	12	1.04E-02	44.3	
22	0	352.20*	187	55	1.14	704.55	699	13	5.19E-02	11.0	
23	0	444.91	11	18	1.41	889.94	886	7	3.05E-03	72.2	
24	0	462.81*	39	21	1.42	925.74	919	12	1.09E-02	29.6	
25	0	511.40*	31	38	1.23	1022.90	1016	14	8.63E-03	54.5	
26	0	583.76*	77	32	1.53	1167.60	1159	14	2.15E-02	19.5	
27	0	609.85*	120	32	1.68	1219.79	1211	14	3.35E-02	13.7	
28	0	620.72	19	15	2.75	1241.53	1234	12	5.24E-03	47.1	
29	0	679.71	8	18	0.83	1359.50	1353	9	2.22E-03	101.9	
30	0	728.45*	17	20	1.12	1456.98	1450	10	4.70E-03	56.2	
31	0	767.97	37	37	6.58	1536.03	1520	24	1.03E-02	45.7	
32	0	886.62*	6	4	0.65	1773.35	1770	7	1.55E-03	78.4	
33	0	912.01*	43	10	1.13	1824.14	1817	12	1.20E-02	21.4	
34	0	965.51	25	12	1.69	1931.15	1925	12	7.02E-03	33.8	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	969.88*	38	7	1.57	1939.89	1936	9	1.05E-02	21.9	
36	0	1053.89	15	0	2.39	2107.93	2103	9	4.17E-03	25.8	
37	0	1121.45	26	15	1.57	2243.08	2235	12	7.16E-03	36.0	
38	0	1204.21	9	26	5.89	2408.65	2390	21	2.46E-03	148.2	
39	0	1207.05	15	5	1.54	2414.33	2410	10	4.17E-03	38.0	
40	0	1237.81	22	7	3.75	2475.86	2469	14	6.11E-03	33.2	
41	0	1264.29	10	5	0.78	2528.85	2521	13	2.65E-03	63.0	
42	0	1461.78*	275	0	1.92	2923.96	2917	14	7.63E-02	6.1	
43	0	1766.23	18	3	2.53	3533.15	3527	11	5.05E-03	29.4	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235037.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 30-NOV-2015 11:19:00 Acquisition date : 3-OCT-2016 09:17:13
 Sample ID : G405235037 Sample quantity : 178.76 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA41 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:05.72 0.2%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Empirical Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
TL-208	277.37	HG-203	279.20
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	8.926E-01	1.191E+01	1.191E+01	12.18	OK
Y-91	1204.77	0.26*	1.058E+00	1.372E+01	5.267E+02	296.36	OK
RH-106	621.93	9.93*	1.938E+00	4.592E-01	8.153E-01	94.29	OK
	1050.41	1.56	1.196E+00	----- Line	Not Found	-----	Absent
RU-106	621.93	9.93*	1.938E+00	4.592E-01	8.153E-01	94.29	OK
	1050.41	1.56	1.196E+00	----- Line	Not Found	-----	Absent
CD-109	88.03	3.70*	7.447E+00	1.367E+00	2.172E+00	55.08	OK
SN-126	64.28	9.60	7.794E+00	6.753E-01	6.753E-01	51.53	OK
	86.94	8.90	7.447E+00	5.685E-01	5.685E-01	55.08	OK
	87.57	37.00*	7.447E+00	1.367E-01	1.367E-01	55.08	OK
HG-203	70.83	3.69	7.737E+00	----- Line	Not Found	-----	Absent
	72.87	6.19	7.711E+00	----- Line	Not Found	-----	Absent
	279.20	81.56*	3.902E+00	3.626E-02	3.541E+00	115.06	OK
TL-208	277.37	6.60	3.907E+00	----- Line	Not Found	-----	<<INT Reject
	583.19	85.00*	2.050E+00	2.099E-01	2.099E-01	38.95	OK
	860.56	12.50	1.434E+00	----- Line	Not Found	-----	Absent
PB-210	46.54	4.25*	7.553E+00	7.803E-01	8.011E-01	94.74	OK
BI-211	72.87	1.23	7.711E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	3.212E+00	4.002E-01	4.002E-01	222.31	OK
PB-212	74.82	10.28	7.681E+00	9.891E-01	9.891E-01	41.37	OK
	77.11	17.10	7.644E+00	1.032E+00	1.032E+00	19.74	OK
	238.63	43.60*	4.381E+00	7.662E-01	7.662E-01	16.56	OK
	300.09	3.30	3.659E+00	8.094E-01	8.094E-01	181.75	OK
BI-214	609.32	45.49*	1.969E+00	6.315E-01	6.317E-01	27.31	OK
	1120.29	14.92	1.127E+00	6.586E-01	6.589E-01	71.98	OK
	1764.49	15.30	7.620E-01	----- Line	Not Found	-----	Absent
PB-214	74.82	5.80	7.683E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	7.644E+00	1.819E+00	1.820E+00	19.74	OK
	87.09	3.41	7.454E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.340E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	3.708E+00	6.813E-01	6.816E-01	39.20	OK
	351.93	35.60*	3.214E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	1.969E+00	6.315E-01	6.317E-01	27.31	OK
	1120.29	14.92	1.127E+00	6.586E-01	6.589E-01	71.98	OK
	1764.49	15.30	7.620E-01	----- Line	Not Found	-----	Absent
RA-224	240.99	4.10*	4.340E+00	1.197E+00	1.197E+00	81.47	OK
RA-226	609.32	45.49*	1.969E+00	6.315E-01	6.317E-01	27.31	OK
	1120.29	14.92	1.127E+00	6.586E-01	6.589E-01	71.98	OK
	1764.49	15.30	7.620E-01	----- Line	Not Found	-----	Absent
AC-228	105.21	1.10	7.028E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.317E+00	5.105E-01	5.105E-01	88.51	OK
	794.95	4.25	1.543E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.473E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.360E+00	5.447E-01	5.447E-01	42.74	OK
	968.97	15.80	1.285E+00	8.194E-01	8.194E-01	43.89	OK
RA-228	105.21	1.10	7.028E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.317E+00	5.105E-01	5.105E-01	88.51	OK
	794.95	4.25	1.543E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.473E+00	----- Line	Not Found	-----	Absent

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	911.20	25.80*	1.360E+00	5.447E-01	5.447E-01	42.74	OK
	968.97	15.80	1.285E+00	8.194E-01	8.194E-01	43.89	OK
TH-228	74.82	10.28	7.681E+00	9.891E-01	9.891E-01	41.37	OK
	77.11	17.10	7.644E+00	1.032E+00	1.032E+00	19.74	OK
	238.63	43.60*	4.381E+00	7.662E-01	7.662E-01	16.56	OK
	300.09	3.30	3.659E+00	8.094E-01	8.094E-01	181.75	OK
TH-230	609.32	45.49*	1.969E+00	6.315E-01	6.315E-01	27.31	OK
	1120.29	14.92	1.127E+00	6.586E-01	6.586E-01	71.98	OK
	1764.49	15.30	7.620E-01	-----	Line Not Found	-----	Absent
PA-231	283.69	1.70	3.838E+00	-----	Line Not Found	-----	Absent
	301.36	5.35*	3.659E+00	4.993E-01	4.993E-01	181.75	OK
TH-232	105.21	1.10	7.028E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.317E+00	5.105E-01	5.105E-01	88.51	OK
	835.71	1.61	1.473E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.360E+00	5.447E-01	5.447E-01	42.74	OK
	968.97	15.80	1.285E+00	8.194E-01	8.194E-01	43.89	OK
TH-234	63.29	3.70*	7.794E+00	1.752E+00	1.752E+00	51.53	OK
	92.59	4.23	7.320E+00	2.112E+00	2.112E+00	48.79	OK
U-234	609.32	45.49*	1.969E+00	6.315E-01	6.315E-01	27.31	OK
	1120.29	14.92	1.127E+00	6.586E-01	6.586E-01	71.98	OK
	1764.49	15.30	7.620E-01	-----	Line Not Found	-----	Absent
U-235	89.96	3.47	7.390E+00	1.435E+00	1.435E+00	55.85	OK
	93.35	5.60	7.320E+00	1.595E+00	1.595E+00	48.79	OK
	143.76	10.96*	6.105E+00	2.047E-01	2.047E-01	178.90	OK
	163.33	5.08	5.667E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	5.223E+00	1.858E-01	1.858E-01	47.55	OK
	205.31	5.01	4.887E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	7.794E+00	1.752E+00	1.752E+00	51.53	OK
	92.59	4.23	7.320E+00	2.112E+00	2.112E+00	48.79	OK
AM-243	43.53	5.90	7.421E+00	-----	Line Not Found	-----	Absent
	74.66	67.20*	7.681E+00	1.513E-01	1.513E-01	41.37	OK
ANH-511	511.00	100.00*	2.313E+00	6.463E-02	6.463E-02	108.92	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235037.CNF;1
* Acquisition date   : 3-OCT-2016 09:17:13 Sensitivity      : 3.000
* Detector ID        : GAM41 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:05.72 Half life ratio : *****
* Sample date        : 30-NOV-2015 11:19:00 Analyst initials: MXR1
* Sample ID          : G405235037 Sample Quantity : 1.7876E+02 GRAM
* Batch Number       : 1596249 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight       : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 26-JAN-2016 06:01:47 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM41 CAN.CNF;3
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.191E+01	1.422E+00	4.971E-01
Y-91	5.267E+02	1.530E+03	1.627E+02
RH-106	8.153E-01	7.533E-01	9.015E-01
RU-106	8.153E-01	7.533E-01	9.015E-01
CD-109	2.172E+00	1.172E+00	1.205E+00
SN-126	1.367E-01	7.381E-02	8.663E-02
HG-203	3.541E+00	3.993E+00	4.637E+00
TL-208	2.099E-01	8.012E-02	6.035E-02
PB-210	8.011E-01	7.438E-01	6.551E-01
BI-211	4.002E-01	8.719E-01	3.181E-01
PB-212	7.662E-01	1.243E-01	8.523E-02
BI-214	6.317E-01	1.691E-01	1.118E-01
PB-214	8.269E-01	1.779E-01	2.782E-01
RN-222	6.317E-01	1.691E-01	1.118E-01
RA-224	1.197E+00	9.555E-01	8.243E-01
RA-226	6.317E-01	1.691E-01	1.118E-01
AC-228	5.447E-01	2.281E-01	2.023E-01
RA-228	5.447E-01	2.281E-01	2.023E-01
TH-228	7.662E-01	1.243E-01	8.523E-02
TH-230	6.315E-01	1.690E-01	1.118E-01
PA-231	4.993E-01	8.893E-01	6.810E-01
TH-232	5.447E-01	2.281E-01	2.023E-01
TH-234	1.752E+00	8.849E-01	8.832E-01
U-234	6.315E-01	1.690E-01	1.118E-01
U-235	2.047E-01	3.589E-01	2.927E-01
U-238	1.752E+00	8.849E-01	8.832E-01
AM-243	1.513E-01	6.135E-02	4.876E-02
ANH-511	6.463E-02	6.899E-02	4.164E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	4.951E+00	1.183E+01	2.443E+01	NOT IDENT.
NA-22	2.148E-02	5.785E-02	1.189E-01	NOT IDENT.

NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	-9.950E-03	2.081E-02	4.180E-02	NOT IDENT.
SC-46	1.846E-02	3.663E-01	6.833E-01	FAIL ABUN
V-48	0.000E+00	1.675E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.474E+02	0.000E+00	SHORT HLIF
MN-54	-1.910E-02	5.795E-02	1.123E-01	NOT IDENT.
CO-56	1.179E-01	5.198E-01	1.079E+00	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	9.342E-04	3.829E-02	7.865E-02	NOT IDENT.
CO-58	-3.216E-01	5.118E-01	9.465E-01	NOT IDENT.
FE-59	4.637E-01	6.280E+00	1.318E+01	NOT IDENT.
CO-60	-1.435E-02	3.329E-02	6.186E-02	NOT IDENT.
ZN-65	5.808E-02	1.972E-01	3.692E-01	NOT IDENT.
GE-68	4.767E-01	2.351E+00	4.899E+00	NOT IDENT.
AS-73	5.366E-01	2.100E+00	4.135E+00	NOT IDENT.
AS-74	0.000E+00	6.310E+03	0.000E+00	SHORT HLIF
SE-75	-5.786E-02	1.594E-01	3.076E-01	NOT IDENT.
BR-77	0.000E+00	2.365E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	7.176E+02	0.000E+00	SHORT HLIF
RB-83	2.332E-02	5.549E-01	1.101E+00	NOT IDENT.
KR-85	9.059E+00	6.785E+00	1.426E+01	NOT IDENT.
SR-85	1.041E+00	7.804E-01	1.640E+00	NOT IDENT.
RB-86	0.000E+00	3.723E+04	0.000E+00	SHORT HLIF
Y-88	-7.732E-02	1.100E-01	1.512E-01	NOT IDENT.
NB-94	3.035E-03	3.221E-02	6.550E-02	NOT IDENT.
NB-95	9.359E-01	8.413E-01	1.948E+00	NOT IDENT.
NB-95M	-8.811E-01	2.324E+00	3.952E+00	NOT IDENT.
ZR-95	-3.235E-01	1.504E+00	2.758E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.268E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-1.423E-02	2.746E-02	5.414E-02	NOT IDENT.
RH-102	4.448E-03	4.258E-02	9.179E-02	FAIL ABUN
RU-103	6.983E-01	4.765E+00	9.746E+00	FAIL ABUN
AG-108M	9.877E-03	2.190E-02	4.602E-02	NOT IDENT.
AG-110M	-1.078E-01	1.126E-01	1.638E-01	FAIL ABUN
SN-113	-1.763E-01	2.004E-01	3.466E-01	NOT IDENT.
CD-115	0.000E+00	3.426E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.131E+05	0.000E+00	SHORT HLIF
TE-123M	-8.763E-02	1.073E-01	2.037E-01	NOT IDENT.
SB-124	-1.014E+00	1.570E+00	2.882E+00	NOT IDENT.
SB-125	6.964E-02	8.785E-02	1.897E-01	FAIL ABUN
TE-125M	-1.005E+01	2.120E+02	4.356E+02	NOT IDENT.
I-126	0.000E+00	1.283E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.709E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	6.987E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	8.087E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.020E+27	0.000E+00	SHORT HLIF
BA-133	1.961E-03	3.948E-02	6.973E-02	FAIL ABUN
I-133	0.000E+00	1.580E+41	0.000E+00	SHORT HLIF
CS-134	2.644E-02	4.629E-02	1.015E-01	NOT IDENT.
CS-135	5.875E-02	1.113E-01	2.332E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	4.886E+05	0.000E+00	SHORT HLIF
BA-137M	1.295E-02	3.584E-02	7.557E-02	NOT IDENT.
CS-137	1.368E-02	3.786E-02	7.983E-02	NOT IDENT.
CE-139	-4.497E-02	9.740E-02	1.898E-01	NOT IDENT.
BA-140	0.000E+00	2.103E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	6.695E+05	0.000E+00	SHORT HLIF
CE-141	5.951E+00	2.498E+01	4.682E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	3.493E-02	2.796E-01	5.776E-01	NOT IDENT.
PM-144	2.328E-02	5.124E-02	1.105E-01	NOT IDENT.
PR-144	2.387E+00	4.422E+00	9.645E+00	NOT IDENT.
PM-146	-3.748E-03	3.535E-02	6.848E-02	NOT IDENT.
ND-147	0.000E+00	5.077E+07	0.000E+00	SHORT HLIF
PM-147	3.548E+02	6.434E+02	1.369E+03	NOT IDENT.
PM-149	0.000E+00	1.335E+41	0.000E+00	SHORT HLIF
EU-150	2.641E-03	2.134E-02	4.085E-02	FAIL ABUN
EU-152	2.960E-02	8.183E-02	1.533E-01	FAIL ABUN
GD-153	-4.303E-02	1.307E-01	2.376E-01	NOT IDENT.
EU-154	6.833E-02	1.393E-01	2.917E-01	NOT IDENT.
EU-155	6.519E-02	7.019E-02	1.551E-01	FAIL ABUN
TB-160	8.906E-01	1.995E+00	4.307E+00	FAIL ABUN
HO-166M	2.744E-03	5.261E-02	1.080E-01	NOT IDENT.
TM-171	6.914E-01	4.234E+00	8.305E+00	NOT IDENT.

HF-172	-6.034E-02	1.846E-01	3.675E-01	FAIL ABUN
LU-172	8.908E-03	7.132E-02	1.480E-01	FAIL ABUN
LU-176	-3.688E-03	1.887E-02	3.673E-02	FAIL ABUN
HF-181	-1.086E+00	4.111E+00	7.737E+00	NOT IDENT.
TA-182	8.428E-01	1.028E+00	2.265E+00	FAIL ABUN
RE-183	-3.351E-01	9.872E-01	1.693E+00	NOT IDENT.
RE-184	-9.713E+00	2.597E+01	5.073E+01	NOT IDENT.
W-188	-6.489E+01	1.449E+02	1.820E+02	FAIL ABUN
IR-192	2.320E-01	4.392E-01	8.425E-01	FAIL ABUN
BI-207	-9.682E-03	5.354E-02	1.030E-01	FAIL ABUN
PB-211	4.972E-02	5.259E-01	1.051E+00	NOT IDENT.
BI-212	6.954E-01	7.661E-01	1.202E+00	FAIL ABUN
RN-219	-3.126E-01	3.188E-01	5.408E-01	NOT IDENT.
RA-223	-6.418E-01	7.388E-01	7.995E-01	FAIL ABUN
AC-227	-4.557E-02	1.756E-01	3.421E-01	FAIL ABUN
TH-227	-4.557E-02	1.756E-01	3.421E-01	FAIL ABUN
TH-229	-8.083E-02	3.831E-01	7.562E-01	FAIL ABUN
TH-231	-6.418E-01	7.388E-01	7.995E-01	FAIL ABUN
PA-233	1.631E-02	4.587E-02	9.512E-02	FAIL ABUN
PA-234	-2.836E-01	2.629E-01	4.289E-01	NOT IDENT.
PA-234M	3.633E+00	4.330E+00	9.626E+00	NOT IDENT.
NP-237	1.631E-02	4.587E-02	9.512E-02	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-4.034E-02	1.757E-01	3.567E-01	FAIL ABUN
PU-239	1.881E+02	2.415E+02	5.190E+02	NOT IDENT.
AM-241	1.506E-02	4.595E-02	8.377E-02	NOT IDENT.
CM-243	-3.773E-02	6.573E-02	1.310E-01	FAIL ABUN
BK-247	-4.058E-02	5.590E-02	1.029E-01	NOT IDENT.
CM-247	-2.013E-02	2.738E-02	4.834E-02	FAIL ABUN
CF-249	3.363E-02	3.060E-02	6.815E-02	NOT IDENT.
CF-251	2.247E-02	9.675E-02	1.983E-01	FAIL ABUN

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	270	10.66*	8.926E-01	1.191E+01	1.191E+01	12.18
Y-91	1204.77	9	0.26*	1.058E+00	1.372E+01	5.267E+02	296.36
RH-106	621.93	21	9.93*	1.938E+00	4.592E-01	8.153E-01	94.29
	1050.41	-----	1.56	1.196E+00	-----	Line Not Found	-----
RU-106	621.93	21	9.93*	1.938E+00	4.592E-01	8.153E-01	94.29
	1050.41	-----	1.56	1.196E+00	-----	Line Not Found	-----
CD-109	88.03	131	3.70*	7.447E+00	1.995E+00	3.169E+00	35.67
SN-126	64.28	120	9.60	7.794E+00	6.753E-01	6.753E-01	51.53
	86.94	131	8.90	7.447E+00	8.295E-01	8.295E-01	35.67
	87.57	131	37.00*	7.447E+00	1.995E-01	1.995E-01	35.67
HG-203	70.83	-----	3.69	7.737E+00	-----	Line Not Found	-----
	72.87	-----	6.19	7.711E+00	-----	Line Not Found	-----
	279.20	40	81.56*	3.902E+00	5.325E-02	5.199E+00	77.37
TL-208	277.37	40	6.60	3.902E+00	6.580E-01	6.580E-01	77.37
	583.19	87	85.00*	2.050E+00	2.099E-01	2.099E-01	38.95
	860.56	-----	12.50	1.434E+00	-----	Line Not Found	-----
PB-210	46.54	60	4.25*	7.553E+00	7.803E-01	8.011E-01	94.74
BI-211	72.87	-----	1.23	7.711E+00	-----	Line Not Found	-----
	351.06	225	12.92*	3.212E+00	2.277E+00	2.277E+00	21.96
PB-212	74.82	258	10.28	7.681E+00	1.373E+00	1.373E+00	27.70
	77.11	321	17.10	7.644E+00	1.032E+00	1.032E+00	19.74
	238.63	348	43.60*	4.381E+00	7.662E-01	7.662E-01	16.56
	300.09	23	3.30	3.659E+00	8.094E-01	8.094E-01	181.75
BI-214	609.32	135	45.49*	1.969E+00	6.315E-01	6.317E-01	27.31
	1120.29	26	14.92	1.127E+00	6.586E-01	6.589E-01	71.98
	1764.49	-----	15.30	7.620E-01	-----	Line Not Found	-----
PB-214	74.82	258	5.80	7.681E+00	2.434E+00	2.435E+00	27.70
	77.11	321	9.70	7.644E+00	1.819E+00	1.820E+00	19.74
	87.09	131	3.41	7.447E+00	2.165E+00	2.166E+00	35.67
	242.00	102	7.25	4.340E+00	1.358E+00	1.359E+00	35.52
	295.22	111	18.42	3.708E+00	6.813E-01	6.816E-01	39.20
	351.93	225	35.60*	3.212E+00	8.266E-01	8.269E-01	21.96
RN-222	609.32	135	45.49*	1.969E+00	6.315E-01	6.317E-01	27.31
	1120.29	26	14.92	1.127E+00	6.586E-01	6.589E-01	71.98
	1764.49	-----	15.30	7.620E-01	-----	Line Not Found	-----
RA-224	240.99	102	4.10*	4.340E+00	2.402E+00	2.402E+00	35.52
RA-226	609.32	135	45.49*	1.969E+00	6.315E-01	6.317E-01	27.31
	1120.29	26	14.92	1.127E+00	6.586E-01	6.589E-01	71.98
	1764.49	-----	15.30	7.620E-01	-----	Line Not Found	-----
AC-228	105.21	-----	1.10	7.028E+00	-----	Line Not Found	-----
	338.32	45	11.27	3.317E+00	5.105E-01	5.105E-01	88.51
	794.95	-----	4.25	1.543E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.473E+00	-----	Line Not Found	-----
	911.20	45	25.80*	1.360E+00	5.447E-01	5.447E-01	42.74
	968.97	40	15.80	1.285E+00	8.194E-01	8.194E-01	43.89
RA-228	105.21	-----	1.10	7.028E+00	-----	Line Not Found	-----
	338.32	45	11.27	3.317E+00	5.105E-01	5.105E-01	88.51

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	794.95	-----	4.25	1.543E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.473E+00	-----	Line Not Found	-----
	911.20	45	25.80*	1.360E+00	5.447E-01	5.447E-01	42.74
	968.97	40	15.80	1.285E+00	8.194E-01	8.194E-01	43.89
TH-228	74.82	258	10.28	7.681E+00	1.373E+00	1.373E+00	27.70
	77.11	321	17.10	7.644E+00	1.032E+00	1.032E+00	19.74
	238.63	348	43.60*	4.381E+00	7.662E-01	7.662E-01	16.56
	300.09	23	3.30	3.659E+00	8.094E-01	8.094E-01	181.75
TH-230	609.32	135	45.49*	1.969E+00	6.315E-01	6.315E-01	27.31
	1120.29	26	14.92	1.127E+00	6.586E-01	6.586E-01	71.98
	1764.49	-----	15.30	7.620E-01	-----	Line Not Found	-----
PA-231	283.69	-----	1.70	3.838E+00	-----	Line Not Found	-----
	301.36	23	5.35*	3.659E+00	4.993E-01	4.993E-01	181.75
TH-232	105.21	-----	1.10	7.028E+00	-----	Line Not Found	-----
	338.32	45	11.27	3.317E+00	5.105E-01	5.105E-01	88.51
	835.71	-----	1.61	1.473E+00	-----	Line Not Found	-----
	911.20	45	25.80*	1.360E+00	5.447E-01	5.447E-01	42.74
	968.97	40	15.80	1.285E+00	8.194E-01	8.194E-01	43.89
TH-234	63.29	120	3.70*	7.794E+00	1.752E+00	1.752E+00	51.53
	92.59	156	4.23	7.320E+00	2.112E+00	2.112E+00	48.79
U-234	609.32	135	45.49*	1.969E+00	6.315E-01	6.315E-01	27.31
	1120.29	26	14.92	1.127E+00	6.586E-01	6.586E-01	71.98
	1764.49	-----	15.30	7.620E-01	-----	Line Not Found	-----
U-235	89.96	88	3.47	7.390E+00	1.435E+00	1.435E+00	55.85
	93.35	156	5.60	7.320E+00	1.595E+00	1.595E+00	48.79
	143.76	33	10.96*	6.105E+00	2.047E-01	2.047E-01	178.90
	163.33	-----	5.08	5.667E+00	-----	Line Not Found	-----
	185.72	132	57.20	5.223E+00	1.858E-01	1.858E-01	47.55
	205.31	-----	5.01	4.887E+00	-----	Line Not Found	-----
U-238	63.29	120	3.70*	7.794E+00	1.752E+00	1.752E+00	51.53
	92.59	156	4.23	7.320E+00	2.112E+00	2.112E+00	48.79
AM-243	43.53	-----	5.90	7.421E+00	-----	Line Not Found	-----
	74.66	258	67.20*	7.681E+00	2.101E-01	2.101E-01	27.70
ANH-511	511.00	36	100.00*	2.313E+00	6.463E-02	6.463E-02	108.92

Flag: "*" = Keyline

Total number of lines in spectrum 43
Number of unidentified lines 8
Number of lines tentatively identified by NID 35 81.40%

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	1.191E+01	1.191E+01	0.145E+01	12.18	
Y-91	58.51D	38.4	1.372E+01	5.267E+02	15.61E+02	296.36	
RH-106	371.80D	1.78	4.592E-01	8.153E-01	7.687E-01	94.29	
RU-106	371.80D	1.78	4.592E-01	8.153E-01	7.687E-01	94.29	
CD-109	461.40D	1.59	1.995E+00	3.169E+00	1.130E+00	35.67	
SN-126	2.30E+05Y	1.00	1.995E-01	1.995E-01	0.712E-01	35.67	
HG-203	46.59D	97.6	5.325E-02	5.199E+00	4.023E+00	77.37	
TL-208	1.41E+10Y	1.00	2.099E-01	2.099E-01	0.818E-01	38.95	
PB-210	22.20Y	1.03	7.803E-01	8.011E-01	7.590E-01	94.74	
BI-211	7.04E+08Y	1.00	2.277E+00	2.277E+00	0.500E+00	21.96	
PB-212	1.41E+10Y	1.00	7.662E-01	7.662E-01	1.269E-01	16.56	
BI-214	1600.00Y	1.00	6.315E-01	6.317E-01	1.725E-01	27.31	
PB-214	1600.00Y	1.00	8.266E-01	8.269E-01	1.816E-01	21.96	
RN-222	1600.00Y	1.00	6.315E-01	6.317E-01	1.725E-01	27.31	
RA-224	1.41E+10Y	1.00	2.402E+00	2.402E+00	0.853E+00	35.52	
RA-226	1600.00Y	1.00	6.315E-01	6.317E-01	1.725E-01	27.31	
AC-228	1.41E+10Y	1.00	5.447E-01	5.447E-01	2.328E-01	42.74	
RA-228	1.41E+10Y	1.00	5.447E-01	5.447E-01	2.328E-01	42.74	
TH-228	1.41E+10Y	1.00	7.662E-01	7.662E-01	1.269E-01	16.56	
TH-230	7.54E+04Y	1.00	6.315E-01	6.315E-01	1.725E-01	27.31	
PA-231	7.04E+08Y	1.00	4.993E-01	4.993E-01	9.074E-01	181.75	
TH-232	1.41E+10Y	1.00	5.447E-01	5.447E-01	2.328E-01	42.74	
TH-234	4.47E+09Y	1.00	1.752E+00	1.752E+00	0.903E+00	51.53	
U-234	2.45E+05Y	1.00	6.315E-01	6.315E-01	1.725E-01	27.31	
U-235	7.04E+08Y	1.00	2.047E-01	2.047E-01	3.662E-01	178.90	
U-238	4.47E+09Y	1.00	1.752E+00	1.752E+00	0.903E+00	51.53	
AM-243	7370.00Y	1.00	2.101E-01	2.101E-01	0.582E-01	27.70	
ANH-511	1.00E+09Y	1.00	6.463E-02	6.463E-02	7.040E-02	108.92	

Total Activity : 4.609E+01 5.661E+02

Grand Total Activity : 4.609E+01 5.661E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	61.13	37	179	1.32	122.54	120	18	6.90E-03	****	7.80E+00	T
0	210.01	33	107	0.92	420.23	415	9	7.11E-03	****	4.81E+00	T
0	230.38	29	66	0.87	460.95	458	8	6.36E-03	****	4.50E+00	
0	286.06	27	71	0.89	572.28	568	10	6.08E-03	****	3.81E+00	T
0	322.00	23	54	1.82	644.16	637	11	5.28E-03	****	3.46E+00	T
0	329.47	17	63	0.89	659.08	653	9	3.80E-03	****	3.40E+00	T
0	444.91	13	21	1.41	889.94	886	7	3.05E-03	****	2.62E+00	
0	462.81	45	24	1.42	925.74	919	12	1.09E-02	59.2	2.53E+00	T
0	679.71	9	20	0.83	1359.50	1353	9	2.22E-03	****	1.78E+00	
0	728.45	18	22	1.12	1456.98	1450	10	4.70E-03	****	1.67E+00	T
0	767.97	40	40	6.58	1536.03	1520	24	1.03E-02	91.4	1.59E+00	T
0	886.62	6	4	0.65	1773.35	1770	7	1.55E-03	****	1.40E+00	
0	965.51	26	12	1.69	1931.15	1925	12	7.02E-03	67.6	1.29E+00	T
0	1053.89	15	0	2.39	2107.93	2103	9	4.17E-03	51.6	1.19E+00	
0	1207.05	15	5	1.54	2414.33	2410	10	4.17E-03	76.0	1.06E+00	
0	1237.81	22	7	3.75	2475.86	2469	14	6.11E-03	66.5	1.03E+00	T
0	1264.29	10	5	0.78	2528.85	2521	13	2.65E-03	****	1.01E+00	
0	1766.23	17	3	2.53	3533.15	3527	11	5.05E-03	58.8	7.61E-01	

Flags: "T" = Tentatively associated

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	(pCi/GRAM)	Lc
K-40	1.880E-01	
Y-91	0.000E+00	
RH-106	3.958E-01	
RU-106	3.958E-01	
CD-109	5.662E-01	
SN-126	4.102E-02	
HG-203	2.131E+00	
TL-208	2.676E-02	
PB-210	3.069E-01	
BI-211	1.445E-01	
PB-212	3.941E-02	
BI-214	4.926E-02	
PB-214	1.339E-01	
RN-222	4.926E-02	
RA-224	3.778E-01	
RA-226	4.926E-02	
AC-228	8.443E-02	
RA-228	8.443E-02	
TH-228	3.941E-02	
TH-230	4.924E-02	
PA-231	3.094E-01	
TH-232	8.443E-02	
TH-234	4.195E-01	
U-234	4.924E-02	
U-235	1.371E-01	
U-238	4.195E-01	
AM-243	2.315E-02	
ANH-511	1.823E-02	

Nuclide	LC (pCi/GRAM)	
BE-7	1.093E+01	NOT IDENT.
NA-22	5.224E+02	NOT IDENT.
NA-24	0.004E+00	SHORT HLIF

AL-26	1.321E-02	NOT IDENT.
SC-46	2.877E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	4.823E-02	NOT IDENT.
CO-56	4.756E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	3.690E-02	NOT IDENT.
CO-58	3.937E-01	NOT IDENT.
FE-59	5.502E+00	NOT IDENT.
CO-60	2.424E-02	NOT IDENT.
ZN-65	1.603E-01	NOT IDENT.
GE-68	2.109E+00	NOT IDENT.
AS-73	1.953E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.386E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.812E-01	NOT IDENT.
KR-85	6.498E+00	NOT IDENT.
SR-85	7.474E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.766E-02	NOT IDENT.
NB-94	2.932E-02	NOT IDENT.
NB-95	8.702E-01	NOT IDENT.
NB-95M	1.819E+00	NOT IDENT.
ZR-95	1.191E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.538E-02	NOT IDENT.
RH-102	3.939E-02	FAIL ABUN
RU-103	4.236E+00	FAIL ABUN
AG-108M	2.053E-02	NOT IDENT.
AG-110M	6.831E-02	FAIL ABUN
SN-113	1.530E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	9.416E-02	NOT IDENT.
SB-124	9.109E-01	NOT IDENT.
SB-125	8.564E-02	FAIL ABUN
TE-125M	2.039E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.163E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	4.481E-02	NOT IDENT.
CS-135	1.071E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.411E-02	NOT IDENT.
CS-137	3.603E-02	NOT IDENT.
CE-139	8.841E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.190E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.700E-01	NOT IDENT.
PM-144	4.909E-02	NOT IDENT.
PR-144	4.287E+00	NOT IDENT.
PM-146	3.025E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	6.434E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.852E-02	FAIL ABUN
EU-152	6.938E-02	FAIL ABUN
GD-153	1.115E-01	NOT IDENT.
EU-154	1.283E-01	NOT IDENT.
EU-155	7.274E-02	FAIL ABUN
TB-160	1.888E+00	FAIL ABUN
HO-166M	4.762E-02	NOT IDENT.
TM-171	3.913E+00	NOT IDENT.
HF-172	1.722E-01	FAIL ABUN

LU-172	6.306E-02	FAIL ABUN
LU-176	1.656E-02	FAIL ABUN
HF-181	3.399E+00	NOT IDENT.
TA-182	9.997E-01	FAIL ABUN
RE-183	7.960E-01	NOT IDENT.
RE-184	2.070E+01	NOT IDENT.
W-188	8.240E+01	FAIL ABUN
IR-192	3.836E-01	FAIL ABUN
BI-207	4.478E-02	FAIL ABUN
PB-211	4.694E-01	NOT IDENT.
BI-212	5.480E-01	FAIL ABUN
RN-219	2.385E-01	NOT IDENT.
RA-223	3.556E-01	FAIL ABUN
AC-227	1.556E-01	FAIL ABUN
TH-227	1.556E-01	FAIL ABUN
TH-229	3.506E-01	FAIL ABUN
TH-231	3.556E-01	FAIL ABUN
PA-233	4.312E-02	FAIL ABUN
PA-234	1.773E-01	NOT IDENT.
PA-234M	4.256E+00	NOT IDENT.
NP-237	4.312E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.666E-01	FAIL ABUN
PU-239	2.441E+02	NOT IDENT.
AM-241	3.960E-02	NOT IDENT.
CM-243	6.118E-02	FAIL ABUN
BK-247	4.642E-02	NOT IDENT.
CM-247	2.124E-02	FAIL ABUN
CF-249	3.098E-02	NOT IDENT.
CF-251	9.250E-02	FAIL ABUN

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235037.CNF;1  *
* Acquisition date   : 3-OCT-2016 09:17:13 Sensitivity      : 3.000          *
* Detector ID        : GAM41 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 01:00:05.72 Half life ratio : *****          *
* Sample date        : 30-NOV-2015 11:19:00 Nuclide Library : SOLID          *
* Sample ID          : G405235037 Analyst initials: MXR1         *
* Batch Number       : 1596249 Sample Quantity : 1.7876E+02 GRAM    *
* Wet wt corr        : 1.00000 Quantity Err(%) : 1.1188E-03 %      *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000            *
* Wet wt corr        : 1.00000 Dry Weight : 0.00000            *
*****
*                                     CALIBRATION INFORMATION                  *
*
* Eff. Cal. date     : 26-JAN-2016 06:01:47 Eff. Geometry : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM41 CAN.CNF;3          *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
      (pCi/GRAM )      (1.96-sigma)      (1.96-sigma)
K-40         1.191E+01      1.747E+00      1.747E+00
Y-91         5.267E+02      1.530E+03      1.530E+03
RH-106       8.153E-01      7.574E-01      7.574E-01
RU-106       8.153E-01      7.574E-01      7.574E-01
CD-109       2.172E+00      1.203E+00      1.203E+00
SN-126       1.367E-01      7.540E-02      7.540E-02
HG-203       3.541E+00      4.013E+00      4.013E+00
TL-208       2.099E-01      8.210E-02      8.210E-02
PB-210       8.011E-01      7.505E-01      7.505E-01
BI-211       4.002E-01      9.023E-01      9.023E-01
PB-212       7.662E-01      1.440E-01      1.440E-01
BI-214       6.317E-01      1.773E-01      1.773E-01
PB-214       8.269E-01      1.914E-01      1.914E-01
RN-222       6.317E-01      1.773E-01      1.773E-01
RA-224       1.197E+00      9.744E-01      9.744E-01
RA-226       6.317E-01      1.773E-01      1.773E-01
AC-228       5.447E-01      2.371E-01      2.371E-01
RA-228       5.447E-01      2.371E-01      2.371E-01
TH-228       7.662E-01      1.440E-01      1.440E-01
TH-230       6.315E-01      1.772E-01      1.772E-01
PA-231       4.993E-01      8.964E-01      8.964E-01
TH-232       5.447E-01      2.371E-01      2.371E-01
TH-234       1.752E+00      9.852E-01      9.852E-01
U-234        6.315E-01      1.772E-01      1.772E-01
U-235        2.047E-01      3.596E-01      3.596E-01
U-238        1.752E+00      9.852E-01      9.852E-01
AM-243       1.513E-01      6.427E-02      6.427E-02
ANH-511      6.463E-02      6.921E-02      6.921E-02

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

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Nuclide      Key-Line      K.L Act error      TPU
      (pCi/GRAM )      (1.96-sigma)      (1.96-sigma)
BE-7         4.951E+00      1.184E+01      1.204E+01 NOT IDENT.
NA-22        2.148E-02      5.788E-02      5.868E-02 NOT IDENT.

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NA-24	1.000E+41	2.350E+41	0.000E+00	SHORT HLIF
AL-26	-9.950E-03	2.083E-02	2.131E-02	NOT IDENT.
SC-46	1.846E-02	3.663E-01	3.664E-01	FAIL ABUN
V-48	2.110E+03	1.676E+04	1.678E+04	SHORT HLIF
CR-51	3.204E+02	4.482E+02	4.709E+02	SHORT HLIF
MN-54	-1.910E-02	5.798E-02	5.862E-02	NOT IDENT.
CO-56	1.179E-01	5.199E-01	5.226E-01	FAIL ABUN
MN-56	1.000E+41	4.410E+41	0.000E+00	SHORT HLIF
CO-57	9.342E-04	3.829E-02	3.829E-02	NOT IDENT.
CO-58	-3.216E-01	5.128E-01	5.329E-01	NOT IDENT.
FE-59	4.637E-01	6.280E+00	6.284E+00	NOT IDENT.
CO-60	-1.435E-02	3.331E-02	3.393E-02	NOT IDENT.
ZN-65	5.808E-02	1.975E-01	1.992E-01	NOT IDENT.
GE-68	4.767E-01	2.352E+00	2.362E+00	NOT IDENT.
AS-73	5.366E-01	2.104E+00	2.118E+00	NOT IDENT.
AS-74	-2.462E+03	6.315E+03	6.412E+03	SHORT HLIF
SE-75	-5.786E-02	1.595E-01	1.616E-01	NOT IDENT.
BR-77	1.458E+39	1.296E+40	0.000E+00	SHORT HLIF
SR-82	-2.573E+01	7.176E+02	7.177E+02	SHORT HLIF
RB-83	2.332E-02	5.549E-01	5.550E-01	NOT IDENT.
KR-85	9.059E+00	6.829E+00	7.957E+00	NOT IDENT.
SR-85	1.041E+00	7.855E-01	9.150E-01	NOT IDENT.
RB-86	2.215E+04	3.742E+04	3.873E+04	SHORT HLIF
Y-88	-7.732E-02	1.102E-01	1.155E-01	NOT IDENT.
NB-94	3.035E-03	3.221E-02	3.224E-02	NOT IDENT.
NB-95	9.359E-01	8.460E-01	9.453E-01	NOT IDENT.
NB-95M	-8.811E-01	2.326E+00	2.360E+00	NOT IDENT.
ZR-95	-3.235E-01	1.505E+00	1.512E+00	NOT IDENT.
NB-97	1.000E+41	2.243E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	6.296E+41	0.000E+00	SHORT HLIF
MO-99	8.364E+32	1.271E+33	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	8.473E+42	0.000E+00	SHORT HLIF
RH-101	-1.423E-02	2.762E-02	2.836E-02	NOT IDENT.
RH-102	4.448E-03	4.258E-02	4.263E-02	FAIL ABUN
RU-103	6.983E-01	4.765E+00	4.776E+00	FAIL ABUN
AG-108M	9.877E-03	2.192E-02	2.237E-02	NOT IDENT.
AG-110M	-1.078E-01	1.132E-01	1.232E-01	FAIL ABUN
SN-113	-1.763E-01	2.009E-01	2.160E-01	NOT IDENT.
CD-115	-4.606E+39	3.427E+40	0.000E+00	SHORT HLIF
SN-117M	1.469E+04	1.131E+05	1.133E+05	SHORT HLIF
TE-123M	-8.763E-02	1.076E-01	1.146E-01	NOT IDENT.
SB-124	-1.014E+00	1.572E+00	1.637E+00	NOT IDENT.
SB-125	6.964E-02	8.804E-02	9.347E-02	FAIL ABUN
TE-125M	-1.005E+01	2.120E+02	2.121E+02	NOT IDENT.
I-126	6.486E+05	1.287E+06	1.320E+06	SHORT HLIF
SB-126	-9.864E+05	1.721E+06	1.778E+06	SHORT HLIF
SB-127	-4.399E+22	9.354E+22	0.000E+00	SHORT HLIF
I-131	1.201E+09	8.088E+09	8.106E+09	SHORT HLIF
I-132	1.000E+41	1.909E+42	0.000E+00	SHORT HLIF
TE-132	-7.918E+25	2.021E+27	0.000E+00	SHORT HLIF
BA-133	1.961E-03	3.949E-02	3.949E-02	FAIL ABUN
I-133	1.000E+41	2.440E+41	0.000E+00	SHORT HLIF
CS-134	2.644E-02	4.637E-02	4.787E-02	NOT IDENT.
CS-135	5.875E-02	1.115E-01	1.146E-01	NOT IDENT.
I-135	-1.000E+41	8.129E+41	0.000E+00	SHORT HLIF
CS-136	2.405E+05	4.907E+05	5.026E+05	SHORT HLIF
BA-137M	1.295E-02	3.586E-02	3.633E-02	NOT IDENT.
CS-137	1.368E-02	3.788E-02	3.838E-02	NOT IDENT.
CE-139	-4.497E-02	9.789E-02	9.996E-02	NOT IDENT.
BA-140	2.016E+06	2.110E+06	2.298E+06	SHORT HLIF
LA-140	-6.821E+05	6.716E+05	7.386E+05	SHORT HLIF
CE-141	5.951E+00	2.499E+01	2.513E+01	NOT IDENT.
CE-143	1.000E+41	7.079E+41	0.000E+00	SHORT HLIF
CE-144	3.493E-02	2.797E-01	2.801E-01	NOT IDENT.
PM-144	2.328E-02	5.129E-02	5.235E-02	NOT IDENT.
PR-144	2.387E+00	4.427E+00	4.556E+00	NOT IDENT.
PM-146	-3.748E-03	3.535E-02	3.539E-02	NOT IDENT.
ND-147	-1.141E+07	5.079E+07	5.105E+07	SHORT HLIF
PM-147	3.548E+02	6.447E+02	6.643E+02	NOT IDENT.
PM-149	1.000E+41	1.356E+41	0.000E+00	SHORT HLIF
EU-150	2.641E-03	2.134E-02	2.138E-02	FAIL ABUN
EU-152	2.960E-02	8.188E-02	8.296E-02	FAIL ABUN
GD-153	-4.303E-02	1.308E-01	1.322E-01	NOT IDENT.
EU-154	6.833E-02	1.394E-01	1.427E-01	NOT IDENT.
EU-155	6.519E-02	7.057E-02	7.644E-02	FAIL ABUN
TB-160	8.906E-01	1.998E+00	2.038E+00	FAIL ABUN
HO-166M	2.744E-03	5.261E-02	5.262E-02	NOT IDENT.
TM-171	6.914E-01	4.235E+00	4.246E+00	NOT IDENT.

HF-172	-6.034E-02	1.850E-01	1.870E-01	FAIL ABUN
LU-172	8.908E-03	7.134E-02	7.146E-02	FAIL ABUN
LU-176	-3.688E-03	1.887E-02	1.894E-02	FAIL ABUN
HF-181	-1.086E+00	4.112E+00	4.142E+00	NOT IDENT.
TA-182	8.428E-01	1.030E+00	1.098E+00	FAIL ABUN
RE-183	-3.351E-01	9.894E-01	1.001E+00	NOT IDENT.
RE-184	-9.713E+00	2.610E+01	2.646E+01	NOT IDENT.
W-188	-6.489E+01	1.452E+02	1.481E+02	FAIL ABUN
IR-192	2.320E-01	4.397E-01	4.520E-01	FAIL ABUN
BI-207	-9.682E-03	5.357E-02	5.374E-02	FAIL ABUN
PB-211	4.972E-02	5.259E-01	5.264E-01	NOT IDENT.
BI-212	6.954E-01	7.688E-01	8.303E-01	FAIL ABUN
RN-219	-3.126E-01	3.220E-01	3.515E-01	NOT IDENT.
RA-223	-6.418E-01	7.415E-01	7.959E-01	FAIL ABUN
AC-227	-4.557E-02	1.757E-01	1.769E-01	FAIL ABUN
TH-227	-4.557E-02	1.757E-01	1.769E-01	FAIL ABUN
TH-229	-8.083E-02	3.832E-01	3.849E-01	FAIL ABUN
TH-231	-6.418E-01	7.415E-01	7.959E-01	FAIL ABUN
PA-233	1.631E-02	4.589E-02	4.648E-02	FAIL ABUN
PA-234	-2.836E-01	4.190E-01	4.381E-01	NOT IDENT.
PA-234M	3.633E+00	4.361E+00	4.659E+00	NOT IDENT.
NP-237	1.631E-02	4.589E-02	4.648E-02	FAIL ABUN
NP-238	-1.000E+41	4.469E+41	0.000E+00	SHORT HLIF
NP-239	-4.034E-02	1.758E-01	1.768E-01	FAIL ABUN
PU-239	1.881E+02	2.425E+02	2.569E+02	NOT IDENT.
AM-241	1.506E-02	4.600E-02	4.650E-02	NOT IDENT.
CM-243	-3.773E-02	6.589E-02	6.805E-02	FAIL ABUN
BK-247	-4.058E-02	5.658E-02	5.947E-02	NOT IDENT.
CM-247	-2.013E-02	2.762E-02	2.907E-02	FAIL ABUN
CF-249	3.363E-02	3.082E-02	3.435E-02	NOT IDENT.
CF-251	2.247E-02	9.680E-02	9.733E-02	FAIL ABUN

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	57.4984	87.09	123.9638	136.47	72.5224
45.60	68.6647	87.57	106.5029	140.51	0.0000
46.54	73.8750	88.03	80.2402	143.76	72.1645
49.72	0.0000	88.34	80.2739	144.24	72.1991
51.35	91.1306	88.47	80.2876	145.44	64.2524
51.87	101.8809	89.96	98.0457	152.43	77.2665
52.39	78.2630	1093.63	40.2603	153.25	0.0000
52.97	72.4112	91.11	0.0000	323.87	53.9978
53.44	83.1661	92.59	78.2043	156.02	0.0000
54.07	89.2087	93.35	83.3318	158.56	0.0000
57.36	0.0000	94.56	83.4628	159.00	66.8969
57.53	110.1053	94.65	83.4723	162.33	52.5938
57.98	92.6242	94.67	83.4743	162.66	0.0000
59.27	89.6297	94.87	72.1102	163.33	62.6253
59.32	89.6374	97.43	86.3074	165.86	71.8662
59.54	89.6713	98.43	73.1997	176.31	57.8429
60.96	119.1815	98.44	73.2006	176.60	0.0000
61.17	119.2234	99.53	64.4772	177.52	59.7414
62.93	119.5741	100.11	66.2219	181.07	0.0000
63.29	119.6449	102.03	83.3998	181.52	56.7185
63.58	119.7023	103.18	73.2904	184.41	42.5274
64.28	119.8396	103.37	79.2743	143.76	42.5742
66.73	120.3141	105.21	56.3847	193.51	58.6844
67.24	120.4123	105.31	56.3918	197.03	61.6548
125.81	107.1077	106.12	73.5515	198.01	67.3125
67.75	107.1191	106.47	74.4382	201.83	60.0163
69.67	126.9777	109.28	68.6776	203.43	50.7030
70.83	100.2966	111.00	86.8801	205.31	50.7777
72.81	107.9610	111.76	0.0000	210.85	43.9140
72.87	124.3303	114.06	72.5126	215.65	43.6014
74.66	118.1038	116.30	0.0000	222.11	48.5762
74.82	118.1316	116.74	72.7339	227.09	40.1513
74.97	118.1580	119.76	72.1116	227.38	41.5941
77.11	118.5315	121.12	67.8695	228.16	0.0000
78.74	95.7097	121.22	67.8771	228.18	45.9238
79.69	99.1455	121.78	66.1776	116.74	45.9238
80.12	104.1669	122.06	76.6500	235.69	53.3885
80.19	0.0000	122.92	79.3380	235.96	53.3987
80.57	102.5790	123.07	83.7109	238.63	50.6084
81.00	92.7090	265.00	76.7861	238.98	0.0000
81.07	92.7181	125.81	77.8379	240.99	40.5542
81.75	132.5814	127.23	87.5910	242.00	40.5833
83.79	97.2274	127.91	74.5071	244.70	30.4951
84.00	94.7623	129.30	65.8379	252.40	0.0000
85.43	123.2671	131.20	86.2016	252.80	35.0468
86.55	135.1343	133.02	67.8583	254.15	0.0000
86.79	135.1780	133.52	66.1301	256.23	38.0558
86.94	123.9388	136.00	63.6475	260.90	0.0000

ENERGY MDA COUNTS

264.66	33.3643
264.80	40.2376
265.00	40.2426
268.22	33.4425
269.46	30.5169
270.03	39.3913
271.23	44.3500
273.65	0.0000
276.40	38.5652
277.37	33.6417
277.60	33.6465
278.00	33.6555
279.20	43.0920
279.54	43.1017
279.70	50.5383
280.46	44.6136
283.69	40.2347
284.31	0.0000
285.41	36.7975
285.90	0.0000
287.50	28.3811
290.67	41.9077
293.27	0.0000
351.93	30.0183
295.96	27.0286
879.38	18.0480
299.98	33.1161
300.09	33.1182
300.13	33.1195
301.36	33.1437
302.85	27.1423
256.23	39.2444
304.85	0.0000
306.78	31.2371
308.46	29.2513
311.90	26.2788
316.51	25.8434
319.41	0.0000
320.08	0.0000
321.04	29.4685
323.87	42.7485
325.23	24.4468
328.76	0.0000
333.37	31.9287
333.97	29.4826
334.37	36.8613
338.28	30.7855
338.32	30.7861
311.90	30.8234
340.48	30.8234
340.55	0.0000
344.28	24.7104
345.93	32.9779
351.06	33.0703
351.93	33.0859

ENERGY MDA COUNTS

355.39	0.0000
356.01	31.0870
364.49	0.0000
366.42	0.0000
372.51	19.8620
375.05	28.2623
377.52	25.1543
356.01	25.2368
388.16	17.9152
388.63	0.0000
391.69	31.6718
264.66	24.3912
401.81	32.8940
402.40	27.5964
404.85	22.3168
410.95	27.7128
413.71	30.9523
414.70	0.0000
423.72	0.0000
427.09	19.3359
427.87	18.2683
433.94	17.2432
439.40	22.6898
453.88	20.6664
463.37	20.7554
468.07	26.2725
473.00	0.0000
475.06	21.9617
476.78	21.9784
477.60	18.6882
482.18	20.9289
487.02	0.0000
492.35	0.0000
497.08	13.3036
505.52	26.7026
507.63	0.0000
511.00	16.7276
514.00	15.0738
514.00	15.0738
520.40	15.6737
520.69	0.0000
522.65	0.0000
527.90	0.0000
528.26	19.0939
529.59	13.4854
529.87	0.0000
531.02	0.0000
537.26	0.0000
546.56	0.0000
552.55	15.8793
563.25	15.9460
569.33	22.8337
946.00	20.5518
569.70	20.5532
583.19	20.6602

ENERGY MDA COUNTS

584.27	20.6689
595.83	0.0000
427.87	18.4857
602.52	0.0000
604.72	26.0358
607.14	18.5306
609.32	18.5456
610.33	18.5527
614.28	6.9673
618.01	6.9768
620.36	12.8020
621.93	17.4670
630.19	0.0000
631.29	11.3921
633.25	12.2769
634.78	0.0000
635.95	21.9444
636.99	0.0000
645.85	10.5707
657.76	19.4608
657.90	0.0000
661.66	21.2585
664.57	0.0000
666.33	0.0000
666.50	0.0000
667.71	0.0000
677.62	15.6755
685.70	0.0000
695.00	0.0000
696.49	16.1345
696.51	15.2382
697.00	0.0000
697.30	17.0355
697.49	19.7267
702.65	23.3538
706.68	20.6865
711.68	18.0182
720.70	0.0000
721.93	0.0000
722.78	11.5734
722.91	15.9146
723.31	18.8106
724.19	20.2631
727.33	19.0159
733.00	18.1439
735.93	15.4369
333.97	18.1702
739.50	0.0000
747.24	9.1135
748.06	15.4965
752.31	15.5178
753.82	0.0000
756.73	15.8443
756.80	15.8443
884.68	10.9937

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	11.0002	1274.44	14.6750	1620.50	7.8122
766.42	11.0024	1001.03	8.8157	1621.92	3.3490
766.84	11.0039	1002.74	13.7193	1678.03	0.0000
772.60	0.0000	1004.73	18.6283	1690.97	3.6152
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	4.5752
778.90	7.3633	1028.54	0.0000	1063.66	1.5264
783.70	0.0000	1037.84	5.9319	1771.35	1.5268
785.37	11.0669	1038.76	0.0000	1791.20	0.0000
792.07	17.5585	631.29	10.8986	1808.65	2.7649
794.95	15.7243	1048.07	0.0000	1810.72	0.0000
795.86	12.9528	1049.04	15.8623	1836.06	1.8515
810.06	12.0792	1050.41	14.2813		
810.29	12.0800	1063.66	16.9149		
344.28	13.0101	1077.00	0.0000		
810.76	13.9407	1077.34	10.9812		
815.77	0.0000	1085.87	5.0015		
1048.07	0.0000	1093.63	10.0220		
832.01	10.2877	1099.45	8.0288		
834.85	15.9126	1112.07	11.0725		
835.71	14.9800	1112.84	12.0813		
836.80	0.0000	1115.54	11.2834		
846.75	0.0000	1120.29	11.0940		
846.77	15.9676	1120.55	11.0947		
856.80	0.0000	1221.41	6.4563		
860.56	16.0314	1129.67	11.1182		
871.09	10.4045	1131.51	0.0000		
873.19	13.2498	1147.95	0.0000		
875.33	0.0000	1173.23	16.3350		
879.38	12.3252	1177.95	11.2424		
880.51	9.4836	1189.05	12.2952		
883.24	19.7412	1204.77	0.0000		
884.68	16.7111	1221.41	10.3198		
889.28	9.1269	1231.02	13.7882		
894.76	10.4740	1235.36	0.0000		
898.04	10.4834	1238.28	14.5007		
900.72	11.4448	1260.41	0.0000		
903.28	9.5441	1271.87	14.6058		
911.20	8.6086	1274.44	12.5259		
912.08	8.6105	1274.54	13.5705		
923.98	0.0000	1291.59	5.2383		
926.50	11.5261	1298.22	0.0000		
929.11	11.5342	1312.11	0.0000		
937.49	14.4502	1332.49	7.3961		
944.13	0.0000	1362.66	0.0000		
946.00	18.3454	1365.19	4.2546		
949.00	10.6294	1368.63	0.0000		
667.71	0.0000	1384.29	8.5420		
962.31	9.3094	1408.01	2.1455		
964.08	3.1046	1457.56	0.0000		
966.17	7.7656	1460.82	3.2514		
911.20	0.0000	1489.16	1.0897		
968.97	0.0000	1505.03	5.4645		
983.53	0.0000	1584.12	4.4353		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:20:03.75

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235038.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM43.CNF;151
Background date    : Z-OCT-2016 11:02:23.
Sample date       : 30-NOV-2015 10:40:00 Acquisition date : 3-OCT-2016 09:17:37.
Sample ID        : G405235038 Sample quantity : 1.70192E+02 GRAM
Detector name    : GAM43 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.65 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596249 Detector SN# :
Matrix Spike ID  : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	42.96	32	134	2.91	85.69	81	9	9.02E-03	66.7	
2	0	51.69	60	85	1.57	103.16	99	8	1.68E-02	29.7	
3	0	54.53*	29	66	1.03	108.84	107	6	7.93E-03	49.3	
4	1	74.69	82	111	1.23	149.18	144	15	2.28E-02	25.0	9.49E-01
5	1	77.06	145	123	1.11	153.92	144	15	4.04E-02	15.0	
6	0	88.08	101	157	3.87	175.96	171	11	2.81E-02	26.0	
7	0	92.78*	51	105	1.51	185.37	182	7	1.42E-02	38.0	
8	0	111.81	14	88	0.44	223.43	219	7	3.77E-03	120.3	
9	4	126.75	17	45	1.21	253.32	252	10	4.75E-03	52.2	4.25E+00
10	4	129.11	37	109	1.39	258.05	252	10	1.04E-02	51.4	
11	0	185.96*	66	117	1.23	371.78	366	9	1.82E-02	33.2	
12	0	209.35	30	84	1.34	418.57	415	10	8.40E-03	59.2	
13	4	238.57*	356	63	1.10	477.03	469	20	9.89E-02	6.6	4.42E-01
14	4	241.64	77	94	1.71	483.18	469	20	2.15E-02	29.0	
15	0	258.87	27	67	0.94	517.65	512	10	7.41E-03	60.7	
16	3	266.78	22	35	1.56	533.46	531	14	6.11E-03	42.2	1.95E+00
17	3	270.05	36	67	1.95	540.00	531	14	9.98E-03	45.9	
18	0	277.60	24	67	0.98	555.11	549	10	6.55E-03	70.0	
19	0	295.27*	111	46	1.57	590.45	586	10	3.08E-02	15.2	
20	0	299.95*	26	39	1.21	599.82	596	8	7.33E-03	46.1	
21	0	308.04	7	47	0.55	616.00	609	8	2.01E-03	169.6	
22	0	338.35	75	46	1.04	676.64	673	8	2.08E-02	19.5	
23	0	351.67*	182	54	1.38	703.29	697	12	5.06E-02	11.0	
24	0	389.09	10	20	0.94	778.14	774	6	2.78E-03	78.4	
25	0	392.32	14	21	1.32	784.61	780	7	3.83E-03	55.9	
26	0	463.79	71	24	2.35	927.58	918	19	1.98E-02	20.2	
27	0	490.97	26	39	6.33	981.95	973	19	7.28E-03	59.8	
28	0	511.12*	2	45	2.79	1022.26	1015	14	4.37E-04	****	
29	0	583.09*	109	15	1.70	1166.23	1161	10	3.03E-02	12.0	
30	0	609.40*	112	34	1.45	1218.87	1212	11	3.12E-02	13.9	
31	0	661.42	40	16	1.16	1322.93	1317	13	1.10E-02	26.3	
32	0	720.47	16	16	1.24	1441.05	1437	10	4.54E-03	51.0	
33	0	728.72	61	32	2.78	1457.56	1446	26	1.71E-02	28.4	
34	0	769.43	18	29	1.31	1538.98	1533	14	5.11E-03	65.4	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	796.61	9	25	3.78	1593.35	1581	14	2.62E-03	115.9	
36	0	827.72	16	8	2.40	1655.58	1650	11	4.46E-03	42.6	
37	1	854.43	15	16	2.04	1709.00	1703	20	4.28E-03	57.4	7.43E+00
38	1	856.93	29	15	2.04	1714.00	1703	20	8.14E-03	30.9	
39	0	911.28*	69	40	1.30	1822.73	1815	16	1.92E-02	24.0	
40	1	965.12	20	11	2.34	1930.43	1926	24	5.52E-03	34.1	1.79E+00
41	1	968.70	45	13	2.34	1937.57	1926	24	1.26E-02	24.4	
42	0	1032.96	9	5	1.42	2066.10	2062	8	2.58E-03	54.9	
43	4	1065.40	16	7	2.20	2131.00	2125	14	4.39E-03	35.8	4.26E-01
44	4	1067.83	8	1	1.80	2135.85	2125	14	2.14E-03	53.6	
45	0	1120.89	18	25	1.43	2241.98	2235	15	4.98E-03	63.0	
46	0	1177.22	15	13	1.65	2354.66	2348	14	4.27E-03	57.1	
47	0	1244.93	6	9	0.47	2490.08	2484	8	1.69E-03	97.0	
48	0	1460.55*	307	3	2.10	2921.34	2913	15	8.52E-02	5.9	
49	0	1764.03*	17	0	0.72	3528.30	3520	15	4.77E-03	26.5	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235038.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 30-NOV-2015 10:40:00 Acquisition date : 3-OCT-2016 09:17:37
Sample ID : G405235038 Sample quantity : 170.19 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA43 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.65 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.002E+00	1.238E+01	1.238E+01	11.86	OK
AS-73	53.44	10.30*	9.178E-01	1.918E+00	2.738E+01	98.59	OK
CD-109	88.03	3.70*	4.365E+00	3.050E+00	4.845E+00	64.96	OK
SN-113	391.69	64.94*	3.112E+00	3.501E-02	2.237E-01	111.79	OK
SN-126	64.28	9.60	1.983E+00	----- Line	Not Found	-----	Absent
	86.94	8.90	4.365E+00	1.268E+00	1.268E+00	64.96	OK
	87.57	37.00*	4.365E+00	3.050E-01	3.050E-01	64.96	OK
CS-135	268.22	16.00*	4.342E+00	1.698E-01	1.698E-01	84.47	OK
BA-137M	661.66	89.90*	1.974E+00	1.071E-01	1.092E-01	52.70	OK
CS-137	661.66	85.10*	1.974E+00	1.131E-01	1.154E-01	52.70	OK
TM-171	51.35	0.27	6.497E-01	2.199E+02	2.982E+02	59.33	OK
	52.39	0.47*	6.497E-01	1.263E+02	1.713E+02	59.33	OK
	66.73	0.14	2.262E+00	----- Line	Not Found	-----	Absent
TL-208	277.37	6.60	4.202E+00	4.542E-01	4.542E-01	139.97	OK
	583.19	85.00*	2.199E+00	2.845E-01	2.845E-01	23.91	OK
	860.56	12.50	1.582E+00	----- Line	Not Found	-----	Absent
PB-212	74.82	10.28	3.134E+00	1.118E+00	1.118E+00	71.23	OK
	77.11	17.10	3.377E+00	1.546E+00	1.546E+00	30.01	OK
	238.63	43.60*	4.739E+00	9.370E-01	9.370E-01	13.13	OK
	300.09	3.30	3.937E+00	1.076E+00	1.076E+00	92.17	OK
BI-214	609.32	45.49*	2.117E+00	5.666E-01	5.668E-01	27.84	OK
	1120.29	14.92	1.266E+00	4.246E-01	4.247E-01	125.97	OK
	1764.49	15.30	8.365E-01	5.620E-01	5.622E-01	52.95	OK
PB-214	74.82	5.80	3.147E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.377E+00	2.725E+00	2.726E+00	30.01	OK
	87.09	3.41	4.287E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.688E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	3.990E+00	8.000E-01	8.003E-01	30.31	OK
	351.93	35.60*	3.428E+00	7.757E-01	7.760E-01	22.09	OK
RN-222	609.32	45.49*	2.117E+00	5.666E-01	5.668E-01	27.84	OK
	1120.29	14.92	1.266E+00	4.246E-01	4.247E-01	125.97	OK
	1764.49	15.30	8.365E-01	5.620E-01	5.622E-01	52.95	OK
RA-224	240.99	4.10*	4.694E+00	7.685E-01	7.685E-01	174.16	OK
RA-226	609.32	45.49*	2.117E+00	5.666E-01	5.668E-01	27.84	OK
	1120.29	14.92	1.266E+00	4.246E-01	4.247E-01	125.97	OK
	1764.49	15.30	8.365E-01	5.620E-01	5.622E-01	52.95	OK
AC-228	105.21	1.10	5.396E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.546E+00	9.761E-01	9.761E-01	39.05	OK
	794.95	4.25	1.691E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.621E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.508E+00	8.193E-01	8.193E-01	48.07	OK
	968.97	15.80	1.432E+00	9.129E-01	9.129E-01	48.81	OK
RA-228	105.21	1.10	5.396E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.546E+00	9.761E-01	9.761E-01	39.05	OK
	794.95	4.25	1.691E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.621E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.508E+00	8.193E-01	8.193E-01	48.07	OK
	968.97	15.80	1.432E+00	9.129E-01	9.129E-01	48.81	OK
TH-228	74.82	10.28	3.134E+00	1.118E+00	1.118E+00	71.23	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	77.11	17.10	3.377E+00	1.546E+00	1.546E+00	30.01	OK
	238.63	43.60*	4.739E+00	9.370E-01	9.370E-01	13.13	OK
	300.09	3.30	3.937E+00	1.076E+00	1.076E+00	92.17	OK
TH-230	609.32	45.49*	2.117E+00	5.666E-01	5.666E-01	27.84	OK
	1120.29	14.92	1.266E+00	4.246E-01	4.246E-01	125.97	OK
	1764.49	15.30	8.365E-01	5.620E-01	5.620E-01	52.95	OK
PA-231	283.69	1.70	4.127E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	3.937E+00	6.635E-01	6.635E-01	92.17	OK
TH-232	105.21	1.10	5.396E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.546E+00	9.761E-01	9.761E-01	39.05	OK
	835.71	1.61	1.621E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.508E+00	8.193E-01	8.193E-01	48.07	OK
	968.97	15.80	1.432E+00	9.129E-01	9.129E-01	48.81	OK
U-234	609.32	45.49*	2.117E+00	5.666E-01	5.666E-01	27.84	OK
	1120.29	14.92	1.266E+00	4.246E-01	4.246E-01	125.97	OK
	1764.49	15.30	8.365E-01	5.620E-01	5.620E-01	52.95	OK
AM-243	43.53	5.90	1.014E-01	3.532E+01	3.532E+01	133.45	OK
	74.66	67.20*	3.134E+00	1.711E-01	1.711E-01	71.23	OK
CF-249	252.80	2.50	4.533E+00	----- Line	Not Found	-----	Absent
	333.37	14.60	3.593E+00	----- Line	Not Found	-----	Absent
	388.16	66.00*	3.135E+00	2.481E-02	2.485E-02	156.84	OK
ANH-511	511.00	100.00*	2.465E+00	3.170E-03	3.170E-03	2134.97	OK

Flag: "*" = Keyline

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235038.CNF;1    *
* Acquisition date   : 3-OCT-2016 09:17:37 Sensitivity      : 3.000             *
* Detector ID        : GAM43 Energy tolerance: 1.500       *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.65 Half life ratio : *****          *
* Sample date       : 30-NOV-2015 10:40:00 Analyst initials: MXR1       *
* Sample ID         : G405235038 Sample Quantity : 1.7019E+02 GRAM    *
* Batch Number      : 1596249 Wet Weight      : 0.00000      *
* Wet wt corr       : 1.00000 Dry Weight      : 0.00000      *
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 6-SEP-2016 07:25:20 Eff. Geometry   : CAN          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM43 CAN.CNF;7          *
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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.238E+01	1.439E+00	6.582E-01
AS-73	2.738E+01	2.645E+01	2.522E+01
CD-109	4.845E+00	3.084E+00	2.130E+00
SN-113	2.237E-01	2.451E-01	4.203E-01
SN-126	3.050E-01	1.942E-01	1.352E-01
CS-135	1.698E-01	1.406E-01	2.407E-01
BA-137M	1.092E-01	5.640E-02	5.907E-02
CS-137	1.154E-01	5.958E-02	6.240E-02
TM-171	1.713E+02	9.960E+01	5.971E+01
TL-208	2.845E-01	6.666E-02	6.132E-02
PB-212	9.370E-01	1.206E-01	8.681E-02
BI-214	5.668E-01	1.547E-01	1.317E-01
PB-214	7.760E-01	1.680E-01	1.140E-01
RN-222	5.668E-01	1.547E-01	1.317E-01
RA-224	7.685E-01	1.312E+00	9.308E-01
RA-226	5.668E-01	1.547E-01	1.317E-01
AC-228	8.193E-01	3.860E-01	2.602E-01
RA-228	8.193E-01	3.860E-01	2.602E-01
TH-228	9.370E-01	1.206E-01	8.681E-02
TH-230	5.666E-01	1.546E-01	1.316E-01
PA-231	6.635E-01	5.993E-01	7.396E-01
TH-232	8.193E-01	3.860E-01	2.602E-01
U-234	5.666E-01	1.546E-01	1.316E-01
AM-243	1.711E-01	1.194E-01	1.051E-01
CF-249	2.485E-02	3.819E-02	3.879E-02
ANH-511	3.170E-03	6.633E-02	4.723E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-5.736E+00	1.263E+01	2.251E+01	NOT IDENT.
NA-22	-1.412E-02	4.877E-02	9.365E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	-1.236E-02	3.111E-02	5.866E-02	NOT IDENT.

SC-46	2.703E-01	3.968E-01	8.625E-01	FAIL ABUN
V-48	0.000E+00	2.035E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.353E+02	0.000E+00	SHORT HLIF
MN-54	2.686E-02	6.304E-02	1.314E-01	NOT IDENT.
CO-56	-3.201E-03	4.586E-01	9.115E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	5.143E-03	4.857E-02	9.125E-02	NOT IDENT.
CO-58	1.387E-01	6.086E-01	1.247E+00	NOT IDENT.
FE-59	2.372E+00	8.065E+00	1.626E+01	NOT IDENT.
CO-60	1.128E-02	4.240E-02	8.942E-02	NOT IDENT.
ZN-65	0.000E+00	1.607E-01	2.792E-01	NOT IDENT.
GE-68	-2.413E-01	2.007E+00	3.901E+00	NOT IDENT.
AS-74	0.000E+00	6.439E+03	0.000E+00	SHORT HLIF
SE-75	3.837E-02	2.005E-01	3.632E-01	NOT IDENT.
BR-77	0.000E+00	2.312E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	1.044E+03	0.000E+00	SHORT HLIF
RB-83	-2.502E-01	7.342E-01	1.419E+00	NOT IDENT.
KR-85	-2.349E+00	7.961E+00	1.253E+01	NOT IDENT.
SR-85	-2.721E-01	9.159E-01	1.441E+00	NOT IDENT.
RB-86	0.000E+00	3.308E+04	0.000E+00	SHORT HLIF
Y-88	-8.303E-02	1.711E-01	3.177E-01	NOT IDENT.
Y-91	-1.197E+02	5.995E+02	1.165E+03	NOT IDENT.
NB-94	-1.205E-02	2.924E-02	5.483E-02	NOT IDENT.
NB-95	-9.290E-02	9.182E-01	1.570E+00	NOT IDENT.
NB-95M	-3.887E-01	2.454E+00	4.255E+00	NOT IDENT.
ZR-95	8.792E-01	1.478E+00	3.183E+00	NOT IDENT.
NB-97	0.000E+00	9.864E+40	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.403E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.525E+41	0.000E+00	SHORT HLIF
RH-101	2.937E-02	3.003E-02	6.382E-02	FAIL ABUN
RH-102	1.634E-02	5.397E-02	1.130E-01	NOT IDENT.
RU-103	-3.664E+00	7.344E+00	1.116E+01	FAIL ABUN
RH-106	-4.074E-02	4.694E-01	9.335E-01	NOT IDENT.
RU-106	-4.074E-02	4.694E-01	9.335E-01	NOT IDENT.
AG-108M	-1.106E-02	2.638E-02	4.762E-02	NOT IDENT.
AG-110M	-1.242E-01	1.035E-01	1.604E-01	NOT IDENT.
CD-115	0.000E+00	3.462E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.160E+05	0.000E+00	SHORT HLIF
TE-123M	2.577E-02	1.123E-01	2.318E-01	NOT IDENT.
SB-124	1.463E+00	1.779E+00	4.871E+00	NOT IDENT.
SB-125	-6.762E-02	9.768E-02	1.697E-01	FAIL ABUN
TE-125M	3.479E+01	3.382E+02	5.900E+02	NOT IDENT.
I-126	0.000E+00	1.433E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	2.521E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	9.023E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	9.615E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.838E+27	0.000E+00	SHORT HLIF
BA-133	5.826E-03	3.982E-02	7.036E-02	FAIL ABUN
I-133	0.000E+00	9.779E+40	0.000E+00	SHORT HLIF
CS-134	4.068E-02	9.241E-02	1.113E-01	FAIL ABUN
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	4.898E+05	0.000E+00	SHORT HLIF
CE-139	-1.039E-01	9.441E-02	1.748E-01	NOT IDENT.
BA-140	0.000E+00	2.035E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	6.136E+05	0.000E+00	SHORT HLIF
CE-141	-1.347E+01	2.513E+01	4.921E+01	NOT IDENT.
CE-143	0.000E+00	1.415E+41	0.000E+00	SHORT HLIF
CE-144	-2.379E-01	3.257E-01	6.022E-01	NOT IDENT.
PM-144	1.692E-02	5.685E-02	1.160E-01	NOT IDENT.
PR-144	1.550E+00	4.970E+00	1.016E+01	NOT IDENT.
PM-146	-1.941E-02	4.176E-02	7.563E-02	NOT IDENT.
ND-147	0.000E+00	4.899E+07	0.000E+00	SHORT HLIF
PM-147	3.652E+01	8.214E+02	1.537E+03	NOT IDENT.
PM-149	0.000E+00	1.410E+41	0.000E+00	SHORT HLIF
EU-150	-1.836E-02	2.754E-02	4.297E-02	FAIL ABUN
EU-152	-3.342E-02	8.725E-02	1.613E-01	FAIL ABUN
GD-153	-1.124E-01	1.983E-01	3.575E-01	NOT IDENT.
EU-154	-4.213E-02	1.217E-01	2.310E-01	NOT IDENT.
EU-155	2.382E-02	1.030E-01	1.989E-01	NOT IDENT.
TB-160	1.138E+00	1.776E+00	3.923E+00	FAIL ABUN
HO-166M	-3.298E-02	5.440E-02	9.885E-02	NOT IDENT.
HF-172	2.024E-01	2.069E-01	4.546E-01	FAIL ABUN
LU-172	-3.067E-02	7.432E-02	1.334E-01	FAIL ABUN
LU-176	1.058E-02	3.517E-02	4.423E-02	FAIL ABUN
HF-181	2.507E-01	4.386E+00	8.466E+00	NOT IDENT.
TA-182	3.567E-01	1.128E+00	2.303E+00	FAIL ABUN

RE-183	2.083E+00	5.140E+00	9.809E+00	NOT IDENT.
RE-184	-1.787E+01	3.726E+01	6.436E+01	NOT IDENT.
W-188	2.622E+01	1.143E+02	2.062E+02	NOT IDENT.
IR-192	3.321E-01	4.274E-01	9.004E-01	FAIL ABUN
HG-203	-2.113E-01	2.204E+00	3.861E+00	NOT IDENT.
BI-207	-8.451E-03	5.413E-02	8.826E-02	FAIL ABUN
PB-210	-3.340E+00	9.826E+00	1.762E+01	NOT IDENT.
BI-211	0.000E+00	4.626E-01	7.270E-01	FAIL ABUN
PB-211	-2.421E-01	6.675E-01	1.217E+00	NOT IDENT.
BI-212	0.000E+00	1.336E+00	1.339E+00	FAIL ABUN
RN-219	1.009E-01	3.491E-01	6.917E-01	FAIL ABUN
RA-223	1.027E-01	5.134E-01	1.019E+00	FAIL ABUN
AC-227	-2.400E-02	2.142E-01	3.730E-01	FAIL ABUN
TH-227	-2.400E-02	2.142E-01	3.730E-01	FAIL ABUN
TH-229	1.758E-03	3.749E-01	7.516E-01	FAIL ABUN
TH-231	1.027E-01	5.134E-01	1.019E+00	FAIL ABUN
PA-233	3.351E-02	5.235E-02	1.084E-01	FAIL ABUN
PA-234	-9.969E-02	3.011E-01	5.528E-01	FAIL ABUN
PA-234M	-3.021E+00	3.889E+00	6.504E+00	NOT IDENT.
TH-234	-1.459E-01	1.591E+00	3.114E+00	FAIL ABUN
U-235	2.090E-01	1.573E-01	3.451E-01	FAIL ABUN
NP-237	3.351E-02	5.235E-02	1.084E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
U-238	-1.459E-01	1.591E+00	3.114E+00	FAIL ABUN
NP-239	1.137E-01	2.239E-01	4.401E-01	FAIL ABUN
PU-239	5.759E+02	5.796E+02	6.423E+02	FAIL ABUN
AM-241	-1.384E-01	1.909E-01	3.534E-01	NOT IDENT.
CM-243	-4.867E-02	9.784E-02	1.768E-01	FAIL ABUN
BK-247	4.107E-03	6.672E-02	1.188E-01	NOT IDENT.
CM-247	1.285E-02	3.248E-02	6.498E-02	FAIL ABUN
CF-251	-7.742E-02	9.753E-02	1.842E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	300	10.66*	1.002E+00	1.238E+01	1.238E+01	11.86
AS-73	53.44	41	10.30*	9.178E-01	1.918E+00	2.738E+01	98.59
CD-109	88.03	139	3.70*	4.365E+00	3.787E+00	6.016E+00	51.98
SN-113	391.69	16	64.94*	3.112E+00	3.501E-02	2.237E-01	111.79
SN-126	64.28	-----	9.60	1.983E+00	-----	Line Not Found	-----
	86.94	139	8.90	4.365E+00	1.575E+00	1.575E+00	51.98
	87.57	139	37.00*	4.365E+00	3.787E-01	3.787E-01	51.98
CS-135	268.22	27	16.00*	4.342E+00	1.698E-01	1.698E-01	84.47
BA-137M	661.66	43	89.90*	1.974E+00	1.071E-01	1.092E-01	52.70
CS-137	661.66	43	85.10*	1.974E+00	1.131E-01	1.154E-01	52.70
TM-171	51.35	87	0.27	6.497E-01	2.199E+02	2.982E+02	59.33
	52.39	87	0.47*	6.497E-01	1.263E+02	1.713E+02	59.33
	66.73	-----	0.14	2.262E+00	-----	Line Not Found	-----
TL-208	277.37	29	6.60	4.202E+00	4.542E-01	4.542E-01	139.97
	583.19	121	85.00*	2.199E+00	2.845E-01	2.845E-01	23.91
	860.56	-----	12.50	1.582E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	2.941E+00	-----	Line Not Found	-----
	351.06	215	12.92*	3.428E+00	2.137E+00	2.137E+00	22.09
PB-212	74.82	115	10.28	3.134E+00	1.570E+00	1.570E+00	49.99
	77.11	202	17.10	3.377E+00	1.546E+00	1.546E+00	30.01
	238.63	439	43.60*	4.739E+00	9.370E-01	9.370E-01	13.13
	300.09	32	3.30	3.937E+00	1.076E+00	1.076E+00	92.17
BI-214	609.32	124	45.49*	2.117E+00	5.666E-01	5.668E-01	27.84
	1120.29	18	14.92	1.266E+00	4.246E-01	4.247E-01	125.97
	1764.49	16	15.30	8.365E-01	5.620E-01	5.622E-01	52.95
PB-214	74.82	115	5.80	3.134E+00	2.782E+00	2.783E+00	49.99
	77.11	202	9.70	3.377E+00	2.725E+00	2.726E+00	30.01
	87.09	139	3.41	4.365E+00	4.110E+00	4.111E+00	51.98
	242.00	95	7.25	4.694E+00	1.235E+00	1.235E+00	58.08
	295.22	133	18.42	3.990E+00	8.000E-01	8.003E-01	30.31
	351.93	215	35.60*	3.428E+00	7.757E-01	7.760E-01	22.09
RN-222	609.32	124	45.49*	2.117E+00	5.666E-01	5.668E-01	27.84
	1120.29	18	14.92	1.266E+00	4.246E-01	4.247E-01	125.97
	1764.49	16	15.30	8.365E-01	5.620E-01	5.622E-01	52.95
RA-224	240.99	95	4.10*	4.694E+00	2.183E+00	2.183E+00	58.08
RA-226	609.32	124	45.49*	2.117E+00	5.666E-01	5.668E-01	27.84
	1120.29	18	14.92	1.266E+00	4.246E-01	4.247E-01	125.97
	1764.49	16	15.30	8.365E-01	5.620E-01	5.622E-01	52.95
AC-228	105.21	-----	1.10	5.396E+00	-----	Line Not Found	-----
	338.32	88	11.27	3.546E+00	9.761E-01	9.761E-01	39.05
	794.95	-----	4.25	1.691E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.621E+00	-----	Line Not Found	-----
	911.20	72	25.80*	1.508E+00	8.193E-01	8.193E-01	48.07
	968.97	47	15.80	1.432E+00	9.129E-01	9.129E-01	48.81
RA-228	105.21	-----	1.10	5.396E+00	-----	Line Not Found	-----
	338.32	88	11.27	3.546E+00	9.761E-01	9.761E-01	39.05
	794.95	-----	4.25	1.691E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	835.71	-----	1.61	1.621E+00	-----	Line Not Found	-----
	911.20	72	25.80*	1.508E+00	8.193E-01	8.193E-01	48.07
	968.97	47	15.80	1.432E+00	9.129E-01	9.129E-01	48.81
TH-228	74.82	115	10.28	3.134E+00	1.570E+00	1.570E+00	49.99
	77.11	202	17.10	3.377E+00	1.546E+00	1.546E+00	30.01
	238.63	439	43.60*	4.739E+00	9.370E-01	9.370E-01	13.13
	300.09	32	3.30	3.937E+00	1.076E+00	1.076E+00	92.17
TH-230	609.32	124	45.49*	2.117E+00	5.666E-01	5.666E-01	27.84
	1120.29	18	14.92	1.266E+00	4.246E-01	4.246E-01	125.97
	1764.49	16	15.30	8.365E-01	5.620E-01	5.620E-01	52.95
PA-231	283.69	-----	1.70	4.127E+00	-----	Line Not Found	-----
	301.36	32	5.35*	3.937E+00	6.635E-01	6.635E-01	92.17
TH-232	105.21	-----	1.10	5.396E+00	-----	Line Not Found	-----
	338.32	88	11.27	3.546E+00	9.761E-01	9.761E-01	39.05
	835.71	-----	1.61	1.621E+00	-----	Line Not Found	-----
	911.20	72	25.80*	1.508E+00	8.193E-01	8.193E-01	48.07
	968.97	47	15.80	1.432E+00	9.129E-01	9.129E-01	48.81
U-234	609.32	124	45.49*	2.117E+00	5.666E-01	5.666E-01	27.84
	1120.29	18	14.92	1.266E+00	4.246E-01	4.246E-01	125.97
	1764.49	16	15.30	8.365E-01	5.620E-01	5.620E-01	52.95
AM-243	43.53	48	5.90	1.014E-01	3.532E+01	3.532E+01	133.45
	74.66	115	67.20*	3.134E+00	2.401E-01	2.401E-01	49.99
CF-249	252.80	-----	2.50	4.533E+00	-----	Line Not Found	-----
	333.37	-----	14.60	3.593E+00	-----	Line Not Found	-----
	388.16	12	66.00*	3.135E+00	2.481E-02	2.485E-02	156.84
ANH-511	511.00	2	100.00*	2.465E+00	3.170E-03	3.170E-03	2134.97

Flag: "*" = Keyline

Total number of lines in spectrum 49
Number of unidentified lines 9
Number of lines tentatively identified by NID 40 81.63%

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	1.238E+01	1.238E+01	0.147E+01	11.86	
AS-73	80.30D	14.3	1.918E+00	2.738E+01	2.699E+01	98.59	
CD-109	461.40D	1.59	3.787E+00	6.016E+00	3.127E+00	51.98	
SN-113	115.09D	6.39	3.501E-02	2.237E-01	2.501E-01	111.79	
SN-126	2.30E+05Y	1.00	3.787E-01	3.787E-01	1.969E-01	51.98	
CS-135	2.30E+06Y	1.00	1.698E-01	1.698E-01	1.435E-01	84.47	
BA-137M	30.08Y	1.02	1.071E-01	1.092E-01	0.575E-01	52.70	
CS-137	30.08Y	1.02	1.131E-01	1.154E-01	0.608E-01	52.70	
TM-171	1.92Y	1.36	1.263E+02	1.713E+02	1.016E+02	59.33	
TL-208	1.41E+10Y	1.00	2.845E-01	2.845E-01	0.680E-01	23.91	
BI-211	7.04E+08Y	1.00	2.137E+00	2.137E+00	0.472E+00	22.09	
PB-212	1.41E+10Y	1.00	9.370E-01	9.370E-01	1.230E-01	13.13	
BI-214	1600.00Y	1.00	5.666E-01	5.668E-01	1.578E-01	27.84	
PB-214	1600.00Y	1.00	7.757E-01	7.760E-01	1.714E-01	22.09	
RN-222	1600.00Y	1.00	5.666E-01	5.668E-01	1.578E-01	27.84	
RA-224	1.41E+10Y	1.00	2.183E+00	2.183E+00	1.268E+00	58.08	
RA-226	1600.00Y	1.00	5.666E-01	5.668E-01	1.578E-01	27.84	
AC-228	1.41E+10Y	1.00	8.193E-01	8.193E-01	3.939E-01	48.07	
RA-228	1.41E+10Y	1.00	8.193E-01	8.193E-01	3.939E-01	48.07	
TH-228	1.41E+10Y	1.00	9.370E-01	9.370E-01	1.230E-01	13.13	
TH-230	7.54E+04Y	1.00	5.666E-01	5.666E-01	1.578E-01	27.84	
PA-231	7.04E+08Y	1.00	6.635E-01	6.635E-01	6.116E-01	92.17	
TH-232	1.41E+10Y	1.00	8.193E-01	8.193E-01	3.939E-01	48.07	
U-234	2.45E+05Y	1.00	5.666E-01	5.666E-01	1.578E-01	27.84	
AM-243	7370.00Y	1.00	2.401E-01	2.401E-01	1.200E-01	49.99	
CF-249	351.00Y	1.00	2.481E-02	2.485E-02	3.897E-02	156.84	
ANH-511	1.00E+09Y	1.00	3.170E-03	3.170E-03	67.68E-03	2134.97	
Total Activity :			1.587E+02	2.315E+02			

Grand Total Activity : 1.587E+02 2.315E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.78	70	144	1.51	185.37	182	7	1.42E-02	75.9	4.71E+00	T
0	111.81	18	118	0.44	223.43	219	7	3.77E-03	****	5.64E+00	T
4	126.75	23	59	1.21	253.32	252	10	4.75E-03	****	5.96E+00	T
4	129.11	49	143	1.39	258.05	252	10	1.04E-02	****	5.98E+00	T
0	185.96	83	148	1.23	371.78	366	9	1.82E-02	66.4	5.57E+00	T
0	209.35	38	105	1.34	418.57	415	10	8.40E-03	****	5.19E+00	
0	258.87	33	82	0.94	517.65	512	10	7.41E-03	****	4.45E+00	
3	270.05	44	81	1.95	540.00	531	14	9.98E-03	91.8	4.30E+00	T
0	308.04	9	56	0.55	616.00	609	8	2.01E-03	****	3.85E+00	T
0	463.79	81	27	2.35	927.58	918	19	1.98E-02	40.4	2.68E+00	T
0	490.97	30	44	6.33	981.95	973	19	7.28E-03	****	2.55E+00	T
0	720.47	18	17	1.24	1441.05	1437	10	4.54E-03	****	1.84E+00	T
0	728.72	66	34	2.78	1457.56	1446	26	1.71E-02	56.8	1.82E+00	T
0	769.43	20	31	1.31	1538.98	1533	14	5.11E-03	****	1.74E+00	
0	796.61	10	26	3.78	1593.35	1581	14	2.62E-03	****	1.69E+00	T
0	827.72	17	8	2.40	1655.58	1650	11	4.46E-03	85.2	1.63E+00	
1	854.43	16	17	2.04	1709.00	1703	20	4.28E-03	****	1.59E+00	
1	856.93	31	16	2.04	1714.00	1703	20	8.14E-03	61.8	1.59E+00	T
1	965.12	21	11	2.34	1930.43	1926	24	5.52E-03	68.2	1.44E+00	T
0	1032.96	10	5	1.42	2066.10	2062	8	2.58E-03	****	1.36E+00	
4	1065.40	16	7	2.20	2131.00	2125	14	4.39E-03	71.7	1.32E+00	
4	1067.83	8	1	1.80	2135.85	2125	14	2.14E-03	****	1.32E+00	
0	1177.22	15	13	1.65	2354.66	2348	14	4.27E-03	****	1.21E+00	T
0	1244.93	6	9	0.47	2490.08	2484	8	1.69E-03	****	1.16E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235038.CNF;1
* Acquisition date   : 3-OCT-2016 09:17:37 Sensitivity      : 3.000
* Detector ID        : GAM43 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.65 Half life ratio : *****
* Sample date        : 30-NOV-2015 10:40:00 Nuclide Library : SOLID
* Sample ID          : G405235038 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.7019E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 6-SEP-2016 07:25:20 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM43 CAN.CNF;7
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.725E-01
AS-73	1.147E+01
CD-109	1.000E+00
SN-113	1.903E-01
SN-126	6.348E-02
CS-135	1.111E-01
BA-137M	2.598E-02
CS-137	2.744E-02
TM-171	2.715E+01
TL-208	2.734E-02
PB-212	4.032E-02
BI-214	5.938E-02
PB-214	5.180E-02
RN-222	5.938E-02
RA-224	4.323E-01
RA-226	5.938E-02
AC-228	1.144E-01
RA-228	1.144E-01
TH-228	4.032E-02
TH-230	5.936E-02
PA-231	3.396E-01
TH-232	1.144E-01
U-234	5.936E-02
AM-243	4.942E-02
CF-249	1.635E-02
ANH-511	2.108E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	9.992E+00	NOT IDENT.
NA-22	4.012E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.196E-02	NOT IDENT.
SC-46	3.803E-01	FAIL ABUN

V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.818E-02	NOT IDENT.
CO-56	3.949E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.280E-02	NOT IDENT.
CO-58	5.476E-01	NOT IDENT.
FE-59	7.116E+00	NOT IDENT.
CO-60	3.849E-02	NOT IDENT.
ZN-65	1.169E-01	NOT IDENT.
GE-68	1.632E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.669E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.414E-01	NOT IDENT.
KR-85	5.644E+00	NOT IDENT.
SR-85	6.491E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.031E-01	NOT IDENT.
Y-91	5.072E+02	NOT IDENT.
NB-94	2.411E-02	NOT IDENT.
NB-95	6.859E-01	NOT IDENT.
NB-95M	1.977E+00	NOT IDENT.
ZR-95	1.411E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.000E-02	FAIL ABUN
RH-102	5.018E-02	NOT IDENT.
RU-103	4.956E+00	FAIL ABUN
RH-106	4.134E-01	NOT IDENT.
RU-106	4.134E-01	NOT IDENT.
AG-108M	2.137E-02	NOT IDENT.
AG-110M	6.734E-02	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.081E-01	NOT IDENT.
SB-124	1.933E+00	NOT IDENT.
SB-125	7.582E-02	FAIL ABUN
TE-125M	2.771E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.201E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	5.002E-02	FAIL ABUN
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	8.090E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.302E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.805E-01	NOT IDENT.
PM-144	5.210E-02	NOT IDENT.
PR-144	4.562E+00	NOT IDENT.
PM-146	3.390E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.202E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.962E-02	FAIL ABUN
EU-152	7.357E-02	FAIL ABUN
GD-153	1.678E-01	NOT IDENT.
EU-154	9.911E-02	NOT IDENT.
EU-155	9.297E-02	NOT IDENT.
TB-160	1.710E+00	FAIL ABUN
HO-166M	4.327E-02	NOT IDENT.
HF-172	2.141E-01	FAIL ABUN
LU-172	5.647E-02	FAIL ABUN
LU-176	2.036E-02	FAIL ABUN
HF-181	3.772E+00	NOT IDENT.
TA-182	1.028E+00	FAIL ABUN
RE-183	4.584E+00	NOT IDENT.

RE-184	2.777E+01	NOT IDENT.
W-188	9.476E+01	NOT IDENT.
IR-192	4.135E-01	FAIL ABUN
HG-203	1.749E+00	NOT IDENT.
BI-207	3.784E-02	FAIL ABUN
PB-210	8.202E+00	NOT IDENT.
BI-211	3.494E-01	FAIL ABUN
PB-211	5.535E-01	NOT IDENT.
BI-212	6.189E-01	FAIL ABUN
RN-219	3.146E-01	FAIL ABUN
RA-223	4.663E-01	FAIL ABUN
AC-227	1.716E-01	FAIL ABUN
TH-227	1.716E-01	FAIL ABUN
TH-229	3.491E-01	FAIL ABUN
TH-231	4.663E-01	FAIL ABUN
PA-233	4.989E-02	FAIL ABUN
PA-234	2.415E-01	FAIL ABUN
PA-234M	2.729E+00	NOT IDENT.
TH-234	1.462E+00	FAIL ABUN
U-235	1.628E-01	FAIL ABUN
NP-237	4.989E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	1.462E+00	FAIL ABUN
NP-239	2.059E-01	FAIL ABUN
PU-239	3.040E+02	FAIL ABUN
AM-241	1.639E-01	NOT IDENT.
CM-243	8.239E-02	FAIL ABUN
BK-247	5.455E-02	NOT IDENT.
CM-247	2.962E-02	FAIL ABUN
CF-251	8.557E-02	NOT IDENT.

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235038.CNF;1
* Acquisition date   : 3-OCT-2016 09:17:37 Sensitivity      : 3.000
* Detector ID        : GAM43 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.65 Half life ratio : *****
* Sample date        : 30-NOV-2015 10:40:00 Nuclide Library : SOLID
* Sample ID          : G405235038 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.7019E+02 GRAM
*                               Quantity Err(%) : 1.1751E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 6-SEP-2016 07:25:20 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF_GAM43_CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.238E+01	1.578E+00	1.578E+00
AS-73	2.738E+01	2.705E+01	2.705E+01
CD-109	4.845E+00	3.113E+00	3.113E+00
SN-113	2.237E-01	2.453E-01	2.453E-01
SN-126	3.050E-01	1.953E-01	1.953E-01
CS-135	1.698E-01	1.411E-01	1.411E-01
BA-137M	1.092E-01	5.659E-02	5.659E-02
CS-137	1.154E-01	5.978E-02	5.978E-02
TM-171	1.713E+02	1.008E+02	1.008E+02
TL-208	2.845E-01	6.776E-02	6.776E-02
PB-212	9.370E-01	1.306E-01	1.306E-01
BI-214	5.668E-01	1.566E-01	1.566E-01
PB-214	7.760E-01	1.711E-01	1.711E-01
RN-222	5.668E-01	1.566E-01	1.566E-01
RA-224	7.685E-01	1.316E+00	1.316E+00
RA-226	5.668E-01	1.566E-01	1.566E-01
AC-228	8.193E-01	3.883E-01	3.883E-01
RA-228	8.193E-01	3.883E-01	3.883E-01
TH-228	9.370E-01	1.306E-01	1.306E-01
TH-230	5.666E-01	1.565E-01	1.565E-01
PA-231	6.635E-01	6.158E-01	6.158E-01
TH-232	8.193E-01	3.883E-01	3.883E-01
U-234	5.666E-01	1.565E-01	1.565E-01
AM-243	1.711E-01	1.202E-01	1.202E-01
CF-249	2.485E-02	3.825E-02	3.825E-02
ANH-511	3.170E-03	6.633E-02	6.633E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-5.736E+00	1.264E+01	1.290E+01	NOT IDENT.
NA-22	-1.412E-02	4.878E-02	4.919E-02	NOT IDENT.
NA-24	1.000E+41	2.190E+41	0.000E+00	SHORT HLIF
AL-26	-1.236E-02	3.112E-02	3.162E-02	NOT IDENT.

SC-46	2.703E-01	3.969E-01	4.152E-01	FAIL ABUN
V-48	-1.199E+04	2.036E+04	2.106E+04	SHORT HLIF
CR-51	-6.908E+01	4.353E+02	4.364E+02	SHORT HLIF
MN-54	2.686E-02	6.305E-02	6.420E-02	NOT IDENT.
CO-56	-3.201E-03	4.586E-01	4.586E-01	NOT IDENT.
MN-56	-1.000E+41	3.143E+43	0.000E+00	SHORT HLIF
CO-57	5.143E-03	4.857E-02	4.863E-02	NOT IDENT.
CO-58	1.387E-01	6.086E-01	6.119E-01	NOT IDENT.
FE-59	2.372E+00	8.066E+00	8.137E+00	NOT IDENT.
CO-60	1.128E-02	4.240E-02	4.270E-02	NOT IDENT.
ZN-65	0.000E+00	1.607E-01	0.000E+00	NOT IDENT.
GE-68	-2.413E-01	2.007E+00	2.010E+00	NOT IDENT.
AS-74	1.938E+03	6.441E+03	6.500E+03	SHORT HLIF
SE-75	3.837E-02	2.005E-01	2.013E-01	NOT IDENT.
BR-77	1.797E+39	1.597E+40	0.000E+00	SHORT HLIF
SR-82	-7.878E+02	1.044E+03	1.103E+03	SHORT HLIF
RB-83	-2.502E-01	7.350E-01	7.436E-01	NOT IDENT.
KR-85	-2.349E+00	7.962E+00	8.032E+00	NOT IDENT.
SR-85	-2.721E-01	9.160E-01	9.241E-01	NOT IDENT.
RB-86	1.139E+03	3.308E+04	3.308E+04	SHORT HLIF
Y-88	-8.303E-02	1.712E-01	1.753E-01	NOT IDENT.
Y-91	-1.197E+02	5.995E+02	6.020E+02	NOT IDENT.
NB-94	-1.205E-02	2.924E-02	2.974E-02	NOT IDENT.
NB-95	-9.290E-02	9.182E-01	9.192E-01	NOT IDENT.
NB-95M	-3.887E-01	2.455E+00	2.461E+00	NOT IDENT.
ZR-95	8.792E-01	1.478E+00	1.530E+00	NOT IDENT.
NB-97	1.000E+41	9.874E+40	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	6.661E+41	0.000E+00	SHORT HLIF
MO-99	-1.597E+32	1.403E+33	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.528E+41	0.000E+00	SHORT HLIF
RH-101	2.937E-02	3.049E-02	3.324E-02	FAIL ABUN
RH-102	1.634E-02	5.399E-02	5.449E-02	NOT IDENT.
RU-103	-3.664E+00	7.346E+00	7.529E+00	FAIL ABUN
RH-106	-4.074E-02	4.694E-01	4.698E-01	NOT IDENT.
RU-106	-4.074E-02	4.694E-01	4.698E-01	NOT IDENT.
AG-108M	-1.106E-02	2.638E-02	2.685E-02	NOT IDENT.
AG-110M	-1.242E-01	1.037E-01	1.179E-01	NOT IDENT.
CD-115	-4.955E+40	3.581E+40	0.000E+00	SHORT HLIF
SN-117M	-2.620E+04	1.160E+05	1.166E+05	SHORT HLIF
TE-123M	2.577E-02	1.123E-01	1.129E-01	NOT IDENT.
SB-124	1.463E+00	1.781E+00	1.899E+00	NOT IDENT.
SB-125	-6.762E-02	9.772E-02	1.024E-01	FAIL ABUN
TE-125M	3.479E+01	3.382E+02	3.386E+02	NOT IDENT.
I-126	-4.637E+05	1.435E+06	1.450E+06	SHORT HLIF
SB-126	2.522E+06	2.567E+06	2.807E+06	SHORT HLIF
SB-127	-2.615E+22	9.749E+22	0.000E+00	SHORT HLIF
I-131	7.203E+09	9.621E+09	1.015E+10	SHORT HLIF
I-132	1.000E+41	2.054E+42	0.000E+00	SHORT HLIF
TE-132	-5.779E+26	1.853E+27	0.000E+00	SHORT HLIF
BA-133	5.826E-03	3.982E-02	3.991E-02	FAIL ABUN
I-133	1.000E+41	2.100E+41	0.000E+00	SHORT HLIF
CS-134	4.068E-02	9.243E-02	9.423E-02	FAIL ABUN
I-135	1.000E+41	1.305E+42	0.000E+00	SHORT HLIF
CS-136	-1.930E+05	4.903E+05	4.979E+05	SHORT HLIF
CE-139	-1.039E-01	9.669E-02	1.074E-01	NOT IDENT.
BA-140	-3.555E+05	2.035E+06	2.041E+06	SHORT HLIF
LA-140	-6.638E+05	6.144E+05	6.834E+05	SHORT HLIF
CE-141	-1.347E+01	2.513E+01	2.586E+01	NOT IDENT.
CE-143	1.000E+41	1.419E+41	0.000E+00	SHORT HLIF
CE-144	-2.379E-01	3.260E-01	3.432E-01	NOT IDENT.
PM-144	1.692E-02	5.686E-02	5.737E-02	NOT IDENT.
PR-144	1.550E+00	4.970E+00	5.019E+00	NOT IDENT.
PM-146	-1.941E-02	4.179E-02	4.269E-02	NOT IDENT.
ND-147	-2.956E+07	4.901E+07	5.079E+07	SHORT HLIF
PM-147	3.652E+01	8.214E+02	8.216E+02	NOT IDENT.
PM-149	1.000E+41	1.428E+41	0.000E+00	SHORT HLIF
EU-150	-1.836E-02	2.755E-02	2.877E-02	FAIL ABUN
EU-152	-3.342E-02	8.727E-02	8.856E-02	FAIL ABUN
GD-153	-1.124E-01	1.984E-01	2.047E-01	NOT IDENT.
EU-154	-4.213E-02	1.217E-01	1.232E-01	NOT IDENT.
EU-155	2.382E-02	1.030E-01	1.035E-01	NOT IDENT.
TB-160	1.138E+00	1.777E+00	1.850E+00	FAIL ABUN
HO-166M	-3.298E-02	5.443E-02	5.642E-02	NOT IDENT.
HF-172	2.024E-01	2.095E-01	2.285E-01	FAIL ABUN
LU-172	-3.067E-02	7.438E-02	7.566E-02	FAIL ABUN
LU-176	1.058E-02	3.518E-02	3.550E-02	FAIL ABUN
HF-181	2.507E-01	4.386E+00	4.388E+00	NOT IDENT.
TA-182	3.567E-01	1.128E+00	1.140E+00	FAIL ABUN

RE-183	2.083E+00	5.151E+00	5.236E+00	NOT IDENT.
RE-184	-1.787E+01	3.752E+01	3.837E+01	NOT IDENT.
W-188	2.622E+01	1.143E+02	1.150E+02	NOT IDENT.
IR-192	3.321E-01	4.276E-01	4.531E-01	FAIL ABUN
HG-203	-2.113E-01	2.204E+00	2.206E+00	NOT IDENT.
BI-207	-8.451E-03	5.413E-02	5.426E-02	FAIL ABUN
PB-210	-3.340E+00	9.832E+00	9.947E+00	NOT IDENT.
BI-211	2.137E+00	4.725E-01	1.073E+00	FAIL ABUN
PB-211	-2.421E-01	6.676E-01	6.764E-01	NOT IDENT.
BI-212	2.400E+00	1.342E+00	1.723E+00	FAIL ABUN
RN-219	1.009E-01	3.493E-01	3.522E-01	FAIL ABUN
RA-223	1.027E-01	5.134E-01	5.155E-01	FAIL ABUN
AC-227	-2.400E-02	2.142E-01	2.145E-01	FAIL ABUN
TH-227	-2.400E-02	2.142E-01	2.145E-01	FAIL ABUN
TH-229	1.758E-03	3.749E-01	3.749E-01	FAIL ABUN
TH-231	1.027E-01	5.134E-01	5.155E-01	FAIL ABUN
PA-233	3.351E-02	5.237E-02	5.451E-02	FAIL ABUN
PA-234	-9.969E-02	3.220E-01	3.251E-01	FAIL ABUN
PA-234M	-3.021E+00	3.892E+00	4.123E+00	NOT IDENT.
TH-234	-1.459E-01	1.592E+00	1.593E+00	FAIL ABUN
U-235	2.090E-01	1.577E-01	1.837E-01	FAIL ABUN
NP-237	3.351E-02	5.237E-02	5.451E-02	FAIL ABUN
NP-238	-1.000E+41	2.624E+41	0.000E+00	SHORT HLIF
U-238	-1.459E-01	1.592E+00	1.593E+00	FAIL ABUN
NP-239	1.137E-01	2.241E-01	2.299E-01	FAIL ABUN
PU-239	5.759E+02	5.802E+02	6.356E+02	FAIL ABUN
AM-241	-1.384E-01	1.912E-01	2.011E-01	NOT IDENT.
CM-243	-4.867E-02	9.795E-02	1.004E-01	FAIL ABUN
BK-247	4.107E-03	6.672E-02	6.675E-02	NOT IDENT.
CM-247	1.285E-02	3.255E-02	3.306E-02	FAIL ABUN
CF-251	-7.742E-02	9.792E-02	1.040E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	68.8594	87.09	79.7662	136.47	80.3799
45.60	57.9438	87.57	79.8461	140.51	0.0000
46.54	69.1879	88.03	79.9228	143.76	56.7160
49.72	0.0000	88.34	79.9741	144.24	67.7686
51.35	50.5560	88.47	79.9953	145.44	83.1620
51.87	50.6340	89.96	67.1245	152.43	77.1451
52.39	33.8077	1093.63	67.2178	153.25	0.0000
52.97	33.8651	91.11	0.0000	323.87	63.5892
53.44	33.9114	92.59	80.6692	156.02	0.0000
54.07	33.9731	93.35	74.5771	158.56	0.0000
57.36	0.0000	94.56	74.7563	159.00	59.6878
57.53	55.7471	94.65	74.7695	162.33	65.1733
57.98	58.6783	94.67	74.7725	162.66	0.0000
59.27	74.3243	94.87	79.4774	163.33	42.6372
59.32	75.4116	97.43	90.4476	165.86	75.0864
59.54	71.1447	98.43	63.5532	176.31	63.7236
60.96	72.4976	98.44	63.5544	176.60	0.0000
61.17	72.5380	99.53	79.0191	177.52	74.4587
62.93	85.9262	100.11	73.2031	181.07	0.0000
63.29	72.9421	102.03	60.4341	181.52	74.8339
63.58	59.9228	103.18	74.8139	184.41	71.5259
64.28	66.5797	103.37	74.8409	143.76	71.6414
66.73	87.8613	105.21	63.1757	193.51	56.9508
67.24	81.3750	105.31	63.1870	197.03	68.9886
125.81	79.2625	106.12	78.8025	198.01	67.2507
67.75	79.2757	106.47	80.0476	201.83	72.1137
69.67	82.9697	109.28	76.8521	203.43	64.9302
70.83	85.7905	111.00	71.0649	205.31	59.1132
72.81	90.6542	111.76	0.0000	210.85	59.0221
72.87	90.6673	114.06	61.3553	215.65	59.3372
74.66	82.8384	116.30	0.0000	222.11	57.8879
74.82	82.8689	116.74	58.3949	227.09	52.5644
74.97	82.8977	119.76	78.2588	227.38	50.7025
77.11	83.3053	121.12	72.3087	228.16	0.0000
78.74	84.3652	121.22	72.3208	228.18	52.6248
79.69	67.9372	121.78	73.6148	116.74	52.6248
80.12	66.4910	122.06	73.6491	235.69	61.0881
80.19	0.0000	122.92	72.5247	235.96	56.8420
80.57	81.6833	123.07	75.0014	238.63	56.9977
81.00	83.2749	265.00	85.3331	238.98	0.0000
81.07	83.2878	125.81	79.0430	240.99	57.1344
81.75	90.9949	127.23	89.1266	242.00	57.1930
83.79	59.4081	127.91	89.2246	244.70	44.4447
84.00	73.1509	129.30	89.4221	252.40	0.0000
85.43	76.4313	131.20	71.4208	252.80	39.5031
86.55	79.6763	133.02	63.2962	254.15	0.0000
86.79	79.7160	133.52	79.0154	256.23	46.4016
86.94	79.7414	136.00	75.3021	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	39.4676	355.39	0.0000	584.27	15.9849
264.80	40.9353	356.01	31.5692	595.83	0.0000
265.00	40.9430	364.49	0.0000	427.87	28.3889
268.22	48.8892	366.42	0.0000	602.52	0.0000
269.46	48.9451	372.51	35.1531	604.72	30.8335
270.03	48.9716	375.05	33.0832	607.14	39.6905
271.23	52.9486	377.52	31.0043	609.32	28.5119
273.65	0.0000	356.01	25.7749	610.33	20.6124
276.40	41.3779	388.16	9.6953	614.28	33.1919
277.37	41.4147	388.63	0.0000	618.01	28.6339
277.60	41.4232	391.69	30.7776	620.36	24.0433
278.00	26.6391	264.66	29.3401	621.93	21.2852
279.20	32.5945	401.81	29.3632	630.19	0.0000
279.54	41.4967	402.40	29.3747	631.29	17.6635
279.70	41.5027	404.85	40.3220	633.25	18.6102
280.46	38.5644	410.95	36.1119	634.78	0.0000
283.69	39.6688	413.71	28.5047	635.95	13.0443
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	39.7298	423.72	0.0000	645.85	14.9775
285.90	0.0000	427.09	32.0769	657.76	7.5308
287.50	51.7440	427.87	34.3067	657.90	0.0000
290.67	38.9175	433.94	32.2203	661.66	17.9180
293.27	0.0000	439.40	24.5289	664.57	0.0000
351.93	39.0722	453.88	29.2553	666.33	0.0000
295.96	39.0976	463.37	16.9775	666.50	0.0000
879.38	24.1143	468.07	22.1343	667.71	0.0000
299.98	31.6884	473.00	0.0000	677.62	15.1997
300.09	31.6916	475.06	20.5181	685.70	0.0000
300.13	31.6923	476.78	21.6804	695.00	0.0000
301.36	42.3008	477.60	27.3994	696.49	22.0349
302.85	39.3293	482.18	21.7507	696.51	22.0349
256.23	40.3947	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	23.0010
306.78	34.9078	497.08	29.4486	697.49	23.0032
308.46	45.5960	505.52	22.6294	702.65	23.0559
311.90	33.5338	507.63	0.0000	706.68	19.2474
316.51	29.5817	511.00	23.2823	711.68	24.1119
319.41	0.0000	514.00	33.2338	720.70	0.0000
320.08	0.0000	514.00	33.2338	721.93	0.0000
321.04	34.8114	520.40	35.1099	722.78	15.5059
323.87	35.9179	520.69	0.0000	722.91	15.5068
325.23	35.9570	522.65	0.0000	723.31	15.5093
328.76	0.0000	527.90	0.0000	724.19	15.5151
333.37	44.6713	528.26	23.8030	727.33	21.7506
333.97	51.2100	529.59	11.4690	733.00	21.8032
334.37	41.9123	529.87	0.0000	735.93	17.1526
338.28	49.8271	531.02	0.0000	333.97	20.2846
338.32	49.8291	537.26	0.0000	739.50	0.0000
311.90	45.2337	546.56	0.0000	747.24	15.6680
340.48	45.2337	552.55	16.9729	748.06	19.5917
340.55	0.0000	563.25	22.4602	752.31	16.6825
344.28	42.7601	569.33	18.9265	753.82	0.0000
345.93	37.5930	946.00	19.8294	756.73	13.7637
351.06	33.5475	569.70	20.7328	756.80	13.7642
351.93	33.5697	583.19	22.6936	884.68	18.9322

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	17.3680	1274.44	9.6671	1620.50	6.0920
766.42	18.9516	1001.03	17.2129	1621.92	4.0625
766.84	15.7959	1002.74	7.5349	1678.03	0.0000
772.60	0.0000	1004.73	10.7712	1690.97	1.0309
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	3.1403
778.90	15.8735	1028.54	0.0000	1063.66	14.6720
783.70	0.0000	1037.84	8.7100	1771.35	5.2412
785.37	12.9310	1038.76	0.0000	1791.20	0.0000
792.07	9.5748	631.29	12.0098	1808.65	5.2808
794.95	18.9722	1048.07	0.0000	1810.72	0.0000
795.86	23.9729	1049.04	14.2045	1836.06	3.1857
810.06	17.0768	1050.41	8.7451		
810.29	18.0829	1063.66	14.0500		
344.28	18.0840	1077.00	0.0000		
810.76	15.0719	1077.34	9.9212		
815.77	0.0000	1085.87	8.8423		
1048.07	0.0000	1093.63	14.4028		
832.01	19.4514	1099.45	13.3191		
834.85	15.2129	1112.07	10.0272		
835.71	13.1888	1112.84	11.1444		
836.80	0.0000	1115.54	8.9224		
846.75	0.0000	1120.29	16.7542		
846.77	14.2636	1120.55	16.7551		
856.80	0.0000	1221.41	16.7587		
860.56	13.1086	1129.67	19.0410		
871.09	16.4502	1131.51	0.0000		
873.19	14.4050	1147.95	0.0000		
875.33	0.0000	1173.23	7.5631		
879.38	9.2815	1177.95	10.9055		
880.51	11.3488	1189.05	15.4992		
883.24	16.5239	1204.77	17.3997		
884.68	22.7318	1221.41	19.3214		
889.28	11.3850	1231.02	16.6052		
894.76	8.2966	1235.36	0.0000		
898.04	13.4979	1238.28	17.1668		
900.72	14.5503	1260.41	0.0000		
903.28	19.0218	1271.87	8.3962		
911.20	17.7346	1274.44	15.8703		
912.08	17.7398	1274.54	14.9367		
923.98	0.0000	1291.59	9.3784		
926.50	17.8306	1298.22	0.0000		
929.11	17.8472	1312.11	0.0000		
937.49	22.1113	1332.49	10.4274		
944.13	0.0000	1362.66	0.0000		
946.00	20.0646	1365.19	5.7357		
949.00	20.0849	1368.63	0.0000		
667.71	0.0000	1384.29	9.6060		
962.31	16.9912	1408.01	4.8315		
964.08	15.3013	1457.56	0.0000		
966.17	15.9499	1460.82	7.8305		
911.20	15.9654	1489.16	1.9709		
968.97	15.9654	1505.03	9.8911		
983.53	0.0000	1584.12	12.0861		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:20:52.95

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235039.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM44.CNF;111
Background date    : 2-OCT-2016 11:02:28.
Sample date       : 30-NOV-2015 10:43:00 Acquisition date : 3-OCT-2016 09:18:06.
Sample ID        : G405235039 Sample quantity : 1.75326E+02 GRAM
Detector name    : GAM44 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.74 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596249 Detector SN# :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	40.61*	26	86	1.05	81.66	78	8	7.12E-03	67.4	
2	3	75.04	84	131	1.16	150.54	146	13	2.33E-02	24.9	7.66E-01
3	3	77.09*	141	92	1.05	154.65	146	13	3.91E-02	14.7	
4	0	87.13	37	119	0.69	174.74	172	6	1.03E-02	49.8	
5	0	92.79*	58	128	0.83	186.05	183	8	1.60E-02	37.7	
6	0	178.00	32	55	1.05	356.55	353	8	8.78E-03	44.2	
7	0	181.98	22	57	0.94	364.51	362	7	6.00E-03	62.2	
8	0	186.14*	72	103	0.80	372.82	368	10	2.01E-02	29.6	
9	0	209.28	49	90	1.05	419.14	414	10	1.37E-02	39.1	
10	0	238.57*	271	110	1.19	477.73	472	10	7.52E-02	9.6	
11	0	241.92	55	48	0.89	484.44	482	6	1.53E-02	24.8	
12	0	259.16	32	57	1.18	518.92	514	10	8.84E-03	47.9	
13	0	272.46	16	73	0.63	545.55	541	10	4.51E-03	104.6	
14	2	295.31	106	63	1.54	591.25	586	25	2.93E-02	16.4	2.19E+00
15	2	300.41	34	50	1.56	601.46	586	25	9.38E-03	43.7	
16	0	338.82	88	57	1.67	678.32	673	14	2.44E-02	21.0	
17	0	351.74*	244	28	1.35	704.17	696	16	6.77E-02	8.2	
18	0	419.10	19	24	0.99	838.96	835	8	5.40E-03	50.1	
19	0	462.78	41	29	1.37	926.37	919	15	1.13E-02	33.2	
20	0	510.73*	75	22	1.97	1022.31	1014	15	2.08E-02	21.6	
21	0	518.48	13	18	0.76	1037.82	1033	10	3.68E-03	67.9	
22	0	583.37*	93	38	1.46	1167.68	1163	13	2.58E-02	17.3	
23	0	596.54	6	20	0.64	1194.03	1188	9	1.71E-03	137.5	
24	0	609.37*	158	12	1.39	1219.70	1214	14	4.39E-02	9.3	
25	0	728.90	17	40	1.37	1458.93	1452	15	4.59E-03	88.1	
26	0	795.09	15	22	1.72	1591.39	1582	12	4.30E-03	64.6	
27	0	861.58	26	9	4.22	1724.45	1719	12	7.35E-03	29.8	
28	0	911.87*	58	27	0.89	1825.11	1817	18	1.61E-02	25.1	
29	0	969.18*	36	8	2.19	1939.81	1935	12	1.00E-02	24.1	
30	0	1011.06	11	5	1.16	2023.64	2017	9	3.06E-03	46.5	
31	0	1031.91	8	10	0.50	2065.38	2060	10	2.22E-03	82.0	
32	0	1104.71	13	4	1.29	2211.07	2208	7	3.62E-03	39.3	
33	0	1120.13	34	3	2.31	2241.95	2236	11	9.57E-03	19.4	
34	0	1136.61	8	5	0.85	2274.93	2272	6	2.14E-03	61.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1156.28	14	6	4.08	2314.30	2308	11	3.75E-03	43.3	
36	0	1318.67	10	7	1.32	2639.37	2631	13	2.64E-03	64.1	
37	0	1360.33	7	2	0.95	2722.75	2718	8	1.94E-03	51.5	
38	0	1460.76*	347	15	2.26	2923.82	2914	20	9.64E-02	6.1	
39	0	1764.36	25	0	0.67	3531.64	3526	10	6.94E-03	20.0	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235039.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 30-NOV-2015 10:43:00 Acquisition date : 3-OCT-2016 09:18:06
Sample ID : G405235039 Sample quantity : 175.33 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA44 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.74 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.030E+00	1.326E+01	1.326E+01	12.16	OK
CD-109	88.03	3.70*	4.450E+00	6.341E-01	1.007E+00	214.94	OK
SN-126	64.28	9.60	2.161E+00	-----	Line Not Found	-----	Absent
	86.94	8.90	4.450E+00	2.636E-01	2.636E-01	214.94	OK
	87.57	37.00*	4.450E+00	6.341E-02	6.341E-02	214.94	OK
TL-208	277.37	6.60	4.074E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	2.178E+00	2.398E-01	2.398E-01	34.57	OK
	860.56	12.50	1.591E+00	6.033E-01	6.033E-01	59.55	OK
BI-211	72.87	1.23	3.135E+00	-----	Line Not Found	-----	Absent
	351.06	12.92*	3.338E+00	7.570E-01	7.570E-01	111.45	OK
PB-212	74.82	10.28	3.363E+00	1.044E+00	1.044E+00	72.10	OK
	77.11	17.10	3.570E+00	1.404E+00	1.404E+00	29.48	OK
	238.63	43.60*	4.587E+00	7.262E-01	7.262E-01	19.24	OK
	300.09	3.30	3.815E+00	1.398E+00	1.398E+00	87.41	OK
BI-214	609.32	45.49*	2.102E+00	7.863E-01	7.865E-01	18.53	OK
	1120.29	14.92	1.288E+00	7.831E-01	7.834E-01	38.74	OK
	1764.49	15.30	8.674E-01	7.675E-01	7.678E-01	40.00	OK
PB-214	74.82	5.80	3.340E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	3.570E+00	2.476E+00	2.477E+00	29.48	OK
	87.09	3.41	4.447E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	4.538E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	3.870E+00	7.744E-01	7.747E-01	32.77	OK
	351.93	35.60*	3.336E+00	-----	Line Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	2.102E+00	7.863E-01	7.865E-01	18.53	OK
	1120.29	14.92	1.288E+00	7.831E-01	7.834E-01	38.74	OK
	1764.49	15.30	8.674E-01	7.675E-01	7.678E-01	40.00	OK
RA-224	240.99	4.10*	4.539E+00	2.131E-01	2.131E-01	424.31	OK
RA-226	609.32	45.49*	2.102E+00	7.863E-01	7.865E-01	18.53	OK
	1120.29	14.92	1.288E+00	7.831E-01	7.834E-01	38.74	OK
	1764.49	15.30	8.674E-01	7.675E-01	7.678E-01	40.00	OK
AC-228	105.21	1.10	5.460E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.446E+00	1.162E+00	1.162E+00	42.03	OK
	794.95	4.25	1.696E+00	9.848E-01	9.848E-01	129.26	OK
	835.71	1.61	1.630E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.520E+00	6.656E-01	6.656E-01	50.14	OK
	968.97	15.80	1.448E+00	7.020E-01	7.020E-01	48.17	OK
RA-228	105.21	1.10	5.460E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.446E+00	1.162E+00	1.162E+00	42.03	OK
	794.95	4.25	1.696E+00	9.848E-01	9.848E-01	129.26	OK
	835.71	1.61	1.630E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.520E+00	6.656E-01	6.656E-01	50.14	OK
	968.97	15.80	1.448E+00	7.020E-01	7.020E-01	48.17	OK
TH-228	74.82	10.28	3.363E+00	1.044E+00	1.044E+00	72.10	OK
	77.11	17.10	3.570E+00	1.404E+00	1.404E+00	29.48	OK
	238.63	43.60*	4.587E+00	7.262E-01	7.262E-01	19.24	OK
	300.09	3.30	3.815E+00	1.398E+00	1.398E+00	87.41	OK
TH-230	609.32	45.49*	2.102E+00	7.863E-01	7.863E-01	18.53	OK
	1120.29	14.92	1.288E+00	7.831E-01	7.831E-01	38.74	OK
	1764.49	15.30	8.674E-01	7.675E-01	7.675E-01	40.00	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
PA-231	283.69	1.70	4.000E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	3.815E+00	8.623E-01	8.623E-01	87.41	OK
TH-232	105.21	1.10	5.460E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.446E+00	1.162E+00	1.162E+00	42.03	OK
	835.71	1.61	1.630E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.520E+00	6.656E-01	6.656E-01	50.14	OK
	968.97	15.80	1.448E+00	7.020E-01	7.020E-01	48.17	OK
U-234	609.32	45.49*	2.102E+00	7.863E-01	7.863E-01	18.53	OK
	1120.29	14.92	1.288E+00	7.831E-01	7.831E-01	38.74	OK
	1764.49	15.30	8.674E-01	7.675E-01	7.675E-01	40.00	OK
AM-243	43.53	5.90	1.573E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.363E+00	1.597E-01	1.597E-01	72.10	OK
ANH-511	511.00	100.00*	2.432E+00	1.498E-01	1.498E-01	43.22	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235039.CNF;1
* Acquisition date   : 3-OCT-2016 09:18:06 Sensitivity      : 3.000
* Detector ID        : GAM44 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.74 Half life ratio : *****
* Sample date        : 30-NOV-2015 10:43:00 Analyst initials: MXR1
* Sample ID          : G405235039 Sample Quantity : 1.7533E+02 GRAM
* Batch Number       : 1596249 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight       : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 6-SEP-2016 04:59:25 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM44 CAN.CNF;3
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.326E+01	1.580E+00	6.697E-01
CD-109	1.007E+00	2.121E+00	2.206E+00
SN-126	6.341E-02	1.336E-01	1.451E-01
TL-208	2.398E-01	8.122E-02	5.900E-02
BI-211	7.570E-01	8.268E-01	2.611E-01
PB-212	7.262E-01	1.369E-01	8.133E-02
BI-214	7.865E-01	1.428E-01	5.130E-02
PB-214	1.049E+00	1.679E-01	2.705E-01
RN-222	7.865E-01	1.428E-01	5.130E-02
RA-224	2.131E-01	8.863E-01	1.002E+00
RA-226	7.865E-01	1.428E-01	5.130E-02
AC-228	6.656E-01	3.271E-01	2.215E-01
RA-228	6.656E-01	3.271E-01	2.215E-01
TH-228	7.262E-01	1.369E-01	8.133E-02
TH-230	7.863E-01	1.428E-01	5.128E-02
PA-231	8.623E-01	7.387E-01	7.205E-01
TH-232	6.656E-01	3.271E-01	2.215E-01
U-234	7.863E-01	1.428E-01	5.128E-02
AM-243	1.597E-01	1.128E-01	9.712E-02
ANH-511	1.498E-01	6.346E-02	4.247E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	5.243E+00	9.283E+00	2.066E+01	NOT IDENT.
NA-22	1.652E-02	3.994E-02	8.728E-02	NOT IDENT.
NA-24	0.000E+00	1.922E+41	0.000E+00	SHORT HLIF
AL-26	4.463E-03	1.791E-02	4.736E-02	NOT IDENT.
SC-46	3.230E-03	3.450E-01	7.165E-01	FAIL ABUN
V-48	0.000E+00	1.799E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.103E+02	0.000E+00	SHORT HLIF
MN-54	6.097E-02	5.493E-02	1.260E-01	NOT IDENT.
CO-56	-3.090E-01	5.054E-01	8.620E-01	NOT IDENT.
MN-56	0.000E+00	1.666E+41	0.000E+00	SHORT HLIF

CO-57	-7.484E-03	3.959E-02	7.670E-02	NOT IDENT.
CO-58	-7.752E-02	5.647E-01	1.070E+00	NOT IDENT.
FE-59	-5.222E+00	7.033E+00	1.183E+01	NOT IDENT.
CO-60	-8.632E-03	3.585E-02	6.948E-02	NOT IDENT.
ZN-65	7.066E-02	1.719E-01	3.344E-01	NOT IDENT.
GE-68	1.875E+00	2.148E+00	4.931E+00	NOT IDENT.
AS-73	2.388E+00	1.164E+01	2.484E+01	NOT IDENT.
AS-74	0.000E+00	1.034E+04	0.000E+00	SHORT HLIF
SE-75	7.491E-02	1.913E-01	3.718E-01	NOT IDENT.
BR-77	0.000E+00	2.624E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	7.916E+02	0.000E+00	SHORT HLIF
RB-83	-6.218E-02	5.262E-01	9.413E-01	NOT IDENT.
KR-85	3.336E+00	7.501E+00	1.191E+01	NOT IDENT.
SR-85	3.821E-01	8.629E-01	1.370E+00	NOT IDENT.
RB-86	0.000E+00	3.330E+04	0.000E+00	SHORT HLIF
Y-88	-9.573E-02	1.845E-01	3.575E-01	NOT IDENT.
Y-91	1.148E+02	5.506E+02	1.130E+03	NOT IDENT.
NB-94	1.948E-02	2.932E-02	6.179E-02	NOT IDENT.
NB-95	-9.620E-01	9.766E-01	1.579E+00	NOT IDENT.
NB-95M	-1.519E+00	2.407E+00	3.782E+00	NOT IDENT.
ZR-95	4.581E-01	1.437E+00	2.929E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.759E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.106E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-1.440E-02	2.937E-02	5.499E-02	NOT IDENT.
RH-102	-7.529E-03	4.589E-02	8.928E-02	NOT IDENT.
RU-103	-2.584E+00	5.040E+00	9.413E+00	FAIL ABUN
RH-106	-2.712E-01	4.400E-01	7.843E-01	NOT IDENT.
RU-106	-2.712E-01	4.400E-01	7.843E-01	NOT IDENT.
AG-108M	-1.626E-03	1.942E-02	3.939E-02	NOT IDENT.
AG-110M	3.866E-02	9.659E-02	2.081E-01	NOT IDENT.
SN-113	-7.694E-02	1.833E-01	3.543E-01	NOT IDENT.
CD-115	0.000E+00	2.298E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.196E+05	0.000E+00	SHORT HLIF
TE-123M	-2.888E-02	1.149E-01	2.161E-01	NOT IDENT.
SB-124	-9.616E-02	1.738E+00	3.755E+00	NOT IDENT.
SB-125	-4.279E-02	8.552E-02	1.617E-01	FAIL ABUN
TE-125M	-4.637E+01	2.518E+02	4.920E+02	NOT IDENT.
I-126	0.000E+00	1.212E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.678E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	9.117E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	7.179E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.688E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.781E+27	0.000E+00	SHORT HLIF
BA-133	-2.530E-02	3.716E-02	6.099E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	6.496E-02	8.228E-02	1.044E-01	FAIL ABUN
CS-135	-4.172E-02	1.274E-01	2.267E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.451E+05	0.000E+00	SHORT HLIF
BA-137M	3.342E-02	3.149E-02	6.981E-02	NOT IDENT.
CS-137	3.531E-02	3.327E-02	7.375E-02	NOT IDENT.
CE-139	3.897E-02	9.331E-02	1.863E-01	NOT IDENT.
BA-140	0.000E+00	1.929E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.378E+05	0.000E+00	SHORT HLIF
CE-141	-4.003E-02	2.481E+01	4.789E+01	NOT IDENT.
CE-143	0.000E+00	1.203E+41	0.000E+00	SHORT HLIF
CE-144	4.438E-02	3.091E-01	6.095E-01	NOT IDENT.
PM-144	2.998E-02	5.585E-02	1.148E-01	NOT IDENT.
PR-144	2.630E+00	4.874E+00	1.002E+01	NOT IDENT.
PM-146	-1.209E-02	3.848E-02	7.393E-02	NOT IDENT.
ND-147	0.000E+00	3.972E+07	0.000E+00	SHORT HLIF
PM-147	1.716E+02	6.675E+02	1.348E+03	NOT IDENT.
PM-149	0.000E+00	1.911E+41	0.000E+00	SHORT HLIF
EU-150	1.204E-02	2.187E-02	4.305E-02	FAIL ABUN
EU-152	-1.932E-02	7.201E-02	1.279E-01	NOT IDENT.
GD-153	-1.216E-01	1.455E-01	2.701E-01	NOT IDENT.
EU-154	3.807E-02	9.700E-02	2.115E-01	NOT IDENT.
EU-155	-6.484E-02	9.195E-02	1.718E-01	FAIL ABUN
TB-160	-8.553E-01	1.696E+00	3.246E+00	FAIL ABUN
HO-166M	-4.712E-02	5.402E-02	8.980E-02	NOT IDENT.
TM-171	-2.068E+01	2.838E+01	5.554E+01	NOT IDENT.
HF-172	5.585E-02	1.978E-01	3.963E-01	NOT IDENT.
LU-172	-4.625E-02	5.750E-02	1.001E-01	FAIL ABUN
LU-176	-1.041E-03	2.284E-02	4.166E-02	FAIL ABUN
HF-181	1.437E-01	3.402E+00	7.025E+00	NOT IDENT.
TA-182	-2.623E-01	1.024E+00	1.930E+00	FAIL ABUN

RE-183	2.188E+00	3.788E+00	8.248E+00	NOT IDENT.
RE-184	-3.405E+00	2.920E+01	5.957E+01	NOT IDENT.
W-188	1.452E+01	1.003E+02	1.895E+02	NOT IDENT.
IR-192	2.705E-02	3.866E-01	7.977E-01	FAIL ABUN
HG-203	-5.983E-02	2.089E+00	4.283E+00	NOT IDENT.
BI-207	-1.693E-03	4.688E-02	9.373E-02	FAIL ABUN
PB-210	5.454E+00	6.175E+00	1.401E+01	NOT IDENT.
PB-211	1.141E-01	4.985E-01	1.042E+00	NOT IDENT.
BI-212	8.082E-01	5.029E-01	1.140E+00	NOT IDENT.
RN-219	1.119E-01	3.117E-01	6.533E-01	FAIL ABUN
RA-223	2.153E-01	4.781E-01	1.014E+00	FAIL ABUN
AC-227	-1.229E-01	2.223E-01	3.497E-01	FAIL ABUN
TH-227	-1.229E-01	2.223E-01	3.497E-01	FAIL ABUN
TH-229	-6.383E-02	3.761E-01	7.027E-01	FAIL ABUN
TH-231	2.153E-01	4.781E-01	1.014E+00	FAIL ABUN
PA-233	-2.411E-03	4.832E-02	9.814E-02	FAIL ABUN
PA-234	-1.025E-01	2.354E-01	4.520E-01	NOT IDENT.
PA-234M	-1.321E-01	3.478E+00	7.102E+00	NOT IDENT.
TH-234	1.396E+00	1.253E+00	2.786E+00	FAIL ABUN
U-235	6.815E-02	1.477E-01	2.974E-01	FAIL ABUN
NP-237	-2.411E-03	4.832E-02	9.814E-02	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
U-238	1.396E+00	1.253E+00	2.786E+00	FAIL ABUN
NP-239	7.875E-03	1.966E-01	3.902E-01	NOT IDENT.
PU-239	6.336E+01	2.626E+02	5.225E+02	NOT IDENT.
AM-241	3.515E-02	1.553E-01	3.283E-01	NOT IDENT.
CM-243	3.830E-02	7.988E-02	1.664E-01	NOT IDENT.
BK-247	-1.032E-02	6.550E-02	1.193E-01	NOT IDENT.
CM-247	-5.977E-03	2.931E-02	5.761E-02	NOT IDENT.
CF-249	-1.810E-03	2.889E-02	5.831E-02	NOT IDENT.
CF-251	1.837E-01	1.590E-01	1.899E-01	FAIL ABUN

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	340	10.66*	1.030E+00	1.326E+01	1.326E+01	12.16
CD-109	88.03	52	3.70*	4.450E+00	1.348E+00	2.141E+00	99.62
SN-126	64.28	-----	9.60	2.161E+00	-----	Line Not Found	-----
	86.94	52	8.90	4.450E+00	5.603E-01	5.603E-01	99.62
	87.57	52	37.00*	4.450E+00	1.348E-01	1.348E-01	99.62
TL-208	277.37	-----	6.60	4.074E+00	-----	Line Not Found	-----
	583.19	104	85.00*	2.178E+00	2.398E-01	2.398E-01	34.57
	860.56	28	12.50	1.591E+00	6.033E-01	6.033E-01	59.55
BI-211	72.87	-----	1.23	3.135E+00	-----	Line Not Found	-----
	351.06	291	12.92*	3.338E+00	2.891E+00	2.891E+00	16.33
PB-212	74.82	120	10.28	3.363E+00	1.481E+00	1.481E+00	49.90
	77.11	200	17.10	3.570E+00	1.404E+00	1.404E+00	29.48
	238.63	339	43.60*	4.587E+00	7.262E-01	7.262E-01	19.24
	300.09	41	3.30	3.815E+00	1.398E+00	1.398E+00	87.41
BI-214	609.32	176	45.49*	2.102E+00	7.863E-01	7.865E-01	18.53
	1120.29	35	14.92	1.288E+00	7.831E-01	7.834E-01	38.74
	1764.49	24	15.30	8.674E-01	7.675E-01	7.678E-01	40.00
PB-214	74.82	120	5.80	3.363E+00	2.624E+00	2.625E+00	49.90
	77.11	200	9.70	3.570E+00	2.476E+00	2.477E+00	29.48
	87.09	52	3.41	4.450E+00	1.462E+00	1.463E+00	99.62
	242.00	69	7.25	4.539E+00	8.949E-01	8.952E-01	49.62
	295.22	129	18.42	3.870E+00	7.744E-01	7.747E-01	32.77
	351.93	291	35.60*	3.338E+00	1.049E+00	1.049E+00	16.33
RN-222	609.32	176	45.49*	2.102E+00	7.863E-01	7.865E-01	18.53
	1120.29	35	14.92	1.288E+00	7.831E-01	7.834E-01	38.74
	1764.49	24	15.30	8.674E-01	7.675E-01	7.678E-01	40.00
RA-224	240.99	69	4.10*	4.539E+00	1.582E+00	1.582E+00	49.62
RA-226	609.32	176	45.49*	2.102E+00	7.863E-01	7.865E-01	18.53
	1120.29	35	14.92	1.288E+00	7.831E-01	7.834E-01	38.74
	1764.49	24	15.30	8.674E-01	7.675E-01	7.678E-01	40.00
AC-228	105.21	-----	1.10	5.460E+00	-----	Line Not Found	-----
	338.32	105	11.27	3.446E+00	1.162E+00	1.162E+00	42.03
	794.95	17	4.25	1.696E+00	9.848E-01	9.848E-01	129.26
	835.71	-----	1.61	1.630E+00	-----	Line Not Found	-----
	911.20	61	25.80*	1.520E+00	6.656E-01	6.656E-01	50.14
	968.97	37	15.80	1.448E+00	7.020E-01	7.020E-01	48.17
RA-228	105.21	-----	1.10	5.460E+00	-----	Line Not Found	-----
	338.32	105	11.27	3.446E+00	1.162E+00	1.162E+00	42.03
	794.95	17	4.25	1.696E+00	9.848E-01	9.848E-01	129.26
	835.71	-----	1.61	1.630E+00	-----	Line Not Found	-----
	911.20	61	25.80*	1.520E+00	6.656E-01	6.656E-01	50.14
	968.97	37	15.80	1.448E+00	7.020E-01	7.020E-01	48.17
TH-228	74.82	120	10.28	3.363E+00	1.481E+00	1.481E+00	49.90
	77.11	200	17.10	3.570E+00	1.404E+00	1.404E+00	29.48
	238.63	339	43.60*	4.587E+00	7.262E-01	7.262E-01	19.24
	300.09	41	3.30	3.815E+00	1.398E+00	1.398E+00	87.41
TH-230	609.32	176	45.49*	2.102E+00	7.863E-01	7.863E-01	18.53

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	1120.29	35	14.92	1.288E+00	7.831E-01	7.831E-01	38.74
	1764.49	24	15.30	8.674E-01	7.675E-01	7.675E-01	40.00
PA-231	283.69	-----	1.70	4.000E+00	-----	Line Not Found	-----
	301.36	41	5.35*	3.815E+00	8.623E-01	8.623E-01	87.41
TH-232	105.21	-----	1.10	5.460E+00	-----	Line Not Found	-----
	338.32	105	11.27	3.446E+00	1.162E+00	1.162E+00	42.03
	835.71	-----	1.61	1.630E+00	-----	Line Not Found	-----
	911.20	61	25.80*	1.520E+00	6.656E-01	6.656E-01	50.14
	968.97	37	15.80	1.448E+00	7.020E-01	7.020E-01	48.17
U-234	609.32	176	45.49*	2.102E+00	7.863E-01	7.863E-01	18.53
	1120.29	35	14.92	1.288E+00	7.831E-01	7.831E-01	38.74
	1764.49	24	15.30	8.674E-01	7.675E-01	7.675E-01	40.00
AM-243	43.53	-----	5.90	1.573E-01	-----	Line Not Found	-----
	74.66	120	67.20*	3.363E+00	2.265E-01	2.265E-01	49.90
ANH-511	511.00	85	100.00*	2.432E+00	1.498E-01	1.498E-01	43.22

Flag: "*" = Keyline

Total number of lines in spectrum 39
Number of unidentified lines 13
Number of lines tentatively identified by NID 26 66.67%

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	1.326E+01	1.326E+01	0.161E+01	12.16	
CD-109	461.40D	1.59	1.348E+00	2.141E+00	2.132E+00	99.62	
SN-126	2.30E+05Y	1.00	1.348E-01	1.348E-01	1.343E-01	99.62	
TL-208	1.41E+10Y	1.00	2.398E-01	2.398E-01	0.829E-01	34.57	
BI-211	7.04E+08Y	1.00	2.891E+00	2.891E+00	0.472E+00	16.33	
PB-212	1.41E+10Y	1.00	7.262E-01	7.262E-01	1.397E-01	19.24	
BI-214	1600.00Y	1.00	7.863E-01	7.865E-01	1.457E-01	18.53	
PB-214	1600.00Y	1.00	1.049E+00	1.049E+00	0.171E+00	16.33	
RN-222	1600.00Y	1.00	7.863E-01	7.865E-01	1.457E-01	18.53	
RA-224	1.41E+10Y	1.00	1.582E+00	1.582E+00	0.785E+00	49.62	
RA-226	1600.00Y	1.00	7.863E-01	7.865E-01	1.457E-01	18.53	
AC-228	1.41E+10Y	1.00	6.656E-01	6.656E-01	3.337E-01	50.14	
RA-228	1.41E+10Y	1.00	6.656E-01	6.656E-01	3.337E-01	50.14	
TH-228	1.41E+10Y	1.00	7.262E-01	7.262E-01	1.397E-01	19.24	
TH-230	7.54E+04Y	1.00	7.863E-01	7.863E-01	1.457E-01	18.53	
PA-231	7.04E+08Y	1.00	8.623E-01	8.623E-01	7.537E-01	87.41	
TH-232	1.41E+10Y	1.00	6.656E-01	6.656E-01	3.337E-01	50.14	
U-234	2.45E+05Y	1.00	7.863E-01	7.863E-01	1.457E-01	18.53	
AM-243	7370.00Y	1.00	2.265E-01	2.265E-01	1.130E-01	49.90	
ANH-511	1.00E+09Y	1.00	1.498E-01	1.498E-01	0.648E-01	43.22	
Total Activity :			2.913E+01	2.992E+01			

Grand Total Activity : 2.913E+01 2.992E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	40.61	39	131	1.05	81.66	78	8	7.12E-03	****	5.88E-02	
0	92.79	80	179	0.83	186.05	183	8	1.60E-02	75.5	4.84E+00	T
0	178.00	41	72	1.05	356.55	353	8	8.78E-03	88.3	5.53E+00	T
0	181.98	28	74	0.94	364.51	362	7	6.00E-03	****	5.46E+00	T
0	186.14	93	133	0.80	372.82	368	10	2.01E-02	59.2	5.40E+00	T
0	209.28	63	114	1.05	419.14	414	10	1.37E-02	78.3	5.03E+00	
0	259.16	39	71	1.18	518.92	514	10	8.84E-03	95.8	4.30E+00	
0	272.46	20	90	0.63	545.55	541	10	4.51E-03	****	4.13E+00	T
0	419.10	23	28	0.99	838.96	835	8	5.40E-03	****	2.87E+00	
0	462.78	47	34	1.37	926.37	919	15	1.13E-02	66.4	2.64E+00	T
0	518.48	15	20	0.76	1037.82	1033	10	3.68E-03	****	2.40E+00	
0	596.54	7	22	0.64	1194.03	1188	9	1.71E-03	****	2.14E+00	T
0	728.90	18	44	1.37	1458.93	1452	15	4.59E-03	****	1.82E+00	
0	1011.06	11	5	1.16	2023.64	2017	9	3.06E-03	92.9	1.40E+00	
0	1031.91	8	10	0.50	2065.38	2060	10	2.22E-03	****	1.38E+00	
0	1104.71	13	4	1.29	2211.07	2208	7	3.62E-03	78.6	1.30E+00	
0	1136.61	8	5	0.85	2274.93	2272	6	2.14E-03	****	1.27E+00	
0	1156.28	14	6	4.08	2314.30	2308	11	3.75E-03	86.5	1.25E+00	
0	1318.67	9	6	1.32	2639.37	2631	13	2.64E-03	****	1.12E+00	
0	1360.33	7	2	0.95	2722.75	2718	8	1.94E-03	****	1.10E+00	

Flags: "T" = Tentatively associated

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Lc (pCi/GRAM)
K-40	2.814E-01
CD-109	1.042E+00
SN-126	6.871E-02
TL-208	2.623E-02
BI-211	1.163E-01
PB-212	3.755E-02
BI-214	1.931E-02
PB-214	1.301E-01
RN-222	1.931E-02
RA-224	4.678E-01
RA-226	1.931E-02
AC-228	9.554E-02
RA-228	9.554E-02
TH-228	3.755E-02
TH-230	1.930E-02
PA-231	3.299E-01
TH-232	9.554E-02
U-234	1.930E-02
AM-243	4.568E-02
ANH-511	1.873E-02

Nuclide	Lc (pCi/GRAM)	
BE-7	9.075E+00	NOT IDENT.
NA-22	3.726E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.678E-02	NOT IDENT.
SC-46	3.091E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.573E-02	NOT IDENT.
CO-56	3.721E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	3.557E-02	NOT IDENT.

CO-58	4.616E-01	NOT IDENT.
FE-59	4.944E+00	NOT IDENT.
CO-60	2.883E-02	NOT IDENT.
ZN-65	1.455E-01	NOT IDENT.
GE-68	2.161E+00	NOT IDENT.
AS-73	1.144E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.711E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.034E-01	NOT IDENT.
KR-85	5.345E+00	NOT IDENT.
SR-85	6.146E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.267E-01	NOT IDENT.
Y-91	4.928E+02	NOT IDENT.
NB-94	2.767E-02	NOT IDENT.
NB-95	6.929E-01	NOT IDENT.
NB-95M	1.739E+00	NOT IDENT.
ZR-95	1.289E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.561E-02	NOT IDENT.
RH-102	3.846E-02	NOT IDENT.
RU-103	4.088E+00	FAIL ABUN
RH-106	3.398E-01	NOT IDENT.
RU-106	3.398E-01	NOT IDENT.
AG-108M	1.727E-02	NOT IDENT.
AG-110M	9.166E-02	NOT IDENT.
SN-113	1.573E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.003E-01	NOT IDENT.
SB-124	1.406E+00	NOT IDENT.
SB-125	7.186E-02	FAIL ABUN
TE-125M	2.286E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.732E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	4.669E-02	FAIL ABUN
CS-135	1.041E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.143E-02	NOT IDENT.
CS-137	3.320E-02	NOT IDENT.
CE-139	8.666E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.237E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.844E-01	NOT IDENT.
PM-144	5.162E-02	NOT IDENT.
PR-144	4.506E+00	NOT IDENT.
PM-146	3.308E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	6.263E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.966E-02	FAIL ABUN
EU-152	5.685E-02	NOT IDENT.
GD-153	1.245E-01	NOT IDENT.
EU-154	9.017E-02	NOT IDENT.
EU-155	7.961E-02	FAIL ABUN
TB-160	1.380E+00	FAIL ABUN
HO-166M	3.890E-02	NOT IDENT.
TM-171	2.547E+01	NOT IDENT.
HF-172	1.851E-01	NOT IDENT.
LU-172	4.026E-02	FAIL ABUN
LU-176	1.907E-02	FAIL ABUN
HF-181	3.056E+00	NOT IDENT.
TA-182	8.472E-01	FAIL ABUN
RE-183	3.843E+00	NOT IDENT.

RE-184	2.553E+01	NOT IDENT.
W-188	8.639E+01	NOT IDENT.
IR-192	3.620E-01	FAIL ABUN
HG-203	1.958E+00	NOT IDENT.
BI-207	4.084E-02	FAIL ABUN
PB-210	6.516E+00	NOT IDENT.
PB-211	4.664E-01	NOT IDENT.
BI-212	5.207E-01	NOT IDENT.
RN-219	2.955E-01	FAIL ABUN
RA-223	4.639E-01	FAIL ABUN
AC-227	1.598E-01	FAIL ABUN
TH-227	1.598E-01	FAIL ABUN
TH-229	3.245E-01	FAIL ABUN
TH-231	4.639E-01	FAIL ABUN
PA-233	4.473E-02	FAIL ABUN
PA-234	1.924E-01	NOT IDENT.
PA-234M	3.049E+00	NOT IDENT.
TH-234	1.307E+00	FAIL ABUN
U-235	1.390E-01	FAIL ABUN
NP-237	4.473E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	1.307E+00	FAIL ABUN
NP-239	1.812E-01	NOT IDENT.
PU-239	2.443E+02	NOT IDENT.
AM-241	1.528E-01	NOT IDENT.
CM-243	7.739E-02	NOT IDENT.
BK-247	5.475E-02	NOT IDENT.
CM-247	2.595E-02	NOT IDENT.
CF-249	2.612E-02	NOT IDENT.
CF-251	8.839E-02	FAIL ABUN

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Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.326E+01	1.724E+00	1.724E+00
CD-109	1.007E+00	2.128E+00	2.128E+00
SN-126	6.341E-02	1.339E-01	1.339E-01
TL-208	2.398E-01	8.186E-02	8.186E-02
BI-211	7.570E-01	8.377E-01	8.377E-01
PB-212	7.262E-01	1.422E-01	1.422E-01
BI-214	7.865E-01	1.467E-01	1.467E-01
PB-214	1.049E+00	1.735E-01	1.735E-01
RN-222	7.865E-01	1.467E-01	1.467E-01
RA-224	2.131E-01	8.909E-01	8.909E-01
RA-226	7.865E-01	1.467E-01	1.467E-01
AC-228	6.656E-01	3.288E-01	3.288E-01
RA-228	6.656E-01	3.288E-01	3.288E-01
TH-228	7.262E-01	1.422E-01	1.422E-01
TH-230	7.863E-01	1.467E-01	1.467E-01
PA-231	8.623E-01	7.613E-01	7.613E-01
TH-232	6.656E-01	3.288E-01	3.288E-01
U-234	7.863E-01	1.467E-01	1.467E-01
AM-243	1.597E-01	1.136E-01	1.136E-01
ANH-511	1.498E-01	6.375E-02	6.375E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	5.243E+00	9.285E+00	9.581E+00	NOT IDENT.
NA-22	1.652E-02	3.994E-02	4.063E-02	NOT IDENT.
NA-24	-1.000E+41	1.974E+41	0.000E+00	SHORT HLIF
AL-26	4.463E-03	1.791E-02	1.803E-02	NOT IDENT.
SC-46	3.230E-03	3.450E-01	3.450E-01	FAIL ABUN
V-48	-8.919E+03	1.799E+04	1.844E+04	SHORT HLIF
CR-51	1.329E+02	4.103E+02	4.147E+02	SHORT HLIF
MN-54	6.097E-02	5.499E-02	6.148E-02	NOT IDENT.
CO-56	-3.090E-01	5.056E-01	5.244E-01	NOT IDENT.
MN-56	-1.000E+41	1.666E+41	0.000E+00	SHORT HLIF

CO-57	-7.484E-03	3.959E-02	3.973E-02	NOT IDENT.
CO-58	-7.752E-02	5.647E-01	5.658E-01	NOT IDENT.
FE-59	-5.222E+00	7.043E+00	7.426E+00	NOT IDENT.
CO-60	-8.632E-03	3.585E-02	3.606E-02	NOT IDENT.
ZN-65	7.066E-02	1.719E-01	1.748E-01	NOT IDENT.
GE-68	1.875E+00	2.149E+00	2.310E+00	NOT IDENT.
AS-73	2.388E+00	1.165E+01	1.170E+01	NOT IDENT.
AS-74	3.836E+03	1.034E+04	1.048E+04	SHORT HLIF
SE-75	7.491E-02	1.913E-01	1.943E-01	NOT IDENT.
BR-77	1.392E+39	1.237E+40	0.000E+00	SHORT HLIF
SR-82	5.203E+01	7.916E+02	7.920E+02	SHORT HLIF
RB-83	-6.218E-02	5.263E-01	5.270E-01	NOT IDENT.
KR-85	3.336E+00	7.502E+00	7.651E+00	NOT IDENT.
SR-85	3.821E-01	8.631E-01	8.801E-01	NOT IDENT.
RB-86	3.786E+04	3.335E+04	3.746E+04	SHORT HLIF
Y-88	-9.573E-02	1.847E-01	1.896E-01	NOT IDENT.
Y-91	1.148E+02	5.507E+02	5.531E+02	NOT IDENT.
NB-94	1.948E-02	2.933E-02	3.062E-02	NOT IDENT.
NB-95	-9.620E-01	9.775E-01	1.069E+00	NOT IDENT.
NB-95M	-1.519E+00	2.410E+00	2.505E+00	NOT IDENT.
ZR-95	4.581E-01	1.437E+00	1.451E+00	NOT IDENT.
NB-97	-1.000E+41	2.180E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.760E+41	0.000E+00	SHORT HLIF
MO-99	-6.006E+32	1.107E+33	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	3.595E+41	0.000E+00	SHORT HLIF
RH-101	-1.440E-02	2.949E-02	3.020E-02	NOT IDENT.
RH-102	-7.529E-03	4.590E-02	4.602E-02	NOT IDENT.
RU-103	-2.584E+00	5.042E+00	5.174E+00	FAIL ABUN
RH-106	-2.712E-01	4.403E-01	4.570E-01	NOT IDENT.
RU-106	-2.712E-01	4.403E-01	4.570E-01	NOT IDENT.
AG-108M	-1.626E-03	1.942E-02	1.943E-02	NOT IDENT.
AG-110M	3.866E-02	9.661E-02	9.817E-02	NOT IDENT.
SN-113	-7.694E-02	1.833E-01	1.866E-01	NOT IDENT.
CD-115	1.191E+40	2.308E+40	0.000E+00	SHORT HLIF
SN-117M	7.387E+04	1.200E+05	1.245E+05	SHORT HLIF
TE-123M	-2.888E-02	1.149E-01	1.157E-01	NOT IDENT.
SB-124	-9.616E-02	1.738E+00	1.739E+00	NOT IDENT.
SB-125	-4.279E-02	8.554E-02	8.768E-02	FAIL ABUN
TE-125M	-4.637E+01	2.518E+02	2.527E+02	NOT IDENT.
I-126	1.661E+05	1.212E+06	1.214E+06	SHORT HLIF
SB-126	-1.473E+06	1.701E+06	1.826E+06	SHORT HLIF
SB-127	1.312E+23	2.064E+23	0.000E+00	SHORT HLIF
I-131	-4.759E+09	7.182E+09	7.496E+09	SHORT HLIF
I-132	-1.000E+41	1.906E+42	0.000E+00	SHORT HLIF
TE-132	9.811E+26	1.828E+27	0.000E+00	SHORT HLIF
BA-133	-2.530E-02	3.718E-02	3.889E-02	NOT IDENT.
I-133	1.000E+41	9.506E+41	0.000E+00	SHORT HLIF
CS-134	6.496E-02	8.233E-02	8.738E-02	FAIL ABUN
CS-135	-4.172E-02	1.274E-01	1.288E-01	NOT IDENT.
I-135	1.000E+41	2.240E+42	0.000E+00	SHORT HLIF
CS-136	-6.943E+04	3.452E+05	3.466E+05	SHORT HLIF
BA-137M	3.342E-02	3.153E-02	3.494E-02	NOT IDENT.
CS-137	3.531E-02	3.331E-02	3.691E-02	NOT IDENT.
CE-139	3.897E-02	9.364E-02	9.527E-02	NOT IDENT.
BA-140	9.426E+05	1.930E+06	1.976E+06	SHORT HLIF
LA-140	-1.865E+04	4.378E+05	4.379E+05	SHORT HLIF
CE-141	-4.003E-02	2.481E+01	2.481E+01	NOT IDENT.
CE-143	1.000E+41	1.208E+41	0.000E+00	SHORT HLIF
CE-144	4.438E-02	3.091E-01	3.097E-01	NOT IDENT.
PM-144	2.998E-02	5.588E-02	5.749E-02	NOT IDENT.
PR-144	2.630E+00	4.875E+00	5.017E+00	NOT IDENT.
PM-146	-1.209E-02	3.849E-02	3.888E-02	NOT IDENT.
ND-147	-1.703E+07	3.973E+07	4.046E+07	SHORT HLIF
PM-147	1.716E+02	6.675E+02	6.720E+02	NOT IDENT.
PM-149	-1.000E+41	1.923E+41	0.000E+00	SHORT HLIF
EU-150	1.204E-02	2.188E-02	2.254E-02	FAIL ABUN
EU-152	-1.932E-02	7.202E-02	7.254E-02	NOT IDENT.
GD-153	-1.216E-01	1.456E-01	1.556E-01	NOT IDENT.
EU-154	3.807E-02	9.701E-02	9.851E-02	NOT IDENT.
EU-155	-6.484E-02	9.207E-02	9.660E-02	FAIL ABUN
TB-160	-8.553E-01	1.696E+00	1.740E+00	FAIL ABUN
HO-166M	-4.712E-02	5.408E-02	5.811E-02	NOT IDENT.
TM-171	-2.068E+01	2.844E+01	2.993E+01	NOT IDENT.
HF-172	5.585E-02	1.980E-01	1.996E-01	NOT IDENT.
LU-172	-4.625E-02	5.769E-02	6.134E-02	FAIL ABUN
LU-176	-1.041E-03	2.284E-02	2.285E-02	FAIL ABUN
HF-181	1.437E-01	3.402E+00	3.403E+00	NOT IDENT.
TA-182	-2.623E-01	1.024E+00	1.031E+00	FAIL ABUN

RE-183	2.188E+00	3.804E+00	3.930E+00	NOT IDENT.
RE-184	-3.405E+00	2.922E+01	2.926E+01	NOT IDENT.
W-188	1.452E+01	1.003E+02	1.005E+02	NOT IDENT.
IR-192	2.705E-02	3.866E-01	3.868E-01	FAIL ABUN
HG-203	-5.983E-02	2.089E+00	2.089E+00	NOT IDENT.
BI-207	-1.693E-03	4.688E-02	4.688E-02	FAIL ABUN
PB-210	5.454E+00	6.195E+00	6.665E+00	NOT IDENT.
PB-211	1.141E-01	4.985E-01	5.012E-01	NOT IDENT.
BI-212	8.082E-01	5.046E-01	6.223E-01	NOT IDENT.
RN-219	1.119E-01	3.120E-01	3.161E-01	FAIL ABUN
RA-223	2.153E-01	4.783E-01	4.880E-01	FAIL ABUN
AC-227	-1.229E-01	2.228E-01	2.296E-01	FAIL ABUN
TH-227	-1.229E-01	2.228E-01	2.296E-01	FAIL ABUN
TH-229	-6.383E-02	3.761E-01	3.772E-01	FAIL ABUN
TH-231	2.153E-01	4.783E-01	4.880E-01	FAIL ABUN
PA-233	-2.411E-03	4.832E-02	4.833E-02	FAIL ABUN
PA-234	-1.025E-01	2.630E-01	2.671E-01	NOT IDENT.
PA-234M	-1.321E-01	3.478E+00	3.479E+00	NOT IDENT.
TH-234	1.396E+00	1.291E+00	1.436E+00	FAIL ABUN
U-235	6.815E-02	1.478E-01	1.509E-01	FAIL ABUN
NP-237	-2.411E-03	4.832E-02	4.833E-02	FAIL ABUN
NP-238	1.000E+41	6.595E+41	0.000E+00	SHORT HLIF
U-238	1.396E+00	1.291E+00	1.436E+00	FAIL ABUN
NP-239	7.875E-03	1.966E-01	1.966E-01	NOT IDENT.
PU-239	6.336E+01	2.626E+02	2.642E+02	NOT IDENT.
AM-241	3.515E-02	1.553E-01	1.561E-01	NOT IDENT.
CM-243	3.830E-02	7.996E-02	8.180E-02	NOT IDENT.
BK-247	-1.032E-02	6.553E-02	6.570E-02	NOT IDENT.
CM-247	-5.977E-03	2.932E-02	2.945E-02	NOT IDENT.
CF-249	-1.810E-03	2.889E-02	2.890E-02	NOT IDENT.
CF-251	1.837E-01	1.604E-01	1.805E-01	FAIL ABUN

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	48.2185	87.09	90.6453	136.47	65.5134
45.60	55.0496	87.57	105.2002	140.51	0.0000
46.54	42.7447	88.03	97.4013	143.76	57.5377
49.72	0.0000	88.34	97.4630	144.24	57.5781
51.35	45.1748	88.47	97.4886	145.44	67.4719
51.87	47.0528	89.96	49.5518	152.43	56.0528
52.39	51.6545	1093.63	82.0372	153.25	0.0000
52.97	44.4788	91.11	0.0000	323.87	59.4959
53.44	39.0847	92.59	63.7588	156.02	0.0000
54.07	45.5284	93.35	63.8540	158.56	0.0000
57.36	0.0000	94.56	54.6708	159.00	60.9955
57.53	56.9976	94.65	54.6804	162.33	50.1286
57.98	50.6236	94.67	54.6825	162.66	0.0000
59.27	59.1111	94.87	54.7038	163.33	68.0423
59.32	59.1189	97.43	64.3589	165.86	50.3627
59.54	56.3805	98.43	62.4659	176.31	34.7836
60.96	63.0852	98.44	62.4671	176.60	0.0000
61.17	67.7608	99.53	58.5571	177.52	31.8072
62.93	53.1497	100.11	64.6846	181.07	0.0000
63.29	46.6652	102.03	68.9727	181.52	36.5313
63.58	57.9075	103.18	49.8056	184.41	36.6602
64.28	71.1091	103.37	49.8232	143.76	35.1888
66.73	57.4230	105.21	69.3738	193.51	52.1157
67.24	65.0349	105.31	69.3862	197.03	55.8186
125.81	66.9921	106.12	60.2905	198.01	48.8964
67.75	67.0029	106.47	60.3283	201.83	52.6190
69.67	70.1581	109.28	61.6571	203.43	55.0573
70.83	72.2525	111.00	59.7815	205.31	48.5214
72.81	68.7673	111.76	0.0000	210.85	47.2461
72.87	68.7772	114.06	76.6755	215.65	51.0566
74.66	83.4476	116.30	0.0000	222.11	51.4109
74.82	83.4781	116.74	56.2070	227.09	45.6712
74.97	83.5066	119.76	62.7667	227.38	37.2694
77.11	83.9095	121.12	52.4223	228.16	0.0000
78.74	74.8559	121.22	52.4311	228.18	43.3169
79.69	67.2518	121.78	59.8258	116.74	43.3169
80.12	62.1367	122.06	58.8032	235.69	58.2026
80.19	0.0000	122.92	62.0398	235.96	58.2180
80.57	67.3804	123.07	62.0551	238.63	48.6462
81.00	69.0646	265.00	63.1691	238.98	0.0000
81.07	72.9664	125.81	61.2723	240.99	65.8273
81.75	76.9700	127.23	73.0567	242.00	35.7943
83.79	84.8067	127.91	69.9558	244.70	19.5764
84.00	82.2338	129.30	63.7344	252.40	0.0000
85.43	85.0983	131.20	64.9893	252.80	35.7632
86.55	90.5450	133.02	64.1025	254.15	0.0000
86.79	90.5892	133.52	62.0135	256.23	49.4910
86.94	90.6180	136.00	57.9543	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	37.4139	355.39	0.0000	584.27	21.6375
264.80	44.9033	356.01	36.3224	595.83	0.0000
265.00	44.9110	364.49	0.0000	427.87	16.2049
268.22	48.7988	366.42	0.0000	602.52	0.0000
269.46	50.1074	372.51	28.1398	604.72	17.1747
270.03	45.1198	375.05	30.9197	607.14	10.9422
271.23	43.4973	377.52	29.1517	609.32	3.1298
273.65	0.0000	356.01	24.7072	610.33	3.1312
276.40	31.5155	388.16	25.6997	614.28	14.1180
277.37	39.3656	388.63	0.0000	618.01	18.8577
277.60	39.3732	391.69	26.6825	620.36	17.8301
278.00	37.0310	264.66	24.0698	621.93	19.9432
279.20	38.7563	401.81	25.0148	630.19	0.0000
279.54	42.9814	402.40	30.5864	631.29	14.7611
279.70	40.4590	404.85	21.3529	633.25	16.8854
280.46	37.9559	410.95	28.8979	634.78	0.0000
283.69	36.3731	413.71	28.0170	635.95	17.9636
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	33.8867	423.72	0.0000	645.85	15.9241
285.90	0.0000	427.09	8.4791	657.76	17.0794
287.50	27.1595	427.87	28.2776	657.90	0.0000
290.67	33.1919	433.94	17.9791	661.66	13.9019
293.27	0.0000	439.40	14.2432	664.57	0.0000
351.93	39.3029	453.88	28.7451	666.33	0.0000
295.96	39.3282	463.37	16.3837	666.50	0.0000
879.38	39.4161	468.07	14.4974	667.71	0.0000
299.98	39.4629	473.00	0.0000	677.62	8.6172
300.09	39.4667	475.06	21.3519	685.70	0.0000
300.13	39.4676	476.78	18.4592	695.00	0.0000
301.36	39.5088	477.60	11.6641	696.49	19.5513
302.85	39.5584	482.18	14.6198	696.51	19.5520
256.23	37.4607	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	20.6452
306.78	40.1208	497.08	20.6454	697.49	28.2534
308.46	38.8806	505.52	20.7449	702.65	16.3367
311.90	36.3920	507.63	0.0000	706.68	17.4564
316.51	31.3110	511.00	18.8276	711.68	25.1478
319.41	0.0000	514.00	17.8667	720.70	0.0000
320.08	0.0000	514.00	17.8667	721.93	0.0000
321.04	38.4087	520.40	13.4478	722.78	13.1836
323.87	31.4971	520.69	0.0000	722.91	11.5361
325.23	42.9179	522.65	0.0000	723.31	11.5382
328.76	0.0000	527.90	0.0000	724.19	14.8403
333.37	25.3875	528.26	7.0031	727.33	14.3097
333.97	27.7804	529.59	12.0142	733.00	9.9305
334.37	33.0826	529.87	0.0000	735.93	8.8379
338.28	26.5466	531.02	0.0000	333.97	11.0547
338.32	26.5472	537.26	0.0000	739.50	0.0000
311.90	26.5918	546.56	0.0000	747.24	21.0897
340.48	26.5918	552.55	20.2718	748.06	16.6553
340.55	0.0000	563.25	28.5400	752.31	13.3477
344.28	25.3358	569.33	20.4500	753.82	0.0000
345.93	18.6920	946.00	20.4517	756.73	14.4864
351.06	22.3389	569.70	20.4541	756.80	14.4869
351.93	22.3531	583.19	21.6255	884.68	15.6469

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	31.3177	1274.44	10.0352	1620.50	4.3054
766.42	24.6121	1001.03	12.7922	1621.92	2.1534
766.84	24.6166	1002.74	7.3137	1678.03	0.0000
772.60	0.0000	1004.73	16.1009	1690.97	3.2781
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	1.7750
778.90	15.7415	1028.54	0.0000	1063.66	0.0000
783.70	0.0000	1037.84	14.7939	1771.35	2.2219
785.37	18.0371	1038.76	0.0000	1791.20	0.0000
792.07	15.8246	631.29	8.3441	1808.65	1.1193
794.95	20.3687	1048.07	0.0000	1810.72	0.0000
795.86	16.9800	1049.04	6.4950	1836.06	4.5012
810.06	15.9363	1050.41	8.3546		
810.29	15.9380	1063.66	15.8462		
344.28	14.8001	1077.00	0.0000		
810.76	14.8022	1077.34	8.4243		
815.77	0.0000	1085.87	10.3232		
1048.07	0.0000	1093.63	12.2296		
832.01	19.5151	1099.45	16.1551		
834.85	8.0442	1112.07	17.0277		
835.71	16.0941	1112.84	14.1925		
836.80	0.0000	1115.54	10.6060		
846.75	0.0000	1120.29	12.3279		
846.77	20.7788	1120.55	10.6217		
856.80	0.0000	1221.41	7.5884		
860.56	11.6032	1129.67	12.3621		
871.09	12.8127	1131.51	0.0000		
873.19	16.3197	1147.95	0.0000		
875.33	0.0000	1173.23	9.6307		
879.38	15.7725	1177.95	11.5723		
880.51	14.9025	1189.05	8.7067		
883.24	17.5494	1204.77	13.6035		
884.68	14.0469	1221.41	20.5001		
889.28	13.1909	1231.02	18.5964		
894.76	8.8113	1235.36	0.0000		
898.04	11.4678	1238.28	18.6335		
900.72	13.2449	1260.41	0.0000		
903.28	13.2568	1271.87	8.9072		
911.20	13.2944	1274.44	7.9229		
912.08	13.2985	1274.54	7.9229		
923.98	0.0000	1291.59	10.9436		
926.50	8.9105	1298.22	0.0000		
929.11	10.7021	1312.11	0.0000		
937.49	9.8388	1332.49	10.0555		
944.13	0.0000	1362.66	0.0000		
946.00	15.2501	1365.19	1.3519		
949.00	11.6737	1368.63	0.0000		
667.71	0.0000	1384.29	4.0752		
962.31	18.9428	1408.01	8.1982		
964.08	14.4414	1457.56	0.0000		
966.17	18.7872	1460.82	9.3417		
911.20	18.9857	1489.16	4.1797		
968.97	18.9857	1505.03	6.2926		
983.53	0.0000	1584.12	4.2712		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:21:50.63

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235040.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM12.CNF;467
Background date    : 2-OCT-2016 11:00:40.
Sample date       : 30-NOV-2015 13:23:00 Acquisition date : 3-OCT-2016 09:20:08.
Sample ID        : G405235040 Sample quantity : 1.72014E+02 GRAM
Detector name    : GAM12 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.56 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596249 Detector SN# :
Matrix Spike ID  : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	36.14*	36	28	1.76	72.12	68	16	1.00E-02	43.6	3.61E+00
2	4	37.58*	14	34	1.21	75.00	68	16	3.75E-03	109.4	
3	0	59.26	30	88	1.29	118.36	116	7	8.19E-03	55.7	
4	2	74.85	94	171	1.54	149.53	144	16	2.62E-02	27.3	5.56E-01
5	2	77.41*	132	142	1.29	154.66	144	16	3.66E-02	18.5	
6	0	86.98	39	148	1.46	173.78	171	7	1.07E-02	54.6	
7	0	93.16*	65	128	1.65	186.14	182	9	1.80E-02	37.2	
8	0	116.83	22	72	0.49	233.50	230	6	6.07E-03	65.4	
9	0	154.17	12	103	1.17	308.17	305	7	3.27E-03	146.6	
10	0	185.69*	95	84	1.20	371.22	367	10	2.65E-02	21.6	
11	2	238.54*	360	85	1.46	476.93	470	22	1.00E-01	7.1	2.19E+00
12	2	241.43	98	68	1.75	482.70	470	22	2.72E-02	25.9	
13	0	270.09	53	66	1.26	540.03	535	10	1.47E-02	32.2	
14	4	295.02	119	53	1.69	589.89	585	21	3.32E-02	14.6	2.17E+00
15	4	299.82	29	57	2.18	599.50	585	21	8.17E-03	60.5	
16	0	310.07	16	61	1.78	620.00	612	11	4.53E-03	95.6	
17	0	328.27	22	57	1.37	656.40	649	9	6.12E-03	57.5	
18	0	338.20*	72	66	1.19	676.27	670	11	2.01E-02	25.2	
19	0	351.83*	184	49	1.27	703.52	698	11	5.12E-02	10.6	
20	0	433.68	14	42	0.71	867.27	859	12	3.97E-03	94.3	
21	0	463.28	33	49	1.84	926.47	919	13	9.25E-03	46.6	
22	0	510.64*	16	74	1.60	1021.23	1017	14	4.51E-03	126.1	
23	0	568.90	45	48	1.95	1137.78	1131	16	1.25E-02	37.5	
24	0	583.04*	97	32	1.52	1166.07	1159	14	2.69E-02	16.2	
25	0	609.35*	155	52	1.51	1218.71	1210	15	4.32E-02	13.1	
26	0	662.07	51	30	2.69	1324.19	1317	12	1.41E-02	25.8	
27	0	696.57	8	33	4.22	1393.23	1382	15	2.34E-03	153.4	
28	0	711.78	22	8	0.53	1423.66	1420	10	6.07E-03	31.9	
29	0	727.75	21	36	0.71	1455.61	1449	11	5.96E-03	58.1	
30	0	786.26	17	18	2.75	1572.70	1564	12	4.82E-03	54.4	
31	0	809.27	11	4	1.67	1618.73	1615	7	2.92E-03	42.7	
32	5	839.82	10	4	1.36	1679.87	1678	14	2.70E-03	38.5	5.98E-01
33	5	842.93	23	7	2.76	1686.08	1678	14	6.43E-03	32.8	
34	0	860.90	23	19	2.12	1722.04	1718	9	6.49E-03	38.8	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	911.13*	78	7	2.06	1822.57	1817	13	2.15E-02	13.7	
36	0	918.40	6	4	0.49	1837.13	1833	6	1.54E-03	73.7	
37	0	934.87	23	8	2.45	1870.07	1864	12	6.45E-03	32.8	
38	0	954.97	9	6	1.47	1910.29	1903	11	2.36E-03	63.5	
39	0	969.92	36	33	1.09	1940.23	1931	12	1.01E-02	35.5	
40	0	1099.51	7	20	4.47	2199.60	2189	12	1.94E-03	142.1	
41	0	1120.28	42	21	1.75	2241.15	2234	14	1.17E-02	27.8	
42	0	1185.40	12	6	2.75	2371.50	2365	12	3.33E-03	50.0	
43	0	1238.67	26	6	0.74	2478.13	2474	10	7.35E-03	26.9	
44	0	1242.98	7	2	0.62	2486.77	2484	6	2.04E-03	45.7	
45	0	1255.12	11	24	3.73	2511.07	2499	18	3.08E-03	112.8	
46	0	1321.66	10	2	2.11	2644.27	2638	10	2.78E-03	42.7	
47	0	1325.88	7	0	0.58	2652.71	2650	6	1.94E-03	37.8	
48	0	1337.19	8	2	0.69	2675.36	2672	6	2.08E-03	44.7	
49	0	1340.06	6	3	0.52	2681.10	2678	6	1.60E-03	63.6	
50	0	1460.76	350	0	2.12	2922.75	2916	14	9.72E-02	5.3	
51	0	1589.14	10	3	3.47	3179.79	3173	13	2.67E-03	50.5	
52	0	1764.76	16	9	4.12	3531.46	3525	12	4.49E-03	44.6	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235040.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 30-NOV-2015 13:23:00 Acquisition date : 3-OCT-2016 09:20:08
Sample ID : G405235040 Sample quantity : 172.01 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA12 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.56 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.082E+00	1.295E+01	1.295E+01	10.69	OK
CO-58	810.76	99.45*	1.744E+00	2.810E-02	5.708E-01	85.45	OK
CD-109	88.03	3.70*	4.287E+00	6.705E-01	1.065E+00	242.14	OK
SN-126	64.28	9.60	2.033E+00	----- Line	Not Found	-----	Absent
	86.94	8.90	4.287E+00	2.788E-01	2.788E-01	242.14	OK
	87.57	37.00*	4.287E+00	6.705E-02	6.705E-02	242.14	OK
BA-137M	661.66	89.90*	2.040E+00	1.320E-01	1.345E-01	51.51	OK
CS-137	661.66	85.10*	2.040E+00	1.394E-01	1.421E-01	51.51	OK
PR-144	696.51	1.34*	1.960E+00	1.521E+00	3.217E+00	306.78	OK
	1489.16	0.28	1.064E+00	----- Line	Not Found	-----	Absent
TL-208	277.37	6.60	4.142E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.256E+00	2.451E-01	2.451E-01	32.38	OK
	860.56	12.50	1.662E+00	5.180E-01	5.180E-01	77.70	OK
BI-212	727.33	6.67*	1.894E+00	7.986E-01	7.986E-01	116.26	OK
	785.37	1.10	1.783E+00	4.118E+00	4.118E+00	108.79	OK
	1620.50	1.47	9.870E-01	----- Line	Not Found	-----	Absent
PB-212	74.82	10.28	3.170E+00	1.286E+00	1.286E+00	76.32	OK
	77.11	17.10	3.429E+00	1.374E+00	1.374E+00	37.08	OK
	238.63	43.60*	4.647E+00	9.611E-01	9.611E-01	14.14	OK
	300.09	3.30	3.891E+00	1.207E+00	1.207E+00	121.08	OK
BI-214	609.32	45.49*	2.179E+00	7.560E-01	7.563E-01	26.14	OK
	1120.29	14.92	1.350E+00	9.249E-01	9.253E-01	55.63	OK
	1764.49	15.30	9.120E-01	4.811E-01	4.813E-01	89.14	OK
PB-214	74.82	5.80	3.167E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.429E+00	2.422E+00	2.423E+00	37.08	OK
	87.09	3.41	4.296E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.599E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	3.942E+00	8.680E-01	8.683E-01	29.19	OK
	351.93	35.60*	3.411E+00	7.832E-01	7.835E-01	21.24	OK
RN-222	609.32	45.49*	2.179E+00	7.560E-01	7.563E-01	26.14	OK
	1120.29	14.92	1.350E+00	9.249E-01	9.253E-01	55.63	OK
	1764.49	15.30	9.120E-01	4.811E-01	4.813E-01	89.14	OK
RA-224	240.99	4.10*	4.607E+00	1.262E+00	1.262E+00	120.32	OK
RA-226	609.32	45.49*	2.179E+00	7.560E-01	7.563E-01	26.14	OK
	1120.29	14.92	1.350E+00	9.249E-01	9.253E-01	55.63	OK
	1764.49	15.30	9.120E-01	4.811E-01	4.813E-01	89.14	OK
AC-228	105.21	1.10	5.379E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.525E+00	9.430E-01	9.430E-01	50.35	OK
	794.95	4.25	1.768E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.701E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.590E+00	8.631E-01	8.631E-01	27.35	OK
	968.97	15.80	1.513E+00	6.904E-01	6.904E-01	71.06	OK
RA-228	105.21	1.10	5.379E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.525E+00	9.430E-01	9.430E-01	50.35	OK
	794.95	4.25	1.768E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.701E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.590E+00	8.631E-01	8.631E-01	27.35	OK
	968.97	15.80	1.513E+00	6.904E-01	6.904E-01	71.06	OK
TH-228	74.82	10.28	3.170E+00	1.286E+00	1.286E+00	76.32	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	77.11	17.10	3.429E+00	1.374E+00	1.374E+00	37.08	OK
	238.63	43.60*	4.647E+00	9.611E-01	9.611E-01	14.14	OK
	300.09	3.30	3.891E+00	1.207E+00	1.207E+00	121.08	OK
TH-230	609.32	45.49*	2.179E+00	7.560E-01	7.560E-01	26.14	OK
	1120.29	14.92	1.350E+00	9.249E-01	9.250E-01	55.63	OK
	1764.49	15.30	9.120E-01	4.811E-01	4.811E-01	89.14	OK
TH-232	105.21	1.10	5.379E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.525E+00	9.430E-01	9.430E-01	50.35	OK
	835.71	1.61	1.701E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.590E+00	8.631E-01	8.631E-01	27.35	OK
	968.97	15.80	1.513E+00	6.904E-01	6.904E-01	71.06	OK
U-234	609.32	45.49*	2.179E+00	7.560E-01	7.560E-01	26.14	OK
	1120.29	14.92	1.350E+00	9.249E-01	9.250E-01	55.63	OK
	1764.49	15.30	9.120E-01	4.811E-01	4.811E-01	89.14	OK
AM-241	59.54	35.90*	1.495E+00	3.456E-01	3.461E-01	111.43	OK
AM-243	43.53	5.90	2.347E-01	-----	Line Not Found	-----	Absent
	74.66	67.20*	3.170E+00	1.968E-01	1.968E-01	76.32	OK
ANH-511	511.00	100.00*	2.510E+00	3.192E-02	3.192E-02	252.30	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235040.CNF;1
* Acquisition date   : 3-OCT-2016 09:20:08 Sensitivity      : 3.000
* Detector ID        : GAM12 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.56 Half life ratio : *****
* Sample date        : 30-NOV-2015 13:23:00 Analyst initials: MXR1
* Sample ID          : G405235040 Sample Quantity : 1.7201E+02 GRAM
* Batch Number       : 1596249 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library     : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 22-SEP-2016 11:41:01 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM12 CAN.CNF;13
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.295E+01	1.356E+00	4.622E-01
CO-58	5.708E-01	4.780E-01	1.071E+00
CD-109	1.065E+00	2.527E+00	2.870E+00
SN-126	6.705E-02	1.591E-01	1.822E-01
BA-137M	1.345E-01	6.791E-02	5.994E-02
CS-137	1.421E-01	7.174E-02	6.332E-02
PR-144	3.217E+00	9.670E+00	6.447E+00
TL-208	2.451E-01	7.777E-02	5.007E-02
BI-212	7.986E-01	9.099E-01	8.785E-01
PB-212	9.611E-01	1.332E-01	8.824E-02
BI-214	7.563E-01	1.938E-01	1.300E-01
PB-214	7.835E-01	1.631E-01	1.070E-01
RN-222	7.563E-01	1.938E-01	1.300E-01
RA-224	1.262E+00	1.488E+00	9.454E-01
RA-226	7.563E-01	1.938E-01	1.300E-01
AC-228	8.631E-01	2.313E-01	2.020E-01
RA-228	8.631E-01	2.313E-01	2.020E-01
TH-228	9.611E-01	1.332E-01	8.824E-02
TH-230	7.560E-01	1.937E-01	1.300E-01
TH-232	8.631E-01	2.313E-01	2.020E-01
U-234	7.560E-01	1.937E-01	1.300E-01
AM-241	3.461E-01	3.779E-01	3.665E-01
AM-243	1.968E-01	1.472E-01	1.090E-01
ANH-511	3.192E-02	7.892E-02	4.917E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-5.510E+00	1.165E+01	2.120E+01	NOT IDENT.
NA-22	-2.605E-02	3.679E-02	6.434E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	3.655E-03	2.971E-02	6.474E-02	NOT IDENT.
SC-46	-1.997E-01	3.379E-01	6.293E-01	FAIL ABUN
V-48	0.000E+00	1.728E+04	0.000E+00	SHORT HLIF

CR-51	0.000E+00	4.942E+02	0.000E+00	SHORT HLIF
MN-54	1.118E-02	5.682E-02	1.186E-01	NOT IDENT.
CO-56	1.057E-01	3.900E-01	7.747E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	1.864E-02	4.421E-02	9.225E-02	NOT IDENT.
FE-59	4.862E+00	1.355E+01	1.477E+01	FAIL ABUN
CO-60	-8.745E-03	3.492E-02	5.893E-02	NOT IDENT.
ZN-65	2.053E-02	1.586E-01	2.936E-01	NOT IDENT.
GE-68	2.099E-01	2.160E+00	4.428E+00	NOT IDENT.
AS-73	-1.083E+01	1.604E+01	2.876E+01	NOT IDENT.
AS-74	0.000E+00	7.006E+03	0.000E+00	SHORT HLIF
SE-75	-1.393E-02	1.958E-01	3.654E-01	NOT IDENT.
BR-77	0.000E+00	2.472E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	8.126E+02	0.000E+00	SHORT HLIF
RB-83	2.144E-02	6.767E-01	1.306E+00	NOT IDENT.
KR-85	1.675E+00	7.881E+00	1.376E+01	NOT IDENT.
SR-85	1.917E-01	9.057E-01	1.582E+00	NOT IDENT.
RB-86	0.000E+00	3.628E+04	0.000E+00	SHORT HLIF
Y-88	1.230E-01	2.291E-01	5.435E-01	NOT IDENT.
Y-91	2.977E+02	5.810E+02	1.223E+03	NOT IDENT.
NB-94	8.461E-03	2.810E-02	5.607E-02	NOT IDENT.
NB-95	-8.984E-02	8.139E-01	1.628E+00	NOT IDENT.
NB-95M	2.774E+00	2.690E+00	5.176E+00	NOT IDENT.
ZR-95	7.492E-02	1.627E+00	3.085E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.047E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.208E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	2.038E-02	3.455E-02	7.177E-02	NOT IDENT.
RH-102	9.662E-03	5.963E-02	1.160E-01	FAIL ABUN
RU-103	6.176E+00	5.541E+00	1.240E+01	FAIL ABUN
RH-106	2.252E-02	4.572E-01	8.870E-01	NOT IDENT.
RU-106	2.252E-02	4.572E-01	8.870E-01	NOT IDENT.
AG-108M	2.777E-02	5.133E-02	4.782E-02	FAIL ABUN
AG-110M	4.762E-02	8.962E-02	1.969E-01	NOT IDENT.
SN-113	9.502E-02	2.388E-01	4.793E-01	NOT IDENT.
CD-115	0.000E+00	3.192E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.465E+05	0.000E+00	SHORT HLIF
TE-123M	-5.088E-02	1.299E-01	2.518E-01	NOT IDENT.
SB-124	-7.465E-01	1.909E+00	3.633E+00	NOT IDENT.
SB-125	-1.222E-01	1.133E-01	1.596E-01	FAIL ABUN
TE-125M	2.179E+02	2.902E+02	6.187E+02	NOT IDENT.
I-126	0.000E+00	1.308E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.839E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	7.591E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	9.512E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.949E+27	0.000E+00	SHORT HLIF
BA-133	2.374E-03	3.724E-02	6.607E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	5.001E-02	4.828E-02	1.085E-01	FAIL ABUN
CS-135	1.438E-01	1.335E-01	2.646E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	4.275E+05	0.000E+00	SHORT HLIF
CE-139	4.305E-02	9.510E-02	1.973E-01	NOT IDENT.
BA-140	0.000E+00	1.594E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	5.716E+05	0.000E+00	SHORT HLIF
CE-141	-1.054E+01	2.674E+01	5.208E+01	NOT IDENT.
CE-143	0.000E+00	7.831E+40	0.000E+00	SHORT HLIF
CE-144	-1.168E-01	3.322E-01	6.532E-01	NOT IDENT.
PM-144	3.688E-02	1.109E-01	9.315E-02	FAIL ABUN
PM-146	4.302E-03	4.119E-02	8.055E-02	NOT IDENT.
ND-147	0.000E+00	4.816E+07	0.000E+00	SHORT HLIF
PM-147	8.258E+02	7.543E+02	1.643E+03	NOT IDENT.
PM-149	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
EU-150	1.016E-02	2.381E-02	4.419E-02	FAIL ABUN
EU-152	-2.983E-02	8.740E-02	1.638E-01	FAIL ABUN
GD-153	2.578E-02	1.825E-01	3.424E-01	NOT IDENT.
EU-154	-5.921E-02	9.084E-02	1.613E-01	NOT IDENT.
EU-155	1.112E-02	1.031E-01	2.119E-01	FAIL ABUN
TB-160	1.228E+00	1.583E+00	3.665E+00	FAIL ABUN
HO-166M	9.904E-02	6.199E-02	1.134E-01	FAIL ABUN
TM-171	-3.224E+00	3.515E+01	6.700E+01	NOT IDENT.
HF-172	7.206E-02	2.255E-01	4.634E-01	NOT IDENT.
LU-172	-3.215E-03	1.013E-01	1.734E-01	FAIL ABUN
LU-176	-6.254E-03	2.198E-02	3.717E-02	FAIL ABUN
HF-181	2.035E+00	4.611E+00	9.390E+00	NOT IDENT.
TA-182	-4.575E-01	7.802E-01	1.409E+00	FAIL ABUN

RE-183	7.625E+00	8.327E+00	9.525E+00	FAIL ABUN
RE-184	5.040E+00	3.152E+01	6.557E+01	NOT IDENT.
W-188	1.599E+01	1.208E+02	2.149E+02	NOT IDENT.
IR-192	2.863E-02	4.810E-01	9.154E-01	FAIL ABUN
HG-203	1.581E+00	2.532E+00	5.203E+00	NOT IDENT.
BI-207	1.108E-02	3.946E-02	8.433E-02	FAIL ABUN
PB-210	4.707E+00	6.881E+00	1.394E+01	NOT IDENT.
BI-211	0.000E+00	4.493E-01	7.265E-01	FAIL ABUN
PB-211	3.784E-01	6.576E-01	1.340E+00	NOT IDENT.
RN-219	-4.178E-02	3.760E-01	7.153E-01	FAIL ABUN
RA-223	-1.179E-01	5.697E-01	9.681E-01	FAIL ABUN
AC-227	8.106E-02	2.059E-01	4.180E-01	FAIL ABUN
TH-227	8.106E-02	2.059E-01	4.180E-01	FAIL ABUN
TH-229	3.593E-01	4.398E-01	9.166E-01	FAIL ABUN
PA-231	4.441E-01	4.183E-01	8.293E-01	NOT IDENT.
TH-231	-1.179E-01	5.697E-01	9.681E-01	FAIL ABUN
PA-233	4.532E-03	5.972E-02	1.055E-01	FAIL ABUN
PA-234	7.769E-02	2.107E-01	4.636E-01	FAIL ABUN
PA-234M	-9.195E-01	4.037E+00	7.943E+00	NOT IDENT.
TH-234	1.104E+00	1.816E+00	3.602E+00	FAIL ABUN
U-235	-6.166E-02	1.672E-01	3.288E-01	FAIL ABUN
NP-237	4.532E-03	5.972E-02	1.055E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
U-238	1.104E+00	1.816E+00	3.602E+00	FAIL ABUN
NP-239	2.808E-01	3.602E-01	4.731E-01	FAIL ABUN
PU-239	1.204E+01	3.104E+02	6.240E+02	NOT IDENT.
CM-243	-3.044E-02	9.247E-02	1.849E-01	NOT IDENT.
BK-247	1.772E-02	6.728E-02	1.231E-01	NOT IDENT.
CM-247	-5.995E-03	3.520E-02	6.644E-02	NOT IDENT.
CF-249	9.005E-04	3.234E-02	6.331E-02	NOT IDENT.
CF-251	-1.447E-02	9.716E-02	1.917E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	342	10.66*	1.082E+00	1.295E+01	1.295E+01	10.69
CO-58	810.76	11	99.45*	1.744E+00	2.810E-02	5.708E-01	85.45
CD-109	88.03	53	3.70*	4.287E+00	1.470E+00	2.335E+00	109.26
SN-126	64.28	-----	9.60	2.033E+00	-----	Line Not Found	-----
	86.94	53	8.90	4.287E+00	6.113E-01	6.113E-01	109.26
	87.57	53	37.00*	4.287E+00	1.470E-01	1.470E-01	109.26
BA-137M	661.66	55	89.90*	2.040E+00	1.320E-01	1.345E-01	51.51
CS-137	661.66	55	85.10*	2.040E+00	1.394E-01	1.421E-01	51.51
PR-144	696.51	9	1.34*	1.960E+00	1.521E+00	3.217E+00	306.78
	1489.16	-----	0.28	1.064E+00	-----	Line Not Found	-----
TL-208	277.37	-----	6.60	4.142E+00	-----	Line Not Found	-----
	583.19	108	85.00*	2.256E+00	2.451E-01	2.451E-01	32.38
	860.56	25	12.50	1.662E+00	5.180E-01	5.180E-01	77.70
BI-211	72.87	-----	1.23	2.964E+00	-----	Line Not Found	-----
	351.06	218	12.92*	3.411E+00	2.158E+00	2.158E+00	21.24
BI-212	727.33	23	6.67*	1.894E+00	7.986E-01	7.986E-01	116.26
	785.37	19	1.10	1.783E+00	4.118E+00	4.118E+00	108.79
	1620.50	-----	1.47	9.870E-01	-----	Line Not Found	-----
PB-212	74.82	133	10.28	3.170E+00	1.776E+00	1.776E+00	54.69
	77.11	185	17.10	3.429E+00	1.374E+00	1.374E+00	37.08
	238.63	446	43.60*	4.647E+00	9.611E-01	9.611E-01	14.14
	300.09	35	3.30	3.891E+00	1.207E+00	1.207E+00	121.08
BI-214	609.32	172	45.49*	2.179E+00	7.560E-01	7.563E-01	26.14
	1120.29	43	14.92	1.350E+00	9.249E-01	9.253E-01	55.63
	1764.49	15	15.30	9.120E-01	4.811E-01	4.813E-01	89.14
PB-214	74.82	133	5.80	3.170E+00	3.148E+00	3.149E+00	54.69
	77.11	185	9.70	3.429E+00	2.422E+00	2.423E+00	37.08
	87.09	53	3.41	4.287E+00	1.596E+00	1.596E+00	109.26
	242.00	121	7.25	4.607E+00	1.582E+00	1.582E+00	51.87
	295.22	144	18.42	3.942E+00	8.680E-01	8.683E-01	29.19
	351.93	218	35.60*	3.411E+00	7.832E-01	7.835E-01	21.24
RN-222	609.32	172	45.49*	2.179E+00	7.560E-01	7.563E-01	26.14
	1120.29	43	14.92	1.350E+00	9.249E-01	9.253E-01	55.63
	1764.49	15	15.30	9.120E-01	4.811E-01	4.813E-01	89.14
RA-224	240.99	121	4.10*	4.607E+00	2.797E+00	2.797E+00	51.87
RA-226	609.32	172	45.49*	2.179E+00	7.560E-01	7.563E-01	26.14
	1120.29	43	14.92	1.350E+00	9.249E-01	9.253E-01	55.63
	1764.49	15	15.30	9.120E-01	4.811E-01	4.813E-01	89.14
AC-228	105.21	-----	1.10	5.379E+00	-----	Line Not Found	-----
	338.32	86	11.27	3.525E+00	9.430E-01	9.430E-01	50.35
	794.95	-----	4.25	1.768E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.701E+00	-----	Line Not Found	-----
	911.20	81	25.80*	1.590E+00	8.631E-01	8.631E-01	27.35
	968.97	38	15.80	1.513E+00	6.904E-01	6.904E-01	71.06
RA-228	105.21	-----	1.10	5.379E+00	-----	Line Not Found	-----
	338.32	86	11.27	3.525E+00	9.430E-01	9.430E-01	50.35
	794.95	-----	4.25	1.768E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	835.71	-----	1.61	1.701E+00	-----	Line Not Found	-----
	911.20	81	25.80*	1.590E+00	8.631E-01	8.631E-01	27.35
	968.97	38	15.80	1.513E+00	6.904E-01	6.904E-01	71.06
TH-228	74.82	133	10.28	3.170E+00	1.776E+00	1.776E+00	54.69
	77.11	185	17.10	3.429E+00	1.374E+00	1.374E+00	37.08
	238.63	446	43.60*	4.647E+00	9.611E-01	9.611E-01	14.14
	300.09	35	3.30	3.891E+00	1.207E+00	1.207E+00	121.08
TH-230	609.32	172	45.49*	2.179E+00	7.560E-01	7.560E-01	26.14
	1120.29	43	14.92	1.350E+00	9.249E-01	9.250E-01	55.63
	1764.49	15	15.30	9.120E-01	4.811E-01	4.811E-01	89.14
TH-232	105.21	-----	1.10	5.379E+00	-----	Line Not Found	-----
	338.32	86	11.27	3.525E+00	9.430E-01	9.430E-01	50.35
	835.71	-----	1.61	1.701E+00	-----	Line Not Found	-----
	911.20	81	25.80*	1.590E+00	8.631E-01	8.631E-01	27.35
	968.97	38	15.80	1.513E+00	6.904E-01	6.904E-01	71.06
U-234	609.32	172	45.49*	2.179E+00	7.560E-01	7.560E-01	26.14
	1120.29	43	14.92	1.350E+00	9.249E-01	9.250E-01	55.63
	1764.49	15	15.30	9.120E-01	4.811E-01	4.811E-01	89.14
AM-241	59.54	42	35.90*	1.495E+00	3.456E-01	3.461E-01	111.43
AM-243	43.53	-----	5.90	2.347E-01	-----	Line Not Found	-----
	74.66	133	67.20*	3.170E+00	2.717E-01	2.717E-01	54.69
ANH-511	511.00	18	100.00*	2.510E+00	3.192E-02	3.192E-02	252.30

Flag: "*" = Keyline

Total number of lines in spectrum 52
Number of unidentified lines 15
Number of lines tentatively identified by NID 37 71.15%

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	1.295E+01	1.295E+01	0.138E+01	10.69	
CO-58	70.86D	20.3	2.810E-02	5.708E-01	4.877E-01	85.45	
CD-109	461.40D	1.59	1.470E+00	2.335E+00	2.551E+00	109.26	
SN-126	2.30E+05Y	1.00	1.470E-01	1.470E-01	1.607E-01	109.26	
BA-137M	30.08Y	1.02	1.320E-01	1.345E-01	0.693E-01	51.51	
CS-137	30.08Y	1.02	1.394E-01	1.421E-01	0.732E-01	51.51	
PR-144	284.91D	2.11	1.521E+00	3.217E+00	9.868E+00	306.78	
TL-208	1.41E+10Y	1.00	2.451E-01	2.451E-01	0.794E-01	32.38	
BI-211	7.04E+08Y	1.00	2.158E+00	2.158E+00	0.458E+00	21.24	
BI-212	1.41E+10Y	1.00	7.986E-01	7.986E-01	9.285E-01	116.26	
PB-212	1.41E+10Y	1.00	9.611E-01	9.611E-01	1.359E-01	14.14	
BI-214	1600.00Y	1.00	7.560E-01	7.563E-01	1.977E-01	26.14	
PB-214	1600.00Y	1.00	7.832E-01	7.835E-01	1.664E-01	21.24	
RN-222	1600.00Y	1.00	7.560E-01	7.563E-01	1.977E-01	26.14	
RA-224	1.41E+10Y	1.00	2.797E+00	2.797E+00	1.451E+00	51.87	
RA-226	1600.00Y	1.00	7.560E-01	7.563E-01	1.977E-01	26.14	
AC-228	1.41E+10Y	1.00	8.631E-01	8.631E-01	2.361E-01	27.35	
RA-228	1.41E+10Y	1.00	8.631E-01	8.631E-01	2.361E-01	27.35	
TH-228	1.41E+10Y	1.00	9.611E-01	9.611E-01	1.359E-01	14.14	
TH-230	7.54E+04Y	1.00	7.560E-01	7.560E-01	1.976E-01	26.14	
TH-232	1.41E+10Y	1.00	8.631E-01	8.631E-01	2.361E-01	27.35	
U-234	2.45E+05Y	1.00	7.560E-01	7.560E-01	1.976E-01	26.14	
AM-241	432.60Y	1.00	3.456E-01	3.461E-01	3.856E-01	111.43	
AM-243	7370.00Y	1.00	2.717E-01	2.717E-01	1.486E-01	54.69	
ANH-511	1.00E+09Y	1.00	3.192E-02	3.192E-02	8.053E-02	252.30	
Total Activity :			3.211E+01	3.522E+01			

Grand Total Activity : 3.211E+01 3.522E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	36.14	55	42	1.76	72.12	68	16	1.00E-02	87.2	2.66E-02	
4	37.58	20	51	1.21	75.00	68	16	3.75E-03	****	4.73E-02	
0	93.16	89	175	1.65	186.14	182	9	1.80E-02	74.4	4.74E+00	T
0	116.83	29	97	0.49	233.50	230	6	6.07E-03	****	5.74E+00	T
0	154.17	15	134	1.17	308.17	305	7	3.27E-03	****	5.86E+00	T
0	185.69	122	107	1.20	371.22	367	10	2.65E-02	43.2	5.45E+00	T
0	270.09	64	81	1.26	540.03	535	10	1.47E-02	64.3	4.23E+00	T
0	310.07	20	73	1.78	620.00	612	11	4.53E-03	****	3.79E+00	
0	328.27	26	68	1.37	656.40	649	9	6.12E-03	****	3.61E+00	T
0	433.68	16	48	0.71	867.27	859	12	3.97E-03	****	2.87E+00	T
0	463.28	38	56	1.84	926.47	919	13	9.25E-03	93.2	2.72E+00	T
0	568.90	50	53	1.95	1137.78	1131	16	1.25E-02	75.0	2.30E+00	T
0	711.78	24	9	0.53	1423.66	1420	10	6.07E-03	63.9	1.93E+00	T
5	839.82	10	4	1.36	1679.87	1678	14	2.70E-03	76.9	1.69E+00	
5	842.93	24	8	2.76	1686.08	1678	14	6.43E-03	65.7	1.69E+00	
0	918.40	6	5	0.49	1837.13	1833	6	1.54E-03	****	1.58E+00	
0	934.87	24	8	2.45	1870.07	1864	12	6.45E-03	65.6	1.56E+00	
0	954.97	9	6	1.47	1910.29	1903	11	2.36E-03	****	1.53E+00	T
0	1099.51	7	20	4.47	2199.60	2189	12	1.94E-03	****	1.37E+00	T
0	1185.40	12	6	2.75	2371.50	2365	12	3.33E-03	****	1.29E+00	
0	1238.67	27	6	0.74	2478.13	2474	10	7.35E-03	53.8	1.24E+00	T
0	1242.98	7	2	0.62	2486.77	2484	6	2.04E-03	91.5	1.24E+00	
0	1255.12	11	24	3.73	2511.07	2499	18	3.08E-03	****	1.23E+00	
0	1321.66	10	2	2.11	2644.27	2638	10	2.78E-03	85.4	1.18E+00	
0	1325.88	7	0	0.58	2652.71	2650	6	1.94E-03	75.6	1.18E+00	
0	1337.19	7	1	0.69	2675.36	2672	6	2.08E-03	89.4	1.17E+00	
0	1340.06	6	3	0.52	2681.10	2678	6	1.60E-03	****	1.17E+00	
0	1589.14	9	3	3.47	3179.79	3173	13	2.67E-03	****	1.00E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235040.CNF;1
* Acquisition date   : 3-OCT-2016 09:20:08 Sensitivity      : 3.000
* Detector ID        : GAM12 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.56 Half life ratio : *****
* Sample date        : 30-NOV-2015 13:23:00 Nuclide Library : SOLID
* Sample ID          : G405235040 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.7201E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 22-SEP-2016 11:41:01 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM12 CAN.CNF;13
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.792E-01
CO-58	4.640E-01
CD-109	1.371E+00
SN-126	8.705E-02
BA-137M	2.656E-02
CS-137	2.806E-02
PR-144	2.730E+00
TL-208	2.182E-02
BI-212	3.909E-01
PB-212	4.100E-02
BI-214	5.881E-02
PB-214	4.833E-02
RN-222	5.881E-02
RA-224	4.393E-01
RA-226	5.881E-02
AC-228	8.619E-02
RA-228	8.619E-02
TH-228	4.100E-02
TH-230	5.878E-02
TH-232	8.619E-02
U-234	5.878E-02
AM-241	1.712E-01
AM-243	5.140E-02
ANH-511	2.212E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	9.365E+00	NOT IDENT.
NA-22	2.598E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.569E-02	NOT IDENT.
SC-46	2.667E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF

MN-54	5.220E-02	NOT IDENT.
CO-56	3.300E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	4.330E-02	NOT IDENT.
FE-59	6.444E+00	FAIL ABUN
CO-60	2.374E-02	NOT IDENT.
ZN-65	1.257E-01	NOT IDENT.
GE-68	1.918E+00	NOT IDENT.
AS-73	1.339E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.679E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.868E-01	NOT IDENT.
KR-85	6.280E+00	NOT IDENT.
SR-85	7.216E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	2.214E-01	NOT IDENT.
Y-91	5.420E+02	NOT IDENT.
NB-94	2.489E-02	NOT IDENT.
NB-95	7.199E-01	NOT IDENT.
NB-95M	2.436E+00	NOT IDENT.
ZR-95	1.371E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.397E-02	NOT IDENT.
RH-102	5.193E-02	FAIL ABUN
RU-103	5.591E+00	FAIL ABUN
RH-106	3.922E-01	NOT IDENT.
RU-106	3.922E-01	NOT IDENT.
AG-108M	2.151E-02	FAIL ABUN
AG-110M	8.636E-02	NOT IDENT.
SN-113	2.200E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.180E-01	NOT IDENT.
SB-124	1.360E+00	NOT IDENT.
SB-125	7.090E-02	FAIL ABUN
TE-125M	2.915E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.988E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	4.890E-02	FAIL ABUN
CS-135	1.231E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.208E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.445E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.060E-01	NOT IDENT.
PM-144	4.092E-02	FAIL ABUN
PM-146	3.643E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.730E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.023E-02	FAIL ABUN
EU-152	7.484E-02	FAIL ABUN
GD-153	1.603E-01	NOT IDENT.
EU-154	6.553E-02	NOT IDENT.
EU-155	9.952E-02	FAIL ABUN
TB-160	1.596E+00	FAIL ABUN
HO-166M	5.083E-02	FAIL ABUN
TM-171	3.121E+01	NOT IDENT.
HF-172	2.185E-01	NOT IDENT.
LU-172	7.721E-02	FAIL ABUN
LU-176	1.683E-02	FAIL ABUN
HF-181	4.246E+00	NOT IDENT.
TA-182	5.903E-01	FAIL ABUN
RE-183	4.465E+00	FAIL ABUN

RE-184	2.865E+01	NOT IDENT.
W-188	9.913E+01	NOT IDENT.
IR-192	4.210E-01	FAIL ABUN
HG-203	2.419E+00	NOT IDENT.
BI-207	3.631E-02	FAIL ABUN
PB-210	6.569E+00	NOT IDENT.
BI-211	3.492E-01	FAIL ABUN
PB-211	6.160E-01	NOT IDENT.
RN-219	3.268E-01	FAIL ABUN
RA-223	4.410E-01	FAIL ABUN
AC-227	1.939E-01	FAIL ABUN
TH-227	1.939E-01	FAIL ABUN
TH-229	4.313E-01	FAIL ABUN
PA-231	3.844E-01	NOT IDENT.
TH-231	4.410E-01	FAIL ABUN
PA-233	4.842E-02	FAIL ABUN
PA-234	1.990E-01	FAIL ABUN
PA-234M	3.484E+00	NOT IDENT.
TH-234	1.709E+00	FAIL ABUN
U-235	1.546E-01	FAIL ABUN
NP-237	4.842E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	1.709E+00	FAIL ABUN
NP-239	2.224E-01	FAIL ABUN
PU-239	2.948E+02	NOT IDENT.
CM-243	8.650E-02	NOT IDENT.
BK-247	5.663E-02	NOT IDENT.
CM-247	3.039E-02	NOT IDENT.
CF-249	2.865E-02	NOT IDENT.
CF-251	8.923E-02	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.295E+01	1.517E+00	1.517E+00
CO-58	5.708E-01	4.786E-01	4.786E-01
CD-109	1.065E+00	2.533E+00	2.533E+00
SN-126	6.705E-02	1.595E-01	1.595E-01
BA-137M	1.345E-01	6.816E-02	6.816E-02
CS-137	1.421E-01	7.201E-02	7.201E-02
PR-144	3.217E+00	9.671E+00	9.671E+00
TL-208	2.451E-01	7.848E-02	7.848E-02
BI-212	7.986E-01	9.109E-01	9.109E-01
PB-212	9.611E-01	1.429E-01	1.429E-01
BI-214	7.563E-01	1.965E-01	1.965E-01
PB-214	7.835E-01	1.665E-01	1.665E-01
RN-222	7.563E-01	1.965E-01	1.965E-01
RA-224	1.262E+00	1.493E+00	1.493E+00
RA-226	7.563E-01	1.965E-01	1.965E-01
AC-228	8.631E-01	2.355E-01	2.355E-01
RA-228	8.631E-01	2.355E-01	2.355E-01
TH-228	9.611E-01	1.429E-01	1.429E-01
TH-230	7.560E-01	1.964E-01	1.964E-01
TH-232	8.631E-01	2.355E-01	2.355E-01
U-234	7.560E-01	1.964E-01	1.964E-01
AM-241	3.461E-01	3.788E-01	3.788E-01
AM-243	1.968E-01	1.480E-01	1.480E-01
ANH-511	3.192E-02	7.893E-02	7.893E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-5.510E+00	1.166E+01	1.192E+01	NOT IDENT.
NA-22	-2.605E-02	3.680E-02	3.863E-02	NOT IDENT.
NA-24	1.000E+41	3.840E+41	0.000E+00	SHORT HLIF
AL-26	3.655E-03	2.971E-02	2.975E-02	NOT IDENT.
SC-46	-1.997E-01	3.380E-01	3.498E-01	FAIL ABUN
V-48	-1.061E+04	1.728E+04	1.793E+04	SHORT HLIF

CR-51	-9.408E+01	4.942E+02	4.960E+02	SHORT HLIF
MN-54	1.118E-02	5.683E-02	5.705E-02	NOT IDENT.
CO-56	1.057E-01	3.901E-01	3.929E-01	FAIL ABUN
MN-56	1.000E+41	3.691E+41	0.000E+00	SHORT HLIF
CO-57	1.864E-02	4.422E-02	4.501E-02	NOT IDENT.
FE-59	4.862E+00	1.355E+01	1.373E+01	FAIL ABUN
CO-60	-8.745E-03	3.492E-02	3.514E-02	NOT IDENT.
ZN-65	2.053E-02	1.586E-01	1.588E-01	NOT IDENT.
GE-68	2.099E-01	2.160E+00	2.162E+00	NOT IDENT.
AS-73	-1.083E+01	1.619E+01	1.691E+01	NOT IDENT.
AS-74	1.824E+02	7.006E+03	7.006E+03	SHORT HLIF
SE-75	-1.393E-02	1.958E-01	1.959E-01	NOT IDENT.
BR-77	1.784E+39	1.585E+40	0.000E+00	SHORT HLIF
SR-82	6.831E+02	8.132E+02	8.696E+02	SHORT HLIF
RB-83	2.144E-02	6.767E-01	6.768E-01	NOT IDENT.
KR-85	1.675E+00	7.881E+00	7.918E+00	NOT IDENT.
SR-85	1.917E-01	9.057E-01	9.099E-01	NOT IDENT.
RB-86	1.561E+03	3.628E+04	3.628E+04	SHORT HLIF
Y-88	1.230E-01	2.292E-01	2.359E-01	NOT IDENT.
Y-91	2.977E+02	5.811E+02	5.964E+02	NOT IDENT.
NB-94	8.461E-03	2.810E-02	2.836E-02	NOT IDENT.
NB-95	-8.984E-02	8.139E-01	8.149E-01	NOT IDENT.
NB-95M	2.774E+00	2.699E+00	2.975E+00	NOT IDENT.
ZR-95	7.492E-02	1.627E+00	1.627E+00	NOT IDENT.
NB-97	1.000E+41	9.049E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.048E+41	0.000E+00	SHORT HLIF
MO-99	6.152E+31	1.208E+33	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	7.838E+41	0.000E+00	SHORT HLIF
RH-101	2.038E-02	3.475E-02	3.594E-02	NOT IDENT.
RH-102	9.662E-03	5.964E-02	5.980E-02	FAIL ABUN
RU-103	6.176E+00	5.549E+00	6.208E+00	FAIL ABUN
RH-106	2.252E-02	4.572E-01	4.573E-01	NOT IDENT.
RU-106	2.252E-02	4.572E-01	4.573E-01	NOT IDENT.
AG-108M	2.777E-02	5.134E-02	5.284E-02	FAIL ABUN
AG-110M	4.762E-02	8.965E-02	9.218E-02	NOT IDENT.
SN-113	9.502E-02	2.388E-01	2.426E-01	NOT IDENT.
CD-115	-2.288E+40	3.220E+40	0.000E+00	SHORT HLIF
SN-117M	-9.273E+04	1.469E+05	1.527E+05	SHORT HLIF
TE-123M	-5.088E-02	1.299E-01	1.319E-01	NOT IDENT.
SB-124	-7.465E-01	1.910E+00	1.939E+00	NOT IDENT.
SB-125	-1.222E-01	1.134E-01	1.261E-01	FAIL ABUN
TE-125M	2.179E+02	2.904E+02	3.066E+02	NOT IDENT.
I-126	2.075E+05	1.308E+06	1.311E+06	SHORT HLIF
SB-126	-5.838E+05	1.842E+06	1.861E+06	SHORT HLIF
SB-127	6.613E+21	7.648E+22	0.000E+00	SHORT HLIF
I-131	4.771E+09	9.515E+09	9.755E+09	SHORT HLIF
I-132	1.000E+41	6.859E+42	0.000E+00	SHORT HLIF
TE-132	1.845E+27	2.095E+27	0.000E+00	SHORT HLIF
BA-133	2.374E-03	3.724E-02	3.725E-02	NOT IDENT.
I-133	-1.000E+41	8.787E+42	0.000E+00	SHORT HLIF
CS-134	5.001E-02	4.833E-02	5.333E-02	FAIL ABUN
CS-135	1.438E-01	1.339E-01	1.487E-01	NOT IDENT.
I-135	1.000E+41	1.162E+42	0.000E+00	SHORT HLIF
CS-136	-9.550E+04	4.277E+05	4.298E+05	SHORT HLIF
CE-139	4.305E-02	9.550E-02	9.745E-02	NOT IDENT.
BA-140	3.900E+05	1.594E+06	1.603E+06	SHORT HLIF
LA-140	1.140E+05	5.716E+05	5.739E+05	SHORT HLIF
CE-141	-1.054E+01	2.674E+01	2.716E+01	NOT IDENT.
CE-143	1.000E+41	7.901E+40	0.000E+00	SHORT HLIF
CE-144	-1.168E-01	3.323E-01	3.364E-01	NOT IDENT.
PM-144	3.688E-02	1.109E-01	1.121E-01	FAIL ABUN
PM-146	4.302E-03	4.119E-02	4.124E-02	NOT IDENT.
ND-147	-3.261E+06	4.816E+07	4.819E+07	SHORT HLIF
PM-147	8.258E+02	7.552E+02	8.420E+02	NOT IDENT.
PM-149	-1.000E+41	2.688E+41	0.000E+00	SHORT HLIF
EU-150	1.016E-02	2.381E-02	2.425E-02	FAIL ABUN
EU-152	-2.983E-02	8.741E-02	8.844E-02	FAIL ABUN
GD-153	2.578E-02	1.825E-01	1.829E-01	NOT IDENT.
EU-154	-5.921E-02	9.088E-02	9.471E-02	NOT IDENT.
EU-155	1.112E-02	1.031E-01	1.033E-01	FAIL ABUN
TB-160	1.228E+00	1.585E+00	1.679E+00	FAIL ABUN
HO-166M	9.904E-02	6.222E-02	7.658E-02	FAIL ABUN
TM-171	-3.224E+00	3.515E+01	3.518E+01	NOT IDENT.
HF-172	7.206E-02	2.258E-01	2.281E-01	NOT IDENT.
LU-172	-3.215E-03	1.013E-01	1.013E-01	FAIL ABUN
LU-176	-6.254E-03	2.198E-02	2.216E-02	FAIL ABUN
HF-181	2.035E+00	4.611E+00	4.702E+00	NOT IDENT.
TA-182	-4.575E-01	7.804E-01	8.072E-01	FAIL ABUN

RE-183	7.625E+00	8.414E+00	9.089E+00	FAIL ABUN
RE-184	5.040E+00	3.154E+01	3.162E+01	NOT IDENT.
W-188	1.599E+01	1.208E+02	1.210E+02	NOT IDENT.
IR-192	2.863E-02	4.810E-01	4.811E-01	FAIL ABUN
HG-203	1.581E+00	2.533E+00	2.632E+00	NOT IDENT.
BI-207	1.108E-02	3.946E-02	3.978E-02	FAIL ABUN
PB-210	4.707E+00	6.895E+00	7.214E+00	NOT IDENT.
BI-211	2.158E+00	4.599E-01	1.076E+00	FAIL ABUN
PB-211	3.784E-01	6.579E-01	6.797E-01	NOT IDENT.
RN-219	-4.178E-02	3.760E-01	3.765E-01	FAIL ABUN
RA-223	-1.179E-01	5.698E-01	5.722E-01	FAIL ABUN
AC-227	8.106E-02	2.062E-01	2.094E-01	FAIL ABUN
TH-227	8.106E-02	2.062E-01	2.094E-01	FAIL ABUN
TH-229	3.593E-01	4.401E-01	4.690E-01	FAIL ABUN
PA-231	4.441E-01	4.289E-01	4.733E-01	NOT IDENT.
TH-231	-1.179E-01	5.698E-01	5.722E-01	FAIL ABUN
PA-233	4.532E-03	5.972E-02	5.975E-02	FAIL ABUN
PA-234	7.769E-02	2.287E-01	2.314E-01	FAIL ABUN
PA-234M	-9.195E-01	4.037E+00	4.059E+00	NOT IDENT.
TH-234	1.104E+00	1.833E+00	1.899E+00	FAIL ABUN
U-235	-6.166E-02	1.673E-01	1.696E-01	FAIL ABUN
NP-237	4.532E-03	5.972E-02	5.975E-02	FAIL ABUN
NP-238	-1.000E+41	2.125E+41	0.000E+00	SHORT HLIF
U-238	1.104E+00	1.833E+00	1.899E+00	FAIL ABUN
NP-239	2.808E-01	3.609E-01	3.825E-01	FAIL ABUN
PU-239	1.204E+01	3.104E+02	3.105E+02	NOT IDENT.
CM-243	-3.044E-02	9.251E-02	9.352E-02	NOT IDENT.
BK-247	1.772E-02	6.738E-02	6.785E-02	NOT IDENT.
CM-247	-5.995E-03	3.521E-02	3.531E-02	NOT IDENT.
CF-249	9.005E-04	3.234E-02	3.234E-02	NOT IDENT.
CF-251	-1.447E-02	9.717E-02	9.739E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	51.9531	87.09	132.1236	136.47	66.4241
45.60	85.5104	87.57	153.2205	140.51	0.0000
46.54	70.9532	88.03	153.2949	143.76	82.1577
49.72	0.0000	88.34	142.6056	144.24	70.4471
51.35	72.6906	88.47	142.6250	145.44	88.5932
51.87	73.9776	89.96	136.8226	152.43	74.9796
52.39	61.6936	1093.63	136.9188	153.25	0.0000
52.97	70.3883	91.11	0.0000	323.87	88.2753
53.44	75.3776	92.59	103.5413	156.02	0.0000
54.07	80.3913	93.35	103.6212	158.56	0.0000
57.36	0.0000	94.56	67.4359	159.00	84.9359
57.53	76.2164	94.65	67.4423	162.33	76.9026
57.98	81.2358	94.67	67.4435	162.66	0.0000
59.27	67.2592	94.87	67.4569	163.33	80.6228
59.32	67.2635	97.43	68.9297	165.86	55.9880
59.54	67.2831	98.43	59.8844	176.31	59.1732
60.96	91.5419	98.44	59.8851	176.60	0.0000
61.17	104.8859	99.53	67.7684	177.52	63.8494
62.93	98.8662	100.11	79.1075	181.07	0.0000
63.29	85.1390	102.03	70.5450	181.52	52.8884
63.58	85.1703	103.18	77.5980	184.41	65.5423
64.28	85.2458	103.37	77.6120	143.76	66.0649
66.73	98.9191	105.21	76.8738	193.51	65.4683
67.24	99.8204	105.31	76.8809	197.03	71.2415
125.81	105.7492	106.12	83.0598	198.01	59.0926
67.75	105.7581	106.47	76.9646	201.83	62.9972
69.67	83.2896	109.28	71.0274	203.43	64.0025
70.83	89.7234	111.00	86.9483	205.31	49.0007
72.81	103.8670	111.76	0.0000	210.85	71.8631
72.87	103.8745	114.06	68.6947	215.65	57.8490
74.66	92.2432	116.30	0.0000	222.11	65.6898
74.82	92.2598	116.74	58.2656	227.09	68.7480
74.97	92.2759	119.76	74.3532	227.38	66.8498
77.11	92.5015	121.12	58.4892	228.16	0.0000
78.74	79.0685	121.22	59.3805	228.18	46.8168
79.69	97.0254	121.78	66.5031	116.74	46.8168
80.12	103.4580	122.06	68.2930	235.69	59.0157
80.19	0.0000	122.92	83.4324	235.96	60.4647
80.57	111.1767	123.07	87.8813	238.63	57.6733
81.00	111.2298	265.00	90.5916	238.98	0.0000
81.07	102.2882	125.81	82.7482	240.99	57.7502
81.75	104.9236	127.23	89.0828	242.00	57.7832
83.79	85.9204	127.91	82.8946	244.70	47.7437
84.00	85.9398	129.30	96.3762	252.40	0.0000
85.43	116.9034	131.20	84.9090	252.80	46.5049
86.55	110.6120	133.02	82.3512	254.15	0.0000
86.79	132.0813	133.52	81.4894	256.23	47.5625
86.94	132.1025	136.00	61.0156	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	44.4635	355.39	0.0000	584.27	15.5199
264.80	45.6374	356.01	29.0410	595.83	0.0000
265.00	39.4980	364.49	0.0000	427.87	15.5990
268.22	36.6348	366.42	0.0000	602.52	0.0000
269.46	43.9902	372.51	36.9463	604.72	26.7754
270.03	44.0030	375.05	45.2049	607.14	30.1443
271.23	44.0314	377.52	43.1954	609.32	30.1641
273.65	0.0000	356.01	32.9987	610.33	30.1740
276.40	51.0172	388.16	29.9588	614.28	15.1051
277.37	46.1346	388.63	0.0000	618.01	23.5233
277.60	46.1404	391.69	35.1753	620.36	20.1775
278.00	46.1499	264.66	39.4581	621.93	19.0655
279.20	46.1786	401.81	39.4766	630.19	0.0000
279.54	40.2901	402.40	41.5641	631.29	22.4927
279.70	40.2935	404.85	33.2845	633.25	22.5065
280.46	52.1072	410.95	35.4513	634.78	0.0000
283.69	56.1326	413.71	34.4468	635.95	30.4080
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	44.3536	423.72	0.0000	645.85	11.2952
285.90	0.0000	427.09	42.4981	657.76	17.0020
287.50	49.3347	427.87	40.9368	657.90	0.0000
290.67	44.4717	433.94	36.2983	661.66	20.4250
293.27	0.0000	439.40	30.5759	664.57	0.0000
351.93	38.6295	453.88	28.6232	666.33	0.0000
295.96	38.6437	463.37	29.7882	666.50	0.0000
879.38	38.6937	468.07	23.9781	667.71	0.0000
299.98	38.7207	473.00	0.0000	677.62	17.0990
300.09	38.7223	475.06	16.0263	685.70	0.0000
300.13	38.7231	476.78	21.3818	695.00	0.0000
301.36	32.7858	477.60	25.6655	696.49	12.6064
302.85	29.8267	482.18	23.5657	696.51	10.3143
256.23	29.8511	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	13.7554
306.78	35.8608	497.08	13.9992	697.49	13.7563
308.46	38.8810	505.52	23.3288	702.65	17.2198
311.90	40.4431	507.63	0.0000	706.68	15.1701
316.51	41.0325	511.00	27.0523	711.68	17.2626
319.41	0.0000	514.00	32.4963	720.70	0.0000
320.08	0.0000	514.00	32.4963	721.93	0.0000
321.04	39.1143	520.40	26.0537	722.78	29.4356
323.87	39.1658	520.69	0.0000	722.91	29.4366
325.23	43.7133	522.65	0.0000	723.31	24.2454
328.76	0.0000	527.90	0.0000	724.19	17.3218
333.37	34.7997	528.26	25.0355	727.33	21.9602
333.97	31.7820	529.59	14.1569	733.00	17.3633
334.37	28.7609	529.87	0.0000	735.93	17.3767
338.28	44.4816	531.02	0.0000	333.97	19.7019
338.32	44.4825	537.26	0.0000	739.50	0.0000
311.90	42.5024	546.56	0.0000	747.24	13.9438
340.48	42.5024	552.55	15.3621	748.06	15.1090
340.55	0.0000	563.25	24.7751	752.31	15.1259
344.28	43.5888	569.33	24.2720	753.82	0.0000
345.93	36.5200	946.00	24.2738	756.73	20.9678
351.06	29.4862	569.70	24.2756	756.80	20.9685
351.93	29.4974	583.19	15.5142	884.68	17.5067

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	21.0183	1274.44	14.8003	1620.50	3.1053
766.42	20.1454	1001.03	16.6679	1621.92	5.1767
766.84	17.5195	1002.74	12.0423	1678.03	0.0000
772.60	0.0000	1004.73	12.9742	1690.97	5.2304
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	5.2866
778.90	17.5751	1028.54	0.0000	1063.66	9.5235
783.70	0.0000	1037.84	11.1995	1771.35	5.2914
785.37	7.0417	1038.76	0.0000	1791.20	0.0000
792.07	17.6343	631.29	9.3500	1808.65	4.2556
794.95	15.0000	1048.07	0.0000	1810.72	0.0000
795.86	15.0037	1049.04	14.9678	1836.06	3.2040
810.06	14.1719	1050.41	13.1002		
810.29	14.1729	1063.66	10.3219		
344.28	14.1733	1077.00	0.0000		
810.76	14.1743	1077.34	13.1737		
815.77	0.0000	1085.87	12.2542		
1048.07	0.0000	1093.63	22.6582		
832.01	12.4683	1099.45	18.1488		
834.85	16.0417	1112.07	16.1097		
835.71	19.0163	1112.84	20.5798		
836.80	0.0000	1115.54	10.6210		
846.75	0.0000	1120.29	13.2882		
846.77	8.5808	1120.55	13.2891		
856.80	0.0000	1221.41	13.2916		
860.56	23.3173	1129.67	17.1167		
871.09	12.5871	1131.51	0.0000		
873.19	10.7944	1147.95	0.0000		
875.33	0.0000	1173.23	11.5093		
879.38	8.1076	1177.95	12.4795		
880.51	13.5164	1189.05	7.6958		
883.24	17.1318	1204.77	14.4736		
884.68	11.7257	1221.41	14.5184		
889.28	16.2532	1231.02	14.5450		
894.76	9.9453	1235.36	0.0000		
898.04	15.3819	1238.28	21.7492		
900.72	11.7697	1260.41	0.0000		
903.28	14.4946	1271.87	11.7231		
911.20	11.4097	1274.44	11.7290		
912.08	11.4120	1274.54	11.7290		
923.98	0.0000	1291.59	5.8828		
926.50	10.0184	1298.22	0.0000		
929.11	4.3743	1312.11	0.0000		
937.49	13.1480	1332.49	7.9009		
944.13	0.0000	1362.66	0.0000		
946.00	9.1483	1365.19	6.9526		
949.00	5.8588	1368.63	0.0000		
667.71	0.0000	1384.29	3.9861		
962.31	10.2833	1408.01	7.0034		
964.08	19.1052	1457.56	0.0000		
966.17	16.1734	1460.82	4.0374		
911.20	18.3905	1489.16	2.0281		
968.97	18.3905	1505.03	6.0996		
983.53	0.0000	1584.12	8.2349		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:22:45.84

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621354.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM16.CNF;440
Background date    : 2-OCT-2016 11:00:50.
Sample date       : 12-SEP-2016 00:00:00 Acquisition date : 3-OCT-2016 09:20:38.
Sample ID        : G1203621354 Sample quantity : 1.78756E+02 GRAM
Detector name    : GAM16 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.18 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596249 Detector SN# :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err.	Fit
1	0	92.48*	46	60	1.41	184.98	178	15	1.29E-02	42.6	
2	0	111.49	18	29	1.43	222.97	218	9	4.91E-03	60.1	
3	0	144.01*	17	35	1.23	287.97	283	11	4.76E-03	74.8	
4	0	185.87*	6	35	2.03	371.66	368	9	1.57E-03	218.9	
5	0	199.03*	16	26	1.28	397.97	393	8	4.49E-03	63.9	
6	0	273.79	23	68	5.30	547.42	534	21	6.41E-03	91.8	
7	0	299.66	22	9	0.88	599.14	595	9	6.11E-03	32.5	
8	0	383.80	8	22	0.80	767.34	760	10	2.15E-03	119.8	
9	0	422.80	16	6	2.99	845.31	840	9	4.33E-03	39.1	
10	0	511.46*	19	9	2.61	1022.57	1016	16	5.15E-03	70.0	
11	0	551.98	7	2	1.46	1103.57	1100	7	2.07E-03	46.7	
12	0	565.28	9	9	1.58	1130.16	1126	11	2.62E-03	67.7	
13	0	638.92	7	9	0.59	1277.39	1269	11	1.94E-03	97.2	
14	0	838.68	7	5	1.37	1676.81	1672	10	1.94E-03	70.7	
15	0	849.09	8	0	1.49	1697.63	1695	6	2.22E-03	35.4	
16	0	1461.40*	4	5	0.89	2922.12	2916	10	1.05E-03	136.7	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621354.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 12-SEP-2016 00:00:00 Acquisition date : 3-OCT-2016 09:20:38
Sample ID : G1203621354 Sample quantity : 178.76 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA16 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.18 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
U-235	143.76	CE-141	145.44

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.215E+00	1.203E-01	1.203E-01	273.45	OK
CE-141	145.44	48.29*	6.768E+00	2.709E-02	4.277E-02	166.66	OK
U-235	89.96	3.47	5.608E+00	-----	Line Not Found	-----	Absent
	93.35	5.60	5.774E+00	8.508E-01	8.508E-01	85.24	OK
	143.76	10.96*	6.770E+00	-----	Line Not Found	-----	<<INT Reject
	163.33	5.08	6.541E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	6.166E+00	8.759E-03	8.759E-03	437.85	OK
	205.31	5.01	5.819E+00	-----	Line Not Found	-----	Absent
ANH-511	511.00	100.00*	2.835E+00	3.146E-02	3.146E-02	139.98	OK

Flag: "*" = Keyline

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.203E-01	3.224E-01	4.423E-01
CE-141	4.277E-02	6.985E-02	4.733E-02
U-235	1.305E-01	1.913E-01	1.847E-01
ANH-511	3.146E-02	4.315E-02	2.498E-02

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Y-91	-4.335E+00	7.522E+00	1.382E+01	NOT IDENT.
NB-94	-3.675E-03	1.843E-02	3.535E-02	NOT IDENT.
NB-95	4.021E-03	1.515E-02	3.523E-02	NOT IDENT.
NB-95M	-1.822E-02	4.654E-02	8.496E-02	NOT IDENT.
ZR-95	-9.992E-03	3.568E-02	6.837E-02	NOT IDENT.
NB-97	0.000E+00	1.603E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	4.378E+08	0.000E+00	SHORT HLIF
MO-99	-8.378E+00	2.729E+01	5.212E+01	NOT IDENT.
TC-99M	0.000E+00	4.994E+23	0.000E+00	SHORT HLIF
RH-101	-4.797E-03	1.177E-02	2.266E-02	FAIL ABUN
RH-102	5.097E-03	2.416E-02	5.295E-02	NOT IDENT.
RU-103	2.010E-02	2.270E-02	5.333E-02	NOT IDENT.
RH-106	-1.539E-02	1.472E-01	2.988E-01	NOT IDENT.
RU-106	-1.539E-02	1.472E-01	2.988E-01	NOT IDENT.
AG-108M	-5.794E-03	1.447E-02	2.809E-02	NOT IDENT.
CD-109	4.947E-02	2.679E-01	5.464E-01	NOT IDENT.
AG-110M	-2.342E-02	2.084E-02	3.214E-02	NOT IDENT.
SN-113	-6.025E-03	2.378E-02	4.737E-02	NOT IDENT.
CD-115	1.203E+01	3.738E+01	8.272E+01	NOT IDENT.
SN-117M	1.659E-02	2.693E-02	5.953E-02	NOT IDENT.
TE-123M	5.520E-03	1.104E-02	2.383E-02	NOT IDENT.
SB-124	9.344E-03	3.751E-02	9.952E-02	NOT IDENT.
SB-125	3.455E-02	3.759E-02	9.238E-02	NOT IDENT.
TE-125M	-2.689E+00	3.779E+00	6.245E+00	NOT IDENT.
I-126	-1.158E-01	1.580E-01	2.690E-01	NOT IDENT.
SB-126	-4.417E-02	9.452E-02	1.826E-01	NOT IDENT.
SN-126	8.352E-03	2.663E-02	5.532E-02	NOT IDENT.
SB-127	-1.324E+00	2.239E+00	3.945E+00	NOT IDENT.
I-131	4.884E-02	9.468E-02	2.123E-01	NOT IDENT.
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	1.497E-01	1.279E+00	2.513E+00	FAIL ABUN
BA-133	-7.059E-03	1.841E-02	3.657E-02	FAIL ABUN
I-133	0.000E+00	3.624E+05	0.000E+00	SHORT HLIF
CS-134	7.014E-03	1.931E-02	4.271E-02	NOT IDENT.
CS-135	4.886E-03	6.127E-02	1.325E-01	NOT IDENT.
I-135	0.000E+00	1.707E+22	0.000E+00	SHORT HLIF
CS-136	-2.788E-02	5.064E-02	9.663E-02	FAIL ABUN
BA-137M	-1.475E-02	1.893E-02	3.187E-02	NOT IDENT.
CS-137	-1.558E-02	2.000E-02	3.367E-02	NOT IDENT.
CE-139	-4.285E-03	1.390E-02	2.624E-02	NOT IDENT.
BA-140	-8.493E-02	1.818E-01	3.420E-01	FAIL ABUN
LA-140	-9.886E-02	8.816E-02	1.180E-01	NOT IDENT.
CE-143	0.000E+00	1.277E+03	0.000E+00	SHORT HLIF
CE-144	-7.222E-02	7.936E-02	1.390E-01	NOT IDENT.
PM-144	-4.886E-03	1.789E-02	3.406E-02	NOT IDENT.
PR-144	-3.668E-01	1.343E+00	2.557E+00	NOT IDENT.
PM-146	1.896E-03	1.559E-02	3.467E-02	NOT IDENT.
ND-147	-3.394E-01	3.225E-01	4.955E-01	FAIL ABUN
PM-147	1.232E+02	2.642E+02	5.862E+02	NOT IDENT.
PM-149	9.794E+01	2.886E+02	6.356E+02	NOT IDENT.
EU-150	5.203E-03	1.246E-02	2.751E-02	NOT IDENT.
EU-152	-3.694E-02	4.644E-02	8.594E-02	NOT IDENT.
GD-153	-1.229E-02	3.678E-02	6.684E-02	NOT IDENT.
EU-154	-9.229E-03	3.904E-02	8.369E-02	NOT IDENT.
EU-155	-2.888E-02	3.696E-02	6.782E-02	NOT IDENT.
TB-160	-1.756E-02	7.490E-02	1.527E-01	FAIL ABUN
HO-166M	-2.132E-02	3.657E-02	6.409E-02	FAIL ABUN
TM-171	-1.465E+00	7.523E+00	1.602E+01	NOT IDENT.
HF-172	-9.223E-03	7.061E-02	1.424E-01	NOT IDENT.
LU-172	-3.036E-02	2.993E-02	4.704E-02	NOT IDENT.
LU-176	1.223E-03	1.077E-02	2.339E-02	NOT IDENT.
HF-181	1.194E-03	2.099E-02	4.488E-02	NOT IDENT.
TA-182	-4.403E-03	7.623E-02	1.630E-01	NOT IDENT.
RE-183	8.638E-03	8.641E-02	1.905E-01	NOT IDENT.
RE-184	-5.311E-03	3.913E-02	9.157E-02	NOT IDENT.
W-188	1.309E+00	3.508E+00	7.710E+00	NOT IDENT.
IR-192	1.686E-03	1.791E-02	3.789E-02	NOT IDENT.
HG-203	-3.844E-03	2.133E-02	3.927E-02	NOT IDENT.
BI-207	-7.275E-03	2.318E-02	4.659E-02	NOT IDENT.
TL-208	1.068E-03	1.483E-02	3.336E-02	NOT IDENT.
PB-210	-6.798E-02	1.892E+00	4.125E+00	NOT IDENT.
BI-211	1.147E-02	1.074E-01	2.225E-01	NOT IDENT.
PB-211	6.915E-02	3.478E-01	7.428E-01	NOT IDENT.
BI-212	2.834E-03	2.220E-01	4.607E-01	NOT IDENT.
PB-212	-4.025E-02	2.735E-02	4.741E-02	FAIL ABUN
BI-214	2.178E-02	4.304E-02	9.221E-02	NOT IDENT.
PB-214	2.002E-02	3.820E-02	8.331E-02	NOT IDENT.
RN-219	5.933E-03	1.785E-01	3.780E-01	NOT IDENT.

RN-222	2.178E-02	4.304E-02	9.221E-02	NOT IDENT.
RA-223	2.099E-01	3.049E-01	6.907E-01	FAIL ABUN
RA-224	1.697E-01	2.767E-01	6.183E-01	NOT IDENT.
RA-226	2.178E-02	4.304E-02	9.221E-02	NOT IDENT.
AC-227	2.399E-03	1.093E-01	2.330E-01	FAIL ABUN
TH-227	2.399E-03	1.093E-01	2.330E-01	FAIL ABUN
AC-228	-4.298E-02	6.603E-02	1.411E-01	NOT IDENT.
RA-228	-4.298E-02	6.603E-02	1.411E-01	NOT IDENT.
TH-228	-4.025E-02	2.735E-02	4.741E-02	FAIL ABUN
TH-229	-1.046E-01	2.207E-01	4.018E-01	NOT IDENT.
TH-230	2.178E-02	4.304E-02	9.221E-02	NOT IDENT.
PA-231	2.805E-02	1.797E-01	3.648E-01	NOT IDENT.
TH-231	2.099E-01	3.049E-01	6.907E-01	FAIL ABUN
TH-232	-4.298E-02	6.603E-02	1.411E-01	NOT IDENT.
PA-233	-1.360E-02	2.509E-02	4.934E-02	FAIL ABUN
PA-234	-7.284E-02	1.478E-01	2.846E-01	FAIL ABUN
PA-234M	-9.380E-01	1.908E+00	4.369E+00	NOT IDENT.
TH-234	-5.147E-01	6.441E-01	1.333E+00	FAIL ABUN
U-234	2.178E-02	4.304E-02	9.221E-02	NOT IDENT.
NP-237	-1.360E-02	2.509E-02	4.934E-02	FAIL ABUN
NP-238	0.000E+00	6.197E+01	0.000E+00	SHORT HLIF
U-238	-5.147E-01	6.441E-01	1.333E+00	FAIL ABUN
NP-239	4.052E-02	8.103E-02	1.863E-01	NOT IDENT.
PU-239	7.359E+01	1.306E+02	2.864E+02	NOT IDENT.
AM-241	-8.443E-03	6.021E-02	1.285E-01	NOT IDENT.
AM-243	1.957E-03	1.791E-02	3.897E-02	NOT IDENT.
CM-243	8.762E-03	3.572E-02	7.845E-02	NOT IDENT.
BK-247	-5.194E-02	4.312E-02	6.525E-02	NOT IDENT.
CM-247	-3.138E-03	1.690E-02	3.438E-02	NOT IDENT.
CF-249	1.870E-03	1.873E-02	3.975E-02	NOT IDENT.
CF-251	1.446E-02	5.694E-02	1.156E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	4	10.66*	1.215E+00	1.203E-01	1.203E-01	273.45
CE-141	145.44	23	48.29*	6.768E+00	2.961E-02	4.674E-02	149.62
U-235	89.96	-----	3.47	5.608E+00	-----	Line Not Found	-----
	93.35	66	5.60	5.774E+00	8.508E-01	8.508E-01	85.24
	143.76	23	10.96*	6.768E+00	1.305E-01	1.305E-01	149.62
	163.33	-----	5.08	6.541E+00	-----	Line Not Found	-----
	185.72	7	57.20	6.166E+00	8.759E-03	8.759E-03	437.85
	205.31	-----	5.01	5.819E+00	-----	Line Not Found	-----
ANH-511	511.00	21	100.00*	2.835E+00	3.146E-02	3.146E-02	139.98

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1203621354

Page : 2
Acquisition date : 3-OCT-2016 09:20:38

Total number of lines in spectrum 16
Number of unidentified lines 4
Number of lines tentatively identified by NID 12 75.00%

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	1.203E-01	1.203E-01	3.290E-01	273.45	
CE-141	32.51D	1.58	2.961E-02	4.674E-02	6.994E-02	149.62	
U-235	7.04E+08Y	1.00	1.305E-01	1.305E-01	1.952E-01	149.62	
ANH-511	1.00E+09Y	1.00	3.146E-02	3.146E-02	4.403E-02	139.98	
Total Activity :			3.119E-01	3.290E-01			

Grand Total Activity : 3.119E-01 3.290E-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	111.49	24	41	1.43	222.97	218	9	4.91E-03	****	6.58E+00	T
0	199.03	21	33	1.28	397.97	393	8	4.49E-03	****	5.93E+00	T
0	273.79	29	84	5.30	547.42	534	21	6.41E-03	****	4.73E+00	T
0	299.66	27	11	0.88	599.14	595	9	6.11E-03	65.1	4.40E+00	T
0	383.80	9	27	0.80	767.34	760	10	2.15E-03	****	3.59E+00	T
0	422.80	18	8	2.99	845.31	840	9	4.33E-03	78.2	3.31E+00	T
0	551.98	8	2	1.46	1103.57	1100	7	2.07E-03	93.3	2.66E+00	T
0	565.28	11	10	1.58	1130.16	1126	11	2.62E-03	****	2.61E+00	
0	638.92	8	10	0.59	1277.39	1269	11	1.94E-03	****	2.37E+00	
0	838.68	7	5	1.37	1676.81	1672	10	1.94E-03	****	1.91E+00	
0	849.09	9	0	1.49	1697.63	1695	6	2.22E-03	70.7	1.89E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621354.CNF;1 *
* Acquisition date   : 3-OCT-2016 09:20:38 Sensitivity      : 3.000          *
* Detector ID        : GAM16 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.18 Half life ratio : *****      *
* Sample date        : 12-SEP-2016 00:00:00 Nuclide Library : SOLID      *
* Sample ID          : G1203621354 Analyst initials: MXR1         *
* Batch Number       : 1596249 Sample Quantity : 1.7876E+02 GRAM    *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000          *
*                                     Dry Weight    : 0.00000          *
*****
*                                     CALIBRATION INFORMATION                  *
*
* Eff. Cal. date     : 23-SEP-2016 08:25:42 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM16 CAN.CNF;14      *
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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.767E-01
CE-141	2.064E-02
U-235	8.394E-02
ANH-511	1.038E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.263E-01	NOT IDENT.
NA-22	1.050E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.173E-02	NOT IDENT.
SC-46	1.192E-02	NOT IDENT.
V-48	3.384E-02	NOT IDENT.
CR-51	1.845E-01	NOT IDENT.
MN-54	1.462E-02	NOT IDENT.
CO-56	1.742E-02	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	8.629E-03	NOT IDENT.
CO-58	1.435E-02	NOT IDENT.
FE-59	2.600E-02	NOT IDENT.
CO-60	1.357E-02	NOT IDENT.
ZN-65	2.942E-02	NOT IDENT.
GE-68	4.029E-01	NOT IDENT.
AS-73	3.864E-01	NOT IDENT.
AS-74	6.255E-02	NOT IDENT.
SE-75	1.672E-02	NOT IDENT.
BR-77	2.213E+01	NOT IDENT.
SR-82	1.032E-01	NOT IDENT.
RB-83	3.530E-02	FAIL ABUN
KR-85	3.898E+00	NOT IDENT.
SR-85	2.204E-02	NOT IDENT.
RB-86	3.277E-01	NOT IDENT.
Y-88	1.158E-02	NOT IDENT.
Y-91	4.896E+00	NOT IDENT.

NB-94	1.497E-02	NOT IDENT.
NB-95	1.398E-02	NOT IDENT.
NB-95M	3.658E-02	NOT IDENT.
ZR-95	2.757E-02	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	2.094E+01	NOT IDENT.
TC-99M	0.000E+00	SHORT HLIF
RH-101	9.956E-03	FAIL ABUN
RH-102	2.199E-02	NOT IDENT.
RU-103	2.336E-02	NOT IDENT.
RH-106	1.236E-01	NOT IDENT.
RU-106	1.236E-01	NOT IDENT.
AG-108M	1.199E-02	NOT IDENT.
CD-109	2.408E-01	NOT IDENT.
AG-110M	1.139E-02	NOT IDENT.
SN-113	2.069E-02	NOT IDENT.
CD-115	3.520E+01	NOT IDENT.
SN-117M	2.652E-02	NOT IDENT.
TE-123M	1.065E-02	NOT IDENT.
SB-124	3.526E-02	NOT IDENT.
SB-125	3.994E-02	NOT IDENT.
TE-125M	2.658E+00	NOT IDENT.
I-126	1.097E-01	NOT IDENT.
SB-126	7.433E-02	NOT IDENT.
SN-126	2.451E-02	NOT IDENT.
SB-127	1.633E+00	NOT IDENT.
I-131	9.355E-02	NOT IDENT.
I-132	0.000E+00	SHORT HLIF
TE-132	1.123E+00	FAIL ABUN
BA-133	1.572E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	1.783E-02	NOT IDENT.
CS-135	5.829E-02	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	3.423E-02	FAIL ABUN
BA-137M	1.307E-02	NOT IDENT.
CS-137	1.380E-02	NOT IDENT.
CE-139	1.179E-02	NOT IDENT.
BA-140	1.421E-01	FAIL ABUN
LA-140	4.182E-02	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	6.078E-02	NOT IDENT.
PM-144	1.423E-02	NOT IDENT.
PR-144	1.068E+00	NOT IDENT.
PM-146	1.435E-02	NOT IDENT.
ND-147	1.835E-01	FAIL ABUN
PM-147	2.599E+02	NOT IDENT.
PM-149	2.825E+02	NOT IDENT.
EU-150	1.218E-02	NOT IDENT.
EU-152	3.714E-02	NOT IDENT.
GD-153	2.959E-02	NOT IDENT.
EU-154	2.965E-02	NOT IDENT.
EU-155	2.919E-02	NOT IDENT.
TB-160	6.335E-02	FAIL ABUN
HO-166M	2.702E-02	FAIL ABUN
TM-171	7.020E+00	NOT IDENT.
HF-172	6.283E-02	NOT IDENT.
LU-172	1.741E-02	NOT IDENT.
LU-176	1.019E-02	NOT IDENT.
HF-181	1.888E-02	NOT IDENT.
TA-182	6.422E-02	NOT IDENT.
RE-183	8.459E-02	NOT IDENT.
RE-184	3.278E-02	NOT IDENT.
W-188	3.439E+00	NOT IDENT.
IR-192	1.681E-02	NOT IDENT.
HG-203	1.742E-02	NOT IDENT.
BI-207	1.835E-02	NOT IDENT.
TL-208	1.393E-02	NOT IDENT.
PB-210	1.844E+00	NOT IDENT.
BI-211	9.911E-02	NOT IDENT.
PB-211	3.249E-01	NOT IDENT.
BI-212	1.889E-01	NOT IDENT.
PB-212	2.102E-02	FAIL ABUN
BI-214	4.080E-02	NOT IDENT.
PB-214	3.724E-02	NOT IDENT.
RN-219	1.625E-01	NOT IDENT.
RN-222	4.080E-02	NOT IDENT.

RA-223	3.085E-01	FAIL ABUN
RA-224	2.805E-01	NOT IDENT.
RA-226	4.080E-02	NOT IDENT.
AC-227	1.035E-01	FAIL ABUN
TH-227	1.035E-01	FAIL ABUN
AC-228	5.783E-02	NOT IDENT.
RA-228	5.783E-02	NOT IDENT.
TH-228	2.102E-02	FAIL ABUN
TH-229	1.776E-01	NOT IDENT.
TH-230	4.080E-02	NOT IDENT.
PA-231	1.564E-01	NOT IDENT.
TH-231	3.085E-01	FAIL ABUN
TH-232	5.783E-02	NOT IDENT.
PA-233	2.095E-02	FAIL ABUN
PA-234	1.142E-01	FAIL ABUN
PA-234M	1.766E+00	NOT IDENT.
TH-234	6.068E-01	FAIL ABUN
U-234	4.080E-02	NOT IDENT.
NP-237	2.095E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	6.068E-01	FAIL ABUN
NP-239	8.129E-02	NOT IDENT.
PU-239	1.286E+02	NOT IDENT.
AM-241	5.676E-02	NOT IDENT.
AM-243	1.726E-02	NOT IDENT.
CM-243	3.444E-02	NOT IDENT.
BK-247	2.842E-02	NOT IDENT.
CM-247	1.476E-02	NOT IDENT.
CF-249	1.730E-02	NOT IDENT.
CF-251	5.215E-02	NOT IDENT.


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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621354.CNF;1
* Acquisition date   : 3-OCT-2016 09:20:38 Sensitivity      : 3.000
* Detector ID        : GAM16 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.18 Half life ratio : *****
* Sample date        : 12-SEP-2016 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1203621354 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.7876E+02 GRAM
*                               Quantity Err(%) : 1.1188E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 23-SEP-2016 08:25:42 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM16 CAN.CNF;14
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.203E-01	3.225E-01	3.225E-01
CE-141	4.277E-02	6.987E-02	6.987E-02
U-235	1.305E-01	1.914E-01	1.914E-01
ANH-511	3.146E-02	4.317E-02	4.317E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-8.196E-02	1.605E-01	1.647E-01	NOT IDENT.
NA-22	-3.268E-03	1.382E-02	1.390E-02	NOT IDENT.
NA-24	1.313E+08	2.654E+08	2.720E+08	SHORT HLIF
AL-26	-2.113E-02	2.236E-02	2.431E-02	NOT IDENT.
SC-46	-5.940E-03	1.535E-02	1.558E-02	NOT IDENT.
V-48	-3.725E-03	3.951E-02	3.955E-02	NOT IDENT.
CR-51	-5.904E-02	2.081E-01	2.098E-01	NOT IDENT.
MN-54	-9.996E-03	2.157E-02	2.203E-02	NOT IDENT.
CO-56	8.005E-03	1.919E-02	1.952E-02	NOT IDENT.
MN-56	1.000E+41	2.419E+41	0.000E+00	SHORT HLIF
CO-57	-2.793E-03	9.921E-03	1.000E-02	NOT IDENT.
CO-58	-9.923E-03	1.852E-02	1.905E-02	NOT IDENT.
FE-59	-3.439E-02	4.196E-02	4.473E-02	NOT IDENT.
CO-60	3.549E-03	1.450E-02	1.459E-02	NOT IDENT.
ZN-65	-1.849E-03	3.450E-02	3.451E-02	NOT IDENT.
GE-68	2.389E-01	3.695E-01	3.849E-01	NOT IDENT.
AS-73	-7.761E-02	4.123E-01	4.138E-01	NOT IDENT.
AS-74	2.345E-02	6.762E-02	6.844E-02	NOT IDENT.
SE-75	-2.877E-02	2.501E-02	2.818E-02	NOT IDENT.
BR-77	-3.293E+01	3.418E+01	3.726E+01	NOT IDENT.
SR-82	-9.639E-02	1.599E-01	1.657E-01	NOT IDENT.
RB-83	3.589E-02	3.273E-02	3.651E-02	FAIL ABUN
KR-85	4.513E+00	3.673E+00	4.199E+00	NOT IDENT.
SR-85	2.544E-02	2.077E-02	2.373E-02	NOT IDENT.
RB-86	1.416E-01	3.251E-01	3.313E-01	NOT IDENT.
Y-88	-4.175E-03	1.593E-02	1.604E-02	NOT IDENT.

Y-91	-4.335E+00	7.523E+00	7.773E+00	NOT IDENT.
NB-94	-3.675E-03	1.843E-02	1.850E-02	NOT IDENT.
NB-95	4.021E-03	1.515E-02	1.526E-02	NOT IDENT.
NB-95M	-1.822E-02	4.656E-02	4.728E-02	NOT IDENT.
ZR-95	-9.992E-03	3.569E-02	3.597E-02	NOT IDENT.
NB-97	1.000E+41	1.604E+41	0.000E+00	SHORT HLIF
ZR-97	2.002E+08	4.379E+08	4.471E+08	SHORT HLIF
MO-99	-8.378E+00	2.730E+01	2.756E+01	NOT IDENT.
TC-99M	-1.787E+23	4.997E+23	0.000E+00	SHORT HLIF
RH-101	-4.797E-03	1.180E-02	1.200E-02	FAIL ABUN
RH-102	5.097E-03	2.416E-02	2.427E-02	NOT IDENT.
RU-103	2.010E-02	2.272E-02	2.446E-02	NOT IDENT.
RH-106	-1.539E-02	1.472E-01	1.473E-01	NOT IDENT.
RU-106	-1.539E-02	1.472E-01	1.473E-01	NOT IDENT.
AG-108M	-5.794E-03	1.447E-02	1.471E-02	NOT IDENT.
CD-109	4.947E-02	2.680E-01	2.689E-01	NOT IDENT.
AG-110M	-2.342E-02	2.087E-02	2.339E-02	NOT IDENT.
SN-113	-6.025E-03	2.378E-02	2.394E-02	NOT IDENT.
CD-115	1.203E+01	3.738E+01	3.778E+01	NOT IDENT.
SN-117M	1.659E-02	2.694E-02	2.796E-02	NOT IDENT.
TE-123M	5.520E-03	1.104E-02	1.132E-02	NOT IDENT.
SB-124	9.344E-03	3.752E-02	3.775E-02	NOT IDENT.
SB-125	3.455E-02	3.762E-02	4.072E-02	NOT IDENT.
TE-125M	-2.689E+00	3.782E+00	3.971E+00	NOT IDENT.
I-126	-1.158E-01	1.582E-01	1.666E-01	NOT IDENT.
SB-126	-4.417E-02	9.462E-02	9.670E-02	NOT IDENT.
SN-126	8.352E-03	2.663E-02	2.690E-02	NOT IDENT.
SB-127	-1.324E+00	2.244E+00	2.322E+00	NOT IDENT.
I-131	4.884E-02	9.471E-02	9.723E-02	NOT IDENT.
I-132	1.000E+41	7.094E+41	0.000E+00	SHORT HLIF
TE-132	1.497E-01	1.279E+00	1.281E+00	FAIL ABUN
BA-133	-7.059E-03	1.842E-02	1.869E-02	FAIL ABUN
I-133	-8.566E+04	3.626E+05	3.646E+05	SHORT HLIF
CS-134	7.014E-03	1.931E-02	1.957E-02	NOT IDENT.
CS-135	4.886E-03	6.127E-02	6.131E-02	NOT IDENT.
I-135	2.219E+22	2.022E+22	0.000E+00	SHORT HLIF
CS-136	-2.788E-02	5.070E-02	5.223E-02	FAIL ABUN
BA-137M	-1.475E-02	1.894E-02	2.008E-02	NOT IDENT.
CS-137	-1.558E-02	2.001E-02	2.121E-02	NOT IDENT.
CE-139	-4.285E-03	1.393E-02	1.406E-02	NOT IDENT.
BA-140	-8.493E-02	1.818E-01	1.858E-01	FAIL ABUN
LA-140	-9.886E-02	8.829E-02	9.890E-02	NOT IDENT.
CE-143	2.193E+02	1.277E+03	1.281E+03	SHORT HLIF
CE-144	-7.222E-02	7.946E-02	8.587E-02	NOT IDENT.
PM-144	-4.886E-03	1.789E-02	1.803E-02	NOT IDENT.
PR-144	-3.668E-01	1.344E+00	1.354E+00	NOT IDENT.
PM-146	1.896E-03	1.559E-02	1.561E-02	NOT IDENT.
ND-147	-3.394E-01	3.229E-01	3.573E-01	FAIL ABUN
PM-147	1.232E+02	2.643E+02	2.701E+02	NOT IDENT.
PM-149	9.794E+01	2.889E+02	2.922E+02	NOT IDENT.
EU-150	5.203E-03	1.246E-02	1.268E-02	NOT IDENT.
EU-152	-3.694E-02	4.649E-02	4.938E-02	NOT IDENT.
GD-153	-1.229E-02	3.679E-02	3.721E-02	NOT IDENT.
EU-154	-9.229E-03	3.904E-02	3.926E-02	NOT IDENT.
EU-155	-2.888E-02	3.702E-02	3.924E-02	NOT IDENT.
TB-160	-1.756E-02	7.491E-02	7.533E-02	FAIL ABUN
HO-166M	-2.132E-02	3.659E-02	3.783E-02	FAIL ABUN
TM-171	-1.465E+00	7.524E+00	7.553E+00	NOT IDENT.
HF-172	-9.223E-03	7.062E-02	7.074E-02	NOT IDENT.
LU-172	-3.036E-02	3.008E-02	3.305E-02	NOT IDENT.
LU-176	1.223E-03	1.077E-02	1.078E-02	NOT IDENT.
HF-181	1.194E-03	2.099E-02	2.100E-02	NOT IDENT.
TA-182	-4.403E-03	7.623E-02	7.626E-02	NOT IDENT.
RE-183	8.638E-03	8.641E-02	8.650E-02	NOT IDENT.
RE-184	-5.311E-03	3.913E-02	3.920E-02	NOT IDENT.
W-188	1.309E+00	3.511E+00	3.560E+00	NOT IDENT.
IR-192	1.686E-03	1.791E-02	1.793E-02	NOT IDENT.
HG-203	-3.844E-03	2.133E-02	2.140E-02	NOT IDENT.
BI-207	-7.275E-03	2.318E-02	2.341E-02	NOT IDENT.
TL-208	1.068E-03	1.483E-02	1.484E-02	NOT IDENT.
PB-210	-6.798E-02	1.892E+00	1.892E+00	NOT IDENT.
BI-211	1.147E-02	1.074E-01	1.075E-01	NOT IDENT.
PB-211	6.915E-02	3.478E-01	3.492E-01	NOT IDENT.
BI-212	2.834E-03	2.220E-01	2.220E-01	NOT IDENT.
PB-212	-4.025E-02	2.744E-02	3.289E-02	FAIL ABUN
BI-214	2.178E-02	4.305E-02	4.415E-02	NOT IDENT.
PB-214	2.002E-02	3.821E-02	3.926E-02	NOT IDENT.
RN-219	5.933E-03	1.785E-01	1.786E-01	NOT IDENT.

RN-222	2.178E-02	4.305E-02	4.415E-02	NOT IDENT.
RA-223	2.099E-01	3.052E-01	3.195E-01	FAIL ABUN
RA-224	1.697E-01	2.768E-01	2.872E-01	NOT IDENT.
RA-226	2.178E-02	4.305E-02	4.415E-02	NOT IDENT.
AC-227	2.399E-03	1.093E-01	1.093E-01	FAIL ABUN
TH-227	2.399E-03	1.093E-01	1.093E-01	FAIL ABUN
AC-228	-4.298E-02	6.606E-02	6.885E-02	NOT IDENT.
RA-228	-4.298E-02	6.606E-02	6.885E-02	NOT IDENT.
TH-228	-4.025E-02	2.744E-02	3.289E-02	FAIL ABUN
TH-229	-1.046E-01	2.208E-01	2.258E-01	NOT IDENT.
TH-230	2.178E-02	4.305E-02	4.415E-02	NOT IDENT.
PA-231	2.805E-02	1.798E-01	1.803E-01	NOT IDENT.
TH-231	2.099E-01	3.052E-01	3.195E-01	FAIL ABUN
TH-232	-4.298E-02	6.606E-02	6.885E-02	NOT IDENT.
PA-233	-1.360E-02	2.510E-02	2.584E-02	FAIL ABUN
PA-234	-7.284E-02	1.697E-01	1.729E-01	FAIL ABUN
PA-234M	-9.380E-01	1.908E+00	1.954E+00	NOT IDENT.
TH-234	-5.147E-01	6.541E-01	6.940E-01	FAIL ABUN
U-234	2.178E-02	4.305E-02	4.415E-02	NOT IDENT.
NP-237	-1.360E-02	2.510E-02	2.584E-02	FAIL ABUN
NP-238	3.348E+01	6.199E+01	6.380E+01	SHORT HLIF
U-238	-5.147E-01	6.541E-01	6.940E-01	FAIL ABUN
NP-239	4.052E-02	8.110E-02	8.313E-02	NOT IDENT.
PU-239	7.359E+01	1.306E+02	1.348E+02	NOT IDENT.
AM-241	-8.443E-03	6.021E-02	6.033E-02	NOT IDENT.
AM-243	1.957E-03	1.791E-02	1.793E-02	NOT IDENT.
CM-243	8.762E-03	3.573E-02	3.594E-02	NOT IDENT.
BK-247	-5.194E-02	4.438E-02	5.017E-02	NOT IDENT.
CM-247	-3.138E-03	1.691E-02	1.696E-02	NOT IDENT.
CF-249	1.870E-03	1.873E-02	1.875E-02	NOT IDENT.
CF-251	1.446E-02	5.696E-02	5.733E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	19.1250	87.09	21.6729	136.47	15.4885
45.60	17.4169	87.57	16.2705	140.51	19.2908
46.54	14.7095	88.03	16.2856	143.76	15.6543
49.72	12.0661	88.34	19.0117	144.24	15.6652
51.35	16.7863	88.47	19.0167	145.44	15.6921
51.87	18.6793	89.96	21.4574	152.43	24.9014
52.39	14.9656	1093.63	21.4864	153.25	23.7961
52.97	14.9902	91.11	21.5063	323.87	19.2889
53.44	19.7006	92.59	21.5687	156.02	18.1990
54.07	24.4343	93.35	21.6005	158.56	14.8374
57.36	0.0000	94.56	21.6510	159.00	17.1300
57.53	23.7174	94.65	21.6546	162.33	24.0883
57.98	19.9464	94.67	21.6555	162.66	20.6559
59.27	20.0145	94.87	21.6638	163.33	21.8226
59.32	20.9703	97.43	24.8793	165.86	31.1137
59.54	20.9824	98.43	22.8486	176.31	37.3672
60.96	28.7179	98.44	22.8491	176.60	30.3719
61.17	28.7335	99.53	10.4070	177.52	24.5591
62.93	20.2036	100.11	19.7947	181.07	21.1424
63.29	29.8515	102.03	18.8189	181.52	27.0300
63.58	29.8731	103.18	9.4291	184.41	18.8694
64.28	31.8560	103.37	14.6725	143.76	27.1672
66.73	30.1060	105.21	23.1331	193.51	26.2254
67.24	24.3090	105.31	22.0855	197.03	20.7465
125.81	28.2283	106.12	20.0109	198.01	15.5773
67.75	25.3123	106.47	14.7541	201.83	24.0692
69.67	27.3843	109.28	19.7692	203.43	24.1122
70.83	21.5747	111.00	22.3066	205.31	30.2036
72.81	26.5993	111.76	22.3357	210.85	21.8795
72.87	26.6031	114.06	24.2027	215.65	34.2122
74.66	18.7969	116.30	19.2921	222.11	14.7631
74.82	26.7209	116.74	10.7256	227.09	24.7330
74.97	26.7299	119.76	24.7920	227.38	24.7403
77.11	24.8680	121.12	16.2044	228.16	22.2841
78.74	28.9498	121.22	15.1265	228.18	22.2847
79.69	22.0072	121.78	23.7918	116.74	22.2847
80.12	25.0313	122.06	22.7206	235.69	17.4654
80.19	25.0351	122.92	26.0023	235.96	17.4701
80.57	22.0487	123.07	26.0085	238.63	30.8627
81.00	18.0564	265.00	17.3558	238.98	30.8736
81.07	18.0592	125.81	20.6798	240.99	23.4105
81.75	32.1516	127.23	22.9075	242.00	26.7814
83.79	20.1810	127.91	26.2079	244.70	25.1743
84.00	20.1898	129.30	18.6039	252.40	26.2073
85.43	29.3620	131.20	17.5610	252.80	24.5260
86.55	22.3256	133.02	22.0120	254.15	0.0000
86.79	21.6597	133.52	28.6375	256.23	21.2121
86.94	21.6663	136.00	14.3721	260.90	22.1576

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	33.3522	355.39	0.0000	584.27	5.2895
264.80	33.3561	356.01	16.5934	595.83	11.7041
265.00	33.3625	364.49	12.9863	427.87	11.7314
268.22	17.1594	366.42	19.5068	602.52	0.0000
269.46	17.1790	372.51	14.9271	604.72	6.4119
270.03	17.1879	375.05	12.1502	607.14	17.1185
271.23	17.2066	377.52	9.8309	609.32	9.6394
273.65	17.2441	356.01	14.1064	610.33	12.8589
276.40	22.0406	388.16	14.1486	614.28	7.5153
277.37	20.7622	388.63	14.1531	618.01	10.7552
277.60	20.7661	391.69	18.9107	620.36	8.6139
278.00	20.7734	264.66	13.3184	621.93	8.6204
279.20	23.3954	401.81	12.3766	630.19	0.0000
279.54	23.4025	402.40	14.2865	631.29	6.4941
279.70	24.9662	404.85	14.3100	633.25	9.7504
280.46	20.8188	410.95	14.3680	634.78	8.1311
283.69	25.2275	413.71	13.4346	635.95	11.3895
284.31	20.8896	414.70	12.4829	636.99	10.8525
285.41	16.5535	423.72	8.6929	645.85	9.8079
285.90	17.4320	427.09	4.6463	657.76	4.3830
287.50	19.2021	427.87	5.8108	657.90	0.0000
290.67	18.3793	433.94	15.5553	661.66	14.2695
293.27	0.0000	439.40	13.6579	664.57	0.0000
351.93	15.8152	453.88	6.8905	666.33	13.2002
295.96	15.8251	463.37	7.9202	666.50	12.1011
879.38	10.5735	468.07	6.9497	667.71	0.0000
299.98	9.7038	473.00	8.9617	677.62	8.8447
300.09	9.7047	475.06	13.9573	685.70	13.3145
300.13	9.7049	476.78	7.9837	695.00	11.1410
301.36	10.5981	477.60	12.9799	696.49	11.1483
302.85	15.9170	482.18	9.0101	696.51	11.1483
256.23	11.6883	487.02	10.0395	697.00	14.4959
304.85	15.0576	492.35	11.0774	697.30	16.7279
306.78	14.1947	497.08	8.0781	697.49	16.7297
308.46	13.3258	505.52	16.7410	702.65	12.2958
311.90	16.0360	507.63	0.0000	706.68	14.5568
316.51	19.6730	511.00	8.1417	711.68	15.7101
319.41	17.9264	514.00	8.1553	720.70	6.7588
320.08	21.5229	514.00	8.1553	721.93	0.0000
321.04	25.1295	520.40	4.0921	722.78	3.3824
323.87	15.2914	520.69	5.1160	722.91	1.1275
325.23	21.6113	522.65	0.0000	723.31	2.2555
328.76	21.6714	527.90	8.2178	724.19	2.2563
333.37	21.7495	528.26	5.1371	727.33	5.6482
333.97	15.4128	529.59	8.2253	733.00	7.9263
334.37	18.1384	529.87	0.0000	735.93	3.4011
338.28	14.5547	531.02	10.2897	333.97	9.0755
338.32	14.5550	537.26	12.3892	739.50	7.9479
311.90	20.9575	546.56	0.0000	747.24	2.2781
340.48	20.9575	552.55	4.6837	748.06	3.4183
340.55	22.7809	563.25	4.7098	752.31	3.4243
344.28	22.8455	569.33	11.0242	753.82	4.5685
345.93	13.7244	946.00	6.3000	756.73	8.0043
351.06	16.5330	569.70	6.3008	756.80	5.7176
351.93	12.8672	583.19	4.2293	884.68	4.5874

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	3.4431	1274.44	7.4849	1620.50	5.5142
766.42	3.4440	1001.03	2.8112	1621.92	4.4126
766.84	6.8892	1002.74	1.8752	1678.03	0.0000
772.60	0.0000	1004.73	6.5674	1690.97	1.1194
776.52	6.9158	507.63	0.0000	1750.46	0.0000
739.50	5.7664	1025.87	0.0000	1764.49	4.5459
778.90	4.6149	1028.54	0.0000	1063.66	1.8205
783.70	5.7798	1037.84	2.8445	1771.35	1.8209
785.37	2.3134	1038.76	0.0000	1791.20	0.0000
792.07	8.1182	631.29	3.8030	1808.65	6.4207
794.95	5.8055	1048.07	4.7559	1810.72	0.0000
795.86	5.8075	1049.04	4.7574	1836.06	1.8443
810.06	11.3873	1050.41	5.7114		
810.29	8.7601	1063.66	6.6907		
344.28	8.7607	1077.00	1.9194		
810.76	8.7619	1077.34	0.9598		
815.77	6.1451	1085.87	5.7740		
1048.07	4.3939	1093.63	9.6460		
832.01	5.2998	1099.45	7.7305		
834.85	11.3184	1112.07	1.9398		
835.71	9.9070	1112.84	3.8806		
836.80	0.0000	1115.54	4.8547		
846.75	0.0000	1120.29	7.7783		
846.77	4.2634	1120.55	6.8065		
856.80	6.2406	1221.41	8.7534		
860.56	7.1421	1129.67	1.9500		
871.09	3.5847	1131.51	0.0000		
873.19	13.4532	1147.95	0.0000		
875.33	0.0000	1173.23	1.9747		
879.38	9.8878	1177.95	3.9546		
880.51	5.3956	1189.05	0.9918		
883.24	9.9016	1204.77	4.9808		
884.68	9.0060	1221.41	5.0037		
889.28	5.4126	1231.02	4.0134		
894.76	1.8077	1235.36	4.0183		
898.04	3.6196	1238.28	3.0161		
900.72	2.7173	1260.41	0.0000		
903.28	2.7198	1271.87	3.0434		
911.20	4.5456	1274.44	3.0456		
912.08	2.7282	1274.54	3.0456		
923.98	0.0000	1291.59	5.0989		
926.50	5.4838	1298.22	0.0000		
929.11	3.6592	1312.11	2.0505		
937.49	2.7523	1332.49	2.0613		
944.13	5.5172	1362.66	0.0000		
946.00	9.2010	1365.19	2.0784		
949.00	6.4474	1368.63	0.0000		
667.71	0.0000	1384.29	2.0883		
962.31	6.4762	1408.01	3.1507		
964.08	5.5543	1457.56	0.0000		
966.17	8.3372	1460.82	5.3183		
911.20	6.4907	1489.16	3.2122		
968.97	6.4907	1505.03	2.1494		
983.53	5.5904	1584.12	3.2822		
984.45	0.0000	1596.21	9.8729		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 10:23:48.28

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621355.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM27.CNF;330
Background date    : 2-OCT-2016 11:01:30.
Sample date       : 30-NOV-2015 10:40:00 Acquisition date : 3-OCT-2016 09:21:06.
Sample ID        : G1203621355 Sample quantity   : 1.70095E+02 GRAM
Detector name     : GAM27 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.94 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity       : 3.00000
Batch ID          : 1596249 Detector SN#       :
Matrix Spike ID   : LCS ID                   : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.85*	19	136	1.58	93.01	89	8	5.25E-03	115.3	
2	0	63.28*	36	167	1.00	125.87	122	7	1.01E-02	63.9	
3	2	72.95	35	212	1.23	145.23	142	15	9.80E-03	68.3	4.62E+00
4	2	75.00*	161	168	0.95	149.32	142	15	4.47E-02	15.1	
5	2	77.05	284	168	1.24	153.43	142	15	7.89E-02	10.1	
6	0	87.08	63	227	1.15	173.50	171	7	1.75E-02	41.5	
7	5	89.88	59	82	1.22	179.10	177	12	1.65E-02	21.8	9.35E-01
8	5	92.83*	45	196	1.29	185.01	177	12	1.25E-02	60.7	
9	0	128.35	50	106	2.38	256.06	252	8	1.39E-02	38.2	
10	0	143.77*	15	81	0.75	286.91	284	6	4.10E-03	103.6	
11	0	163.65*	7	133	1.40	326.69	324	8	1.98E-03	287.1	
12	0	186.05*	70	106	1.72	371.51	367	8	1.93E-02	30.4	
13	0	209.11	46	77	0.85	417.64	415	8	1.29E-02	35.6	
14	0	225.87	20	54	1.27	451.18	449	6	5.45E-03	63.0	
15	0	238.68*	404	161	1.14	476.81	471	10	1.12E-01	7.8	
16	0	241.80	88	74	1.22	483.06	481	6	2.46E-02	19.3	
17	0	270.69	42	70	2.21	540.85	536	11	1.16E-02	41.7	
18	0	295.59*	200	74	1.08	590.67	586	11	5.56E-02	11.1	
19	0	300.50	53	52	1.18	600.50	597	8	1.47E-02	27.3	
20	0	328.98	15	76	1.29	657.49	651	10	4.26E-03	108.8	
21	0	338.07*	90	57	1.34	675.67	669	11	2.49E-02	20.1	
22	0	351.90*	312	69	1.28	703.35	697	13	8.67E-02	7.9	
23	0	463.97	20	71	3.36	927.58	919	13	5.57E-03	89.7	
24	0	491.06	17	20	1.56	981.79	979	9	4.68E-03	52.2	
25	0	511.06*	73	55	1.83	1021.80	1016	15	2.02E-02	29.1	
26	0	583.46*	155	42	1.46	1166.67	1159	16	4.30E-02	12.7	
27	0	609.47*	202	53	1.46	1218.71	1212	15	5.62E-02	10.7	
28	0	642.39	15	18	1.60	1284.60	1279	9	4.26E-03	57.7	
29	0	663.05*	17	46	1.97	1325.95	1320	15	4.77E-03	93.8	
30	0	728.29	38	41	1.82	1456.48	1448	15	1.05E-02	40.3	
31	0	742.43	27	12	0.81	1484.78	1480	10	7.42E-03	31.4	
32	0	845.51	8	7	1.23	1691.05	1687	6	2.11E-03	67.4	
33	0	860.29	29	12	1.45	1720.62	1715	10	7.93E-03	29.8	
34	0	881.21	15	17	3.68	1762.50	1754	14	4.12E-03	65.1	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	893.41	69	26	15.20	1786.90	1773	33	1.93E-02	24.9	
36	0	911.45*	90	43	1.14	1823.01	1817	13	2.50E-02	18.6	
37	0	927.40	23	14	4.86	1854.93	1846	15	6.46E-03	41.5	
38	0	969.64*	55	45	1.46	1939.47	1934	14	1.54E-02	29.4	
39	0	1120.31*	66	11	1.73	2240.99	2235	11	1.83E-02	16.1	
40	0	1126.44	10	6	1.44	2253.27	2250	8	2.72E-03	54.1	
41	0	1177.68	15	2	0.98	2355.81	2352	8	4.13E-03	30.8	
42	0	1180.97	13	2	0.76	2362.41	2359	8	3.72E-03	32.5	
43	0	1193.17	10	17	3.36	2386.82	2379	10	2.79E-03	83.6	
44	0	1237.59	31	19	0.92	2475.71	2467	15	8.73E-03	34.9	
45	0	1279.23	12	1	0.64	2559.04	2556	8	3.22E-03	35.6	
46	0	1297.27	6	16	2.86	2595.15	2585	13	1.66E-03	144.7	
47	0	1364.61	4	6	1.23	2729.93	2722	9	1.19E-03	116.7	
48	0	1376.86	31	0	1.21	2754.45	2747	14	8.61E-03	18.0	
49	0	1409.66	18	3	3.28	2820.10	2813	14	4.94E-03	32.4	
50	0	1460.82*	417	4	2.06	2922.50	2915	16	1.16E-01	5.1	
51	0	1765.04*	27	7	2.24	3531.43	3524	13	7.52E-03	29.0	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621355.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 30-NOV-2015 10:40:00 Acquisition date : 3-OCT-2016 09:21:06
Sample ID : G1203621355 Sample quantity : 170.10 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA27 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.94 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.403E+00	1.202E+01	1.202E+01	10.14	OK
CO-56	846.77	99.94*	2.182E+00	1.621E-02	2.572E-01	134.83	OK
	1037.84	14.17	1.863E+00	-----	Line Not Found	-----	Absent
	1238.28	66.90	1.617E+00	1.282E-01	2.033E+00	69.84	OK
	1771.35	15.47	1.172E+00	-----	Line Not Found	-----	Absent
CD-109	88.03	3.70*	7.559E+00	2.810E-01	4.463E-01	409.78	OK
SN-126	64.28	9.60	5.534E+00	4.297E-01	4.297E-01	127.75	OK
	86.94	8.90	7.559E+00	1.168E-01	1.168E-01	409.78	OK
	87.57	37.00*	7.559E+00	2.810E-02	2.810E-02	409.78	OK
BA-137M	661.66	89.90*	2.620E+00	3.503E-02	3.572E-02	187.70	OK
CS-137	661.66	85.10*	2.620E+00	3.701E-02	3.773E-02	187.70	OK
TL-208	277.37	6.60	5.132E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	2.885E+00	3.083E-01	3.083E-01	25.31	OK
	860.56	12.50	2.153E+00	4.920E-01	4.920E-01	59.57	OK
PB-210	46.54	4.25*	2.754E+00	1.042E+00	1.070E+00	230.61	OK
PB-212	74.82	10.28	6.772E+00	7.609E-01	7.609E-01	58.94	OK
	77.11	17.10	6.937E+00	1.470E+00	1.470E+00	20.11	OK
	238.63	43.60*	5.748E+00	8.762E-01	8.762E-01	15.68	OK
	300.09	3.30	4.823E+00	1.763E+00	1.763E+00	54.55	OK
BI-214	609.32	45.49*	2.791E+00	7.732E-01	7.735E-01	21.38	OK
	1120.29	14.92	1.754E+00	1.129E+00	1.129E+00	32.27	OK
	1764.49	15.30	1.177E+00	6.303E-01	6.305E-01	58.08	OK
PB-214	74.82	5.80	6.757E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	6.937E+00	2.591E+00	2.592E+00	20.11	OK
	87.09	3.41	7.559E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	5.693E+00	1.163E+00	1.164E+00	38.53	OK
	295.22	18.42	4.885E+00	1.180E+00	1.180E+00	22.14	OK
	351.93	35.60*	4.262E+00	1.069E+00	1.069E+00	15.89	OK
RN-222	609.32	45.49*	2.791E+00	7.732E-01	7.735E-01	21.38	OK
	1120.29	14.92	1.754E+00	1.129E+00	1.129E+00	32.27	OK
	1764.49	15.30	1.177E+00	6.303E-01	6.305E-01	58.08	OK
RA-226	609.32	45.49*	2.791E+00	7.732E-01	7.735E-01	21.38	OK
	1120.29	14.92	1.754E+00	1.129E+00	1.129E+00	32.27	OK
	1764.49	15.30	1.177E+00	6.303E-01	6.305E-01	58.08	OK
AC-228	105.21	1.10	8.060E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.399E+00	9.435E-01	9.435E-01	40.20	OK
	794.95	4.25	2.286E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	2.201E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	2.060E+00	7.786E-01	7.786E-01	37.20	OK
	968.97	15.80	1.964E+00	8.137E-01	8.137E-01	58.83	OK
RA-228	105.21	1.10	8.060E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.399E+00	9.435E-01	9.435E-01	40.20	OK
	794.95	4.25	2.286E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	2.201E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	2.060E+00	7.786E-01	7.786E-01	37.20	OK
	968.97	15.80	1.964E+00	8.137E-01	8.137E-01	58.83	OK
TH-228	74.82	10.28	6.772E+00	7.609E-01	7.609E-01	58.94	OK
	77.11	17.10	6.937E+00	1.470E+00	1.470E+00	20.11	OK
	238.63	43.60*	5.748E+00	8.762E-01	8.762E-01	15.68	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	300.09	3.30	4.823E+00	1.763E+00	1.763E+00	54.55	OK
	609.32	45.49*	2.791E+00	7.732E-01	7.732E-01	21.38	OK
	1120.29	14.92	1.754E+00	1.129E+00	1.129E+00	32.27	OK
	1764.49	15.30	1.177E+00	6.303E-01	6.303E-01	58.08	OK
PA-231	283.69	1.70	5.044E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	4.823E+00	1.087E+00	1.087E+00	54.55	OK
TH-232	105.21	1.10	8.060E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.399E+00	9.435E-01	9.435E-01	40.20	OK
	835.71	1.61	2.201E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	2.060E+00	7.786E-01	7.786E-01	37.20	OK
TH-234	968.97	15.80	1.964E+00	8.137E-01	8.137E-01	58.83	OK
	63.29	3.70*	5.534E+00	1.115E+00	1.115E+00	127.75	OK
	92.59	4.23	7.793E+00	8.209E-01	8.209E-01	121.48	OK
U-234	609.32	45.49*	2.791E+00	7.732E-01	7.732E-01	21.38	OK
	1120.29	14.92	1.754E+00	1.129E+00	1.129E+00	32.27	OK
	1764.49	15.30	1.177E+00	6.303E-01	6.303E-01	58.08	OK
U-235	89.96	3.47	7.683E+00	1.346E+00	1.346E+00	43.58	OK
	93.35	5.60	7.793E+00	6.201E-01	6.201E-01	121.48	OK
	143.76	10.96*	7.743E+00	1.001E-01	1.001E-01	207.10	OK
	163.33	5.08	7.318E+00	1.089E-01	1.089E-01	574.18	OK
	185.72	57.20	6.810E+00	9.991E-02	9.991E-02	60.79	OK
U-238	205.31	5.01	6.393E+00	----- Line	Not Found	-----	Absent
	63.29	3.70*	5.534E+00	1.115E+00	1.115E+00	127.75	OK
	92.59	4.23	7.793E+00	8.209E-01	8.209E-01	121.48	OK
AM-243	43.53	5.90	2.021E+00	----- Line	Not Found	-----	Absent
ANH-511	74.66	67.20*	6.772E+00	1.164E-01	1.164E-01	58.94	OK
	511.00	100.00*	3.191E+00	1.133E-01	1.133E-01	58.16	OK

Flag: "*" = Keyline

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621355.CNF;1
* Acquisition date   : 3-OCT-2016 09:21:06 Sensitivity      : 3.000
* Detector ID        : GAM27 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.94 Half life ratio : *****
* Sample date        : 30-NOV-2015 10:40:00 Analyst initials: MXR1
* Sample ID          : G1203621355 Sample Quantity : 1.7010E+02 GRAM
* Batch Number       : 1596249 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library     : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 3-OCT-2016 06:09:32 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM27 CAN.CNF;13
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.202E+01	1.195E+00	4.316E-01
CO-56	2.572E-01	3.398E-01	7.009E-01
CD-109	4.463E-01	1.792E+00	1.622E+00
SN-126	2.810E-02	1.129E-01	1.024E-01
BA-137M	3.572E-02	6.570E-02	4.983E-02
CS-137	3.773E-02	6.941E-02	5.264E-02
TL-208	3.083E-01	7.646E-02	4.442E-02
PB-210	1.070E+00	2.417E+00	1.808E+00
PB-212	8.762E-01	1.346E-01	8.079E-02
BI-214	7.735E-01	1.621E-01	9.914E-02
PB-214	1.069E+00	1.665E-01	9.042E-02
RN-222	7.735E-01	1.621E-01	9.914E-02
RA-226	7.735E-01	1.621E-01	9.914E-02
AC-228	7.786E-01	2.839E-01	1.841E-01
RA-228	7.786E-01	2.839E-01	1.841E-01
TH-228	8.762E-01	1.346E-01	8.079E-02
TH-230	7.732E-01	1.620E-01	9.910E-02
PA-231	1.087E+00	5.814E-01	5.989E-01
TH-232	7.786E-01	2.839E-01	1.841E-01
TH-234	1.115E+00	1.396E+00	1.264E+00
U-234	7.732E-01	1.620E-01	9.910E-02
U-235	1.001E-01	2.032E-01	2.518E-01
U-238	1.115E+00	1.396E+00	1.264E+00
AM-243	1.164E-01	6.724E-02	5.755E-02
ANH-511	1.133E-01	6.461E-02	4.140E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	3.678E+00	1.018E+01	2.073E+01	NOT IDENT.
NA-22	2.007E-02	3.275E-02	6.762E-02	NOT IDENT.
NA-24	0.000E+00	1.163E+41	0.000E+00	SHORT HLIF
AL-26	1.348E-03	2.044E-02	4.652E-02	NOT IDENT.
SC-46	1.969E-01	3.186E-01	6.883E-01	FAIL ABUN

V-48	0.000E+00	1.530E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.922E+02	0.000E+00	SHORT HLIF
MN-54	2.301E-02	4.982E-02	1.054E-01	NOT IDENT.
MN-56	0.000E+00	1.321E+41	0.000E+00	SHORT HLIF
CO-57	-4.736E-03	3.484E-02	6.586E-02	NOT IDENT.
CO-58	-1.976E-01	4.286E-01	8.210E-01	NOT IDENT.
FE-59	-3.122E+00	6.409E+00	1.170E+01	NOT IDENT.
CO-60	3.445E-03	2.518E-02	5.302E-02	NOT IDENT.
ZN-65	4.042E-03	1.320E-01	2.349E-01	NOT IDENT.
GE-68	2.096E+00	2.037E+00	4.508E+00	NOT IDENT.
AS-73	-1.544E+00	3.929E+00	7.706E+00	NOT IDENT.
AS-74	0.000E+00	5.787E+03	0.000E+00	SHORT HLIF
SE-75	-6.294E-02	1.598E-01	3.110E-01	NOT IDENT.
BR-77	0.000E+00	2.583E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.968E+02	0.000E+00	SHORT HLIF
RB-83	3.257E-02	5.307E-01	1.040E+00	NOT IDENT.
KR-85	7.659E-01	6.101E+00	1.068E+01	NOT IDENT.
SR-85	8.767E-02	7.020E-01	1.229E+00	NOT IDENT.
RB-86	0.000E+00	3.195E+04	0.000E+00	SHORT HLIF
Y-88	2.683E-02	1.421E-01	3.400E-01	NOT IDENT.
Y-91	-3.144E+02	4.620E+02	8.069E+02	NOT IDENT.
NB-94	-2.081E-02	2.563E-02	4.271E-02	NOT IDENT.
NB-95	-9.650E-01	7.396E-01	1.098E+00	NOT IDENT.
NB-95M	-4.666E-01	2.107E+00	3.739E+00	NOT IDENT.
ZR-95	7.913E-01	1.365E+00	2.755E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.139E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.693E+41	0.000E+00	SHORT HLIF
RH-101	0.000E+00	4.806E-02	4.741E-02	FAIL ABUN
RH-102	2.394E-02	4.712E-02	9.612E-02	NOT IDENT.
RU-103	1.021E+00	4.656E+00	9.393E+00	FAIL ABUN
RH-106	7.037E-02	4.641E-01	8.916E-01	NOT IDENT.
RU-106	7.037E-02	4.641E-01	8.916E-01	NOT IDENT.
AG-108M	-1.534E-02	2.186E-02	3.870E-02	NOT IDENT.
AG-110M	3.414E-03	9.427E-02	1.282E-01	NOT IDENT.
SN-113	-1.954E-02	1.656E-01	3.248E-01	NOT IDENT.
CD-115	0.000E+00	3.293E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.140E+05	0.000E+00	SHORT HLIF
TE-123M	6.327E-02	1.058E-01	2.078E-01	NOT IDENT.
SB-124	6.668E-01	1.779E+00	3.969E+00	NOT IDENT.
SB-125	1.810E-02	7.460E-02	1.511E-01	FAIL ABUN
TE-125M	1.075E+02	2.210E+02	4.391E+02	NOT IDENT.
I-126	0.000E+00	1.049E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.521E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	8.688E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	7.297E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.554E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.819E+27	0.000E+00	SHORT HLIF
BA-133	-3.907E-02	3.499E-02	5.465E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	1.935E-02	3.801E-02	7.724E-02	FAIL ABUN
CS-135	-3.494E-02	1.022E-01	1.784E-01	NOT IDENT.
I-135	0.000E+00	1.742E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.398E+05	0.000E+00	SHORT HLIF
CE-139	2.436E-02	9.839E-02	1.730E-01	NOT IDENT.
BA-140	0.000E+00	1.615E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	5.438E+05	0.000E+00	SHORT HLIF
CE-141	-7.203E+00	2.469E+01	4.148E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	6.426E-02	2.633E-01	5.098E-01	NOT IDENT.
PM-144	8.028E-03	4.591E-02	8.860E-02	NOT IDENT.
PR-144	-2.579E-01	4.136E+00	7.714E+00	NOT IDENT.
PM-146	-1.331E-02	2.789E-02	5.190E-02	NOT IDENT.
ND-147	0.000E+00	4.112E+07	0.000E+00	SHORT HLIF
PM-147	-1.748E+02	5.920E+02	1.105E+03	NOT IDENT.
PM-149	0.000E+00	1.313E+41	0.000E+00	SHORT HLIF
EU-150	6.773E-03	1.866E-02	3.517E-02	FAIL ABUN
EU-152	-2.135E-02	6.860E-02	1.320E-01	NOT IDENT.
GD-153	-1.419E-01	1.253E-01	2.217E-01	NOT IDENT.
EU-154	3.377E-02	8.418E-02	1.642E-01	NOT IDENT.
EU-155	6.871E-02	7.541E-02	1.551E-01	FAIL ABUN
TB-160	-4.399E-01	1.406E+00	2.733E+00	FAIL ABUN
HO-166M	1.746E-02	4.678E-02	9.286E-02	NOT IDENT.
TM-171	-8.480E-01	7.778E+00	1.566E+01	NOT IDENT.
HF-172	-1.107E-01	1.765E-01	2.904E-01	FAIL ABUN
LU-172	1.076E-02	5.610E-02	1.152E-01	FAIL ABUN
LU-176	-1.847E-02	1.786E-02	3.221E-02	FAIL ABUN

HF-181	1.264E+00	3.195E+00	6.672E+00	NOT IDENT.
TA-182	2.691E-01	6.952E-01	1.447E+00	FAIL ABUN
RE-183	1.175E-02	1.620E+00	3.234E+00	FAIL ABUN
RE-184	1.190E+01	2.907E+01	5.578E+01	FAIL ABUN
W-188	4.785E+01	9.976E+01	1.976E+02	FAIL ABUN
IR-192	7.654E-02	3.865E-01	7.803E-01	FAIL ABUN
HG-203	-1.326E-02	2.120E+00	4.222E+00	FAIL ABUN
BI-207	2.323E-02	3.724E-02	8.010E-02	FAIL ABUN
BI-211	0.000E+00	4.586E-01	6.803E-01	FAIL ABUN
PB-211	-1.684E-01	5.093E-01	9.648E-01	NOT IDENT.
BI-212	0.000E+00	8.728E-01	1.043E+00	FAIL ABUN
RN-219	-6.253E-02	2.896E-01	5.558E-01	FAIL ABUN
RA-223	-2.036E-01	4.961E-01	8.402E-01	FAIL ABUN
RA-224	0.000E+00	7.768E-01	1.223E+00	FAIL ABUN
AC-227	3.791E-02	1.769E-01	3.602E-01	FAIL ABUN
TH-227	3.791E-02	1.769E-01	3.602E-01	FAIL ABUN
TH-229	1.694E-01	3.792E-01	7.245E-01	FAIL ABUN
TH-231	-2.036E-01	4.961E-01	8.402E-01	FAIL ABUN
PA-233	-3.877E-02	4.164E-02	7.577E-02	FAIL ABUN
PA-234	-1.719E-01	2.017E-01	3.534E-01	FAIL ABUN
PA-234M	8.732E-01	3.256E+00	6.693E+00	NOT IDENT.
NP-237	-3.877E-02	4.164E-02	7.577E-02	FAIL ABUN
NP-238	0.000E+00	1.915E+41	0.000E+00	SHORT HLIF
NP-239	1.071E-01	1.685E-01	3.395E-01	NOT IDENT.
PU-239	0.000E+00	4.339E+02	4.530E+02	FAIL ABUN
AM-241	-1.913E-02	7.794E-02	1.409E-01	NOT IDENT.
CM-243	-3.200E-02	6.561E-02	1.221E-01	NOT IDENT.
BK-247	-1.725E-02	5.235E-02	1.025E-01	NOT IDENT.
CM-247	3.584E-03	2.661E-02	5.293E-02	NOT IDENT.
CF-249	9.104E-03	2.940E-02	5.940E-02	NOT IDENT.
CF-251	-2.734E-02	1.003E-01	1.810E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	407	10.66*	1.403E+00	1.202E+01	1.202E+01	10.14
CO-56	846.77	8	99.94*	2.182E+00	1.621E-02	2.572E-01	134.83
	1037.84	-----	14.17	1.863E+00	-----	Line Not Found	-----
	1238.28	31	66.90	1.617E+00	1.282E-01	2.033E+00	69.84
	1771.35	-----	15.47	1.172E+00	-----	Line Not Found	-----
CD-109	88.03	86	3.70*	7.559E+00	1.364E+00	2.167E+00	83.01
SN-126	64.28	52	9.60	5.534E+00	4.297E-01	4.297E-01	127.75
	86.94	86	8.90	7.559E+00	5.672E-01	5.672E-01	83.01
	87.57	86	37.00*	7.559E+00	1.364E-01	1.364E-01	83.01
BA-137M	661.66	19	89.90*	2.620E+00	3.503E-02	3.572E-02	187.70
CS-137	661.66	19	85.10*	2.620E+00	3.701E-02	3.773E-02	187.70
TL-208	277.37	-----	6.60	5.132E+00	-----	Line Not Found	-----
	583.19	171	85.00*	2.885E+00	3.083E-01	3.083E-01	25.31
	860.56	30	12.50	2.153E+00	4.920E-01	4.920E-01	59.57
PB-210	46.54	28	4.25*	2.754E+00	1.042E+00	1.070E+00	230.61
BI-211	72.87	49	1.23	6.592E+00	2.686E+00	2.686E+00	136.52
	351.06	367	12.92*	4.262E+00	2.945E+00	2.945E+00	15.89
PB-212	74.82	225	10.28	6.772E+00	1.424E+00	1.424E+00	30.20
	77.11	395	17.10	6.937E+00	1.470E+00	1.470E+00	20.11
	238.63	497	43.60*	5.748E+00	8.762E-01	8.762E-01	15.68
	300.09	64	3.30	4.823E+00	1.763E+00	1.763E+00	54.55
BI-214	609.32	222	45.49*	2.791E+00	7.732E-01	7.735E-01	21.38
	1120.29	67	14.92	1.754E+00	1.129E+00	1.129E+00	32.27
	1764.49	26	15.30	1.177E+00	6.303E-01	6.305E-01	58.08
PB-214	74.82	225	5.80	6.772E+00	2.524E+00	2.525E+00	30.20
	77.11	395	9.70	6.937E+00	2.591E+00	2.592E+00	20.11
	87.09	86	3.41	7.559E+00	1.480E+00	1.481E+00	83.01
	242.00	109	7.25	5.693E+00	1.163E+00	1.164E+00	38.53
	295.22	241	18.42	4.885E+00	1.180E+00	1.180E+00	22.14
	351.93	367	35.60*	4.262E+00	1.069E+00	1.069E+00	15.89
RN-222	609.32	222	45.49*	2.791E+00	7.732E-01	7.735E-01	21.38
	1120.29	67	14.92	1.754E+00	1.129E+00	1.129E+00	32.27
	1764.49	26	15.30	1.177E+00	6.303E-01	6.305E-01	58.08
RA-224	240.99	109	4.10*	5.693E+00	2.057E+00	2.057E+00	38.53
RA-226	609.32	222	45.49*	2.791E+00	7.732E-01	7.735E-01	21.38
	1120.29	67	14.92	1.754E+00	1.129E+00	1.129E+00	32.27
	1764.49	26	15.30	1.177E+00	6.303E-01	6.305E-01	58.08
AC-228	105.21	-----	1.10	8.060E+00	-----	Line Not Found	-----
	338.32	106	11.27	4.399E+00	9.435E-01	9.435E-01	40.20
	794.95	-----	4.25	2.286E+00	-----	Line Not Found	-----
	835.71	-----	1.61	2.201E+00	-----	Line Not Found	-----
	911.20	94	25.80*	2.060E+00	7.786E-01	7.786E-01	37.20
	968.97	57	15.80	1.964E+00	8.137E-01	8.137E-01	58.83
RA-228	105.21	-----	1.10	8.060E+00	-----	Line Not Found	-----
	338.32	106	11.27	4.399E+00	9.435E-01	9.435E-01	40.20
	794.95	-----	4.25	2.286E+00	-----	Line Not Found	-----
	835.71	-----	1.61	2.201E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	94	25.80*	2.060E+00	7.786E-01	7.786E-01	37.20
	968.97	57	15.80	1.964E+00	8.137E-01	8.137E-01	58.83
TH-228	74.82	225	10.28	6.772E+00	1.424E+00	1.424E+00	30.20
	77.11	395	17.10	6.937E+00	1.470E+00	1.470E+00	20.11
	238.63	497	43.60*	5.748E+00	8.762E-01	8.762E-01	15.68
	300.09	64	3.30	4.823E+00	1.763E+00	1.763E+00	54.55
TH-230	609.32	222	45.49*	2.791E+00	7.732E-01	7.732E-01	21.38
	1120.29	67	14.92	1.754E+00	1.129E+00	1.129E+00	32.27
	1764.49	26	15.30	1.177E+00	6.303E-01	6.303E-01	58.08
PA-231	283.69	-----	1.70	5.044E+00	-----	Line Not Found	-----
	301.36	64	5.35*	4.823E+00	1.087E+00	1.087E+00	54.55
TH-232	105.21	-----	1.10	8.060E+00	-----	Line Not Found	-----
	338.32	106	11.27	4.399E+00	9.435E-01	9.435E-01	40.20
	835.71	-----	1.61	2.201E+00	-----	Line Not Found	-----
	911.20	94	25.80*	2.060E+00	7.786E-01	7.786E-01	37.20
	968.97	57	15.80	1.964E+00	8.137E-01	8.137E-01	58.83
TH-234	63.29	52	3.70*	5.534E+00	1.115E+00	1.115E+00	127.75
	92.59	61	4.23	7.793E+00	8.209E-01	8.209E-01	121.48
U-234	609.32	222	45.49*	2.791E+00	7.732E-01	7.732E-01	21.38
	1120.29	67	14.92	1.754E+00	1.129E+00	1.129E+00	32.27
	1764.49	26	15.30	1.177E+00	6.303E-01	6.303E-01	58.08
U-235	89.96	81	3.47	7.683E+00	1.346E+00	1.346E+00	43.58
	93.35	61	5.60	7.793E+00	6.201E-01	6.201E-01	121.48
	143.76	19	10.96*	7.743E+00	1.001E-01	1.001E-01	207.10
	163.33	9	5.08	7.318E+00	1.089E-01	1.089E-01	574.18
	185.72	88	57.20	6.810E+00	9.991E-02	9.991E-02	60.79
	205.31	-----	5.01	6.393E+00	-----	Line Not Found	-----
U-238	63.29	52	3.70*	5.534E+00	1.115E+00	1.115E+00	127.75
	92.59	61	4.23	7.793E+00	8.209E-01	8.209E-01	121.48
AM-243	43.53	-----	5.90	2.021E+00	-----	Line Not Found	-----
	74.66	225	67.20*	6.772E+00	2.179E-01	2.179E-01	30.20
ANH-511	511.00	82	100.00*	3.191E+00	1.133E-01	1.133E-01	58.16

Flag: "*" = Keyline

Total number of lines in spectrum 51
Number of unidentified lines 9
Number of lines tentatively identified by NID 42 82.35%

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	1.202E+01	1.202E+01	0.122E+01	10.14	
CO-56	77.23D	15.9	1.621E-02	2.572E-01	3.468E-01	134.83	
CD-109	461.40D	1.59	1.364E+00	2.167E+00	1.799E+00	83.01	
SN-126	2.30E+05Y	1.00	1.364E-01	1.364E-01	1.133E-01	83.01	
BA-137M	30.08Y	1.02	3.503E-02	3.572E-02	6.704E-02	187.70	
CS-137	30.08Y	1.02	3.701E-02	3.773E-02	7.082E-02	187.70	
TL-208	1.41E+10Y	1.00	3.083E-01	3.083E-01	0.780E-01	25.31	
PB-210	22.20Y	1.03	1.042E+00	1.070E+00	2.467E+00	230.61	
BI-211	7.04E+08Y	1.00	2.945E+00	2.945E+00	0.468E+00	15.89	
PB-212	1.41E+10Y	1.00	8.762E-01	8.762E-01	1.374E-01	15.68	
BI-214	1600.00Y	1.00	7.732E-01	7.735E-01	1.654E-01	21.38	
PB-214	1600.00Y	1.00	1.069E+00	1.069E+00	0.170E+00	15.89	
RN-222	1600.00Y	1.00	7.732E-01	7.735E-01	1.654E-01	21.38	
RA-224	1.41E+10Y	1.00	2.057E+00	2.057E+00	0.793E+00	38.53	
RA-226	1600.00Y	1.00	7.732E-01	7.735E-01	1.654E-01	21.38	
AC-228	1.41E+10Y	1.00	7.786E-01	7.786E-01	2.896E-01	37.20	
RA-228	1.41E+10Y	1.00	7.786E-01	7.786E-01	2.896E-01	37.20	
TH-228	1.41E+10Y	1.00	8.762E-01	8.762E-01	1.374E-01	15.68	
TH-230	7.54E+04Y	1.00	7.732E-01	7.732E-01	1.653E-01	21.38	
PA-231	7.04E+08Y	1.00	1.087E+00	1.087E+00	0.593E+00	54.55	
TH-232	1.41E+10Y	1.00	7.786E-01	7.786E-01	2.896E-01	37.20	
TH-234	4.47E+09Y	1.00	1.115E+00	1.115E+00	1.424E+00	127.75	
U-234	2.45E+05Y	1.00	7.732E-01	7.732E-01	1.653E-01	21.38	
U-235	7.04E+08Y	1.00	1.001E-01	1.001E-01	2.073E-01	207.10	
U-238	4.47E+09Y	1.00	1.115E+00	1.115E+00	1.424E+00	127.75	
AM-243	7370.00Y	1.00	2.179E-01	2.179E-01	0.658E-01	30.20	
ANH-511	1.00E+09Y	1.00	1.133E-01	1.133E-01	0.659E-01	58.16	
Total Activity :			3.273E+01	3.381E+01			

Grand Total Activity : 3.273E+01 3.381E+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	128.35	66	140	2.38	256.06	252	8	1.39E-02	76.5	8.00E+00	T
0	209.11	58	96	0.85	417.64	415	8	1.29E-02	71.1	6.31E+00	
0	225.87	24	67	1.27	451.18	449	6	5.45E-03	****	5.98E+00	T
0	270.69	51	85	2.21	540.85	536	11	1.16E-02	83.4	5.23E+00	T
0	328.98	18	90	1.29	657.49	651	10	4.26E-03	****	4.49E+00	T
0	463.97	23	81	3.36	927.58	919	13	5.57E-03	****	3.44E+00	T
0	491.06	19	23	1.56	981.79	979	9	4.68E-03	****	3.29E+00	T
0	642.39	17	19	1.60	1284.60	1279	9	4.26E-03	****	2.68E+00	
0	728.29	41	44	1.82	1456.48	1448	15	1.05E-02	80.6	2.44E+00	T
0	742.43	29	13	0.81	1484.78	1480	10	7.42E-03	62.7	2.41E+00	
0	881.21	16	18	3.68	1762.50	1754	14	4.12E-03	****	2.11E+00	T
0	893.41	73	27	15.20	1786.90	1773	33	1.93E-02	49.8	2.09E+00	T
0	927.40	24	14	4.86	1854.93	1846	15	6.46E-03	83.0	2.03E+00	T
0	1126.44	10	6	1.44	2253.27	2250	8	2.72E-03	****	1.75E+00	
0	1177.68	15	2	0.98	2355.81	2352	8	4.13E-03	61.6	1.68E+00	T
0	1180.97	13	2	0.76	2362.41	2359	8	3.72E-03	65.1	1.68E+00	
0	1193.17	10	17	3.36	2386.82	2379	10	2.79E-03	****	1.67E+00	
0	1279.23	12	1	0.64	2559.04	2556	8	3.22E-03	71.2	1.57E+00	
0	1297.27	6	16	2.86	2595.15	2585	13	1.66E-03	****	1.55E+00	T
0	1364.61	4	6	1.23	2729.93	2722	9	1.19E-03	****	1.49E+00	T
0	1376.86	31	0	1.21	2754.45	2747	14	8.61E-03	35.9	1.48E+00	
0	1409.66	17	3	3.28	2820.10	2813	14	4.94E-03	64.8	1.45E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621355.CNF;1  *
* Acquisition date   : 3-OCT-2016 09:21:06 Sensitivity      : 3.000             *
* Detector ID        : GAM27 Energy tolerance: 1.500       *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000       *
* Elapsed real time  : 0 01:00:00.94 Half life ratio  : *****       *
* Sample date        : 30-NOV-2015 10:40:00 Nuclide Library : SOLID       *
* Sample ID          : G1203621355 Analyst initials: MXR1         *
* Batch Number       : 1596249 Sample Quantity : 1.7010E+02 GRAM      *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000          *
*                               Dry Weight      : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 3-OCT-2016 06:09:32 Eff. Geometry   : CAN         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM27 CAN.CNF;13       *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.754E-01
CO-56	3.057E-01
CD-109	7.742E-01
SN-126	4.887E-02
BA-137M	2.224E-02
CS-137	2.349E-02
TL-208	1.967E-02
PB-210	8.441E-01
PB-212	3.785E-02
BI-214	4.468E-02
PB-214	4.105E-02
RN-222	4.468E-02
RA-226	4.468E-02
AC-228	8.052E-02
RA-228	8.052E-02
TH-228	3.785E-02
TH-230	4.467E-02
PA-231	2.748E-01
TH-232	8.052E-02
TH-234	5.997E-01
U-234	4.466E-02
U-235	1.183E-01
U-238	5.997E-01
AM-243	2.732E-02
ANH-511	1.874E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	9.383E+00	NOT IDENT.
NA-22	2.900E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.802E-02	NOT IDENT.
SC-46	3.068E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF

CR-51	0.000E+00	SHORT HLIF
MN-54	4.715E-02	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	3.086E-02	NOT IDENT.
CO-58	3.546E-01	NOT IDENT.
FE-59	5.117E+00	NOT IDENT.
CO-60	2.205E-02	NOT IDENT.
ZN-65	1.010E-01	NOT IDENT.
GE-68	2.024E+00	NOT IDENT.
AS-73	3.625E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.434E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.673E-01	NOT IDENT.
KR-85	4.862E+00	NOT IDENT.
SR-85	5.594E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.305E-01	NOT IDENT.
Y-91	3.492E+02	NOT IDENT.
NB-94	1.889E-02	NOT IDENT.
NB-95	4.751E-01	NOT IDENT.
NB-95M	1.745E+00	NOT IDENT.
ZR-95	1.244E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.228E-02	FAIL ABUN
RH-102	4.330E-02	NOT IDENT.
RU-103	4.212E+00	FAIL ABUN
RH-106	4.055E-01	NOT IDENT.
RU-106	4.055E-01	NOT IDENT.
AG-108M	1.743E-02	NOT IDENT.
AG-110M	5.466E-02	NOT IDENT.
SN-113	1.466E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	9.770E-02	NOT IDENT.
SB-124	1.627E+00	NOT IDENT.
SB-125	6.843E-02	FAIL ABUN
TE-125M	2.073E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.478E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	3.444E-02	FAIL ABUN
CS-135	8.165E-02	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	8.129E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.951E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.393E-01	NOT IDENT.
PM-144	3.987E-02	NOT IDENT.
PR-144	3.471E+00	NOT IDENT.
PM-146	2.288E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	5.173E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.608E-02	FAIL ABUN
EU-152	6.030E-02	NOT IDENT.
GD-153	1.039E-01	NOT IDENT.
EU-154	7.033E-02	NOT IDENT.
EU-155	7.322E-02	FAIL ABUN
TB-160	1.182E+00	FAIL ABUN
HO-166M	4.183E-02	NOT IDENT.
TM-171	7.333E+00	NOT IDENT.
HF-172	1.354E-01	FAIL ABUN
LU-172	5.023E-02	FAIL ABUN
LU-176	1.468E-02	FAIL ABUN
HF-181	2.978E+00	NOT IDENT.

TA-182	6.345E-01	FAIL ABUN
RE-183	1.532E+00	FAIL ABUN
RE-184	2.467E+01	FAIL ABUN
W-188	9.201E+01	FAIL ABUN
IR-192	3.604E-01	FAIL ABUN
HG-203	1.962E+00	FAIL ABUN
BI-207	3.550E-02	FAIL ABUN
BI-211	3.288E-01	FAIL ABUN
PB-211	4.388E-01	NOT IDENT.
BI-212	4.835E-01	FAIL ABUN
RN-219	2.531E-01	FAIL ABUN
RA-223	3.852E-01	FAIL ABUN
RA-224	5.843E-01	FAIL ABUN
AC-227	1.678E-01	FAIL ABUN
TH-227	1.678E-01	FAIL ABUN
TH-229	3.404E-01	FAIL ABUN
TH-231	3.852E-01	FAIL ABUN
PA-233	3.437E-02	FAIL ABUN
PA-234	1.512E-01	FAIL ABUN
PA-234M	2.967E+00	NOT IDENT.
NP-237	3.437E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.596E-01	NOT IDENT.
PU-239	2.136E+02	FAIL ABUN
AM-241	6.676E-02	NOT IDENT.
CM-243	5.705E-02	NOT IDENT.
BK-247	4.725E-02	NOT IDENT.
CM-247	2.419E-02	NOT IDENT.
CF-249	2.728E-02	NOT IDENT.
CF-251	8.517E-02	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.202E+01	1.349E+00	1.349E+00
CO-56	2.572E-01	3.400E-01	3.400E-01
CD-109	4.465E-01	1.805E+00	1.805E+00
SN-126	2.811E-02	1.136E-01	1.136E-01
BA-137M	3.572E-02	6.572E-02	6.572E-02
CS-137	3.773E-02	6.943E-02	6.943E-02
TL-208	3.083E-01	7.759E-02	7.759E-02
PB-210	1.070E+00	2.419E+00	2.419E+00
PB-212	8.762E-01	1.426E-01	1.426E-01
BI-214	7.735E-01	1.655E-01	1.655E-01
PB-214	1.069E+00	1.725E-01	1.725E-01
RN-222	7.735E-01	1.655E-01	1.655E-01
RA-226	7.735E-01	1.655E-01	1.655E-01
AC-228	7.786E-01	2.866E-01	2.866E-01
RA-228	7.786E-01	2.866E-01	2.866E-01
TH-228	8.762E-01	1.426E-01	1.426E-01
TH-230	7.732E-01	1.654E-01	1.654E-01
PA-231	1.087E+00	6.261E-01	6.261E-01
TH-232	7.786E-01	2.866E-01	2.866E-01
TH-234	1.115E+00	1.417E+00	1.417E+00
U-234	7.732E-01	1.654E-01	1.654E-01
U-235	1.001E-01	2.032E-01	2.032E-01
U-238	1.115E+00	1.417E+00	1.417E+00
AM-243	1.164E-01	6.878E-02	6.878E-02
ANH-511	1.133E-01	6.477E-02	6.477E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	3.678E+00	1.018E+01	1.031E+01	NOT IDENT.
NA-22	2.007E-02	3.275E-02	3.398E-02	NOT IDENT.
NA-24	1.000E+41	1.246E+41	0.000E+00	SHORT HLIF
AL-26	1.348E-03	2.044E-02	2.045E-02	NOT IDENT.
SC-46	1.969E-01	3.187E-01	3.308E-01	FAIL ABUN

V-48	-7.696E+03	1.530E+04	1.569E+04	SHORT HLIF
CR-51	-1.543E+01	3.922E+02	3.923E+02	SHORT HLIF
MN-54	2.301E-02	4.983E-02	5.090E-02	NOT IDENT.
MN-56	1.000E+41	1.322E+41	0.000E+00	SHORT HLIF
CO-57	-4.736E-03	3.484E-02	3.490E-02	NOT IDENT.
CO-58	-1.976E-01	4.287E-01	4.379E-01	NOT IDENT.
FE-59	-3.122E+00	6.413E+00	6.566E+00	NOT IDENT.
CO-60	3.445E-03	2.518E-02	2.523E-02	NOT IDENT.
ZN-65	4.042E-03	1.320E-01	1.320E-01	NOT IDENT.
GE-68	2.096E+00	2.039E+00	2.247E+00	NOT IDENT.
AS-73	-1.544E+00	3.942E+00	4.003E+00	NOT IDENT.
AS-74	5.615E+03	5.806E+03	6.333E+03	SHORT HLIF
SE-75	-6.294E-02	1.598E-01	1.623E-01	NOT IDENT.
BR-77	1.681E+39	1.495E+40	0.000E+00	SHORT HLIF
SR-82	9.295E+02	6.982E+02	8.143E+02	SHORT HLIF
RB-83	3.257E-02	5.307E-01	5.309E-01	NOT IDENT.
KR-85	7.659E-01	6.101E+00	6.111E+00	NOT IDENT.
SR-85	8.767E-02	7.020E-01	7.031E-01	NOT IDENT.
RB-86	3.506E+04	3.199E+04	3.568E+04	SHORT HLIF
Y-88	2.683E-02	1.421E-01	1.426E-01	NOT IDENT.
Y-91	-3.144E+02	4.621E+02	4.834E+02	NOT IDENT.
NB-94	-2.081E-02	2.565E-02	2.731E-02	NOT IDENT.
NB-95	-9.650E-01	7.407E-01	8.590E-01	NOT IDENT.
NB-95M	-4.666E-01	2.107E+00	2.118E+00	NOT IDENT.
ZR-95	7.913E-01	1.365E+00	1.411E+00	NOT IDENT.
NB-97	1.000E+41	2.440E+41	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	6.698E+41	0.000E+00	SHORT HLIF
MO-99	5.807E+32	1.140E+33	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	1.696E+41	0.000E+00	SHORT HLIF
RH-101	6.413E-02	4.945E-02	5.728E-02	FAIL ABUN
RH-102	2.394E-02	4.716E-02	4.838E-02	NOT IDENT.
RU-103	1.021E+00	4.657E+00	4.679E+00	FAIL ABUN
RH-106	7.037E-02	4.641E-01	4.652E-01	NOT IDENT.
RU-106	7.037E-02	4.641E-01	4.652E-01	NOT IDENT.
AG-108M	-1.534E-02	2.186E-02	2.293E-02	NOT IDENT.
AG-110M	3.414E-03	9.427E-02	9.429E-02	NOT IDENT.
SN-113	-1.954E-02	1.656E-01	1.659E-01	NOT IDENT.
CD-115	-4.280E+39	3.294E+40	0.000E+00	SHORT HLIF
SN-117M	4.373E+04	1.142E+05	1.158E+05	SHORT HLIF
TE-123M	6.327E-02	1.059E-01	1.096E-01	NOT IDENT.
SB-124	6.668E-01	1.779E+00	1.804E+00	NOT IDENT.
SB-125	1.810E-02	7.460E-02	7.505E-02	FAIL ABUN
TE-125M	1.075E+02	2.211E+02	2.263E+02	NOT IDENT.
I-126	8.075E+04	1.049E+06	1.050E+06	SHORT HLIF
SB-126	-2.045E+05	1.521E+06	1.524E+06	SHORT HLIF
SB-127	2.156E+21	8.694E+22	0.000E+00	SHORT HLIF
I-131	-3.985E+09	7.299E+09	7.517E+09	SHORT HLIF
I-132	-1.000E+41	1.905E+42	0.000E+00	SHORT HLIF
TE-132	9.226E+25	1.819E+27	0.000E+00	SHORT HLIF
BA-133	-3.907E-02	3.502E-02	3.920E-02	NOT IDENT.
I-133	1.000E+41	1.497E+42	0.000E+00	SHORT HLIF
CS-134	1.935E-02	3.801E-02	3.900E-02	FAIL ABUN
CS-135	-3.494E-02	1.022E-01	1.034E-01	NOT IDENT.
I-135	-1.000E+41	7.173E+41	0.000E+00	SHORT HLIF
CS-136	4.882E+04	3.398E+05	3.406E+05	SHORT HLIF
CE-139	2.436E-02	9.851E-02	9.912E-02	NOT IDENT.
BA-140	3.266E+05	1.615E+06	1.621E+06	SHORT HLIF
LA-140	-3.715E+05	5.441E+05	5.693E+05	SHORT HLIF
CE-141	-7.203E+00	2.469E+01	2.490E+01	NOT IDENT.
CE-143	-1.000E+41	2.110E+41	0.000E+00	SHORT HLIF
CE-144	6.426E-02	2.633E-01	2.649E-01	NOT IDENT.
PM-144	8.028E-03	4.591E-02	4.606E-02	NOT IDENT.
PR-144	-2.579E-01	4.136E+00	4.138E+00	NOT IDENT.
PM-146	-1.331E-02	2.791E-02	2.854E-02	NOT IDENT.
ND-147	-7.226E+06	4.112E+07	4.125E+07	SHORT HLIF
PM-147	-1.748E+02	5.921E+02	5.973E+02	NOT IDENT.
PM-149	-1.000E+41	1.332E+41	0.000E+00	SHORT HLIF
EU-150	6.773E-03	1.866E-02	1.891E-02	FAIL ABUN
EU-152	-2.135E-02	6.861E-02	6.928E-02	NOT IDENT.
GD-153	-1.419E-01	1.256E-01	1.410E-01	NOT IDENT.
EU-154	3.377E-02	8.419E-02	8.555E-02	NOT IDENT.
EU-155	6.871E-02	7.557E-02	8.167E-02	FAIL ABUN
TB-160	-4.399E-01	1.406E+00	1.420E+00	FAIL ABUN
HO-166M	1.746E-02	4.678E-02	4.744E-02	NOT IDENT.
TM-171	-8.480E-01	7.778E+00	7.787E+00	NOT IDENT.
HF-172	-1.107E-01	1.774E-01	1.843E-01	FAIL ABUN
LU-172	1.076E-02	5.611E-02	5.632E-02	FAIL ABUN
LU-176	-1.847E-02	1.788E-02	1.972E-02	FAIL ABUN

HF-181	1.264E+00	3.196E+00	3.246E+00	NOT IDENT.
TA-182	2.691E-01	6.952E-01	7.057E-01	FAIL ABUN
RE-183	1.175E-02	1.620E+00	1.620E+00	FAIL ABUN
RE-184	1.190E+01	2.921E+01	2.970E+01	FAIL ABUN
W-188	4.785E+01	9.991E+01	1.022E+02	FAIL ABUN
IR-192	7.654E-02	3.865E-01	3.880E-01	FAIL ABUN
HG-203	-1.326E-02	2.120E+00	2.120E+00	FAIL ABUN
BI-207	2.323E-02	3.725E-02	3.870E-02	FAIL ABUN
BI-211	2.945E+00	4.775E-01	1.411E+00	FAIL ABUN
PB-211	-1.684E-01	5.094E-01	5.150E-01	NOT IDENT.
BI-212	1.105E+00	8.746E-01	1.007E+00	FAIL ABUN
RN-219	-6.253E-02	2.897E-01	2.911E-01	FAIL ABUN
RA-223	-2.036E-01	4.962E-01	5.047E-01	FAIL ABUN
RA-224	2.057E+00	7.847E-01	1.215E+00	FAIL ABUN
AC-227	3.791E-02	1.770E-01	1.778E-01	FAIL ABUN
TH-227	3.791E-02	1.770E-01	1.778E-01	FAIL ABUN
TH-229	1.694E-01	3.793E-01	3.869E-01	FAIL ABUN
TH-231	-2.036E-01	4.962E-01	5.047E-01	FAIL ABUN
PA-233	-3.877E-02	4.169E-02	4.520E-02	FAIL ABUN
PA-234	-1.719E-01	2.817E-01	2.922E-01	FAIL ABUN
PA-234M	8.732E-01	3.256E+00	3.280E+00	NOT IDENT.
NP-237	-3.877E-02	4.169E-02	4.520E-02	FAIL ABUN
NP-238	-1.000E+41	1.916E+41	0.000E+00	SHORT HLIF
NP-239	1.071E-01	1.687E-01	1.755E-01	NOT IDENT.
PU-239	5.790E+02	4.346E+02	5.070E+02	FAIL ABUN
AM-241	-1.913E-02	7.795E-02	7.843E-02	NOT IDENT.
CM-243	-3.200E-02	6.568E-02	6.724E-02	NOT IDENT.
BK-247	-1.725E-02	5.246E-02	5.304E-02	NOT IDENT.
CM-247	3.584E-03	2.662E-02	2.667E-02	NOT IDENT.
CF-249	9.104E-03	2.941E-02	2.970E-02	NOT IDENT.
CF-251	-2.734E-02	1.004E-01	1.011E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	75.5737	87.09	145.1000	136.47	86.1691
45.60	65.5803	87.57	145.2323	140.51	0.0000
46.54	65.7580	88.03	145.3587	143.76	80.1685
49.72	0.0000	88.34	109.0829	144.24	90.1517
51.35	80.1621	88.47	109.1099	145.44	84.1762
51.87	78.3396	89.96	108.0118	152.43	77.6201
52.39	74.5741	1093.63	108.1489	153.25	0.0000
52.97	86.3281	91.11	0.0000	323.87	73.1543
53.44	94.2045	92.59	108.5374	156.02	0.0000
54.07	97.2776	93.35	108.6886	158.56	0.0000
57.36	0.0000	94.56	80.6340	159.00	67.7617
57.53	116.7861	94.65	80.6468	162.33	79.7767
57.98	107.0919	94.67	80.6497	162.66	0.0000
59.27	116.9610	94.87	80.6790	163.33	81.0510
59.32	116.9755	97.43	105.5757	165.86	73.8410
59.54	117.0384	98.43	76.9175	176.31	94.2609
60.96	113.4834	98.44	76.9191	176.60	0.0000
61.17	114.8610	99.53	74.9251	177.52	93.1999
62.93	114.3490	100.11	70.7146	181.07	0.0000
63.29	114.4455	102.03	77.3992	181.52	89.6317
63.58	114.5236	103.18	80.7827	184.41	83.5045
64.28	121.0283	103.37	80.8084	143.76	91.6706
66.73	120.3735	105.21	71.3330	193.51	69.3522
67.24	135.5768	105.31	71.3446	197.03	81.8331
125.81	126.6643	106.12	85.5130	198.01	62.3570
67.75	126.6835	106.47	93.1446	201.83	65.0693
69.67	125.2081	109.28	81.6084	203.43	82.3974
70.83	137.6747	111.00	80.7455	205.31	59.1482
72.81	116.9153	111.76	0.0000	210.85	69.4061
72.87	116.9302	114.06	71.2740	215.65	63.5212
74.66	117.3768	116.30	0.0000	222.11	70.2034
74.82	117.4163	116.74	67.1711	227.09	65.5102
74.97	117.4532	119.76	70.8052	227.38	59.2276
77.11	117.9778	121.12	75.3872	228.16	0.0000
78.74	126.2642	121.22	78.7250	228.18	60.5354
79.69	89.3810	121.78	81.0117	116.74	60.5354
80.12	99.0923	122.06	77.7155	235.69	71.1382
80.19	0.0000	122.92	77.8165	235.96	67.3450
80.57	99.1816	123.07	68.9388	238.63	73.8850
81.00	103.4035	265.00	62.3245	238.98	0.0000
81.07	98.2471	125.81	80.3870	240.99	102.1375
81.75	115.9854	127.23	70.4862	242.00	46.0052
83.79	109.5202	127.91	70.5571	244.70	49.9646
84.00	109.5652	129.30	77.8075	252.40	0.0000
85.43	125.1682	131.20	76.5228	252.80	55.9301
86.55	133.7998	133.02	83.4928	254.15	0.0000
86.79	145.0164	133.52	72.2607	256.23	57.8293
86.94	145.0577	136.00	73.6487	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	54.7853	355.39	0.0000	584.27	20.2463
264.80	53.0523	356.01	43.4348	595.83	0.0000
265.00	53.0623	364.49	0.0000	427.87	26.8483
268.22	45.7965	366.42	0.0000	602.52	0.0000
269.46	47.1555	372.51	30.2337	604.72	40.3503
270.03	47.1786	375.05	40.6966	607.14	22.6218
271.23	47.2269	377.52	35.0759	609.32	28.0365
273.65	0.0000	356.01	39.0331	610.33	28.0492
276.40	57.0998	388.16	37.2354	614.28	14.5909
277.37	43.9585	388.63	0.0000	618.01	25.9844
277.60	43.9677	391.69	30.6230	620.36	23.8441
278.00	51.0190	264.66	42.3520	621.93	31.4544
279.20	58.1152	401.81	38.5303	630.19	0.0000
279.54	59.0135	402.40	35.6541	631.29	20.6954
279.70	58.1394	404.85	39.5711	633.25	20.7140
280.46	55.5326	410.95	40.6935	634.78	0.0000
283.69	45.0764	413.71	39.7938	635.95	22.9226
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	52.2228	423.72	0.0000	645.85	13.1567
285.90	0.0000	427.09	38.1677	657.76	21.4924
287.50	47.8795	427.87	27.4155	657.90	0.0000
290.67	51.2039	433.94	37.3452	661.66	23.1849
293.27	0.0000	439.40	31.5521	664.57	0.0000
351.93	45.5049	453.88	24.8622	666.33	0.0000
295.96	45.5329	463.37	32.9993	666.50	0.0000
879.38	34.8923	468.07	33.0886	667.71	0.0000
299.98	44.3367	473.00	0.0000	677.62	21.1222
300.09	44.3397	475.06	35.2336	685.70	0.0000
300.13	44.3417	476.78	26.1989	695.00	0.0000
301.36	41.6950	477.60	25.2029	696.49	24.6542
302.85	43.0908	482.18	18.1930	696.51	28.0162
256.23	39.1024	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	36.9934
306.78	54.0320	497.08	22.4194	697.49	36.9961
308.46	35.1668	505.52	27.6411	702.65	31.4590
311.90	47.9191	507.63	0.0000	706.68	19.1319
316.51	45.3674	511.00	30.8029	711.68	20.2991
319.41	0.0000	514.00	32.3947	720.70	0.0000
320.08	0.0000	514.00	32.3947	721.93	0.0000
321.04	41.8831	520.40	25.7975	722.78	23.7908
323.87	49.2726	520.69	0.0000	722.91	23.7916
325.23	28.7718	522.65	0.0000	723.31	18.6968
328.76	0.0000	527.90	0.0000	724.19	18.7035
333.37	35.8397	528.26	25.9033	727.33	23.8344
333.97	31.7184	529.59	23.8479	733.00	17.0636
334.37	40.0042	529.87	0.0000	735.93	26.1951
338.28	43.3473	531.02	0.0000	333.97	13.6753
338.32	43.3482	537.26	0.0000	739.50	0.0000
311.90	40.1839	546.56	0.0000	747.24	25.7419
340.48	40.1839	552.55	26.2278	748.06	20.6001
340.55	0.0000	563.25	16.8757	752.31	21.7809
344.28	42.6103	569.33	31.7371	753.82	0.0000
345.93	34.4996	946.00	31.7395	756.73	20.6704
351.06	32.5782	569.70	31.7419	756.80	20.6711
351.93	32.5989	583.19	20.2362	884.68	19.5774

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	32.2679	1274.44	18.7335	1620.50	3.2950
766.42	27.6650	1001.03	13.1331	1621.92	8.7896
766.84	25.3641	1002.74	18.7720	1678.03	0.0000
772.60	0.0000	1004.73	15.9660	1690.97	4.4578
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	3.6189
778.90	25.4823	1028.54	0.0000	1063.66	15.3979
783.70	0.0000	1037.84	26.5662	1771.35	3.3973
785.37	17.4170	1038.76	0.0000	1791.20	0.0000
792.07	18.6257	631.29	23.7839	1808.65	3.6500
794.95	13.9844	1048.07	0.0000	1810.72	0.0000
795.86	16.3208	1049.04	12.3763	1836.06	2.7519
810.06	19.3380	1050.41	19.0491		
810.29	19.3393	1063.66	13.3873		
344.28	19.3406	1077.00	0.0000		
810.76	18.4634	1077.34	13.4412		
815.77	0.0000	1085.87	12.5128		
1048.07	0.0000	1093.63	13.5061		
832.01	26.5833	1099.45	22.2251		
834.85	18.6275	1112.07	10.6683		
835.71	23.9571	1112.84	12.6112		
836.80	0.0000	1115.54	12.4266		
846.75	0.0000	1120.29	13.6104		
846.77	15.6788	1120.55	13.6112		
856.80	0.0000	1221.41	12.9655		
860.56	14.3237	1129.67	18.7148		
871.09	17.0726	1131.51	0.0000		
873.19	17.4708	1147.95	0.0000		
875.33	0.0000	1173.23	7.8936		
879.38	17.1225	1177.95	11.0653		
880.51	17.1289	1189.05	17.4410		
883.24	14.4380	1204.77	21.8939		
884.68	10.8340	1221.41	12.9952		
889.28	15.3725	1231.02	22.4492		
894.76	15.4016	1235.36	0.0000		
898.04	15.4187	1238.28	19.0777		
900.72	15.4332	1260.41	0.0000		
903.28	14.5381	1271.87	11.1423		
911.20	16.3993	1274.44	8.1089		
912.08	16.4042	1274.54	6.4871		
923.98	0.0000	1291.59	14.6602		
926.50	21.9785	1298.22	0.0000		
929.11	17.5980	1312.11	0.0000		
937.49	20.2202	1332.49	7.2000		
944.13	0.0000	1362.66	0.0000		
946.00	21.1989	1365.19	3.3180		
949.00	15.6838	1368.63	0.0000		
667.71	0.0000	1384.29	6.2498		
962.31	21.3119	1408.01	5.2377		
964.08	17.8008	1457.56	0.0000		
966.17	26.7196	1460.82	6.3629		
911.20	18.5718	1489.16	8.5391		
968.97	18.5718	1505.03	10.7117		
983.53	0.0000	1584.12	9.8091		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 09:26:31.23

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621356.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM06.CNF;499
Background date    : 2-OCT-2016 11:00:12.
Sample date       : 12-SEP-2016 00:00:00 Acquisition date : 3-OCT-2016 09:11:02.
Sample ID        : G1203621356 Sample quantity : 1.15000E+02 GRAM
Detector name     : GAM06 Detector geometry: CAN
Elapsed live time : 0 00:15:00.00 Elapsed real time: 0 00:15:04.89 0.5%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1596249 Detector SN# :
Matrix Spike ID   : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	37.09	94	2568	1.24	73.94	72	5	1.04E-01	81.9	
2	9	45.10	450	2604	1.83	89.95	87	10	5.00E-01	17.4	1.64E+00
3	9	46.51*	5038	2670	0.92	92.76	87	10	5.60E+00	2.2	
4	0	51.85	142	2206	1.45	103.43	102	5	1.58E-01	50.2	
5	0	59.50	14909	3321	0.98	118.71	114	11	1.66E+01	1.1	
6	0	88.00	2482	1352	1.01	175.67	171	10	2.76E+00	3.4	
7	0	122.28	298	865	1.02	244.18	240	9	3.31E-01	18.8	
8	0	164.58	98	639	1.37	328.71	325	8	1.09E-01	46.0	
9	0	167.41	39	491	1.38	334.36	333	6	4.30E-02	91.6	
10	0	225.90	80	770	1.51	451.26	448	8	8.91E-02	61.0	
11	0	284.90	66	474	1.57	569.18	567	7	7.33E-02	55.8	
12	0	385.80	72	471	1.33	770.85	767	8	7.99E-02	53.6	
13	0	661.30	11854	494	1.46	1321.61	1316	14	1.32E+01	1.0	
14	0	739.32	61	264	4.33	1477.62	1472	11	6.81E-02	53.1	
15	0	891.33	42	198	0.73	1781.56	1779	6	4.64E-02	55.6	
16	0	996.25	42	227	1.32	1991.39	1987	8	4.62E-02	64.9	
17	0	1086.07	81	406	6.36	2171.03	2164	17	9.05E-02	57.9	
18	0	1115.01	167	346	4.31	2228.91	2221	15	1.85E-01	25.6	
19	0	1162.31	49	105	1.81	2323.52	2321	9	5.48E-02	39.6	
20	0	1172.54	7487	330	1.92	2343.98	2334	20	8.32E+00	1.3	
21	0	1331.69	6682	73	2.13	2662.34	2653	18	7.42E+00	1.3	
22	0	1351.56	22	9	2.31	2702.08	2696	12	2.47E-02	34.2	
23	0	1398.56	11	10	0.88	2796.11	2791	10	1.19E-02	71.4	
24	0	1484.54	7	15	1.16	2968.13	2960	10	7.27E-03	123.9	
25	0	1548.58	15	7	2.25	3096.27	3087	14	1.67E-02	45.5	
26	0	1585.08	7	6	0.59	3169.29	3160	12	7.78E-03	79.5	

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

VMS Nuclide Identification Report V3.1 Generated 3-OCT-2016 09:26:33

Configuration	: DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621356.CNF;1	
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4	
Sample title	: MXR1	
Sample date	: 12-SEP-2016 00:00:00	Acquisition date : 3-OCT-2016 09:11:02
Sample ID	: G1203621356	Sample quantity : 115.00 GRAM
Sample type	: SOLID	Sample geometry :
Detector name	: GAMMA6	Detector geometry: CAN
Elapsed live time:	0 00:15:00.00	Elapsed real time: 0 00:15:04.89 0.5%
Energy tolerance :	1.50 keV	Half life ratio : 10.00
Errors propagated:	No	Systematic Error : 0.00 %
Efficiency type	: Empirical	Efficiencies at : Peak Energy
Abundance limit	: 75.00	

Interference Report

No interference correction performed

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
CO-57	122.06	312	85.60*	6.177E+00	1.540E+00	1.627E+00	37.61
	136.47	-----	10.68	6.083E+00	-----	Line Not Found	-----
CO-60	1173.23	7132	99.85	1.227E+00	1.520E+02	1.532E+02	2.60
	1332.49	6329	99.98*	1.092E+00	1.514E+02	1.526E+02	2.52
ZN-65	1115.54	159	50.60*	1.285E+00	6.384E+00	6.784E+00	51.23
CD-109	88.03	2636	3.70*	5.253E+00	3.541E+02	3.657E+02	6.86
SN-126	64.28	-----	9.60	2.772E+00	-----	Line Not Found	-----
	86.94	2636	8.90	5.253E+00	1.472E+02	1.472E+02	6.86
	87.57	2636	37.00*	5.253E+00	3.541E+01	3.541E+01	6.86
BA-137M	661.66	11577	89.90*	2.028E+00	1.658E+02	1.660E+02	2.00
CS-137	661.66	11577	85.10*	2.028E+00	1.751E+02	1.754E+02	2.00
CE-139	165.86	101	80.00*	5.647E+00	5.856E-01	6.522E-01	91.98
PM-147	121.22	312	0.00*	6.177E+00	4.626E+04	4.698E+04	37.61
PM-149	285.90	67	3.10*	3.879E+00	1.450E+01	1.181E+04	111.62
TM-171	51.35	154	0.27	1.156E+00	1.290E+03	1.318E+03	100.40
	52.39	154	0.47*	1.156E+00	7.413E+02	7.572E+02	100.40
	66.73	-----	0.14	3.097E+00	-----	Line Not Found	-----
PB-210	46.54	5485	4.25*	6.176E-01	5.456E+03	5.466E+03	4.39
AM-241	59.54	16078	35.90*	2.126E+00	5.502E+02	5.503E+02	2.27

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621356.CNF;1  *
* Acquisition date   : 3-OCT-2016 09:11:02 Sensitivity      : 3.000             *
* Detector ID        : GAM06 Energy tolerance: 1.500       *
* Elapsed live time  : 0 00:15:00.00 Abundance limit: 75.000  *
* Elapsed real time  : 0 00:15:04.89 Half life ratio: ***** *
* Sample date        : 12-SEP-2016 00:00:00 Analyst initials: MXR1          *
* Sample ID          : G1203621356 Sample Quantity: 1.1500E+02 GRAM          *
* Batch Number       : 1596249 Wet Weight : 0.00000        *
* Wet wt corr        : 1.00000 Dry Weight : 0.00000         *
* Nuclide Library    : SOLID.NLB;6                                           *
*****
*
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 8-MAR-2016 07:26:53 Eff. Geometry   : CAN              *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM06 CAN.CNF;14          *
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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
CO-57	1.627E+00	5.996E-01	5.200E-01
CO-60	1.526E+02	3.766E+00	7.581E-01
ZN-65	6.784E+00	3.406E+00	2.990E+00
CD-109	3.657E+02	2.458E+01	1.573E+01
SN-126	3.541E+01	2.380E+00	1.532E+00
BA-137M	1.660E+02	3.261E+00	1.030E+00
CS-137	1.754E+02	3.445E+00	1.088E+00
CE-139	6.522E-01	5.879E-01	5.730E-01
PM-147	4.698E+04	1.732E+04	1.501E+04
PM-149	1.181E+04	1.292E+04	1.770E+04
TM-171	7.572E+02	7.450E+02	9.011E+02
PB-210	5.466E+03	2.349E+02	1.949E+02
AM-241	5.503E+02	1.222E+01	5.831E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.900E+00	6.816E+00	1.190E+01	NOT IDENT.
NA-22	1.218E-01	4.037E-01	7.655E-01	NOT IDENT.
NA-24	0.000E+00	4.969E+09	0.000E+00	SHORT HLIF
AL-26	1.818E-01	2.534E-01	5.666E-01	NOT IDENT.
K-40	2.569E-01	2.569E+00	5.087E+00	NOT IDENT.
SC-46	8.129E-01	9.793E-01	1.540E+00	NOT IDENT.
V-48	-3.611E-01	1.899E+00	3.376E+00	NOT IDENT.
CR-51	7.870E+00	6.403E+00	1.208E+01	NOT IDENT.
MN-54	2.281E-01	6.938E-01	1.195E+00	NOT IDENT.
CO-56	-7.242E-01	8.545E-01	1.385E+00	NOT IDENT.
MN-56	0.000E+00	1.170E+41	0.000E+00	SHORT HLIF
CO-58	-3.445E-01	8.146E-01	1.355E+00	NOT IDENT.
FE-59	-1.166E+00	2.025E+00	3.508E+00	NOT IDENT.
GE-68	2.860E+00	2.610E+01	4.665E+01	NOT IDENT.
AS-73	-2.100E+01	2.669E+01	4.415E+01	NOT IDENT.
AS-74	-1.482E+00	1.940E+00	3.269E+00	NOT IDENT.
SE-75	4.911E-01	6.981E-01	1.193E+00	FAIL ABUN

BR-77	1.824E+02	7.495E+02	1.270E+03	NOT IDENT.
SR-82	1.460E-01	6.875E+00	1.178E+01	NOT IDENT.
RB-83	6.953E-01	1.238E+00	2.231E+00	NOT IDENT.
KR-85	-4.998E+01	1.071E+02	1.852E+02	NOT IDENT.
SR-85	-2.829E-01	6.060E-01	1.048E+00	NOT IDENT.
RB-86	5.068E+00	2.010E+01	3.617E+01	NOT IDENT.
Y-88	1.861E-01	3.101E-01	6.718E-01	NOT IDENT.
Y-91	-1.102E+02	2.525E+02	4.423E+02	NOT IDENT.
NB-94	1.422E-02	5.048E-01	8.744E-01	NOT IDENT.
NB-95	1.502E-01	7.252E-01	1.255E+00	NOT IDENT.
NB-95M	1.075E+00	1.742E+00	2.986E+00	NOT IDENT.
ZR-95	-5.329E-01	1.334E+00	2.239E+00	NOT IDENT.
NB-97	0.000E+00	5.816E+40	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.203E+10	0.000E+00	SHORT HLIF
MO-99	1.529E+03	1.590E+03	1.722E+03	FAIL ABUN
TC-99M	0.000E+00	1.311E+25	0.000E+00	SHORT HLIF
RH-101	-5.671E-02	3.599E-01	6.257E-01	NOT IDENT.
RH-102	-5.007E-02	8.620E-01	1.498E+00	NOT IDENT.
RU-103	6.113E-01	7.813E-01	1.418E+00	NOT IDENT.
RH-106	-1.772E+00	5.129E+00	8.791E+00	NOT IDENT.
RU-106	-1.772E+00	5.129E+00	8.791E+00	NOT IDENT.
AG-108M	1.015E-01	5.671E-01	1.011E+00	NOT IDENT.
AG-110M	-2.468E-01	1.090E+00	1.813E+00	NOT IDENT.
SN-113	4.319E-01	7.584E-01	1.384E+00	NOT IDENT.
CD-115	4.932E+02	1.318E+03	2.356E+03	NOT IDENT.
SN-117M	6.257E-01	8.749E-01	1.547E+00	NOT IDENT.
TE-123M	1.149E-01	3.439E-01	6.001E-01	NOT IDENT.
SB-124	-8.329E-01	7.390E-01	1.073E+00	NOT IDENT.
SB-125	-9.187E-01	1.645E+00	2.871E+00	NOT IDENT.
TE-125M	6.992E+01	1.179E+02	2.118E+02	NOT IDENT.
I-126	-3.153E-01	5.416E+00	8.351E+00	NOT IDENT.
SB-126	1.420E+00	3.273E+00	5.766E+00	NOT IDENT.
SB-127	-4.207E+01	6.444E+01	1.078E+02	NOT IDENT.
I-131	-3.580E-01	3.103E+00	5.574E+00	FAIL ABUN
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	1.188E+01	4.376E+01	6.845E+01	NOT IDENT.
BA-133	-1.834E-01	6.572E-01	1.175E+00	NOT IDENT.
I-133	0.000E+00	1.446E+07	0.000E+00	SHORT HLIF
CS-134	-1.346E-01	7.171E-01	1.212E+00	NOT IDENT.
CS-135	3.058E-01	2.324E+00	3.880E+00	NOT IDENT.
I-135	0.000E+00	4.270E+23	0.000E+00	SHORT HLIF
CS-136	-1.037E-01	3.030E+00	5.394E+00	NOT IDENT.
BA-140	2.364E+00	6.151E+00	1.099E+01	NOT IDENT.
LA-140	2.730E-01	9.107E-01	1.847E+00	NOT IDENT.
CE-141	-5.769E-01	8.028E-01	1.357E+00	NOT IDENT.
CE-143	0.000E+00	4.336E+04	0.000E+00	SHORT HLIF
CE-144	1.140E+00	2.299E+00	4.074E+00	NOT IDENT.
PM-144	-5.622E-02	5.315E-01	9.145E-01	NOT IDENT.
PR-144	-4.644E+00	3.989E+01	6.859E+01	NOT IDENT.
PM-146	-5.729E-01	8.390E-01	1.451E+00	NOT IDENT.
ND-147	-9.134E-01	1.371E+01	2.407E+01	NOT IDENT.
EU-150	-1.768E-01	3.984E-01	7.119E-01	NOT IDENT.
EU-152	-2.253E-01	1.440E+00	2.593E+00	FAIL ABUN
GD-153	-4.815E-01	9.736E-01	1.700E+00	NOT IDENT.
EU-154	3.175E-01	1.137E+00	2.153E+00	FAIL ABUN
EU-155	2.236E-01	1.233E+00	2.189E+00	FAIL ABUN
TB-160	9.867E-01	2.934E+00	5.021E+00	FAIL ABUN
HO-166M	7.945E-01	9.576E-01	1.723E+00	NOT IDENT.
HF-172	2.123E+00	2.339E+00	3.926E+00	FAIL ABUN
LU-172	-3.481E-01	1.541E+00	2.379E+00	FAIL ABUN
LU-176	-9.479E-02	3.846E-01	6.956E-01	FAIL ABUN
HF-181	-2.714E-01	9.176E-01	1.601E+00	NOT IDENT.
TA-182	-1.101E+00	1.741E+00	3.010E+00	NOT IDENT.
RE-183	0.000E+00	5.916E+00	1.229E+01	FAIL ABUN
RE-184	9.017E-01	3.102E+00	5.271E+00	NOT IDENT.
W-188	-8.103E+01	1.177E+02	1.888E+02	FAIL ABUN
IR-192	-3.332E-01	5.418E-01	9.665E-01	NOT IDENT.
HG-203	-1.094E-01	6.467E-01	1.063E+00	NOT IDENT.
BI-207	-3.845E-01	1.022E+00	1.793E+00	NOT IDENT.
TL-208	-1.255E-01	5.507E-01	9.552E-01	NOT IDENT.
BI-211	2.417E+00	3.053E+00	5.656E+00	NOT IDENT.
PB-211	2.617E+00	1.173E+01	2.112E+01	NOT IDENT.
BI-212	3.240E+00	8.152E+00	1.431E+01	NOT IDENT.
PB-212	1.849E-01	7.737E-01	1.311E+00	NOT IDENT.
BI-214	-3.655E-01	1.097E+00	1.887E+00	NOT IDENT.
PB-214	8.612E-01	1.111E+00	2.057E+00	FAIL ABUN
RN-219	-9.777E-01	6.652E+00	1.184E+01	NOT IDENT.
RN-222	-3.655E-01	1.097E+00	1.887E+00	NOT IDENT.

RA-223	6.770E+00	9.522E+00	1.766E+01	NOT IDENT.
RA-224	-4.861E+00	8.388E+00	1.374E+01	NOT IDENT.
RA-226	-3.655E-01	1.097E+00	1.887E+00	NOT IDENT.
AC-227	2.578E-02	3.693E+00	6.160E+00	NOT IDENT.
TH-227	2.578E-02	3.693E+00	6.160E+00	NOT IDENT.
AC-228	1.598E+00	3.237E+00	5.530E+00	NOT IDENT.
RA-228	1.598E+00	3.237E+00	5.530E+00	NOT IDENT.
TH-228	1.849E-01	7.737E-01	1.311E+00	NOT IDENT.
TH-229	2.881E-01	6.823E+00	1.161E+01	FAIL ABUN
TH-230	-3.655E-01	1.097E+00	1.887E+00	NOT IDENT.
PA-231	-1.169E+00	6.678E+00	1.212E+01	FAIL ABUN
TH-231	6.770E+00	9.522E+00	1.766E+01	NOT IDENT.
TH-232	1.598E+00	3.237E+00	5.530E+00	NOT IDENT.
PA-233	4.085E-01	9.866E-01	1.816E+00	NOT IDENT.
PA-234	-3.750E+00	7.176E+00	1.260E+01	NOT IDENT.
PA-234M	4.808E+01	9.825E+01	1.672E+02	NOT IDENT.
TH-234	-3.161E+00	1.747E+01	2.925E+01	NOT IDENT.
U-234	-3.655E-01	1.097E+00	1.887E+00	NOT IDENT.
U-235	4.519E-02	2.294E+00	3.983E+00	FAIL ABUN
NP-237	4.085E-01	9.866E-01	1.816E+00	NOT IDENT.
NP-238	0.000E+00	3.252E+03	0.000E+00	SHORT HLIF
U-238	-3.161E+00	1.747E+01	2.925E+01	NOT IDENT.
NP-239	4.003E+00	3.145E+00	5.739E+00	NOT IDENT.
PU-239	-7.410E+02	3.782E+03	6.563E+03	NOT IDENT.
AM-243	8.737E-02	6.262E-01	1.127E+00	NOT IDENT.
CM-243	7.468E-01	1.220E+00	2.198E+00	NOT IDENT.
BK-247	7.513E-01	1.215E+00	2.069E+00	FAIL ABUN
CM-247	-1.226E-01	6.205E-01	1.102E+00	NOT IDENT.
CF-249	-5.793E-02	6.933E-01	1.115E+00	NOT IDENT.
CF-251	6.516E-01	1.500E+00	2.613E+00	FAIL ABUN
ANH-511	6.898E-03	4.657E-01	8.338E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
CO-57	122.06	312	85.60*	6.177E+00	1.540E+00	1.627E+00	37.61
	136.47	-----	10.68	6.083E+00	-----	Line Not Found	-----
CO-60	1173.23	7132	99.85	1.227E+00	1.520E+02	1.532E+02	2.60
	1332.49	6329	99.98*	1.092E+00	1.514E+02	1.526E+02	2.52
ZN-65	1115.54	159	50.60*	1.285E+00	6.384E+00	6.784E+00	51.23
CD-109	88.03	2636	3.70*	5.253E+00	3.541E+02	3.657E+02	6.86
SN-126	64.28	-----	9.60	2.772E+00	-----	Line Not Found	-----
	86.94	2636	8.90	5.253E+00	1.472E+02	1.472E+02	6.86
	87.57	2636	37.00*	5.253E+00	3.541E+01	3.541E+01	6.86
BA-137M	661.66	11577	89.90*	2.028E+00	1.658E+02	1.660E+02	2.00
CS-137	661.66	11577	85.10*	2.028E+00	1.751E+02	1.754E+02	2.00
CE-139	165.86	101	80.00*	5.647E+00	5.856E-01	6.522E-01	91.98
PM-147	121.22	312	0.00*	6.177E+00	4.626E+04	4.698E+04	37.61
PM-149	285.90	67	3.10*	3.879E+00	1.450E+01	1.181E+04	111.62
TM-171	51.35	154	0.27	1.156E+00	1.290E+03	1.318E+03	100.40
	52.39	154	0.47*	1.156E+00	7.413E+02	7.572E+02	100.40
	66.73	-----	0.14	3.097E+00	-----	Line Not Found	-----
PB-210	46.54	5485	4.25*	6.176E-01	5.456E+03	5.466E+03	4.39
AM-241	59.54	16078	35.90*	2.126E+00	5.502E+02	5.503E+02	2.27

Flag: "*" = Keyline

Total number of lines in spectrum 26
Number of unidentified lines 9
Number of lines tentatively identified by NID 17 65.38%

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	1.540E+00	1.627E+00	0.612E+00	37.61	
CO-60	5.27Y	1.01	1.514E+02	1.526E+02	0.038E+02	2.52	
ZN-65	244.06D	1.06	6.384E+00	6.784E+00	3.476E+00	51.23	
CD-109	461.40D	1.03	3.541E+02	3.657E+02	0.251E+02	6.86	
SN-126	2.30E+05Y	1.00	3.541E+01	3.541E+01	0.243E+01	6.86	
BA-137M	30.08Y	1.00	1.658E+02	1.660E+02	0.033E+02	2.00	
CS-137	30.08Y	1.00	1.751E+02	1.754E+02	0.035E+02	2.00	
CE-139	137.64D	1.11	5.856E-01	6.522E-01	5.999E-01	91.98	
PM-147	2.62Y	1.02	4.626E+04	4.698E+04	1.767E+04	37.61	
PM-149	53.08H	815.	1.450E+01	1.181E+04	1.319E+04	111.62	
TM-171	1.92Y	1.02	7.413E+02	7.572E+02	7.602E+02	100.40	
PB-210	22.20Y	1.00	5.456E+03	5.466E+03	0.240E+03	4.39	
AM-241	432.60Y	1.00	5.502E+02	5.503E+02	0.125E+02	2.27	

Total Activity : 5.392E+04 6.648E+04

Grand Total Activity : 5.392E+04 6.648E+04

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	37.09	103	2821	1.24	73.94	72	5	1.04E-01	****	1.01E-01	
9	45.10	491	2838	1.83	89.95	87	10	5.00E-01	34.9	5.04E-01	T
0	167.41	40	508	1.38	334.36	333	6	4.30E-02	****	5.60E+00	
0	225.90	82	787	1.51	451.26	448	8	8.91E-02	****	4.61E+00	T
0	385.80	72	471	1.33	770.85	767	8	7.99E-02	****	3.08E+00	
0	739.32	60	256	4.33	1477.62	1472	11	6.81E-02	****	1.85E+00	T
0	891.33	40	191	0.73	1781.56	1779	6	4.64E-02	****	1.57E+00	
0	996.25	40	218	1.32	1991.39	1987	8	4.62E-02	****	1.42E+00	T
0	1086.07	78	388	6.36	2171.03	2164	17	9.05E-02	****	1.32E+00	T
0	1162.31	47	100	1.81	2323.52	2321	9	5.48E-02	79.3	1.24E+00	
0	1351.56	21	8	2.31	2702.08	2696	12	2.47E-02	68.5	1.08E+00	
0	1398.56	10	10	0.88	2796.11	2791	10	1.19E-02	****	1.04E+00	
0	1484.54	6	15	1.16	2968.13	2960	10	7.27E-03	****	9.90E-01	
0	1548.58	14	7	2.25	3096.27	3087	14	1.67E-02	90.9	9.55E-01	
0	1585.08	7	6	0.59	3169.29	3160	12	7.78E-03	****	9.36E-01	T

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621356.CNF;1
* Acquisition date   : 3-OCT-2016 09:11:02 Sensitivity      : 3.000
* Detector ID        : GAM06 Energy tolerance: 1.500
* Elapsed live time  : 0 00:15:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 00:15:04.89 Half life ratio : *****
* Sample date        : 12-SEP-2016 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1203621356 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.1500E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 8-MAR-2016 07:26:53 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM06 CAN.CNF;14
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
CO-57	2.530E-01
CO-60	3.467E-01
ZN-65	1.438E+00
CD-109	7.678E+00
SN-126	7.477E-01
BA-137M	4.959E-01
CS-137	5.239E-01
CE-139	2.778E-01
PM-147	7.302E+03
PM-149	8.612E+03
TM-171	4.443E+02
PB-210	9.613E+01
AM-241	2.870E+00

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

Nuclide	Lc (pCi/GRAM)	
BE-7	5.782E+00	NOT IDENT.
NA-22	3.514E-01	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.417E-01	NOT IDENT.
K-40	2.216E+00	NOT IDENT.
SC-46	7.435E-01	NOT IDENT.
V-48	1.627E+00	NOT IDENT.
CR-51	5.869E+00	NOT IDENT.
MN-54	5.754E-01	NOT IDENT.
CO-56	6.668E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-58	6.523E-01	NOT IDENT.
FE-59	1.688E+00	NOT IDENT.
GE-68	2.247E+01	NOT IDENT.
AS-73	2.177E+01	NOT IDENT.
AS-74	1.573E+00	NOT IDENT.
SE-75	5.800E-01	FAIL ABUN
BR-77	6.175E+02	NOT IDENT.

SR-82	5.653E+00	NOT IDENT.
RB-83	1.078E+00	NOT IDENT.
KR-85	8.933E+01	NOT IDENT.
SR-85	5.056E-01	NOT IDENT.
RB-86	1.741E+01	NOT IDENT.
Y-88	2.873E-01	NOT IDENT.
Y-91	2.066E+02	NOT IDENT.
NB-94	4.190E-01	NOT IDENT.
NB-95	6.029E-01	NOT IDENT.
NB-95M	1.453E+00	NOT IDENT.
ZR-95	1.075E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	8.266E+02	FAIL ABUN
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.043E-01	NOT IDENT.
RH-102	7.191E-01	NOT IDENT.
RU-103	6.869E-01	NOT IDENT.
RH-106	4.223E+00	NOT IDENT.
RU-106	4.223E+00	NOT IDENT.
AG-108M	4.921E-01	NOT IDENT.
AG-110M	8.742E-01	NOT IDENT.
SN-113	6.721E-01	NOT IDENT.
CD-115	1.137E+03	NOT IDENT.
SN-117M	7.525E-01	NOT IDENT.
TE-123M	2.918E-01	NOT IDENT.
SB-124	4.303E-01	NOT IDENT.
SB-125	1.394E+00	NOT IDENT.
TE-125M	1.031E+02	NOT IDENT.
I-126	4.009E+00	NOT IDENT.
SB-126	2.769E+00	NOT IDENT.
SB-127	5.163E+01	NOT IDENT.
I-131	2.702E+00	FAIL ABUN
I-132	0.000E+00	SHORT HLIF
TE-132	3.333E+01	NOT IDENT.
BA-133	5.702E-01	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.818E-01	NOT IDENT.
CS-135	1.886E+00	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	2.598E+00	NOT IDENT.
BA-140	5.305E+00	NOT IDENT.
LA-140	7.970E-01	NOT IDENT.
CE-141	6.590E-01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	1.982E+00	NOT IDENT.
PM-144	4.384E-01	NOT IDENT.
PR-144	3.288E+01	NOT IDENT.
PM-146	7.056E-01	NOT IDENT.
ND-147	1.161E+01	NOT IDENT.
EU-150	3.453E-01	NOT IDENT.
EU-152	1.257E+00	FAIL ABUN
GD-153	8.274E-01	NOT IDENT.
EU-154	9.877E-01	FAIL ABUN
EU-155	1.066E+00	FAIL ABUN
TB-160	2.421E+00	FAIL ABUN
HO-166M	8.276E-01	NOT IDENT.
HF-172	1.911E+00	FAIL ABUN
LU-172	1.146E+00	FAIL ABUN
LU-176	3.376E-01	FAIL ABUN
HF-181	7.769E-01	NOT IDENT.
TA-182	1.380E+00	NOT IDENT.
RE-183	6.083E+00	FAIL ABUN
RE-184	2.546E+00	NOT IDENT.
W-188	9.159E+01	FAIL ABUN
IR-192	4.687E-01	NOT IDENT.
HG-203	5.167E-01	NOT IDENT.
BI-207	8.616E-01	NOT IDENT.
TL-208	4.592E-01	NOT IDENT.
BI-211	2.746E+00	NOT IDENT.
PB-211	1.025E+01	NOT IDENT.
BI-212	6.876E+00	NOT IDENT.
PB-212	6.374E-01	NOT IDENT.
BI-214	9.082E-01	NOT IDENT.
PB-214	9.989E-01	FAIL ABUN
RN-219	5.744E+00	NOT IDENT.
RN-222	9.082E-01	NOT IDENT.
RA-223	8.583E+00	NOT IDENT.

RA-224	6.673E+00	NOT IDENT.
RA-226	9.082E-01	NOT IDENT.
AC-227	2.992E+00	NOT IDENT.
TH-227	2.992E+00	NOT IDENT.
AC-228	2.677E+00	NOT IDENT.
RA-228	2.677E+00	NOT IDENT.
TH-228	6.374E-01	NOT IDENT.
TH-229	5.651E+00	FAIL ABUN
TH-230	9.082E-01	NOT IDENT.
PA-231	5.884E+00	FAIL ABUN
TH-231	8.583E+00	NOT IDENT.
TH-232	2.677E+00	NOT IDENT.
PA-233	8.831E-01	NOT IDENT.
PA-234	6.106E+00	NOT IDENT.
PA-234M	8.070E+01	NOT IDENT.
TH-234	1.426E+01	NOT IDENT.
U-234	9.082E-01	NOT IDENT.
U-235	1.938E+00	FAIL ABUN
NP-237	8.831E-01	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
U-238	1.426E+01	NOT IDENT.
NP-239	2.797E+00	NOT IDENT.
PU-239	3.190E+03	NOT IDENT.
AM-243	5.507E-01	NOT IDENT.
CM-243	1.070E+00	NOT IDENT.
BK-247	1.006E+00	FAIL ABUN
CM-247	5.348E-01	NOT IDENT.
CF-249	5.404E-01	NOT IDENT.
CF-251	1.269E+00	FAIL ABUN
ANH-511	4.028E-01	NOT IDENT.

```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road      *
*               Charleston, SC 29407  *
*                                     *
*****
*
*               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621356.CNF;1
* Acquisition date   : 3-OCT-2016 09:11:02 Sensitivity      : 3.000
* Detector ID        : GAM06 Energy tolerance: 1.500
* Elapsed live time  : 0 00:15:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 00:15:04.89 Half life ratio : *****
* Sample date        : 12-SEP-2016 00:00:00 Nuclide Library: SOLID
* Sample ID          : G1203621356 Analyst initials: MXR1
* Batch Number       : 1596249 Sample Quantity : 1.1500E+02 GRAM
*                               Quantity Err(%) : 1.7391E-03 %
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000
*                               Dry Weight       : 0.00000
*****
*
*               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 8-MAR-2016 07:26:53 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM06 CAN.CNF;14
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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
CO-57	1.627E+00	6.110E-01	6.110E-01
CO-60	1.526E+02	1.245E+01	1.245E+01
ZN-65	6.784E+00	3.615E+00	3.615E+00
CD-109	3.657E+02	4.352E+01	4.352E+01
SN-126	3.541E+01	3.774E+00	3.774E+00
BA-137M	1.660E+02	1.409E+01	1.409E+01
CS-137	1.754E+02	1.488E+01	1.488E+01
CE-139	6.522E-01	6.035E-01	6.035E-01
PM-147	4.698E+04	1.765E+04	1.765E+04
PM-149	1.181E+04	1.306E+04	1.306E+04
TM-171	7.572E+02	7.483E+02	7.483E+02
PB-210	5.466E+03	5.253E+02	5.253E+02
AM-241	5.503E+02	4.434E+01	4.434E+01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-1.900E+00	6.818E+00	6.872E+00	NOT IDENT.
NA-22	1.218E-01	4.038E-01	4.075E-01	NOT IDENT.
NA-24	-5.212E+08	4.970E+09	4.975E+09	SHORT HLIF
AL-26	1.818E-01	2.538E-01	2.667E-01	NOT IDENT.
K-40	2.569E-01	2.569E+00	2.572E+00	NOT IDENT.
SC-46	8.129E-01	9.843E-01	1.050E+00	NOT IDENT.
V-48	-3.611E-01	1.900E+00	1.907E+00	NOT IDENT.
CR-51	7.870E+00	6.445E+00	7.357E+00	NOT IDENT.
MN-54	2.281E-01	6.943E-01	7.018E-01	NOT IDENT.
CO-56	-7.242E-01	8.585E-01	9.185E-01	NOT IDENT.
MN-56	-1.000E+41	1.175E+41	0.000E+00	SHORT HLIF
CO-58	-3.445E-01	8.155E-01	8.301E-01	NOT IDENT.
FE-59	-1.166E+00	2.037E+00	2.103E+00	NOT IDENT.
GE-68	2.860E+00	2.610E+01	2.614E+01	NOT IDENT.
AS-73	-2.100E+01	2.704E+01	2.865E+01	NOT IDENT.
AS-74	-1.482E+00	1.946E+00	2.058E+00	NOT IDENT.
SE-75	4.911E-01	6.996E-01	7.338E-01	FAIL ABUN

BR-77	1.824E+02	7.581E+02	7.625E+02	NOT IDENT.
SR-82	1.460E-01	6.875E+00	6.876E+00	NOT IDENT.
RB-83	6.953E-01	1.243E+00	1.282E+00	NOT IDENT.
KR-85	-4.998E+01	1.072E+02	1.095E+02	NOT IDENT.
SR-85	-2.829E-01	6.065E-01	6.198E-01	NOT IDENT.
RE-86	5.068E+00	2.012E+01	2.025E+01	NOT IDENT.
Y-88	1.861E-01	3.104E-01	3.215E-01	NOT IDENT.
Y-91	-1.102E+02	2.527E+02	2.575E+02	NOT IDENT.
NB-94	1.422E-02	5.048E-01	5.048E-01	NOT IDENT.
NB-95	1.502E-01	7.254E-01	7.285E-01	NOT IDENT.
NB-95M	1.075E+00	1.745E+00	1.812E+00	NOT IDENT.
ZR-95	-5.329E-01	1.335E+00	1.356E+00	NOT IDENT.
NB-97	1.000E+41	5.875E+40	0.000E+00	SHORT HLIF
ZR-97	2.497E+08	1.203E+10	1.203E+10	SHORT HLIF
MO-99	1.529E+03	1.598E+03	1.740E+03	FAIL ABUN
TC-99M	-8.303E+22	1.311E+25	0.000E+00	SHORT HLIF
RH-101	-5.671E-02	3.601E-01	3.610E-01	NOT IDENT.
RH-102	-5.007E-02	8.620E-01	8.623E-01	NOT IDENT.
RU-103	6.113E-01	7.832E-01	8.303E-01	NOT IDENT.
RH-106	-1.772E+00	5.132E+00	5.194E+00	NOT IDENT.
RU-106	-1.772E+00	5.132E+00	5.194E+00	NOT IDENT.
AG-108M	1.015E-01	5.671E-01	5.690E-01	NOT IDENT.
AG-110M	-2.468E-01	1.090E+00	1.096E+00	NOT IDENT.
SN-113	4.319E-01	7.593E-01	7.838E-01	NOT IDENT.
CD-115	4.932E+02	1.319E+03	1.337E+03	NOT IDENT.
SN-117M	6.257E-01	8.761E-01	9.203E-01	NOT IDENT.
TE-123M	1.149E-01	3.440E-01	3.479E-01	NOT IDENT.
SB-124	-8.329E-01	7.417E-01	8.314E-01	NOT IDENT.
SB-125	-9.187E-01	1.647E+00	1.698E+00	NOT IDENT.
TE-125M	6.992E+01	1.180E+02	1.222E+02	NOT IDENT.
I-126	-3.153E-01	5.416E+00	5.418E+00	NOT IDENT.
SB-126	1.420E+00	3.278E+00	3.339E+00	NOT IDENT.
SB-127	-4.207E+01	6.467E+01	6.740E+01	NOT IDENT.
I-131	-3.580E-01	3.104E+00	3.108E+00	FAIL ABUN
I-132	-1.000E+41	5.004E+41	0.000E+00	SHORT HLIF
TE-132	1.188E+01	4.378E+01	4.410E+01	NOT IDENT.
BA-133	-1.834E-01	6.574E-01	6.626E-01	NOT IDENT.
I-133	5.749E+06	1.449E+07	1.472E+07	SHORT HLIF
CS-134	-1.346E-01	7.173E-01	7.198E-01	NOT IDENT.
CS-135	3.058E-01	2.325E+00	2.329E+00	NOT IDENT.
I-135	-1.860E+23	4.368E+23	0.000E+00	SHORT HLIF
CS-136	-1.037E-01	3.030E+00	3.030E+00	NOT IDENT.
BA-140	2.364E+00	6.155E+00	6.246E+00	NOT IDENT.
LA-140	2.730E-01	9.110E-01	9.193E-01	NOT IDENT.
CE-141	-5.769E-01	8.038E-01	8.448E-01	NOT IDENT.
CE-143	-3.131E+04	4.346E+04	4.570E+04	SHORT HLIF
CE-144	1.140E+00	2.301E+00	2.358E+00	NOT IDENT.
PM-144	-5.622E-02	5.316E-01	5.322E-01	NOT IDENT.
PR-144	-4.644E+00	3.989E+01	3.995E+01	NOT IDENT.
PM-146	-5.729E-01	8.412E-01	8.799E-01	NOT IDENT.
ND-147	-9.134E-01	1.371E+01	1.372E+01	NOT IDENT.
EU-150	-1.768E-01	3.987E-01	4.066E-01	NOT IDENT.
EU-152	-2.253E-01	1.440E+00	1.443E+00	FAIL ABUN
GD-153	-4.815E-01	9.743E-01	9.982E-01	NOT IDENT.
EU-154	3.175E-01	1.138E+00	1.146E+00	FAIL ABUN
EU-155	2.236E-01	1.233E+00	1.237E+00	FAIL ABUN
TB-160	9.867E-01	2.936E+00	2.970E+00	FAIL ABUN
HO-166M	7.945E-01	9.606E-01	1.025E+00	NOT IDENT.
HF-172	2.123E+00	2.367E+00	2.554E+00	FAIL ABUN
LU-172	-3.481E-01	1.542E+00	1.550E+00	FAIL ABUN
LU-176	-9.479E-02	3.847E-01	3.870E-01	FAIL ABUN
HF-181	-2.714E-01	9.179E-01	9.260E-01	NOT IDENT.
TA-182	-1.101E+00	1.744E+00	1.813E+00	NOT IDENT.
RE-183	7.211E+01	9.687E+00	3.392E+01	FAIL ABUN
RE-184	9.017E-01	3.105E+00	3.131E+00	NOT IDENT.
W-188	-8.103E+01	1.182E+02	1.238E+02	FAIL ABUN
IR-192	-3.332E-01	5.427E-01	5.631E-01	NOT IDENT.
HG-203	-1.094E-01	6.468E-01	6.487E-01	NOT IDENT.
BI-207	-3.845E-01	1.024E+00	1.038E+00	NOT IDENT.
TL-208	-1.255E-01	5.508E-01	5.537E-01	NOT IDENT.
BI-211	2.417E+00	3.061E+00	3.249E+00	NOT IDENT.
PB-211	2.617E+00	1.173E+01	1.179E+01	NOT IDENT.
BI-212	3.240E+00	8.158E+00	8.287E+00	NOT IDENT.
PB-212	1.849E-01	7.739E-01	7.784E-01	NOT IDENT.
BI-214	-3.655E-01	1.098E+00	1.110E+00	NOT IDENT.
PB-214	8.612E-01	1.114E+00	1.180E+00	FAIL ABUN
RN-219	-9.777E-01	6.654E+00	6.668E+00	NOT IDENT.
RN-222	-3.655E-01	1.098E+00	1.110E+00	NOT IDENT.

RA-223	6.770E+00	9.548E+00	1.002E+01	NOT IDENT.
RA-224	-4.861E+00	8.400E+00	8.681E+00	NOT IDENT.
RA-226	-3.655E-01	1.098E+00	1.110E+00	NOT IDENT.
AC-227	2.578E-02	3.693E+00	3.693E+00	NOT IDENT.
TH-227	2.578E-02	3.693E+00	3.693E+00	NOT IDENT.
AC-228	1.598E+00	3.244E+00	3.323E+00	NOT IDENT.
RA-228	1.598E+00	3.244E+00	3.323E+00	NOT IDENT.
TH-228	1.849E-01	7.739E-01	7.784E-01	NOT IDENT.
TH-229	2.881E-01	6.823E+00	6.824E+00	FAIL ABUN
TH-230	-3.655E-01	1.098E+00	1.110E+00	NOT IDENT.
PA-231	-1.169E+00	6.684E+00	6.704E+00	FAIL ABUN
TH-231	6.770E+00	9.548E+00	1.002E+01	NOT IDENT.
TH-232	1.598E+00	3.244E+00	3.323E+00	NOT IDENT.
PA-233	4.085E-01	9.874E-01	1.004E+00	NOT IDENT.
PA-234	-3.750E+00	8.374E+00	8.543E+00	NOT IDENT.
PA-234M	4.808E+01	9.851E+01	1.009E+02	NOT IDENT.
TH-234	-3.161E+00	1.749E+01	1.754E+01	NOT IDENT.
U-234	-3.655E-01	1.098E+00	1.110E+00	NOT IDENT.
U-235	4.519E-02	2.294E+00	2.295E+00	FAIL ABUN
NP-237	4.085E-01	9.874E-01	1.004E+00	NOT IDENT.
NP-238	9.343E+02	3.255E+03	3.282E+03	SHORT HLIF
U-238	-3.161E+00	1.749E+01	1.754E+01	NOT IDENT.
NP-239	4.003E+00	3.169E+00	3.647E+00	NOT IDENT.
PU-239	-7.410E+02	3.783E+03	3.798E+03	NOT IDENT.
AM-243	8.737E-02	6.263E-01	6.275E-01	NOT IDENT.
CM-243	7.468E-01	1.222E+00	1.268E+00	NOT IDENT.
BK-247	7.513E-01	1.226E+00	1.272E+00	FAIL ABUN
CM-247	-1.226E-01	6.209E-01	6.233E-01	NOT IDENT.
CF-249	-5.793E-02	6.933E-01	6.938E-01	NOT IDENT.
CF-251	6.516E-01	1.502E+00	1.530E+00	FAIL ABUN
ANH-511	6.898E-03	4.657E-01	4.657E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	1841.6368	87.09	540.2142	136.47	460.9942
45.60	1632.1157	87.57	540.7593	140.51	426.1465
46.54	1637.0526	88.03	541.2784	143.76	420.8557
49.72	1436.5237	88.34	541.6288	144.24	399.0442
51.35	1549.3970	88.47	541.7759	145.44	418.7352
51.87	1588.1833	89.96	477.9510	152.43	392.0894
52.39	1590.6327	90.64	485.0193	153.25	408.5446
52.97	1670.1371	91.11	459.8628	154.21	377.0555
53.44	1700.5043	92.59	474.0950	156.02	407.9984
54.07	1766.8883	93.35	448.7623	158.56	373.9821
57.36	0.0000	94.56	435.3367	159.00	386.0335
57.53	1896.7218	94.65	435.4156	162.33	361.5121
57.98	1234.1639	94.67	435.4328	162.66	377.5258
59.27	1238.5405	94.87	435.6045	163.33	406.7118
59.32	1238.7048	97.43	466.9885	165.86	329.9534
59.54	1239.4467	98.43	431.8263	176.31	398.3127
60.96	1244.1995	98.44	431.8365	176.60	375.3414
61.17	1244.8989	99.53	425.9043	177.52	347.1316
62.93	483.8324	100.11	442.0270	181.07	391.8653
63.29	508.3216	102.03	438.7333	181.52	376.5805
63.58	535.1631	103.18	424.9270	184.41	463.5320
64.28	585.5295	103.37	425.0786	185.72	443.1284
66.73	544.6443	105.21	456.1524	193.51	427.1057
67.24	587.2230	105.31	456.2370	197.03	428.8974
67.68	615.2103	106.12	442.0823	198.01	456.5096
67.75	615.3185	106.47	465.1269	201.83	418.8242
69.67	596.2616	109.28	411.8016	203.43	430.9726
70.83	568.5532	111.00	414.0692	205.31	412.5306
72.81	570.3317	111.76	417.6237	210.85	463.2906
72.87	546.4139	114.06	432.3581	215.65	448.4814
74.66	573.7481	116.30	444.1089	222.11	478.3616
74.82	573.9606	116.74	413.2031	227.09	449.7927
74.97	592.7150	119.76	460.5810	227.38	435.9221
77.11	606.8308	121.12	417.2996	228.16	431.6065
78.74	575.3989	121.22	417.3686	228.18	431.6178
79.69	593.5003	121.78	417.7574	235.69	394.5819
80.12	623.1636	122.06	417.9518	235.96	417.0800
80.19	623.2599	122.92	418.5507	238.63	382.7823
80.57	634.1205	123.07	418.6542	238.98	384.1026
81.00	641.3106	123.68	414.6590	240.99	414.4981
81.07	641.4095	125.81	387.4579	242.00	387.6539
81.75	637.6574	127.23	422.5348	244.70	400.6040
83.79	614.3232	127.91	446.6158	252.40	389.3047
84.00	598.1945	129.30	410.5677	252.80	377.4751
85.43	627.8812	131.20	412.8418	254.15	0.0000
86.55	539.6000	133.02	410.9207	256.23	376.3369
86.79	539.8682	133.52	396.7395	260.90	370.7928
86.94	540.0412	136.00	433.6263	264.66	364.8504

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.80	352.7736	364.49	338.2066	600.60	219.9227
265.00	368.5981	366.42	368.6027	602.52	0.0000
268.22	389.1797	372.51	332.2588	604.72	214.2797
269.46	405.4677	375.05	345.2649	607.14	216.5708
270.03	393.4985	1093.63	321.0511	609.32	226.9834
271.23	408.5777	383.85	342.1172	610.33	202.6600
273.65	398.4865	388.16	323.0641	614.28	217.3422
276.40	357.8354	388.63	333.8947	618.01	189.1176
277.37	391.2734	391.69	335.0645	620.36	198.5469
277.60	391.3513	400.66	357.8993	621.93	212.0116
278.00	417.2699	401.81	349.1598	630.19	0.0000
279.20	395.6115	402.40	361.9377	631.29	191.3735
279.54	376.0659	404.85	341.7550	633.25	201.8459
279.70	376.1219	410.95	396.7425	634.78	217.4564
280.46	392.3735	413.71	373.8317	635.95	199.0155
283.69	317.4495	414.70	405.0286	636.99	182.6105
284.31	370.2850	423.72	355.2798	645.85	204.1021
285.41	390.4193	427.09	371.6702	657.76	221.9183
285.90	425.2024	427.87	392.0595	657.90	0.0000
287.50	364.7453	433.94	410.2072	661.66	219.1858
290.67	381.0799	439.40	393.1544	664.57	0.0000
293.27	0.0000	453.88	449.0684	666.33	194.5598
295.22	362.6666	463.37	442.3387	666.50	194.5750
295.96	339.2031	468.07	469.9850	667.71	0.0000
298.58	358.7325	473.00	437.3877	677.62	178.7435
299.98	372.0931	475.06	400.0995	685.70	195.2301
300.09	372.1295	476.78	409.9898	695.00	168.4976
300.13	372.1385	477.60	397.8772	696.49	182.3931
301.36	371.7025	482.18	366.6733	696.51	182.3931
302.85	355.4464	487.02	325.8087	697.00	180.3137
304.50	378.5610	492.35	327.7942	697.30	186.6992
304.85	370.3027	497.08	279.8274	697.49	184.5953
306.78	368.3877	505.52	255.1984	702.65	174.3835
308.46	376.4778	507.63	0.0000	706.68	169.3710
311.90	380.1000	511.00	251.1715	711.68	165.4696
316.51	373.0986	514.00	265.1476	720.70	176.8399
319.41	331.5927	514.00	265.1476	721.93	0.0000
320.08	325.8281	520.40	243.7690	722.78	169.4887
321.04	377.0369	520.69	241.8672	722.91	173.7927
323.87	348.9738	522.65	0.0000	723.31	183.4757
325.23	362.9910	527.90	238.9488	724.19	205.0126
328.76	348.6494	528.26	240.9496	727.33	183.7958
333.37	353.3668	529.59	243.0729	733.00	206.8672
333.97	366.4058	529.87	0.0000	735.93	171.5254
334.37	359.6604	531.02	245.2193	737.46	194.3115
338.28	377.1281	537.26	234.3029	739.50	199.8822
338.32	381.4512	546.56	0.0000	747.24	214.6289
340.48	351.0408	552.55	222.4182	748.06	204.9423
340.55	351.0657	563.25	222.6875	752.31	197.6999
344.28	340.8382	569.33	225.4023	753.82	192.3910
345.93	349.0748	569.50	225.4207	756.73	206.7765
351.06	326.9728	569.70	225.4391	756.80	206.7765
351.93	328.0572	583.19	213.9707	763.94	192.1133
355.39	0.0000	584.27	206.0427	765.81	190.0718
356.01	368.3571	595.83	243.6575	766.42	202.1405

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
766.84	205.4567	1002.74	241.3669	1678.03	0.0000
772.60	0.0000	1004.73	243.3125	1690.97	16.0611
776.52	190.9143	1021.30	0.0000	1750.46	0.0000
777.92	216.2703	1025.87	0.0000	1764.49	15.2219
778.90	216.3585	1028.54	0.0000	1770.23	15.2390
783.70	212.3738	1037.84	216.1124	1771.35	9.7993
785.37	213.6242	1038.76	0.0000	1791.20	0.0000
792.07	194.3262	1046.59	215.8037	1808.65	5.4852
794.95	198.9697	1048.07	229.5129	1810.72	0.0000
795.86	201.2546	1049.04	236.8499	1836.06	6.6182
801.95	230.5638	1050.41	211.5260		
810.06	223.5160	1063.66	216.0687		
810.29	212.4191	1077.00	210.5573		
810.45	225.7813	1077.34	219.7412		
810.76	236.9296	1085.87	214.8047		
815.77	212.8777	1093.63	242.9238		
818.51	219.7973	1099.45	238.7498		
832.01	211.9790	1112.07	239.8518		
834.85	212.2097	1112.84	210.1108		
835.71	213.4021	1115.54	210.2770		
836.80	0.0000	1120.29	164.7548		
846.75	0.0000	1120.55	169.2188		
846.77	259.4238	1121.30	175.6973		
856.80	232.1015	1129.67	146.9871		
860.56	239.2381	1131.51	0.0000		
871.09	252.6948	1147.95	0.0000		
873.19	250.6152	1173.23	109.3093		
875.33	0.0000	1177.95	78.5078		
879.38	227.2111	1189.05	75.7275		
880.51	229.5928	1204.77	77.9711		
883.24	226.3916	1221.41	52.5427		
884.68	253.9685	1231.02	34.4839		
889.28	220.0156	1235.36	43.1570		
894.76	254.8989	1238.28	41.2704		
898.04	260.9539	1260.41	0.0000		
900.72	276.1621	1271.87	39.7162		
903.28	253.3814	1274.44	36.8357		
911.20	282.9822	1274.54	36.8357		
912.08	283.0719	1291.59	26.2930		
923.98	0.0000	1298.22	0.0000		
926.50	292.6465	1312.11	27.4155		
929.11	302.2225	1332.49	38.3906		
937.49	314.7693	1362.66	0.0000		
944.13	334.7746	1365.19	12.9048		
946.00	349.9043	1368.63	0.0000		
949.00	323.9335	1384.29	20.9474		
954.55	0.0000	1408.01	9.0313		
962.31	298.0709	1457.56	0.0000		
964.08	307.0807	1460.82	13.2142		
966.17	271.0984	1489.16	9.3566		
968.97	256.3254	1505.03	17.4628		
983.53	240.7143	1584.12	3.3473		
984.45	0.0000	1596.21	10.4889		
996.26	259.7588	1620.50	7.3815		
1001.03	228.7188	1621.92	12.6584		

03-Oct-2016

Batch# 1596292

Product: Ys 1.2

Date: 10/3/16

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 10x 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 5x MDA/MDC, then RPD is 100% or less, If greater 5x 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.		✓	Det# 1563784
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 stated.	✓		
MS, LCS, and Duplicate RPD/RER values uploaded to LIMS and values verified	✓		
Hlt notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.	✓		N/A 10/3/16 Det# 1563784
Batch Data Exception Reports (DER) second reviewed. Disposition verified to be completed.	✓		
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.)			N/A

Primary Review Performed By:

B. Wall 10/3/16

Secondary Review Performed By:

JG 10/3/16

DATA EXCEPTION REPORT

Mo.Day Yr. 03-OCT-16	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process
Instrument Type: GAMMA SPECTROMETER	Test / Method: DOE HASL 300, 4.5.2.3/Ga-01-R	Matrix Type: Solid	Client Code: MJWC
Batch ID: 1596252	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 405235 Application Issues: Sample received out of holding			
Specification and Requirements Exception Description:		DER Disposition:	
Sample received out of holding for sample 405235041, sample 405235042, sample 405235043, sample 405235044, sample 405235045, sample 405235046, sample 405235047, sample 405235048, sample 405235049, sample 405235050, sample 405235051, sample 405235052, sample 405235053, sample 405235054, sample 405235055, sample 405235056, sample 405235057, sample 405235058, sample 405235059, sample 405235060 and DUP 1203621362		Samples were analyzed as soon as possible. Reporting results.	

Originator's Name:

Bryan Williams 03-OCT-16

Data Validator/Group Leader:

Spencer Collins 03-OCT-16

Gamma Spec Queue Sheet

1.6 - 10/3/16

09/16/2016

Batch #: 1596252

Analyst: MXRI

First Client Due Date: 10/04/2016

Internal Due Date: 09/30/2016

Gamma LCS Isotope: Mixed Gamma

LCS Code: 1556

Expiration Date: 4/1/37 Vol: 1.0 mL

Initials: M.S.

Prep Date: 9/12/16

Library: SOLID

Balance ID: N/A

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry	Wet/Dry Allotment (1/g F)	Detector	Sealing Date/Time (if Applicable)
405235041-1	4.4D.R.1.4	SAMPLE		MJWC001	SOIL	30-NOV-15 13:27:00	CAN	181.483 g	28	9/12/16
405235042-1	4.4D.R.2.3	SAMPLE		MJWC001	SOIL	30-NOV-15 13:53:00		176.8 g	8	
405235043-1	4.4D.R.2.4	SAMPLE		MJWC001	SOIL	30-NOV-15 13:59:00		165.795 g	9	
405235044-1	4.4D.R.4.2	SAMPLE		MJWC001	SOIL	30-NOV-15 13:50:00		128.844 g	32	
405235045-1	4.4D.R.5.2	SAMPLE		MJWC001	SOIL	30-NOV-15 14:15:00		130.599 g	39	
405235046-1	4.5A.R.1.3	SAMPLE		MJWC001	SOIL	07-DEC-15 10:02:00		156.928 g	20	
405235047-1	4.5A.R.1.4	SAMPLE		MJWC001	SOIL	07-DEC-15 10:10:00		151.349 g	29	
405235048-1	4.5B.R.1.2	SAMPLE		MJWC001	SOIL	07-DEC-15 13:28:00		131.577 g	28	
405235049-1	4.5B.R.1.3	SAMPLE		MJWC001	SOIL	07-DEC-15 13:33:00		147.303 g	33	
405235050-1	4.5B.R.1.4	SAMPLE		MJWC001	SOIL	07-DEC-15 13:42:00		171.604 g	36	
405235051-1	4.5B.R.2.3	SAMPLE		MJWC001	SOIL	07-DEC-15 13:02:00		153.012 g	41	
405235052-1	4.5B.R.2.4	SAMPLE		MJWC001	SOIL	07-DEC-15 13:11:00		165.248 g	44	
405235053-1	4.5C.R.5.2	SAMPLE		MJWC001	SOIL	01-DEC-15 14:24:00		113.628 g	31	
405235054-1	4.5C.R.1.3	SAMPLE		MJWC001	SOIL	02-DEC-15 14:51:00		146.461 g	43	
405235055-1	4.5C.R.1.4	SAMPLE		MJWC001	SOIL	02-DEC-15 14:59:00		142.583 g	11	
405235056-1	4.5C.R.2.2	SAMPLE		MJWC001	SOIL	02-DEC-15 14:50:00		101.481 g	1	
405235057-1	4.5C.R.2.3	SAMPLE		MJWC001	SOIL	02-DEC-15 14:58:00		115.835 g	5	
405235058-1	4.5C.R.2.4	SAMPLE		MJWC001	SOIL	02-DEC-15 15:00:00		140.622 g	6	
405235059-1	5.1A.R.1.2	SAMPLE		MJWC001	SOIL	16-DEC-15 12:26:00		154.222 g	7	
405235060-1	5.1A.R.1.3	SAMPLE		MJWC001	SOIL	16-DEC-15 12:33:00		152.266 g	18	
1203621361-1	MB	MB		QC ACCOUNT	SOIL	9/12/16		181.483	24	
1203621362-1	DUP 4.4D.R.1.4(405235041)	DUP		QC ACCOUNT	SOIL	30-NOV-15 13:27:00		181.483	29	
1203621363-1	LCS	LCS		QC ACCOUNT	SOIL	9/12/16		115	11	

9/14/16

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 06:57:25.97

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235041.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM28.CNF;265
Background date    : 2-OCT-2016 11:01:35.
Sample date       : 30-NOV-2015 13:27:00 Acquisition date : 3-OCT-2016 05:54:08.
Sample ID        : G405235041 Sample quantity : 1.81483E+02 GRAM
Detector name    : GAM28 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.41 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596252 Detector SN# :
Matrix Spike ID  : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	74.82*	126	198	1.48	149.74	142	19	3.50E-02	23.2	1.55E+00
2	3	77.24	171	204	1.31	154.57	142	19	4.74E-02	16.4	
3	0	87.41	39	259	1.54	174.93	169	11	1.09E-02	81.4	
4	0	93.17*	30	155	1.25	186.45	183	8	8.22E-03	81.9	
5	0	116.91	33	143	1.43	233.97	227	10	9.21E-03	70.4	
6	0	186.22*	71	116	1.21	372.69	369	10	1.96E-02	32.4	
7	0	208.98	42	91	0.95	418.24	414	8	1.17E-02	42.2	
8	4	238.89*	340	95	1.24	478.12	472	24	9.45E-02	7.2	2.49E+00
9	4	241.70	104	112	1.97	483.75	472	24	2.88E-02	29.0	
10	0	295.86	125	89	1.11	592.13	585	11	3.46E-02	17.1	
11	0	300.31	34	39	1.85	601.04	597	8	9.39E-03	36.6	
12	0	338.63	80	51	0.97	677.73	672	12	2.22E-02	21.1	
13	0	352.28*	215	72	1.60	705.06	699	12	5.98E-02	10.6	
14	0	448.85	16	19	2.29	898.35	894	9	4.56E-03	52.9	
15	0	463.26	47	36	1.37	927.19	922	12	1.31E-02	27.2	
16	0	480.40	21	30	4.87	961.49	955	13	5.97E-03	56.3	
17	0	511.83*	56	76	2.11	1024.40	1014	22	1.57E-02	45.7	
18	0	523.66	13	14	1.36	1048.08	1044	9	3.47E-03	60.1	
19	0	583.75*	126	51	1.51	1168.34	1161	16	3.50E-02	15.1	
20	0	601.53	28	30	3.98	1203.93	1197	15	7.78E-03	46.6	
21	0	609.77*	191	32	1.75	1220.43	1211	18	5.29E-02	10.2	
22	0	618.45	16	39	3.06	1237.79	1229	17	4.41E-03	92.8	
23	0	662.53*	17	25	1.48	1326.02	1321	9	4.66E-03	62.3	
24	0	675.73	15	26	3.34	1352.44	1345	13	4.14E-03	75.2	
25	0	727.33	30	23	1.44	1455.73	1448	13	8.43E-03	37.1	
26	0	816.35	15	10	0.53	1633.90	1628	11	4.07E-03	50.7	
27	0	861.08	17	16	1.30	1723.41	1717	12	4.76E-03	54.5	
28	0	867.40	24	18	3.86	1736.07	1729	17	6.73E-03	44.1	
29	0	912.08*	67	23	1.35	1825.49	1817	15	1.86E-02	20.0	
30	0	969.82	51	35	1.33	1941.06	1935	14	1.42E-02	28.3	
31	0	1120.37*	49	26	1.35	2242.38	2234	16	1.37E-02	28.0	
32	0	1183.05	13	13	5.36	2367.85	2360	13	3.61E-03	63.5	
33	0	1239.39	16	25	2.13	2480.60	2476	9	4.46E-03	61.2	
34	0	1461.82*	383	7	2.08	2925.80	2919	13	1.07E-01	5.3	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1540.81	9	0	0.62	3083.89	3079	10	2.50E-03	33.3	
36	0	1765.92*	28	8	2.73	3534.45	3526	16	7.85E-03	30.2	
37	0	1848.94	13	3	1.48	3700.61	3695	10	3.74E-03	35.0	

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

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235041.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 30-NOV-2015 13:27:00 Acquisition date : 3-OCT-2016 05:54:08
Sample ID        : G405235041 Sample quantity : 181.48 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA28 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.41 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type   : Linear Efficiencies at : Peak Energy
Abundance limit  : 75.00

```

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.237E+00	1.183E+01	1.183E+01	10.64	OK
CD-109	88.03	3.70*	5.432E+00	4.268E-01	6.777E-01	447.68	OK
SN-126	64.28	9.60	3.124E+00	----- Line	Not Found	-----	Absent
	86.94	8.90	5.432E+00	1.775E-01	1.775E-01	447.68	OK
	87.57	37.00*	5.432E+00	4.268E-02	4.268E-02	447.68	OK
BA-137M	661.66	89.90*	2.304E+00	3.721E-02	3.794E-02	124.68	OK
CS-137	661.66	85.10*	2.304E+00	3.931E-02	4.008E-02	124.68	OK
TL-208	277.37	6.60	4.566E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.539E+00	2.731E-01	2.731E-01	30.19	OK
	860.56	12.50	1.887E+00	3.210E-01	3.210E-01	108.96	OK
BI-211	72.87	1.23	4.138E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	3.783E+00	8.826E-03	8.826E-03	*****	OK
PB-212	74.82	10.28	4.344E+00	1.256E+00	1.256E+00	64.18	OK
	77.11	17.10	4.585E+00	1.313E+00	1.313E+00	32.89	OK
	238.63	43.60*	5.101E+00	8.071E-01	8.071E-01	14.30	OK
	300.09	3.30	4.293E+00	1.224E+00	1.224E+00	73.14	OK
BI-214	609.32	45.49*	2.455E+00	7.939E-01	7.942E-01	20.48	OK
	1120.29	14.92	1.539E+00	9.149E-01	9.152E-01	55.98	OK
	1764.49	15.30	1.044E+00	6.974E-01	6.977E-01	60.31	OK
PB-214	74.82	5.80	4.343E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	4.585E+00	2.315E+00	2.316E+00	32.89	OK
	87.09	3.41	5.409E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	5.054E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.343E+00	7.994E-01	7.997E-01	34.29	OK
	351.93	35.60*	3.786E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	2.455E+00	7.939E-01	7.942E-01	20.48	OK
	1120.29	14.92	1.539E+00	9.149E-01	9.152E-01	55.98	OK
	1764.49	15.30	1.044E+00	6.974E-01	6.977E-01	60.31	OK
RA-224	240.99	4.10*	5.059E+00	1.221E+00	1.221E+00	131.43	OK
RA-226	609.32	45.49*	2.455E+00	7.939E-01	7.942E-01	20.48	OK
	1120.29	14.92	1.539E+00	9.149E-01	9.152E-01	55.98	OK
	1764.49	15.30	1.044E+00	6.974E-01	6.977E-01	60.31	OK
AC-228	105.21	1.10	6.315E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.904E+00	9.153E-01	9.153E-01	42.22	OK
	794.95	4.25	2.005E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.930E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.806E+00	6.291E-01	6.291E-01	39.97	OK
	968.97	15.80	1.723E+00	8.137E-01	8.137E-01	56.63	OK
RA-228	105.21	1.10	6.315E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.904E+00	9.153E-01	9.153E-01	42.22	OK
	794.95	4.25	2.005E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.930E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.806E+00	6.291E-01	6.291E-01	39.97	OK
	968.97	15.80	1.723E+00	8.137E-01	8.137E-01	56.63	OK
TH-228	74.82	10.28	4.344E+00	1.256E+00	1.256E+00	64.18	OK
	77.11	17.10	4.585E+00	1.313E+00	1.313E+00	32.89	OK
	238.63	43.60*	5.101E+00	8.071E-01	8.071E-01	14.30	OK
	300.09	3.30	4.293E+00	1.224E+00	1.224E+00	73.14	OK
TH-230	609.32	45.49*	2.455E+00	7.939E-01	7.939E-01	20.48	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	1120.29	14.92	1.539E+00	9.149E-01	9.149E-01	55.98	OK
	1764.49	15.30	1.044E+00	6.974E-01	6.974E-01	60.31	OK
PA-231	283.69	1.70	4.487E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	4.293E+00	7.547E-01	7.547E-01	73.14	OK
TH-232	105.21	1.10	6.315E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.904E+00	9.153E-01	9.153E-01	42.22	OK
	835.71	1.61	1.930E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.806E+00	6.291E-01	6.291E-01	39.97	OK
	968.97	15.80	1.723E+00	8.137E-01	8.137E-01	56.63	OK
U-234	609.32	45.49*	2.455E+00	7.939E-01	7.939E-01	20.48	OK
	1120.29	14.92	1.539E+00	9.149E-01	9.149E-01	55.98	OK
	1764.49	15.30	1.044E+00	6.974E-01	6.974E-01	60.31	OK
AM-243	43.53	5.90	4.883E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	4.344E+00	1.922E-01	1.922E-01	64.18	OK
ANH-511	511.00	100.00*	2.812E+00	9.561E-02	9.561E-02	91.39	OK

Flag: "*" = Keyline

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.183E+01	1.233E+00	4.280E-01
CD-109	6.777E-01	2.973E+00	2.012E+00
SN-126	4.268E-02	1.873E-01	1.275E-01
BA-137M	3.794E-02	4.636E-02	5.412E-02
CS-137	4.008E-02	4.898E-02	5.717E-02
TL-208	2.731E-01	8.080E-02	4.938E-02
BI-211	8.826E-03	8.712E-01	2.838E-01
PB-212	8.071E-01	1.131E-01	7.667E-02
BI-214	7.942E-01	1.594E-01	8.436E-02
PB-214	8.029E-01	1.668E-01	2.522E-01
RN-222	7.942E-01	1.594E-01	8.436E-02
RA-224	1.221E+00	1.572E+00	8.215E-01
RA-226	7.942E-01	1.594E-01	8.436E-02
AC-228	6.291E-01	2.464E-01	2.040E-01
RA-228	6.291E-01	2.464E-01	2.040E-01
TH-228	8.071E-01	1.131E-01	7.667E-02
TH-230	7.939E-01	1.594E-01	8.433E-02
PA-231	7.547E-01	5.410E-01	6.421E-01
TH-232	6.291E-01	2.464E-01	2.040E-01
U-234	7.939E-01	1.594E-01	8.433E-02
AM-243	1.922E-01	1.209E-01	8.042E-02
ANH-511	9.561E-02	8.563E-02	4.218E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-2.191E-01	1.151E+01	2.013E+01	NOT IDENT.
NA-22	-3.133E-03	4.147E-02	8.013E-02	NOT IDENT.
NA-24	0.000E+00	1.640E+41	0.000E+00	SHORT HLIF
AL-26	9.807E-03	1.932E-02	5.027E-02	NOT IDENT.
SC-46	-5.154E-02	3.074E-01	6.107E-01	FAIL ABUN
V-48	0.000E+00	1.631E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.114E+02	0.000E+00	SHORT HLIF
MN-54	-1.507E-02	4.486E-02	8.755E-02	NOT IDENT.

CO-56	2.359E-01	3.183E-01	7.383E-01	FAIL ABUN
MN-56	0.000E+00	1.330E+41	0.000E+00	SHORT HLIF
CO-57	2.007E-02	3.755E-02	7.512E-02	NOT IDENT.
CO-58	-5.366E-01	5.507E-01	7.859E-01	NOT IDENT.
FE-59	-2.765E+00	7.132E+00	1.321E+01	NOT IDENT.
CO-60	1.676E-02	3.302E-02	7.121E-02	NOT IDENT.
ZN-65	3.236E-02	1.379E-01	2.582E-01	NOT IDENT.
GE-68	3.568E-01	1.967E+00	4.110E+00	NOT IDENT.
AS-73	7.118E-01	7.667E+00	1.542E+01	NOT IDENT.
AS-74	0.000E+00	6.412E+03	0.000E+00	SHORT HLIF
SE-75	3.921E-02	1.560E-01	3.226E-01	NOT IDENT.
BR-77	0.000E+00	2.013E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.619E+02	0.000E+00	SHORT HLIF
RB-83	-7.956E-02	5.151E-01	8.069E-01	NOT IDENT.
KR-85	1.199E+01	6.695E+00	1.484E+01	NOT IDENT.
SR-85	1.374E+00	7.680E-01	1.702E+00	NOT IDENT.
RB-86	0.000E+00	3.086E+04	0.000E+00	SHORT HLIF
Y-88	-3.347E-02	1.661E-01	3.512E-01	NOT IDENT.
Y-91	-8.323E+01	4.945E+02	9.417E+02	NOT IDENT.
NB-94	3.764E-03	2.770E-02	5.314E-02	NOT IDENT.
NB-95	-2.157E-01	7.525E-01	1.468E+00	NOT IDENT.
NB-95M	6.486E-01	2.187E+00	4.070E+00	NOT IDENT.
ZR-95	-4.732E-01	1.213E+00	2.353E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	9.670E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	7.707E-04	2.980E-02	5.632E-02	NOT IDENT.
RH-102	7.192E-03	4.975E-02	9.731E-02	NOT IDENT.
RU-103	4.882E+00	4.914E+00	1.085E+01	FAIL ABUN
RH-106	-6.489E-02	4.481E-01	7.483E-01	NOT IDENT.
RU-106	-6.489E-02	4.481E-01	7.483E-01	NOT IDENT.
AG-108M	-1.657E-03	2.181E-02	4.250E-02	NOT IDENT.
AG-110M	-2.353E-02	6.819E-02	1.333E-01	NOT IDENT.
SN-113	-1.516E-01	1.871E-01	3.351E-01	NOT IDENT.
CD-115	0.000E+00	2.626E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.185E+05	0.000E+00	SHORT HLIF
TE-123M	4.146E-02	1.180E-01	2.263E-01	NOT IDENT.
SB-124	-5.395E-01	1.225E+00	2.288E+00	NOT IDENT.
SB-125	-5.858E-02	7.809E-02	1.397E-01	FAIL ABUN
TE-125M	3.575E+02	2.626E+02	5.525E+02	NOT IDENT.
I-126	0.000E+00	1.294E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.650E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	7.770E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	8.049E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.684E+27	0.000E+00	SHORT HLIF
BA-133	5.065E-03	3.547E-02	6.415E-02	NOT IDENT.
I-133	0.000E+00	1.811E+41	0.000E+00	SHORT HLIF
CS-134	2.947E-02	3.597E-02	8.122E-02	NOT IDENT.
CS-135	-3.974E-02	1.121E-01	2.176E-01	NOT IDENT.
I-135	0.000E+00	1.017E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	4.021E+05	0.000E+00	SHORT HLIF
CE-139	-2.894E-02	8.760E-02	1.763E-01	NOT IDENT.
BA-140	0.000E+00	1.663E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	6.030E+05	0.000E+00	SHORT HLIF
CE-141	-4.633E+00	2.484E+01	4.568E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	-2.477E-01	2.927E-01	5.104E-01	NOT IDENT.
PM-144	-7.349E-03	4.538E-02	8.436E-02	FAIL ABUN
PR-144	-6.410E-01	3.959E+00	7.358E+00	NOT IDENT.
PM-146	4.002E-02	3.280E-02	7.211E-02	NOT IDENT.
ND-147	0.000E+00	4.119E+07	0.000E+00	SHORT HLIF
PM-147	-2.057E+02	6.735E+02	1.248E+03	NOT IDENT.
PM-149	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
EU-150	-1.533E-02	1.960E-02	3.101E-02	FAIL ABUN
EU-152	-3.274E-02	7.623E-02	1.371E-01	NOT IDENT.
GD-153	-2.430E-02	1.542E-01	2.939E-01	NOT IDENT.
EU-154	-7.654E-03	1.013E-01	1.957E-01	NOT IDENT.
EU-155	1.440E-01	9.169E-02	1.967E-01	FAIL ABUN
TB-160	-1.598E-01	1.485E+00	2.989E+00	FAIL ABUN
HO-166M	4.164E-02	4.165E-02	9.240E-02	NOT IDENT.
TM-171	3.747E+00	1.817E+01	3.684E+01	NOT IDENT.
HF-172	1.520E-01	1.927E-01	3.887E-01	NOT IDENT.
LU-172	-1.882E-02	5.670E-02	1.080E-01	FAIL ABUN
LU-176	-1.850E-04	2.079E-02	4.115E-02	FAIL ABUN
HF-181	-1.030E+00	4.586E+00	7.676E+00	NOT IDENT.
TA-182	8.049E-02	8.034E-01	1.591E+00	FAIL ABUN

RE-183	7.150E-01	2.591E+00	5.320E+00	NOT IDENT.
RE-184	-9.123E+00	2.949E+01	5.672E+01	NOT IDENT.
W-188	-7.636E+01	1.150E+02	1.905E+02	NOT IDENT.
IR-192	-1.241E-01	4.075E-01	7.863E-01	FAIL ABUN
HG-203	1.115E+00	2.026E+00	4.255E+00	NOT IDENT.
BI-207	-5.187E-03	3.713E-02	7.285E-02	FAIL ABUN
PB-210	2.871E-01	2.941E+00	5.962E+00	NOT IDENT.
PB-211	1.675E-01	5.050E-01	1.033E+00	NOT IDENT.
BI-212	9.611E-01	6.997E-01	9.733E-01	FAIL ABUN
RN-219	9.597E-02	2.962E-01	6.035E-01	NOT IDENT.
RA-223	1.121E-01	4.307E-01	8.828E-01	FAIL ABUN
AC-227	3.136E-02	1.768E-01	3.607E-01	FAIL ABUN
TH-227	3.136E-02	1.768E-01	3.607E-01	FAIL ABUN
TH-229	-1.910E-01	3.872E-01	7.594E-01	FAIL ABUN
TH-231	1.121E-01	4.307E-01	8.828E-01	FAIL ABUN
PA-233	-1.434E-02	4.449E-02	8.618E-02	FAIL ABUN
PA-234	6.026E-03	2.016E-01	4.124E-01	NOT IDENT.
PA-234M	-2.242E+00	3.002E+00	5.820E+00	NOT IDENT.
TH-234	1.378E-01	1.031E+00	2.078E+00	FAIL ABUN
U-235	8.410E-02	1.545E-01	3.035E-01	FAIL ABUN
NP-237	-1.434E-02	4.449E-02	8.618E-02	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
U-238	1.378E-01	1.031E+00	2.078E+00	FAIL ABUN
NP-239	3.654E-01	5.044E-01	4.283E-01	FAIL ABUN
PU-239	1.305E+02	2.816E+02	5.474E+02	NOT IDENT.
AM-241	5.439E-02	1.190E-01	2.450E-01	NOT IDENT.
CM-243	-1.148E-01	8.637E-02	1.472E-01	NOT IDENT.
BK-247	-3.643E-03	5.211E-02	1.047E-01	NOT IDENT.
CM-247	7.164E-03	2.740E-02	5.541E-02	NOT IDENT.
CF-249	1.758E-02	2.798E-02	5.915E-02	NOT IDENT.
CF-251	-2.456E-03	8.975E-02	1.833E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	377	10.66*	1.237E+00	1.183E+01	1.183E+01	10.64
CD-109	88.03	57	3.70*	5.432E+00	1.164E+00	1.847E+00	162.79
SN-126	64.28	-----	9.60	3.124E+00	-----	Line Not Found	-----
	86.94	57	8.90	5.432E+00	4.837E-01	4.837E-01	162.79
	87.57	57	37.00*	5.432E+00	1.164E-01	1.164E-01	162.79
BA-137M	661.66	19	89.90*	2.304E+00	3.721E-02	3.794E-02	124.68
CS-137	661.66	19	85.10*	2.304E+00	3.931E-02	4.008E-02	124.68
TL-208	277.37	-----	6.60	4.566E+00	-----	Line Not Found	-----
	583.19	142	85.00*	2.539E+00	2.731E-01	2.731E-01	30.19
	860.56	18	12.50	1.887E+00	3.210E-01	3.210E-01	108.96
BI-211	72.87	-----	1.23	4.138E+00	-----	Line Not Found	-----
	351.06	261	12.92*	3.783E+00	2.211E+00	2.211E+00	21.20
PB-212	74.82	184	10.28	4.344E+00	1.707E+00	1.707E+00	46.35
	77.11	249	17.10	4.585E+00	1.313E+00	1.313E+00	32.89
	238.63	434	43.60*	5.101E+00	8.071E-01	8.071E-01	14.30
	300.09	42	3.30	4.293E+00	1.224E+00	1.224E+00	73.14
BI-214	609.32	214	45.49*	2.455E+00	7.939E-01	7.942E-01	20.48
	1120.29	51	14.92	1.539E+00	9.149E-01	9.152E-01	55.98
	1764.49	27	15.30	1.044E+00	6.974E-01	6.977E-01	60.31
PB-214	74.82	184	5.80	4.344E+00	3.026E+00	3.027E+00	46.35
	77.11	249	9.70	4.585E+00	2.315E+00	2.316E+00	32.89
	87.09	57	3.41	5.432E+00	1.263E+00	1.263E+00	162.79
	242.00	132	7.25	5.059E+00	1.490E+00	1.490E+00	58.06
	295.22	155	18.42	4.343E+00	7.994E-01	7.997E-01	34.29
	351.93	261	35.60*	3.783E+00	8.026E-01	8.029E-01	21.20
RN-222	609.32	214	45.49*	2.455E+00	7.939E-01	7.942E-01	20.48
	1120.29	51	14.92	1.539E+00	9.149E-01	9.152E-01	55.98
	1764.49	27	15.30	1.044E+00	6.974E-01	6.977E-01	60.31
RA-224	240.99	132	4.10*	5.059E+00	2.634E+00	2.634E+00	58.06
RA-226	609.32	214	45.49*	2.455E+00	7.939E-01	7.942E-01	20.48
	1120.29	51	14.92	1.539E+00	9.149E-01	9.152E-01	55.98
	1764.49	27	15.30	1.044E+00	6.974E-01	6.977E-01	60.31
AC-228	105.21	-----	1.10	6.315E+00	-----	Line Not Found	-----
	338.32	97	11.27	3.904E+00	9.153E-01	9.153E-01	42.22
	794.95	-----	4.25	2.005E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.930E+00	-----	Line Not Found	-----
	911.20	71	25.80*	1.806E+00	6.291E-01	6.291E-01	39.97
	968.97	54	15.80	1.723E+00	8.137E-01	8.137E-01	56.63
RA-228	105.21	-----	1.10	6.315E+00	-----	Line Not Found	-----
	338.32	97	11.27	3.904E+00	9.153E-01	9.153E-01	42.22
	794.95	-----	4.25	2.005E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.930E+00	-----	Line Not Found	-----
	911.20	71	25.80*	1.806E+00	6.291E-01	6.291E-01	39.97
	968.97	54	15.80	1.723E+00	8.137E-01	8.137E-01	56.63
TH-228	74.82	184	10.28	4.344E+00	1.707E+00	1.707E+00	46.35
	77.11	249	17.10	4.585E+00	1.313E+00	1.313E+00	32.89
	238.63	434	43.60*	5.101E+00	8.071E-01	8.071E-01	14.30

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-230	300.09	42	3.30	4.293E+00	1.224E+00	1.224E+00	73.14
	609.32	214	45.49*	2.455E+00	7.939E-01	7.939E-01	20.48
	1120.29	51	14.92	1.539E+00	9.149E-01	9.149E-01	55.98
	1764.49	27	15.30	1.044E+00	6.974E-01	6.974E-01	60.31
PA-231	283.69	-----	1.70	4.487E+00	-----	Line Not Found	-----
	301.36	42	5.35*	4.293E+00	7.547E-01	7.547E-01	73.14
TH-232	105.21	-----	1.10	6.315E+00	-----	Line Not Found	-----
	338.32	97	11.27	3.904E+00	9.153E-01	9.153E-01	42.22
	835.71	-----	1.61	1.930E+00	-----	Line Not Found	-----
	911.20	71	25.80*	1.806E+00	6.291E-01	6.291E-01	39.97
U-234	968.97	54	15.80	1.723E+00	8.137E-01	8.137E-01	56.63
	609.32	214	45.49*	2.455E+00	7.939E-01	7.939E-01	20.48
	1120.29	51	14.92	1.539E+00	9.149E-01	9.149E-01	55.98
	1764.49	27	15.30	1.044E+00	6.974E-01	6.974E-01	60.31
AM-243	43.53	-----	5.90	4.883E-01	-----	Line Not Found	-----
	74.66	184	67.20*	4.344E+00	2.612E-01	2.612E-01	46.35
ANH-511	511.00	65	100.00*	2.812E+00	9.561E-02	9.561E-02	91.39

Flag: "*" = Keyline

Total number of lines in spectrum 37
Number of unidentified lines 8
Number of lines tentatively identified by NID 29 78.38%

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	1.183E+01	1.183E+01	0.126E+01	10.64	
CD-109	461.40D	1.59	1.164E+00	1.847E+00	3.007E+00	162.79	
SN-126	2.30E+05Y	1.00	1.164E-01	1.164E-01	1.894E-01	162.79	
BA-137M	30.08Y	1.02	3.721E-02	3.794E-02	4.731E-02	124.68	
CS-137	30.08Y	1.02	3.931E-02	4.008E-02	4.998E-02	124.68	
TL-208	1.41E+10Y	1.00	2.731E-01	2.731E-01	0.824E-01	30.19	
BI-211	7.04E+08Y	1.00	2.211E+00	2.211E+00	0.469E+00	21.20	
PB-212	1.41E+10Y	1.00	8.071E-01	8.071E-01	1.154E-01	14.30	
BI-214	1600.00Y	1.00	7.939E-01	7.942E-01	1.627E-01	20.48	
PB-214	1600.00Y	1.00	8.026E-01	8.029E-01	1.702E-01	21.20	
RN-222	1600.00Y	1.00	7.939E-01	7.942E-01	1.627E-01	20.48	
RA-224	1.41E+10Y	1.00	2.634E+00	2.634E+00	1.530E+00	58.06	
RA-226	1600.00Y	1.00	7.939E-01	7.942E-01	1.627E-01	20.48	
AC-228	1.41E+10Y	1.00	6.291E-01	6.291E-01	2.514E-01	39.97	
RA-228	1.41E+10Y	1.00	6.291E-01	6.291E-01	2.514E-01	39.97	
TH-228	1.41E+10Y	1.00	8.071E-01	8.071E-01	1.154E-01	14.30	
TH-230	7.54E+04Y	1.00	7.939E-01	7.939E-01	1.626E-01	20.48	
PA-231	7.04E+08Y	1.00	7.547E-01	7.547E-01	5.520E-01	73.14	
TH-232	1.41E+10Y	1.00	6.291E-01	6.291E-01	2.514E-01	39.97	
U-234	2.45E+05Y	1.00	7.939E-01	7.939E-01	1.626E-01	20.48	
AM-243	7370.00Y	1.00	2.612E-01	2.612E-01	1.210E-01	46.35	
ANH-511	1.00E+09Y	1.00	9.561E-02	9.561E-02	8.738E-02	91.39	
Total Activity :			2.769E+01	2.837E+01			

Grand Total Activity : 2.769E+01 2.837E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	93.17	42	222	1.25	186.45	183	8	8.22E-03	****	5.79E+00	T
0	116.91	46	199	1.43	233.97	227	10	9.21E-03	****	6.57E+00	T
0	186.22	93	152	1.21	372.69	369	10	1.96E-02	64.7	5.98E+00	T
0	208.98	55	118	0.95	418.24	414	8	1.17E-02	84.4	5.58E+00	
0	448.85	19	22	2.29	898.35	894	9	4.56E-03	****	3.12E+00	
0	463.26	55	42	1.37	927.19	922	12	1.31E-02	54.5	3.04E+00	T
0	480.40	25	34	4.87	961.49	955	13	5.97E-03	****	2.96E+00	
0	523.66	14	16	1.36	1048.08	1044	9	3.47E-03	****	2.76E+00	T
0	601.53	32	34	3.98	1203.93	1197	15	7.78E-03	93.3	2.48E+00	T
0	618.45	18	44	3.06	1237.79	1229	17	4.41E-03	****	2.43E+00	T
0	675.73	16	29	3.34	1352.44	1345	13	4.14E-03	****	2.27E+00	
0	727.33	33	25	1.44	1455.73	1448	13	8.43E-03	74.3	2.15E+00	T
0	816.35	16	11	0.53	1633.90	1628	11	4.07E-03	****	1.97E+00	T
0	867.40	26	19	3.86	1736.07	1729	17	6.73E-03	88.3	1.88E+00	
0	1183.05	13	13	5.36	2367.85	2360	13	3.61E-03	****	1.47E+00	
0	1239.39	16	25	2.13	2480.60	2476	9	4.46E-03	****	1.42E+00	T
0	1540.81	9	0	0.62	3083.89	3079	10	2.50E-03	66.7	1.18E+00	
0	1848.94	13	2	1.48	3700.61	3695	10	3.74E-03	70.0	9.99E-01	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235041.CNF;1
* Acquisition date   : 3-OCT-2016 05:54:08 Sensitivity      : 3.000
* Detector ID        : GAM28 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.41 Half life ratio : *****
* Sample date        : 30-NOV-2015 13:27:00 Nuclide Library : SOLID
* Sample ID          : G405235041 Analyst initials: MXR1
* Batch Number       : 1596252 Sample Quantity : 1.8148E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 1-AUG-2016 10:02:35 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM28 CAN.CNF;10
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.709E-01
CD-109	9.572E-01
SN-126	6.063E-02
BA-137M	2.419E-02
CS-137	2.555E-02
TL-208	2.197E-02
BI-211	1.297E-01
PB-212	3.562E-02
BI-214	3.693E-02
PB-214	1.217E-01
RN-222	3.693E-02
RA-224	3.817E-01
RA-226	3.693E-02
AC-228	8.962E-02
RA-228	8.962E-02
TH-228	3.562E-02
TH-230	3.691E-02
PA-231	2.948E-01
TH-232	8.962E-02
U-234	3.691E-02
AM-243	3.805E-02
ANH-511	1.899E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	9.013E+00	NOT IDENT.
NA-22	3.492E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.960E-02	NOT IDENT.
SC-46	2.653E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	3.782E-02	NOT IDENT.
CO-56	3.211E-01	FAIL ABUN

MN-56	0.000E+00	SHORT HLIF
CO-57	3.517E-02	NOT IDENT.
CO-58	3.330E-01	NOT IDENT.
FE-59	5.822E+00	NOT IDENT.
CO-60	3.085E-02	NOT IDENT.
ZN-65	1.115E-01	NOT IDENT.
GE-68	1.808E+00	NOT IDENT.
AS-73	7.186E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.485E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	3.473E-01	NOT IDENT.
KR-85	6.908E+00	NOT IDENT.
SR-85	7.923E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.339E-01	NOT IDENT.
Y-91	4.129E+02	NOT IDENT.
NB-94	2.392E-02	NOT IDENT.
NB-95	6.551E-01	NOT IDENT.
NB-95M	1.903E+00	NOT IDENT.
ZR-95	1.033E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.653E-02	NOT IDENT.
RH-102	4.354E-02	NOT IDENT.
RU-103	4.907E+00	FAIL ABUN
RH-106	3.308E-01	NOT IDENT.
RU-106	3.308E-01	NOT IDENT.
AG-108M	1.920E-02	NOT IDENT.
AG-110M	5.654E-02	NOT IDENT.
SN-113	1.507E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.063E-01	NOT IDENT.
SB-124	7.659E-01	NOT IDENT.
SB-125	6.222E-02	FAIL ABUN
TE-125M	2.616E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.936E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	3.612E-02	NOT IDENT.
CS-135	1.007E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	8.243E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.148E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.375E-01	NOT IDENT.
PM-144	3.742E-02	FAIL ABUN
PR-144	3.264E+00	NOT IDENT.
PM-146	3.278E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	5.832E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.390E-02	FAIL ABUN
EU-152	6.245E-02	NOT IDENT.
GD-153	1.383E-01	NOT IDENT.
EU-154	8.526E-02	NOT IDENT.
EU-155	9.310E-02	FAIL ABUN
TB-160	1.296E+00	FAIL ABUN
HO-166M	4.126E-02	NOT IDENT.
TM-171	1.723E+01	NOT IDENT.
HF-172	1.831E-01	NOT IDENT.
LU-172	4.605E-02	FAIL ABUN
LU-176	1.906E-02	FAIL ABUN
HF-181	3.456E+00	NOT IDENT.
TA-182	7.004E-01	FAIL ABUN
RE-183	2.491E+00	NOT IDENT.

RE-184	2.491E+01	NOT IDENT.
W-188	8.802E+01	NOT IDENT.
IR-192	3.615E-01	FAIL ABUN
HG-203	1.970E+00	NOT IDENT.
BI-207	3.154E-02	FAIL ABUN
PB-210	2.790E+00	NOT IDENT.
PB-211	4.700E-01	NOT IDENT.
BI-212	4.460E-01	FAIL ABUN
RN-219	2.753E-01	NOT IDENT.
RA-223	4.043E-01	FAIL ABUN
AC-227	1.672E-01	FAIL ABUN
TH-227	1.672E-01	FAIL ABUN
TH-229	3.561E-01	FAIL ABUN
TH-231	4.043E-01	FAIL ABUN
PA-233	3.935E-02	FAIL ABUN
PA-234	1.788E-01	NOT IDENT.
PA-234M	2.502E+00	NOT IDENT.
TH-234	9.821E-01	FAIL ABUN
U-235	1.433E-01	FAIL ABUN
NP-237	3.935E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	9.821E-01	FAIL ABUN
NP-239	2.023E-01	FAIL ABUN
PU-239	2.590E+02	NOT IDENT.
AM-241	1.155E-01	NOT IDENT.
CM-243	6.873E-02	NOT IDENT.
BK-247	4.808E-02	NOT IDENT.
CM-247	2.528E-02	NOT IDENT.
CF-249	2.700E-02	NOT IDENT.
CF-251	8.589E-02	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235041.CNF;1
* Acquisition date   : 3-OCT-2016 05:54:08 Sensitivity      : 3.000
* Detector ID        : GAM28 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.41 Half life ratio : *****
* Sample date        : 30-NOV-2015 13:27:00 Nuclide Library : SOLID
* Sample ID          : G405235041 Analyst initials: MXR1
* Batch Number       : 1596252 Sample Quantity : 1.8148E+02 GRAM
*                               Quantity Err(%) : 1.1020E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight  : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 1-AUG-2016 10:02:35 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM28 CAN.CNF;10
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.183E+01	1.380E+00	1.380E+00
CD-109	6.777E-01	2.977E+00	2.977E+00
SN-126	4.268E-02	1.875E-01	1.875E-01
BA-137M	3.794E-02	4.639E-02	4.639E-02
CS-137	4.008E-02	4.901E-02	4.901E-02
TL-208	2.731E-01	8.164E-02	8.164E-02
BI-211	8.826E-03	8.817E-01	8.817E-01
PB-212	8.071E-01	1.211E-01	1.211E-01
BI-214	7.942E-01	1.631E-01	1.631E-01
PB-214	8.029E-01	1.702E-01	1.702E-01
RN-222	7.942E-01	1.631E-01	1.631E-01
RA-224	1.221E+00	1.577E+00	1.577E+00
RA-226	7.942E-01	1.631E-01	1.631E-01
AC-228	6.291E-01	2.485E-01	2.485E-01
RA-228	6.291E-01	2.485E-01	2.485E-01
TH-228	8.071E-01	1.211E-01	1.211E-01
TH-230	7.939E-01	1.630E-01	1.630E-01
PA-231	7.547E-01	5.645E-01	5.645E-01
TH-232	6.291E-01	2.485E-01	2.485E-01
U-234	7.939E-01	1.630E-01	1.630E-01
AM-243	1.922E-01	1.218E-01	1.218E-01
ANH-511	9.561E-02	8.572E-02	8.572E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-2.191E-01	1.151E+01	1.151E+01	NOT IDENT.
NA-22	-3.133E-03	4.147E-02	4.149E-02	NOT IDENT.
NA-24	1.000E+41	1.700E+41	0.000E+00	SHORT HLIF
AL-26	9.807E-03	1.933E-02	1.983E-02	NOT IDENT.
SC-46	-5.154E-02	3.074E-01	3.082E-01	FAIL ABUN
V-48	2.863E+03	1.631E+04	1.636E+04	SHORT HLIF
CR-51	-1.913E+02	4.115E+02	4.204E+02	SHORT HLIF
MN-54	-1.507E-02	4.487E-02	4.538E-02	NOT IDENT.

CO-56	2.359E-01	3.184E-01	3.357E-01	FAIL ABUN
MN-56	1.000E+41	1.330E+41	0.000E+00	SHORT HLIF
CO-57	2.007E-02	3.756E-02	3.864E-02	NOT IDENT.
CO-58	-5.366E-01	5.512E-01	6.020E-01	NOT IDENT.
FE-59	-2.765E+00	7.135E+00	7.243E+00	NOT IDENT.
CO-60	1.676E-02	3.302E-02	3.387E-02	NOT IDENT.
ZN-65	3.236E-02	1.379E-01	1.386E-01	NOT IDENT.
GE-68	3.568E-01	1.967E+00	1.974E+00	NOT IDENT.
AS-73	7.118E-01	7.668E+00	7.675E+00	NOT IDENT.
AS-74	-7.144E+02	6.412E+03	6.420E+03	SHORT HLIF
SE-75	3.921E-02	1.560E-01	1.570E-01	NOT IDENT.
BR-77	1.436E+39	1.275E+40	0.000E+00	SHORT HLIF
SR-82	-1.409E+02	6.620E+02	6.650E+02	SHORT HLIF
RB-83	-7.956E-02	5.153E-01	5.165E-01	NOT IDENT.
KR-85	1.199E+01	6.713E+00	8.619E+00	NOT IDENT.
SR-85	1.374E+00	7.701E-01	9.882E-01	NOT IDENT.
RB-86	-1.011E+03	3.086E+04	3.086E+04	SHORT HLIF
Y-88	-3.347E-02	1.661E-01	1.668E-01	NOT IDENT.
Y-91	-8.323E+01	4.945E+02	4.959E+02	NOT IDENT.
NB-94	3.764E-03	2.770E-02	2.775E-02	NOT IDENT.
NB-95	-2.157E-01	7.525E-01	7.588E-01	NOT IDENT.
NB-95M	6.486E-01	2.188E+00	2.207E+00	NOT IDENT.
ZR-95	-4.732E-01	1.214E+00	1.232E+00	NOT IDENT.
NB-97	1.000E+41	2.113E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	2.218E+41	0.000E+00	SHORT HLIF
MO-99	-6.514E+32	9.682E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	2.065E+41	0.000E+00	SHORT HLIF
RH-101	7.707E-04	2.980E-02	2.980E-02	NOT IDENT.
RH-102	7.192E-03	4.975E-02	4.986E-02	NOT IDENT.
RU-103	4.882E+00	4.920E+00	5.390E+00	FAIL ABUN
RH-106	-6.489E-02	4.481E-01	4.490E-01	NOT IDENT.
RU-106	-6.489E-02	4.481E-01	4.490E-01	NOT IDENT.
AG-108M	-1.657E-03	2.181E-02	2.183E-02	NOT IDENT.
AG-110M	-2.353E-02	6.820E-02	6.902E-02	NOT IDENT.
SN-113	-1.516E-01	1.872E-01	1.992E-01	NOT IDENT.
CD-115	1.503E+40	2.640E+40	0.000E+00	SHORT HLIF
SN-117M	6.715E+04	1.187E+05	1.225E+05	SHORT HLIF
TE-123M	4.146E-02	1.181E-01	1.195E-01	NOT IDENT.
SB-124	-5.395E-01	1.225E+00	1.249E+00	NOT IDENT.
SB-125	-5.858E-02	7.813E-02	8.247E-02	FAIL ABUN
TE-125M	3.575E+02	2.634E+02	3.088E+02	NOT IDENT.
I-126	6.654E+04	1.294E+06	1.294E+06	SHORT HLIF
SB-126	9.420E+05	1.660E+06	1.713E+06	SHORT HLIF
SB-127	-3.575E+22	9.264E+22	0.000E+00	SHORT HLIF
I-131	-5.677E+09	8.053E+09	8.450E+09	SHORT HLIF
I-132	-1.000E+41	1.909E+42	0.000E+00	SHORT HLIF
TE-132	4.747E+26	1.695E+27	0.000E+00	SHORT HLIF
BA-133	5.065E-03	3.547E-02	3.554E-02	NOT IDENT.
I-133	-1.000E+41	2.594E+41	0.000E+00	SHORT HLIF
CS-134	2.947E-02	3.599E-02	3.836E-02	NOT IDENT.
CS-135	-3.974E-02	1.121E-01	1.135E-01	NOT IDENT.
I-135	1.000E+41	7.026E+41	0.000E+00	SHORT HLIF
CS-136	-4.347E+04	4.022E+05	4.026E+05	SHORT HLIF
CE-139	-2.894E-02	8.780E-02	8.876E-02	NOT IDENT.
BA-140	-8.930E+05	1.664E+06	1.712E+06	SHORT HLIF
LA-140	-7.616E+04	6.030E+05	6.040E+05	SHORT HLIF
CE-141	-4.633E+00	2.484E+01	2.493E+01	NOT IDENT.
CE-143	-1.000E+41	3.231E+41	0.000E+00	SHORT HLIF
CE-144	-2.477E-01	2.931E-01	3.136E-01	NOT IDENT.
PM-144	-7.349E-03	4.539E-02	4.551E-02	FAIL ABUN
PR-144	-6.410E-01	3.959E+00	3.969E+00	NOT IDENT.
PM-146	4.002E-02	3.292E-02	3.754E-02	NOT IDENT.
ND-147	-2.792E+07	4.122E+07	4.309E+07	SHORT HLIF
PM-147	-2.057E+02	6.736E+02	6.799E+02	NOT IDENT.
PM-149	6.814E+40	4.470E+41	0.000E+00	SHORT HLIF
EU-150	-1.533E-02	1.961E-02	2.080E-02	FAIL ABUN
EU-152	-3.274E-02	7.625E-02	7.766E-02	NOT IDENT.
GD-153	-2.430E-02	1.542E-01	1.546E-01	NOT IDENT.
EU-154	-7.654E-03	1.013E-01	1.013E-01	NOT IDENT.
EU-155	1.440E-01	9.226E-02	1.128E-01	FAIL ABUN
TB-160	-1.598E-01	1.485E+00	1.487E+00	FAIL ABUN
HO-166M	4.164E-02	4.172E-02	4.574E-02	NOT IDENT.
TM-171	3.747E+00	1.817E+01	1.825E+01	NOT IDENT.
HF-172	1.520E-01	1.943E-01	2.060E-01	NOT IDENT.
LU-172	-1.882E-02	5.674E-02	5.737E-02	FAIL ABUN
LU-176	-1.850E-04	2.079E-02	2.079E-02	FAIL ABUN
HF-181	-1.030E+00	4.586E+00	4.610E+00	NOT IDENT.
TA-182	8.049E-02	8.034E-01	8.043E-01	FAIL ABUN

RE-183	7.150E-01	2.594E+00	2.614E+00	NOT IDENT.
RE-184	-9.123E+00	2.957E+01	2.986E+01	NOT IDENT.
W-188	-7.636E+01	1.153E+02	1.203E+02	NOT IDENT.
IR-192	-1.241E-01	4.075E-01	4.113E-01	FAIL ABUN
HG-203	1.115E+00	2.027E+00	2.088E+00	NOT IDENT.
BI-207	-5.187E-03	3.713E-02	3.720E-02	FAIL ABUN
PB-210	2.871E-01	2.941E+00	2.944E+00	NOT IDENT.
PB-211	1.675E-01	5.051E-01	5.107E-01	NOT IDENT.
BI-212	9.611E-01	7.014E-01	8.244E-01	FAIL ABUN
RN-219	9.597E-02	2.964E-01	2.996E-01	NOT IDENT.
RA-223	1.121E-01	4.308E-01	4.337E-01	FAIL ABUN
AC-227	3.136E-02	1.768E-01	1.774E-01	FAIL ABUN
TH-227	3.136E-02	1.768E-01	1.774E-01	FAIL ABUN
TH-229	-1.910E-01	3.873E-01	3.967E-01	FAIL ABUN
TH-231	1.121E-01	4.308E-01	4.337E-01	FAIL ABUN
PA-233	-1.434E-02	4.450E-02	4.497E-02	FAIL ABUN
PA-234	6.026E-03	2.017E-01	2.018E-01	NOT IDENT.
PA-234M	-2.242E+00	3.003E+00	3.169E+00	NOT IDENT.
TH-234	1.378E-01	1.032E+00	1.033E+00	FAIL ABUN
U-235	8.410E-02	1.545E-01	1.591E-01	FAIL ABUN
NP-237	-1.434E-02	4.450E-02	4.497E-02	FAIL ABUN
NP-238	-1.000E+41	7.561E+41	0.000E+00	SHORT HLIF
U-238	1.378E-01	1.032E+00	1.033E+00	FAIL ABUN
NP-239	3.654E-01	5.053E-01	5.315E-01	FAIL ABUN
PU-239	1.305E+02	2.816E+02	2.877E+02	NOT IDENT.
AM-241	5.439E-02	1.190E-01	1.215E-01	NOT IDENT.
CM-243	-1.148E-01	8.702E-02	1.012E-01	NOT IDENT.
BK-247	-3.643E-03	5.212E-02	5.215E-02	NOT IDENT.
CM-247	7.164E-03	2.742E-02	2.761E-02	NOT IDENT.
CF-249	1.758E-02	2.801E-02	2.911E-02	NOT IDENT.
CF-251	-2.456E-03	8.975E-02	8.976E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	63.5639	87.09	127.2108	136.47	87.5808
45.60	77.5038	87.57	127.3091	140.51	0.0000
46.54	64.0330	88.03	127.4031	143.76	72.3906
49.72	0.0000	88.34	127.4672	144.24	74.8864
51.35	57.3219	88.47	127.4937	145.44	87.2842
51.87	53.1378	89.96	95.8471	152.43	86.7427
52.39	61.7115	1093.63	125.6492	153.25	0.0000
52.97	57.5295	91.11	0.0000	323.87	78.2232
53.44	57.5892	92.59	116.8675	156.02	0.0000
54.07	61.9405	93.35	117.0052	158.56	0.0000
57.36	0.0000	94.56	87.3433	159.00	72.3956
57.53	73.1602	94.65	87.3549	162.33	70.9864
57.98	65.6907	94.67	87.3578	162.66	0.0000
59.27	68.0267	94.87	87.3845	163.33	62.7029
59.32	77.7527	97.43	84.2620	165.86	77.1224
59.54	77.7879	98.43	85.5444	176.31	67.7938
60.96	93.1830	98.44	85.5456	176.60	0.0000
61.17	102.9785	99.53	86.8429	177.52	74.6645
62.93	76.1473	100.11	64.8983	181.07	0.0000
63.29	81.6446	102.03	84.8384	181.52	74.6245
63.58	72.9776	103.18	93.1293	184.41	64.0739
64.28	74.1690	103.37	102.4711	143.76	76.9876
66.73	75.6177	105.21	63.0466	193.51	87.9125
67.24	82.2733	105.31	63.0555	197.03	80.4233
125.81	79.0488	106.12	86.5093	198.01	78.7660
67.75	79.0587	106.47	97.0795	201.83	63.4116
69.67	95.5084	109.28	69.2820	203.43	73.9444
70.83	89.8233	111.00	108.2912	205.31	58.8222
72.81	103.0811	111.76	0.0000	210.85	57.8051
72.87	103.0917	114.06	85.1061	215.65	62.4507
74.66	103.4245	116.30	0.0000	222.11	59.2670
74.82	103.4536	116.74	87.7864	227.09	65.7399
74.97	103.4812	119.76	65.1114	227.38	57.7590
77.11	103.8729	121.12	75.1711	228.16	0.0000
78.74	104.1674	121.22	75.1807	228.18	59.5765
79.69	124.1581	121.78	64.4880	116.74	59.5765
80.12	110.7764	122.06	59.7328	235.69	61.7444
80.19	0.0000	122.92	71.7590	235.96	61.7578
80.57	110.8615	123.07	72.9694	238.63	57.4095
81.00	107.9436	265.00	83.8011	238.98	0.0000
81.07	107.9568	125.81	68.4246	240.99	57.5208
81.75	106.5794	127.23	87.7889	242.00	57.5684
83.79	112.9684	127.91	104.7154	244.70	57.6953
84.00	99.4471	129.30	90.4289	252.40	0.0000
85.43	126.8673	131.20	73.7238	252.80	47.1827
86.55	127.0989	133.02	78.7347	254.15	0.0000
86.79	127.1484	133.52	81.2064	256.23	50.9497
86.94	127.1792	136.00	79.0204	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	40.2948	355.39	0.0000	584.27	21.9295
264.80	39.3834	356.01	36.5707	595.83	0.0000
265.00	43.9697	364.49	0.0000	427.87	23.1875
268.22	59.6878	366.42	0.0000	602.52	0.0000
269.46	50.5532	372.51	30.5383	604.72	0.0000
270.03	45.9768	375.05	39.4645	607.14	16.6077
271.23	57.0629	377.52	29.6423	609.32	16.6229
273.65	0.0000	356.01	31.7370	610.33	16.6302
276.40	51.7412	388.16	26.8456	614.28	9.9946
277.37	50.8542	388.63	0.0000	618.01	16.6833
277.60	50.8620	391.69	39.8535	620.36	16.6992
278.00	49.9526	264.66	34.0505	621.93	21.7233
279.20	41.6638	401.81	31.0662	630.19	0.0000
279.54	44.4531	402.40	32.0794	631.29	22.3657
279.70	46.3104	404.85	29.1121	633.25	21.2644
280.46	52.8240	410.95	33.2417	634.78	0.0000
283.69	50.1625	413.71	29.2572	635.95	25.7692
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	46.5047	423.72	0.0000	645.85	22.4976
285.90	0.0000	427.09	30.4901	657.76	11.8672
287.50	48.4379	427.87	33.5532	657.90	0.0000
290.67	60.2194	433.94	30.6030	661.66	23.7711
293.27	0.0000	439.40	22.5080	664.57	0.0000
351.93	44.9609	453.88	16.0824	666.33	0.0000
295.96	44.9844	463.37	24.8638	666.50	0.0000
879.38	33.8005	468.07	23.3661	667.71	0.0000
299.98	26.7854	473.00	0.0000	677.62	18.7935
300.09	26.7872	475.06	21.8857	685.70	0.0000
300.13	26.7878	476.78	20.3399	695.00	0.0000
301.36	42.3331	477.60	25.0439	696.49	22.9443
302.85	45.2021	482.18	31.3763	696.51	22.9443
256.23	47.5176	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	27.5420
306.78	52.8805	497.08	16.8574	697.49	27.5439
308.46	34.0342	505.52	23.8028	702.65	25.2979
311.90	42.6425	507.63	0.0000	706.68	13.8193
316.51	49.4313	511.00	27.5777	711.68	11.5377
319.41	0.0000	514.00	27.6165	720.70	0.0000
320.08	0.0000	514.00	27.6165	721.93	0.0000
321.04	49.5815	520.40	14.9154	722.78	19.1157
323.87	35.3462	520.69	0.0000	722.91	19.1164
325.23	53.5448	522.65	0.0000	723.31	22.5953
328.76	0.0000	527.90	0.0000	724.19	24.3411
333.37	33.1643	528.26	17.6440	727.33	19.7275
333.97	38.9476	529.59	18.1898	733.00	23.2568
334.37	36.0718	529.87	0.0000	735.93	8.1484
338.28	27.9663	531.02	0.0000	333.97	11.6471
338.32	27.9669	537.26	0.0000	739.50	0.0000
311.90	34.7659	546.56	0.0000	747.24	15.7791
340.48	34.7659	552.55	30.2752	748.06	10.5223
340.55	0.0000	563.25	27.1617	752.31	22.8333
344.28	42.9818	569.33	20.6978	753.82	0.0000
345.93	34.8867	946.00	16.3416	756.73	21.9894
351.06	37.9169	569.70	16.3434	756.80	21.9902
351.93	37.9376	583.19	21.9198	884.68	20.2822

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	24.7076	1274.44	10.4404	1620.50	6.5889
766.42	22.0650	1001.03	14.2561	1621.92	3.2953
766.84	16.7717	1002.74	11.4104	1678.03	0.0000
772.60	0.0000	1004.73	18.0769	1690.97	3.3391
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	4.5127
778.90	10.6373	1028.54	0.0000	1063.66	4.5173
783.70	0.0000	1037.84	13.4437	1771.35	1.5061
785.37	11.5496	1038.76	0.0000	1791.20	0.0000
792.07	12.4666	631.29	14.4397	1808.65	1.8194
794.95	13.3704	1048.07	0.0000	1810.72	0.0000
795.86	12.4828	1049.04	17.3386	1836.06	4.5706
810.06	21.5024	1050.41	15.4180		
810.29	21.5039	1063.66	15.4736		
344.28	22.9383	1077.00	0.0000		
810.76	22.9414	1077.34	12.6191		
815.77	0.0000	1085.87	12.6485		
1048.07	0.0000	1093.63	14.6246		
832.01	11.7325	1099.45	23.4346		
834.85	17.1631	1112.07	11.1970		
835.71	21.6863	1112.84	11.7590		
836.80	0.0000	1115.54	10.9826		
846.75	0.0000	1120.29	11.7817		
846.77	8.1617	1120.55	11.7825		
856.80	0.0000	1221.41	11.7847		
860.56	14.5747	1129.67	6.8893		
871.09	11.6988	1131.51	0.0000		
873.19	16.0966	1147.95	0.0000		
875.33	0.0000	1173.23	12.9381		
879.38	15.5785	1177.95	12.7539		
880.51	13.7508	1189.05	19.4120		
883.24	13.7622	1204.77	19.0580		
884.68	13.7686	1221.41	17.1214		
889.28	16.5460	1231.02	12.1143		
894.76	12.8913	1235.36	0.0000		
898.04	17.5133	1238.28	16.1807		
900.72	13.8377	1260.41	0.0000		
903.28	21.2347	1271.87	17.3300		
911.20	17.5846	1274.44	16.3203		
912.08	17.5893	1274.54	16.3213		
923.98	0.0000	1291.59	16.3857		
926.50	12.0875	1298.22	0.0000		
929.11	13.0276	1312.11	0.0000		
937.49	20.5243	1332.49	9.3043		
944.13	0.0000	1362.66	0.0000		
946.00	14.0291	1365.19	3.1243		
949.00	14.0419	1368.63	0.0000		
667.71	0.0000	1384.29	5.2295		
962.31	19.7362	1408.01	12.6160		
964.08	10.5314	1457.56	0.0000		
966.17	19.5705	1460.82	5.3165		
911.20	24.4829	1489.16	6.4175		
968.97	24.4829	1505.03	6.4387		
983.53	0.0000	1584.12	7.6328		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 07:57:48.10

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235042.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM08.CNF;320
Background date    : Z-OCT-2016 11:00:23.
Sample date       : 30-NOV-2015 13:53:00 Acquisition date : 3-OCT-2016 06:55:55.
Sample ID        : G405235042 Sample quantity : 1.76800E+02 GRAM
Detector name    : GAM08 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.67 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596252 Detector SN# :
Matrix Spike ID  : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.99*	19	93	1.39	126.24	123	7	5.23E-03	92.6	
2	1	74.79*	105	121	1.18	149.84	144	16	2.91E-02	20.2	1.23E+00
3	1	76.94*	124	120	1.18	154.13	144	16	3.45E-02	17.6	
4	3	92.73*	66	150	1.48	185.74	170	23	1.84E-02	39.3	3.36E+00
5	3	94.82	23	83	1.08	189.91	170	23	6.40E-03	75.5	
6	0	144.04*	5	87	0.88	288.40	285	6	1.45E-03	298.1	
7	0	185.86*	47	92	1.29	372.09	368	9	1.31E-02	42.6	
8	0	213.01	94	223	8.20	426.41	412	27	2.61E-02	46.0	
9	0	238.59*	234	119	1.00	477.59	473	9	6.50E-02	10.9	
10	0	241.76	56	49	1.65	483.93	482	6	1.55E-02	24.4	
11	0	270.96	27	71	0.73	542.35	537	10	7.56E-03	61.4	
12	1	295.37*	101	39	1.55	591.20	586	19	2.81E-02	15.6	1.13E+00
13	1	300.25	21	44	1.55	600.95	586	19	5.85E-03	61.0	
14	0	307.48	13	62	4.45	615.43	607	12	3.66E-03	123.5	
15	0	339.27*	66	63	1.39	679.03	672	14	1.82E-02	29.5	
16	0	352.15*	170	83	1.43	704.81	699	14	4.72E-02	14.1	
17	0	370.31	33	57	7.15	741.13	733	18	9.30E-03	56.2	
18	0	463.41	30	29	2.78	927.42	922	12	8.28E-03	40.9	
19	0	511.28*	47	22	2.42	1023.18	1017	19	1.31E-02	35.4	
20	0	583.44*	110	15	1.59	1167.56	1162	14	3.07E-02	12.2	
21	0	609.45*	121	49	1.46	1219.61	1214	14	3.37E-02	15.5	
22	0	661.74	81	29	1.57	1324.21	1319	11	2.24E-02	17.2	
23	0	728.09*	34	18	1.63	1456.96	1449	15	9.58E-03	33.5	
24	0	733.46	9	8	1.77	1467.71	1463	7	2.43E-03	65.1	
25	0	794.49	16	8	1.29	1589.80	1583	11	4.36E-03	43.5	
26	0	861.60*	14	23	0.73	1724.07	1714	19	3.97E-03	87.4	
27	0	911.20*	66	11	1.11	1823.30	1816	15	1.82E-02	17.1	
28	0	924.29	9	2	0.53	1849.49	1845	7	2.51E-03	41.5	
29	0	971.14*	23	41	1.02	1943.22	1933	16	6.49E-03	67.1	
30	0	1001.34*	17	3	0.62	2003.65	1997	13	4.76E-03	35.7	
31	0	1028.25	8	19	1.42	2057.47	2051	10	2.12E-03	115.0	
32	0	1120.48*	24	7	1.57	2241.99	2237	10	6.79E-03	30.3	
33	0	1155.72	18	8	1.59	2312.49	2305	17	4.94E-03	44.4	
34	0	1163.80	9	9	1.26	2328.65	2322	12	2.63E-03	70.8	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1168.05	10	7	1.08	2337.17	2333	9	2.76E-03	57.1	
36	0	1261.90	12	7	1.33	2524.91	2519	11	3.41E-03	52.5	
37	0	1301.59	13	0	0.83	2604.31	2599	10	3.61E-03	27.7	
38	0	1460.69	305	4	2.03	2922.58	2915	15	8.48E-02	5.9	
39	0	1764.43*	18	0	1.18	3530.17	3523	13	4.88E-03	28.1	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235042.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 30-NOV-2015 13:53:00 Acquisition date : 3-OCT-2016 06:55:55
Sample ID : G405235042 Sample quantity : 176.80 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA8 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.67 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
U-235	143.76	CE-141	145.44
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	9.672E-01	1.233E+01	1.233E+01	11.78	OK
BA-137M	661.66	89.90*	1.815E+00	2.313E-01	2.358E-01	34.47	OK
CS-137	661.66	85.10*	1.815E+00	2.443E-01	2.491E-01	34.47	OK
TL-208	277.37	6.60	3.710E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	2.006E+00	3.083E-01	3.083E-01	24.40	OK
	860.56	12.50	1.477E+00	3.489E-01	3.489E-01	174.76	OK
PB-212	74.82	10.28	3.316E+00	1.414E+00	1.414E+00	54.34	OK
	77.11	17.10	3.509E+00	1.258E+00	1.258E+00	35.22	OK
	238.63	43.60*	4.174E+00	6.871E-01	6.871E-01	21.74	OK
	300.09	3.30	3.477E+00	9.534E-01	9.534E-01	121.97	OK
BI-214	609.32	45.49*	1.937E+00	6.508E-01	6.511E-01	30.99	OK
	1120.29	14.92	1.202E+00	5.911E-01	5.913E-01	60.69	OK
	1764.49	15.30	8.180E-01	5.677E-01	5.679E-01	56.10	OK
PB-214	74.82	5.80	3.318E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	3.509E+00	2.218E+00	2.218E+00	35.22	OK
	87.09	3.41	4.288E+00	-----	Line Not Found	-----	Absent
	242.00	7.25	4.130E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	3.525E+00	8.110E-01	8.113E-01	31.12	OK
	351.93	35.60*	3.044E+00	7.984E-01	7.987E-01	28.20	OK
RN-222	609.32	45.49*	1.937E+00	6.508E-01	6.511E-01	30.99	OK
	1120.29	14.92	1.202E+00	5.911E-01	5.913E-01	60.69	OK
	1764.49	15.30	8.180E-01	5.677E-01	5.679E-01	56.10	OK
RA-224	240.99	4.10*	4.133E+00	3.237E-01	3.237E-01	298.89	OK
RA-226	609.32	45.49*	1.937E+00	6.508E-01	6.511E-01	30.99	OK
	1120.29	14.92	1.202E+00	5.911E-01	5.913E-01	60.69	OK
	1764.49	15.30	8.180E-01	5.677E-01	5.679E-01	56.10	OK
TH-228	74.82	10.28	3.316E+00	1.414E+00	1.414E+00	54.34	OK
	77.11	17.10	3.509E+00	1.258E+00	1.258E+00	35.22	OK
	238.63	43.60*	4.174E+00	6.871E-01	6.871E-01	21.74	OK
	300.09	3.30	3.477E+00	9.534E-01	9.534E-01	121.97	OK
TH-230	609.32	45.49*	1.937E+00	6.508E-01	6.508E-01	30.99	OK
	1120.29	14.92	1.202E+00	5.911E-01	5.911E-01	60.69	OK
	1764.49	15.30	8.180E-01	5.677E-01	5.677E-01	56.10	OK
PA-231	283.69	1.70	3.643E+00	-----	Line Not Found	-----	Absent
	301.36	5.35*	3.477E+00	5.881E-01	5.881E-01	121.97	OK
TH-234	63.29	3.70*	2.108E+00	1.498E+00	1.498E+00	185.14	OK
	92.59	4.23	4.622E+00	2.017E+00	2.017E+00	78.54	OK
U-234	609.32	45.49*	1.937E+00	6.508E-01	6.508E-01	30.99	OK
	1120.29	14.92	1.202E+00	5.911E-01	5.911E-01	60.69	OK
	1764.49	15.30	8.180E-01	5.677E-01	5.677E-01	56.10	OK
U-235	89.96	3.47	4.467E+00	-----	Line Not Found	-----	Absent
	93.35	5.60	4.622E+00	1.523E+00	1.523E+00	78.54	OK
	143.76	10.96*	5.442E+00	4.947E-02	4.947E-02	596.16	OK
	163.33	5.08	5.246E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	4.930E+00	9.198E-02	9.198E-02	85.11	OK
	205.31	5.01	4.641E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	2.108E+00	1.498E+00	1.498E+00	185.14	OK
	92.59	4.23	4.622E+00	2.017E+00	2.017E+00	78.54	OK
AM-243	43.53	5.90	2.327E-01	-----	Line Not Found	-----	Absent

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	74.66	67.20*	3.316E+00	2.163E-01	2.163E-01	54.34	OK
ANH-511	511.00	100.00*	2.232E+00	1.023E-01	1.023E-01	70.85	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235042.CNF;1
* Acquisition date   : 3-OCT-2016 06:55:55 Sensitivity      : 3.000
* Detector ID        : GAM08 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.67 Half life ratio : *****
* Sample date       : 30-NOV-2015 13:53:00 Analyst initials: MXR1
* Sample ID         : G405235042 Sample Quantity : 1.7680E+02 GRAM
* Batch Number      : 1596252 Wet Weight      : 0.00000
* Wet wt corr       : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 21-JUL-2016 06:09:19 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM08 CAN.CNF;14
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.233E+01	1.423E+00	6.159E-01
BA-137M	2.358E-01	7.965E-02	6.643E-02
CS-137	2.491E-01	8.415E-02	7.018E-02
TL-208	3.083E-01	7.372E-02	6.311E-02
PB-212	6.871E-01	1.464E-01	1.010E-01
BI-214	6.511E-01	1.977E-01	1.309E-01
PB-214	7.987E-01	2.207E-01	1.220E-01
RN-222	6.511E-01	1.977E-01	1.309E-01
RA-224	3.237E-01	9.481E-01	1.062E+00
RA-226	6.511E-01	1.977E-01	1.309E-01
TH-228	6.871E-01	1.464E-01	1.010E-01
TH-230	6.508E-01	1.976E-01	1.309E-01
PA-231	5.881E-01	7.029E-01	6.746E-01
TH-234	1.498E+00	2.718E+00	2.540E+00
U-234	6.508E-01	1.976E-01	1.309E-01
U-235	4.947E-02	2.890E-01	3.150E-01
U-238	1.498E+00	2.718E+00	2.540E+00
AM-243	2.163E-01	1.152E-01	9.787E-02
ANH-511	1.023E-01	7.103E-02	4.036E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	1.495E+01	1.265E+01	2.850E+01	NOT IDENT.
NA-22	-1.235E-02	3.734E-02	7.060E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	8.641E-03	1.952E-02	5.458E-02	NOT IDENT.
SC-46	7.510E-02	4.817E-01	9.700E-01	FAIL ABUN
V-48	0.000E+00	1.689E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.524E+02	0.000E+00	SHORT HLIF
MN-54	3.215E-02	4.896E-02	1.131E-01	NOT IDENT.
CO-56	-2.901E-01	4.658E-01	8.545E-01	NOT IDENT.
MN-56	0.000E+00	1.617E+41	0.000E+00	SHORT HLIF
CO-57	1.767E-02	4.884E-02	9.585E-02	NOT IDENT.

CO-58	-4.666E-01	5.904E-01	1.055E+00	NOT IDENT.
FE-59	-5.049E+00	7.984E+00	1.408E+01	NOT IDENT.
CO-60	5.863E-03	3.677E-02	7.723E-02	NOT IDENT.
ZN-65	3.864E-02	1.443E-01	2.827E-01	NOT IDENT.
GE-68	-1.369E+00	2.448E+00	4.398E+00	NOT IDENT.
AS-73	-1.025E+01	1.199E+01	2.243E+01	NOT IDENT.
AS-74	0.000E+00	7.929E+03	0.000E+00	SHORT HLIF
SE-75	5.548E-02	2.054E-01	4.219E-01	NOT IDENT.
BR-77	0.000E+00	2.623E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	7.896E+02	0.000E+00	SHORT HLIF
RB-83	-9.802E-02	5.823E-01	1.069E+00	NOT IDENT.
KR-85	6.097E+00	5.934E+00	1.322E+01	NOT IDENT.
SR-85	6.954E-01	6.805E-01	1.515E+00	NOT IDENT.
RB-86	0.000E+00	3.924E+04	0.000E+00	SHORT HLIF
Y-88	3.127E-02	6.945E-02	2.753E-01	NOT IDENT.
Y-91	-5.682E+01	5.592E+02	1.082E+03	NOT IDENT.
NB-94	-1.328E-02	2.623E-02	5.022E-02	NOT IDENT.
NB-95	-2.528E-01	8.902E-01	1.730E+00	NOT IDENT.
NB-95M	-4.655E-01	2.690E+00	4.769E+00	NOT IDENT.
ZR-95	4.518E-01	1.375E+00	2.967E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.331E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.027E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.838E+41	0.000E+00	SHORT HLIF
RH-101	9.922E-03	3.491E-02	6.760E-02	NOT IDENT.
RH-102	-8.216E-03	4.404E-02	8.467E-02	NOT IDENT.
RU-103	2.616E+00	5.933E+00	1.239E+01	FAIL ABUN
RH-106	-3.175E-01	4.677E-01	7.996E-01	NOT IDENT.
RU-106	-3.175E-01	4.677E-01	7.996E-01	NOT IDENT.
AG-108M	-6.266E-03	2.733E-02	5.201E-02	NOT IDENT.
CD-109	8.134E-02	1.168E+00	2.260E+00	NOT IDENT.
AG-110M	-1.853E-02	9.769E-02	1.924E-01	NOT IDENT.
SN-113	-4.937E-02	2.262E-01	4.350E-01	NOT IDENT.
CD-115	0.000E+00	3.202E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.378E+05	0.000E+00	SHORT HLIF
TE-123M	2.142E-02	1.354E-01	2.566E-01	NOT IDENT.
SB-124	1.157E-02	1.920E+00	4.303E+00	NOT IDENT.
SB-125	8.939E-02	1.008E-01	2.176E-01	FAIL ABUN
TE-125M	-1.322E+02	3.099E+02	5.665E+02	NOT IDENT.
I-126	0.000E+00	1.659E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.785E+06	0.000E+00	SHORT HLIF
SN-126	3.738E-02	7.618E-02	1.516E-01	FAIL ABUN
SB-127	0.000E+00	8.020E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.060E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.057E+27	0.000E+00	SHORT HLIF
BA-133	1.310E-02	3.859E-02	7.271E-02	NOT IDENT.
I-133	0.000E+00	1.241E+41	0.000E+00	SHORT HLIF
CS-134	7.066E-02	6.025E-02	9.993E-02	FAIL ABUN
CS-135	7.375E-04	1.330E-01	2.411E-01	NOT IDENT.
I-135	0.000E+00	1.030E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.564E+05	0.000E+00	SHORT HLIF
CE-139	-7.099E-02	1.126E-01	1.968E-01	NOT IDENT.
BA-140	0.000E+00	1.762E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	6.662E+05	0.000E+00	SHORT HLIF
CE-141	7.939E+00	4.638E+01	5.258E+01	FAIL ABUN
CE-143	0.000E+00	1.507E+41	0.000E+00	SHORT HLIF
CE-144	-3.430E-02	3.694E-01	6.850E-01	NOT IDENT.
PM-144	-1.214E-03	4.960E-02	1.016E-01	NOT IDENT.
PR-144	-5.977E-02	4.334E+00	8.886E+00	NOT IDENT.
PM-146	4.624E-03	4.204E-02	8.344E-02	NOT IDENT.
ND-147	0.000E+00	4.802E+07	0.000E+00	SHORT HLIF
PM-147	2.994E+02	8.013E+02	1.581E+03	NOT IDENT.
PM-149	0.000E+00	1.792E+41	0.000E+00	SHORT HLIF
EU-150	9.557E-03	2.385E-02	4.526E-02	FAIL ABUN
EU-152	-3.597E-03	8.187E-02	1.468E-01	NOT IDENT.
GD-153	1.846E-01	1.794E-01	3.565E-01	NOT IDENT.
EU-154	-3.016E-02	9.116E-02	1.724E-01	NOT IDENT.
EU-155	3.030E-02	1.114E-01	2.189E-01	NOT IDENT.
TB-160	-3.385E-01	2.036E+00	4.000E+00	NOT IDENT.
HO-166M	-3.375E-02	5.772E-02	1.082E-01	FAIL ABUN
TM-171	1.165E+01	2.787E+01	5.840E+01	NOT IDENT.
HF-172	-5.657E-02	2.454E-01	4.555E-01	FAIL ABUN
LU-172	-8.596E-02	7.803E-02	1.271E-01	FAIL ABUN
LU-176	2.135E-02	5.166E-02	3.864E-02	FAIL ABUN
HF-181	2.002E+00	4.765E+00	9.808E+00	NOT IDENT.
TA-182	2.198E-01	9.055E-01	1.857E+00	FAIL ABUN
RE-183	-4.373E-02	3.753E+00	7.573E+00	NOT IDENT.

RE-184	-1.125E+00	3.339E+01	6.727E+01	NOT IDENT.
W-188	1.987E+01	1.196E+02	2.197E+02	FAIL ABUN
IR-192	-4.992E-01	4.595E-01	8.093E-01	FAIL ABUN
HG-203	-3.595E+00	2.484E+00	4.248E+00	NOT IDENT.
BI-207	6.315E-03	3.790E-02	8.061E-02	FAIL ABUN
PB-210	-3.347E+00	5.445E+00	1.058E+01	NOT IDENT.
BI-211	0.000E+00	6.079E-01	7.644E-01	FAIL ABUN
PB-211	5.547E-02	6.223E-01	1.238E+00	NOT IDENT.
BI-212	0.000E+00	9.296E-01	1.302E+00	FAIL ABUN
RN-219	-1.052E-01	3.421E-01	6.507E-01	FAIL ABUN
RA-223	4.151E-02	5.534E-01	1.082E+00	FAIL ABUN
AC-227	-6.853E-02	1.989E-01	3.892E-01	FAIL ABUN
TH-227	-6.853E-02	1.989E-01	3.892E-01	FAIL ABUN
AC-228	0.000E+00	2.700E-01	5.024E-01	FAIL ABUN
RA-228	0.000E+00	2.700E-01	5.024E-01	FAIL ABUN
TH-229	-4.067E-02	4.114E-01	8.342E-01	NOT IDENT.
TH-231	4.151E-02	5.534E-01	1.082E+00	FAIL ABUN
TH-232	0.000E+00	2.700E-01	5.024E-01	FAIL ABUN
PA-233	-1.259E-02	6.296E-02	1.165E-01	FAIL ABUN
PA-234	-1.738E-01	2.461E-01	4.376E-01	FAIL ABUN
PA-234M	6.851E+00	4.793E+00	8.846E+00	FAIL ABUN
NP-237	-1.259E-02	6.296E-02	1.165E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	4.936E-02	2.323E-01	4.536E-01	NOT IDENT.
PU-239	9.967E+01	3.116E+02	6.049E+02	NOT IDENT.
AM-241	1.412E-01	1.644E-01	3.327E-01	NOT IDENT.
CM-243	-5.309E-02	1.008E-01	1.857E-01	NOT IDENT.
BK-247	2.102E-02	6.631E-02	1.371E-01	NOT IDENT.
CM-247	3.517E-03	3.081E-02	6.187E-02	NOT IDENT.
CF-249	6.041E-03	3.398E-02	6.864E-02	NOT IDENT.
CF-251	2.810E-02	1.029E-01	2.153E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	299	10.66*	9.672E-01	1.233E+01	1.233E+01	11.78
BA-137M	661.66	89	89.90*	1.815E+00	2.313E-01	2.358E-01	34.47
CS-137	661.66	89	85.10*	1.815E+00	2.443E-01	2.491E-01	34.47
CE-141	145.44	7	48.29*	5.442E+00	1.123E-02	7.939E+00	596.16
TL-208	277.37	-----	6.60	3.710E+00	-----	Line Not Found	-----
	583.19	124	85.00*	2.006E+00	3.083E-01	3.083E-01	24.40
	860.56	15	12.50	1.477E+00	3.489E-01	3.489E-01	174.76
BI-211	72.87	-----	1.23	3.135E+00	-----	Line Not Found	-----
	351.06	204	12.92*	3.044E+00	2.200E+00	2.200E+00	28.20
PB-212	74.82	150	10.28	3.316E+00	1.871E+00	1.871E+00	40.34
	77.11	178	17.10	3.509E+00	1.258E+00	1.258E+00	35.22
	238.63	295	43.60*	4.174E+00	6.871E-01	6.871E-01	21.74
	300.09	26	3.30	3.477E+00	9.534E-01	9.534E-01	121.97
BI-214	609.32	135	45.49*	1.937E+00	6.508E-01	6.511E-01	30.99
	1120.29	25	14.92	1.202E+00	5.911E-01	5.913E-01	60.69
	1764.49	17	15.30	8.180E-01	5.677E-01	5.679E-01	56.10
PB-214	74.82	150	5.80	3.316E+00	3.317E+00	3.318E+00	40.34
	77.11	178	9.70	3.509E+00	2.218E+00	2.218E+00	35.22
	87.09	-----	3.41	4.288E+00	-----	Line Not Found	-----
	242.00	70	7.25	4.133E+00	9.941E-01	9.945E-01	48.83
	295.22	124	18.42	3.525E+00	8.110E-01	8.113E-01	31.12
	351.93	204	35.60*	3.044E+00	7.984E-01	7.987E-01	28.20
RN-222	609.32	135	45.49*	1.937E+00	6.508E-01	6.511E-01	30.99
	1120.29	25	14.92	1.202E+00	5.911E-01	5.913E-01	60.69
	1764.49	17	15.30	8.180E-01	5.677E-01	5.679E-01	56.10
RA-224	240.99	70	4.10*	4.133E+00	1.758E+00	1.758E+00	48.83
RA-226	609.32	135	45.49*	1.937E+00	6.508E-01	6.511E-01	30.99
	1120.29	25	14.92	1.202E+00	5.911E-01	5.913E-01	60.69
	1764.49	17	15.30	8.180E-01	5.677E-01	5.679E-01	56.10
TH-228	74.82	150	10.28	3.316E+00	1.871E+00	1.871E+00	40.34
	77.11	178	17.10	3.509E+00	1.258E+00	1.258E+00	35.22
	238.63	295	43.60*	4.174E+00	6.871E-01	6.871E-01	21.74
	300.09	26	3.30	3.477E+00	9.534E-01	9.534E-01	121.97
TH-230	609.32	135	45.49*	1.937E+00	6.508E-01	6.508E-01	30.99
	1120.29	25	14.92	1.202E+00	5.911E-01	5.911E-01	60.69
	1764.49	17	15.30	8.180E-01	5.677E-01	5.677E-01	56.10
PA-231	283.69	-----	1.70	3.643E+00	-----	Line Not Found	-----
	301.36	26	5.35*	3.477E+00	5.881E-01	5.881E-01	121.97
TH-234	63.29	28	3.70*	2.108E+00	1.498E+00	1.498E+00	185.14
	92.59	93	4.23	4.622E+00	2.017E+00	2.017E+00	78.54
U-234	609.32	135	45.49*	1.937E+00	6.508E-01	6.508E-01	30.99
	1120.29	25	14.92	1.202E+00	5.911E-01	5.911E-01	60.69
	1764.49	17	15.30	8.180E-01	5.677E-01	5.677E-01	56.10
U-235	89.96	-----	3.47	4.467E+00	-----	Line Not Found	-----
	93.35	93	5.60	4.622E+00	1.523E+00	1.523E+00	78.54
	143.76	7	10.96*	5.442E+00	4.947E-02	4.947E-02	596.16
	163.33	-----	5.08	5.246E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	185.72	61	57.20	4.930E+00	9.198E-02	9.198E-02	85.11
	205.31	-----	5.01	4.641E+00	-----	Line Not Found	-----
U-238	63.29	28	3.70*	2.108E+00	1.498E+00	1.498E+00	185.14
	92.59	93	4.23	4.622E+00	2.017E+00	2.017E+00	78.54
AM-243	43.53	-----	5.90	2.327E-01	-----	Line Not Found	-----
	74.66	150	67.20*	3.316E+00	2.863E-01	2.863E-01	40.34
ANH-511	511.00	54	100.00*	2.232E+00	1.023E-01	1.023E-01	70.85

Flag: "*" = Keyline

Total number of lines in spectrum 39
Number of unidentified lines 7
Number of lines tentatively identified by NID 32 82.05%

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	1.233E+01	1.233E+01	0.145E+01	11.78	
BA-137M	30.08Y	1.02	2.313E-01	2.358E-01	0.813E-01	34.47	
CS-137	30.08Y	1.02	2.443E-01	2.491E-01	0.859E-01	34.47	
CE-141	32.51D	707.	1.123E-02	7.939E+00	47.33E+00	596.16	
TL-208	1.41E+10Y	1.00	3.083E-01	3.083E-01	0.752E-01	24.40	
BI-211	7.04E+08Y	1.00	2.200E+00	2.200E+00	0.620E+00	28.20	
PB-212	1.41E+10Y	1.00	6.871E-01	6.871E-01	1.494E-01	21.74	
BI-214	1600.00Y	1.00	6.508E-01	6.511E-01	2.017E-01	30.99	
PB-214	1600.00Y	1.00	7.984E-01	7.987E-01	2.252E-01	28.20	
RN-222	1600.00Y	1.00	6.508E-01	6.511E-01	2.017E-01	30.99	
RA-224	1.41E+10Y	1.00	1.758E+00	1.758E+00	0.858E+00	48.83	
RA-226	1600.00Y	1.00	6.508E-01	6.511E-01	2.017E-01	30.99	
TH-228	1.41E+10Y	1.00	6.871E-01	6.871E-01	1.494E-01	21.74	
TH-230	7.54E+04Y	1.00	6.508E-01	6.508E-01	2.017E-01	30.99	
PA-231	7.04E+08Y	1.00	5.881E-01	5.881E-01	7.173E-01	121.97	
TH-234	4.47E+09Y	1.00	1.498E+00	1.498E+00	2.773E+00	185.14	
U-234	2.45E+05Y	1.00	6.508E-01	6.508E-01	2.017E-01	30.99	
U-235	7.04E+08Y	1.00	4.947E-02	4.947E-02	29.49E-02	596.16	
U-238	4.47E+09Y	1.00	1.498E+00	1.498E+00	2.773E+00	185.14	
AM-243	7370.00Y	1.00	2.863E-01	2.863E-01	1.155E-01	40.34	
ANH-511	1.00E+09Y	1.00	1.023E-01	1.023E-01	0.725E-01	70.85	

Total Activity : 2.653E+01 3.447E+01

Grand Total Activity : 2.653E+01 3.447E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	94.82	32	116	1.08	189.91	170	23	6.40E-03	****	4.73E+00	T
0	213.01	120	284	8.20	426.41	412	27	2.61E-02	92.0	4.53E+00	
0	270.96	34	88	0.73	542.35	537	10	7.56E-03	****	3.78E+00	T
0	307.48	16	75	4.45	615.43	607	12	3.66E-03	****	3.41E+00	T
0	339.27	79	76	1.39	679.03	672	14	1.82E-02	58.9	3.14E+00	T
0	370.31	40	67	7.15	741.13	733	18	9.30E-03	****	2.92E+00	
0	463.41	34	34	2.78	927.42	922	12	8.28E-03	81.9	2.42E+00	T
0	728.09	37	19	1.63	1456.96	1449	15	9.58E-03	66.9	1.68E+00	T
0	733.46	9	9	1.77	1467.71	1463	7	2.43E-03	****	1.67E+00	T
0	794.49	17	9	1.29	1589.80	1583	11	4.36E-03	87.0	1.57E+00	T
0	911.20	69	12	1.11	1823.30	1816	15	1.82E-02	34.2	1.41E+00	T
0	924.29	10	2	0.53	1849.49	1845	7	2.51E-03	82.9	1.40E+00	T
0	971.14	24	43	1.02	1943.22	1933	16	6.49E-03	****	1.35E+00	
0	1001.34	18	3	0.62	2003.65	1997	13	4.76E-03	71.4	1.31E+00	T
0	1028.25	8	20	1.42	2057.47	2051	10	2.12E-03	****	1.29E+00	T
0	1155.72	18	8	1.59	2312.49	2305	17	4.94E-03	88.7	1.17E+00	
0	1163.80	10	9	1.26	2328.65	2322	12	2.63E-03	****	1.17E+00	
0	1168.05	10	7	1.08	2337.17	2333	9	2.76E-03	****	1.16E+00	
0	1261.90	12	7	1.33	2524.91	2519	11	3.41E-03	****	1.09E+00	T
0	1301.59	13	0	0.83	2604.31	2599	10	3.61E-03	55.5	1.07E+00	

Flags: "T" = Tentatively associated

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*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                           *
*                               Charleston, SC 29407                       *
*                               *                                           *
*****
*                               DETECTOR AND SAMPLE DATA                   *
*                               *                                           *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235042.CNF;1 *
* Acquisition date   : 3-OCT-2016 06:55:55 Sensitivity      : 3.000         *
* Detector ID        : GAM08 Energy tolerance: 1.500         *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000         *
* Elapsed real time  : 0 01:00:00.67 Half life ratio : *****         *
* Sample date        : 30-NOV-2015 13:53:00 Nuclide Library : SOLID         *
* Sample ID          : G405235042 Analyst initials: MXR1         *
* Batch Number       : 1596252 Sample Quantity : 1.7680E+02 GRAM         *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000         *
*                               Dry Weight : 0.00000         *
*****
*                               CALIBRATION INFORMATION                     *
*                               *                                           *
* Eff. Cal. date     : 21-JUL-2016 06:09:19 Eff. Geometry : CAN         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM08 CAN.CNF;14         *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.514E-01
BA-137M	2.948E-02
CS-137	3.114E-02
TL-208	2.803E-02
PB-212	4.711E-02
BI-214	5.866E-02
PB-214	5.534E-02
RN-222	5.866E-02
RA-224	4.945E-01
RA-226	5.866E-02
TH-228	4.711E-02
TH-230	5.864E-02
PA-231	3.042E-01
TH-234	1.189E+00
U-234	5.864E-02
U-235	1.470E-01
U-238	1.189E+00
AM-243	4.605E-02
ANH-511	1.747E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.290E+01	NOT IDENT.
NA-22	2.853E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.004E-02	NOT IDENT.
SC-46	4.326E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	4.876E-02	NOT IDENT.
CO-56	3.644E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.496E-02	NOT IDENT.
CO-58	4.491E-01	NOT IDENT.

FE-59	6.011E+00	NOT IDENT.
CO-60	3.236E-02	NOT IDENT.
ZN-65	1.183E-01	NOT IDENT.
GE-68	1.875E+00	NOT IDENT.
AS-73	1.037E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.948E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.621E-01	NOT IDENT.
KR-85	5.947E+00	NOT IDENT.
SR-85	6.816E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	8.295E-02	NOT IDENT.
Y-91	4.649E+02	NOT IDENT.
NB-94	2.165E-02	NOT IDENT.
NB-95	7.619E-01	NOT IDENT.
NB-95M	2.219E+00	NOT IDENT.
ZR-95	1.296E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.178E-02	NOT IDENT.
RH-102	3.569E-02	NOT IDENT.
RU-103	5.532E+00	FAIL ABUN
RH-106	3.435E-01	NOT IDENT.
RU-106	3.435E-01	NOT IDENT.
AG-108M	2.337E-02	NOT IDENT.
CD-109	1.067E+00	NOT IDENT.
AG-110M	8.297E-02	NOT IDENT.
SN-113	1.960E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.199E-01	NOT IDENT.
SB-124	1.656E+00	NOT IDENT.
SB-125	9.908E-02	FAIL ABUN
TE-125M	2.649E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SN-126	7.182E-02	FAIL ABUN
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.290E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	4.409E-02	FAIL ABUN
CS-135	1.105E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.133E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.460E+01	FAIL ABUN
CE-143	0.000E+00	SHORT HLIF
CE-144	3.206E-01	NOT IDENT.
PM-144	4.458E-02	NOT IDENT.
PR-144	3.902E+00	NOT IDENT.
PM-146	3.751E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.399E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.059E-02	FAIL ABUN
EU-152	6.568E-02	NOT IDENT.
GD-153	1.673E-01	NOT IDENT.
EU-154	6.967E-02	NOT IDENT.
EU-155	1.029E-01	NOT IDENT.
TB-160	1.741E+00	NOT IDENT.
HO-166M	4.766E-02	FAIL ABUN
TM-171	2.725E+01	NOT IDENT.
HF-172	2.138E-01	FAIL ABUN
LU-172	5.311E-02	FAIL ABUN
LU-176	1.740E-02	FAIL ABUN
HF-181	4.412E+00	NOT IDENT.
TA-182	8.038E-01	FAIL ABUN
RE-183	3.531E+00	NOT IDENT.
RE-184	2.912E+01	NOT IDENT.

W-188	1.007E+02	FAIL ABUN
IR-192	3.646E-01	FAIL ABUN
HG-203	1.925E+00	NOT IDENT.
BI-207	3.389E-02	FAIL ABUN
PB-210	4.926E+00	NOT IDENT.
BI-211	3.668E-01	FAIL ABUN
PB-211	5.596E-01	NOT IDENT.
BI-212	5.980E-01	FAIL ABUN
RN-219	2.915E-01	FAIL ABUN
RA-223	4.941E-01	FAIL ABUN
AC-227	1.782E-01	FAIL ABUN
TH-227	1.782E-01	FAIL ABUN
AC-228	2.350E-01	FAIL ABUN
RA-228	2.350E-01	FAIL ABUN
TH-229	3.878E-01	NOT IDENT.
TH-231	4.941E-01	FAIL ABUN
TH-232	2.350E-01	FAIL ABUN
PA-233	5.352E-02	FAIL ABUN
PA-234	1.829E-01	FAIL ABUN
PA-234M	3.889E+00	FAIL ABUN
NP-237	5.352E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.120E-01	NOT IDENT.
PU-239	2.843E+02	NOT IDENT.
AM-241	1.559E-01	NOT IDENT.
CM-243	8.673E-02	NOT IDENT.
BK-247	6.321E-02	NOT IDENT.
CM-247	2.783E-02	NOT IDENT.
CF-249	3.103E-02	NOT IDENT.
CF-251	1.005E-01	NOT IDENT.

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235042.CNF;1
* Acquisition date   : 3-OCT-2016 06:55:55 Sensitivity      : 3.000
* Detector ID        : GAM08 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.67 Half life ratio : *****
* Sample date       : 30-NOV-2015 13:53:00 Nuclide Library : SOLID
* Sample ID         : G405235042 Analyst initials: MXR1
* Batch Number      : 1596252 Sample Quantity : 1.7680E+02 GRAM
* Wet wt corr       : 1.00000 Quantity Err(%) : 1.1312E-03 %
*                   : Wet Weight : 0.00000
*                   : Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 21-JUL-2016 06:09:19 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM08 CAN.CNF;14
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.233E+01	1.562E+00	1.562E+00
BA-137M	2.358E-01	8.030E-02	8.030E-02
CS-137	2.491E-01	8.482E-02	8.482E-02
TL-208	3.083E-01	7.488E-02	7.488E-02
PB-212	6.871E-01	1.509E-01	1.509E-01
BI-214	6.511E-01	1.997E-01	1.997E-01
PB-214	7.987E-01	2.232E-01	2.232E-01
RN-222	6.511E-01	1.997E-01	1.997E-01
RA-224	3.237E-01	9.529E-01	9.529E-01
RA-226	6.511E-01	1.997E-01	1.997E-01
TH-228	6.871E-01	1.509E-01	1.509E-01
TH-230	6.508E-01	1.996E-01	1.996E-01
PA-231	5.881E-01	7.140E-01	7.140E-01
TH-234	1.498E+00	2.738E+00	2.738E+00
U-234	6.508E-01	1.996E-01	1.996E-01
U-235	4.947E-02	2.890E-01	2.890E-01
U-238	1.498E+00	2.738E+00	2.738E+00
AM-243	2.163E-01	1.163E-01	1.163E-01
ANH-511	1.023E-01	7.116E-02	7.116E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	1.495E+01	1.267E+01	1.435E+01	NOT IDENT.
NA-22	-1.235E-02	3.734E-02	3.775E-02	NOT IDENT.
NA-24	1.000E+41	4.268E+41	0.000E+00	SHORT HLIF
AL-26	8.641E-03	1.953E-02	1.991E-02	NOT IDENT.
SC-46	7.510E-02	4.817E-01	4.829E-01	FAIL ABUN
V-48	1.342E+04	1.690E+04	1.795E+04	SHORT HLIF
CR-51	8.273E+01	4.525E+02	4.540E+02	SHORT HLIF
MN-54	3.215E-02	4.898E-02	5.107E-02	NOT IDENT.
CO-56	-2.901E-01	4.660E-01	4.840E-01	NOT IDENT.
MN-56	-1.000E+41	1.618E+41	0.000E+00	SHORT HLIF
CO-57	1.767E-02	4.884E-02	4.949E-02	NOT IDENT.

CO-58	-4.666E-01	5.908E-01	6.271E-01	NOT IDENT.
FE-59	-5.049E+00	7.992E+00	8.310E+00	NOT IDENT.
CO-60	5.863E-03	3.677E-02	3.687E-02	NOT IDENT.
ZN-65	3.864E-02	1.443E-01	1.453E-01	NOT IDENT.
GE-68	-1.369E+00	2.449E+00	2.525E+00	NOT IDENT.
AS-73	-1.025E+01	1.218E+01	1.303E+01	NOT IDENT.
AS-74	-3.921E+03	7.936E+03	8.130E+03	SHORT HLIF
SE-75	5.548E-02	2.054E-01	2.069E-01	NOT IDENT.
BR-77	1.231E+39	1.094E+40	0.000E+00	SHORT HLIF
SR-82	-2.936E+01	7.896E+02	7.897E+02	SHORT HLIF
RB-83	-9.802E-02	5.824E-01	5.841E-01	NOT IDENT.
KR-85	6.097E+00	5.939E+00	6.544E+00	NOT IDENT.
SR-85	6.954E-01	6.811E-01	7.497E-01	NOT IDENT.
RB-86	-1.880E+04	3.925E+04	4.015E+04	SHORT HLIF
Y-88	3.127E-02	6.948E-02	7.090E-02	NOT IDENT.
Y-91	-5.682E+01	5.592E+02	5.598E+02	NOT IDENT.
NB-94	-1.328E-02	2.624E-02	2.691E-02	NOT IDENT.
NB-95	-2.528E-01	8.902E-01	8.975E-01	NOT IDENT.
NB-95M	-4.655E-01	2.690E+00	2.698E+00	NOT IDENT.
ZR-95	4.518E-01	1.375E+00	1.390E+00	NOT IDENT.
NB-97	1.000E+41	2.204E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.332E+41	0.000E+00	SHORT HLIF
MO-99	7.632E+31	1.027E+33	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.840E+41	0.000E+00	SHORT HLIF
RH-101	9.922E-03	3.495E-02	3.524E-02	NOT IDENT.
RH-102	-8.216E-03	4.404E-02	4.420E-02	NOT IDENT.
RU-103	2.616E+00	5.935E+00	6.051E+00	FAIL ABUN
RH-106	-3.175E-01	4.681E-01	4.895E-01	NOT IDENT.
RU-106	-3.175E-01	4.681E-01	4.895E-01	NOT IDENT.
AG-108M	-6.266E-03	2.733E-02	2.747E-02	NOT IDENT.
CD-109	8.134E-02	1.168E+00	1.168E+00	NOT IDENT.
AG-110M	-1.853E-02	9.769E-02	9.805E-02	NOT IDENT.
SN-113	-4.937E-02	2.262E-01	2.273E-01	NOT IDENT.
CD-115	3.469E+40	3.266E+40	0.000E+00	SHORT HLIF
SN-117M	5.137E+04	1.380E+05	1.399E+05	SHORT HLIF
TE-123M	2.142E-02	1.354E-01	1.357E-01	NOT IDENT.
SB-124	1.157E-02	1.920E+00	1.920E+00	NOT IDENT.
SB-125	8.939E-02	1.008E-01	1.086E-01	FAIL ABUN
TE-125M	-1.322E+02	3.100E+02	3.157E+02	NOT IDENT.
I-126	-1.299E+05	1.659E+06	1.660E+06	SHORT HLIF
SB-126	-8.927E+05	1.794E+06	1.838E+06	SHORT HLIF
SN-126	3.738E-02	7.622E-02	7.806E-02	FAIL ABUN
SB-127	3.571E+22	9.471E+22	0.000E+00	SHORT HLIF
I-131	-1.329E+09	1.060E+10	1.062E+10	SHORT HLIF
I-132	1.000E+41	1.932E+42	0.000E+00	SHORT HLIF
TE-132	4.759E+26	2.066E+27	0.000E+00	SHORT HLIF
BA-133	1.310E-02	3.859E-02	3.904E-02	NOT IDENT.
I-133	-1.000E+41	2.233E+41	0.000E+00	SHORT HLIF
CS-134	7.066E-02	6.032E-02	6.822E-02	FAIL ABUN
CS-135	7.375E-04	1.330E-01	1.330E-01	NOT IDENT.
I-135	1.000E+41	7.029E+41	0.000E+00	SHORT HLIF
CS-136	-2.869E+05	3.578E+05	3.805E+05	SHORT HLIF
CE-139	-7.099E-02	1.135E-01	1.179E-01	NOT IDENT.
BA-140	2.571E+05	1.762E+06	1.766E+06	SHORT HLIF
LA-140	-1.908E+05	6.663E+05	6.718E+05	SHORT HLIF
CE-141	7.939E+00	4.639E+01	4.652E+01	FAIL ABUN
CE-143	1.000E+41	1.511E+41	0.000E+00	SHORT HLIF
CE-144	-3.430E-02	3.694E-01	3.698E-01	NOT IDENT.
PM-144	-1.214E-03	4.960E-02	4.960E-02	NOT IDENT.
PR-144	-5.977E-02	4.334E+00	4.334E+00	NOT IDENT.
PM-146	4.624E-03	4.204E-02	4.209E-02	NOT IDENT.
ND-147	-5.879E+07	4.813E+07	5.495E+07	SHORT HLIF
PM-147	2.994E+02	8.014E+02	8.127E+02	NOT IDENT.
PM-149	-1.000E+41	1.806E+41	0.000E+00	SHORT HLIF
EU-150	9.557E-03	2.385E-02	2.424E-02	FAIL ABUN
EU-152	-3.597E-03	8.187E-02	8.188E-02	NOT IDENT.
GD-153	1.846E-01	1.798E-01	1.981E-01	NOT IDENT.
EU-154	-3.016E-02	9.117E-02	9.218E-02	NOT IDENT.
EU-155	3.030E-02	1.115E-01	1.123E-01	NOT IDENT.
TB-160	-3.385E-01	2.036E+00	2.041E+00	NOT IDENT.
HO-166M	-3.375E-02	5.775E-02	5.972E-02	FAIL ABUN
TM-171	1.165E+01	2.788E+01	2.837E+01	NOT IDENT.
HF-172	-5.657E-02	2.455E-01	2.468E-01	FAIL ABUN
LU-172	-8.596E-02	7.851E-02	8.756E-02	FAIL ABUN
LU-176	2.135E-02	5.167E-02	5.255E-02	FAIL ABUN
HF-181	2.002E+00	4.766E+00	4.850E+00	NOT IDENT.
TA-182	2.198E-01	9.056E-01	9.110E-01	FAIL ABUN
RE-183	-4.373E-02	3.753E+00	3.753E+00	NOT IDENT.

RE-184	-1.125E+00	3.339E+01	3.339E+01	NOT IDENT.
W-188	1.987E+01	1.196E+02	1.199E+02	FAIL ABUN
IR-192	-4.992E-01	4.600E-01	5.121E-01	FAIL ABUN
HG-203	-3.595E+00	2.489E+00	2.970E+00	NOT IDENT.
BI-207	6.315E-03	3.790E-02	3.800E-02	FAIL ABUN
PB-210	-3.347E+00	5.454E+00	5.659E+00	NOT IDENT.
BI-211	2.200E+00	6.158E-01	1.167E+00	FAIL ABUN
PB-211	5.547E-02	6.223E-01	6.228E-01	NOT IDENT.
BI-212	1.417E+00	9.324E-01	1.130E+00	FAIL ABUN
RN-219	-1.052E-01	3.424E-01	3.456E-01	FAIL ABUN
RA-223	4.151E-02	5.534E-01	5.537E-01	FAIL ABUN
AC-227	-6.853E-02	1.991E-01	2.015E-01	FAIL ABUN
TH-227	-6.853E-02	1.991E-01	2.015E-01	FAIL ABUN
AC-228	8.044E-01	2.731E-01	4.539E-01	FAIL ABUN
RA-228	8.044E-01	2.731E-01	4.539E-01	FAIL ABUN
TH-229	-4.067E-02	4.114E-01	4.118E-01	NOT IDENT.
TH-231	4.151E-02	5.534E-01	5.537E-01	FAIL ABUN
TH-232	8.044E-01	2.731E-01	4.539E-01	FAIL ABUN
PA-233	-1.259E-02	6.296E-02	6.321E-02	FAIL ABUN
PA-234	-1.738E-01	3.164E-01	3.260E-01	FAIL ABUN
PA-234M	6.851E+00	4.803E+00	5.710E+00	FAIL ABUN
NP-237	-1.259E-02	6.296E-02	6.321E-02	FAIL ABUN
NP-238	1.000E+41	3.207E+41	0.000E+00	SHORT HLIF
NP-239	4.936E-02	2.323E-01	2.334E-01	NOT IDENT.
PU-239	9.967E+01	3.116E+02	3.148E+02	NOT IDENT.
AM-241	1.412E-01	1.647E-01	1.766E-01	NOT IDENT.
CM-243	-5.309E-02	1.009E-01	1.037E-01	NOT IDENT.
BK-247	2.102E-02	6.644E-02	6.711E-02	NOT IDENT.
CM-247	3.517E-03	3.081E-02	3.085E-02	NOT IDENT.
CF-249	6.041E-03	3.398E-02	3.409E-02	NOT IDENT.
CF-251	2.810E-02	1.030E-01	1.037E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	72.6218	87.09	91.4164	136.47	82.3165
45.60	65.0560	87.57	91.4993	140.51	0.0000
46.54	75.2672	88.03	91.5791	143.76	65.0701
49.72	0.0000	88.34	91.6323	144.24	70.7391
51.35	51.8652	88.47	91.6545	145.44	66.0219
51.87	48.8820	89.96	91.9097	152.43	71.9144
52.39	50.9890	1093.63	92.0256	153.25	0.0000
52.97	59.2375	91.11	0.0000	323.87	64.7490
53.44	64.4232	92.59	92.3549	156.02	0.0000
54.07	65.5530	93.35	92.4828	158.56	0.0000
57.36	0.0000	94.56	92.6848	159.00	63.9153
57.53	59.9313	94.65	92.6993	162.33	70.3533
57.98	64.1359	94.67	92.7031	162.66	0.0000
59.27	53.9620	94.87	92.7361	163.33	55.6107
59.32	53.9688	97.43	52.3782	165.86	70.6594
59.54	53.9975	98.43	79.8295	176.31	61.9234
60.96	66.6868	98.44	79.8311	176.60	0.0000
61.17	68.1102	99.53	70.9706	177.52	60.3347
62.93	71.1865	100.11	68.7865	181.07	0.0000
63.29	71.2465	102.03	73.5391	181.52	61.8773
63.58	69.8967	103.18	85.0182	184.41	72.2172
64.28	64.4097	103.37	80.5099	143.76	62.5963
66.73	79.2046	105.21	76.2097	193.51	60.5801
67.24	88.8110	105.31	73.9472	197.03	58.2431
125.81	89.9571	106.12	69.4902	198.01	54.0176
67.75	85.7368	106.47	76.3697	201.83	57.6824
69.67	79.3709	109.28	73.2876	203.43	46.5694
70.83	99.4650	111.00	82.6782	205.31	53.1425
72.81	84.5493	111.76	0.0000	210.85	58.2290
72.87	84.5601	114.06	66.9280	215.65	58.5153
74.66	84.8814	116.30	0.0000	222.11	59.7746
74.82	84.9097	116.74	63.7335	227.09	65.3680
74.97	84.9362	119.76	72.1809	227.38	60.0852
77.11	85.3141	121.12	61.8308	228.16	0.0000
78.74	75.1245	121.22	61.8405	228.18	56.5944
79.69	68.0315	121.78	64.2282	116.74	56.5944
80.12	75.3335	122.06	67.7603	235.69	64.1301
80.19	0.0000	122.92	73.6974	235.96	72.1653
80.57	66.7015	123.07	67.8634	238.63	64.3088
81.00	66.7586	265.00	80.8083	238.98	0.0000
81.07	69.6709	125.81	84.5892	240.99	61.7662
81.75	83.9356	127.23	75.3472	242.00	38.9763
83.79	86.0963	127.91	84.8507	244.70	37.7267
84.00	86.1317	129.30	73.2135	252.40	0.0000
85.43	98.0805	131.20	81.7038	252.80	42.5316
86.55	91.3227	133.02	72.4189	254.15	0.0000
86.79	91.3638	133.52	71.2830	256.23	45.3857
86.94	91.3904	136.00	67.9563	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	43.8965	355.39	0.0000	584.27	21.2776
264.80	43.9014	356.01	25.0424	595.83	0.0000
265.00	41.1649	364.49	0.0000	427.87	22.5716
268.22	39.9042	366.42	0.0000	602.52	0.0000
269.46	36.7326	372.51	29.7986	604.72	13.5693
270.03	36.7513	375.05	31.3430	607.14	16.9806
271.23	36.7887	377.52	25.1159	609.32	24.9299
273.65	0.0000	356.01	23.0201	610.33	24.9425
276.40	35.1039	388.16	27.1005	614.28	17.0367
277.37	39.7552	388.63	0.0000	618.01	19.3415
277.60	41.6125	391.69	31.1873	620.36	14.8070
278.00	36.0761	264.66	24.2856	621.93	20.5166
279.20	49.0761	401.81	29.3670	630.19	0.0000
279.54	51.8688	402.40	25.3255	631.29	11.4465
279.70	52.8020	404.85	28.4090	633.25	10.3110
280.46	44.4932	410.95	28.5190	634.78	0.0000
283.69	35.3188	413.71	28.5685	635.95	20.6470
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	52.1229	423.72	0.0000	645.85	19.5864
285.90	0.0000	427.09	27.7773	657.76	17.3730
287.50	42.8892	427.87	21.6148	657.90	0.0000
290.67	37.8592	433.94	29.9594	661.66	20.8835
293.27	0.0000	439.40	26.9479	664.57	0.0000
351.93	39.4066	453.88	25.0889	666.33	0.0000
295.96	39.4297	463.37	21.0225	666.50	0.0000
879.38	39.5126	468.07	22.1331	667.71	0.0000
299.98	39.5570	473.00	0.0000	677.62	16.6465
300.09	39.5604	475.06	30.6862	685.70	0.0000
300.13	39.5613	476.78	18.0058	695.00	0.0000
301.36	28.2861	477.60	14.8351	696.49	17.6630
302.85	45.3105	482.18	21.2472	696.51	17.6636
256.23	39.6989	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	20.3194
306.78	39.7698	497.08	16.0666	697.49	20.3208
308.46	42.6663	505.52	12.9121	702.65	18.5942
311.90	46.7736	507.63	0.0000	706.68	14.1904
316.51	45.7949	511.00	14.0292	711.68	25.7733
319.41	0.0000	514.00	14.0516	720.70	0.0000
320.08	0.0000	514.00	14.0516	721.93	0.0000
321.04	40.2090	520.40	15.6176	722.78	12.8558
323.87	33.5794	520.69	0.0000	722.91	12.8566
325.23	37.4551	522.65	0.0000	723.31	11.4301
328.76	0.0000	527.90	0.0000	724.19	15.7217
333.37	42.0304	528.26	14.1569	727.33	20.0348
333.97	27.5491	529.59	18.5260	733.00	17.2119
334.37	34.8091	529.87	0.0000	735.93	10.0522
338.28	30.0609	531.02	0.0000	333.97	16.7640
338.32	30.0615	537.26	0.0000	739.50	0.0000
311.90	30.1088	546.56	0.0000	747.24	19.8348
340.48	30.1088	552.55	16.5387	748.06	11.7241
340.55	0.0000	563.25	17.7357	752.31	22.5845
344.28	24.8349	569.33	14.4531	753.82	0.0000
345.93	31.2025	946.00	14.4547	756.73	12.6691
351.06	32.2950	569.70	12.2318	756.80	12.6696
351.93	32.3152	583.19	21.2668	884.68	16.3350

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	21.7954	1274.44	6.2975	1620.50	2.7681
766.42	22.7089	1001.03	9.8544	1621.92	7.3836
766.84	21.8042	1002.74	11.0428	1678.03	0.0000
772.60	0.0000	1004.73	3.1570	1690.97	3.7447
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	0.9500
778.90	15.5168	1028.54	0.0000	1063.66	4.7551
783.70	0.0000	1037.84	8.9698	1771.35	2.8538
785.37	16.4696	1038.76	0.0000	1791.20	0.0000
792.07	11.7418	631.29	7.9946	1808.65	0.9581
794.95	16.1622	1048.07	0.0000	1810.72	0.0000
795.86	13.2284	1049.04	11.0007	1836.06	0.0000
810.06	15.6999	1050.41	10.0049		
810.29	15.7009	1063.66	8.0356		
344.28	15.7020	1077.00	0.0000		
810.76	19.3985	1077.34	17.1442		
815.77	0.0000	1085.87	20.2209		
1048.07	0.0000	1093.63	18.2395		
832.01	16.7574	1099.45	18.2703		
834.85	7.4556	1112.07	10.1874		
835.71	13.0511	1112.84	13.2468		
836.80	0.0000	1115.54	6.5266		
846.75	0.0000	1120.29	9.1901		
846.77	17.7829	1120.55	9.1906		
856.80	0.0000	1221.41	11.4399		
860.56	11.2866	1129.67	14.3341		
871.09	9.4403	1131.51	0.0000		
873.19	14.1710	1147.95	0.0000		
875.33	0.0000	1173.23	8.2910		
879.38	17.0414	1177.95	7.2640		
880.51	11.3654	1189.05	15.6125		
883.24	16.1165	1204.77	13.5887		
884.68	15.1758	1221.41	11.5492		
889.28	20.9003	1231.02	17.8944		
894.76	18.0839	1235.36	0.0000		
898.04	12.3871	1238.28	14.7648		
900.72	14.3060	1260.41	0.0000		
903.28	14.3184	1271.87	3.1915		
911.20	9.5712	1274.44	8.5166		
912.08	9.5740	1274.54	8.5166		
923.98	0.0000	1291.59	7.4845		
926.50	9.2355	1298.22	0.0000		
929.11	7.7029	1312.11	0.0000		
937.49	13.5176	1332.49	6.4816		
944.13	0.0000	1362.66	0.0000		
946.00	15.4922	1365.19	4.3557		
949.00	12.5997	1368.63	0.0000		
667.71	0.0000	1384.29	6.5636		
962.31	24.4738	1408.01	4.4004		
964.08	23.3745	1457.56	0.0000		
966.17	17.1531	1460.82	6.6823		
911.20	23.4119	1489.16	4.4836		
968.97	23.4119	1505.03	6.7493		
983.53	0.0000	1584.12	10.9875		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 07:58:38.72

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235043.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM09.CNF;335
Background date    : 2-OCT-2016 11:00:29.
Sample date       : 30-NOV-2015 13:59:00 Acquisition date : 3-OCT-2016 06:56:18.
Sample ID        : G405235043 Sample quantity   : 1.65795E+02 GRAM
Detector name     : GAM09 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.51 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity       : 3.00000
Batch ID          : 1596252 Detector SN#       :
Matrix Spike ID   : LCS ID                   : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.36*	40	126	1.26	126.39	123	9	1.11E-02	54.6	
2	2	74.99	98	122	1.03	149.66	145	14	2.73E-02	20.3	3.15E+00
3	2	77.16	145	101	0.90	154.00	145	14	4.02E-02	13.2	
4	1	87.24	64	110	0.96	174.17	170	13	1.78E-02	27.8	2.34E+00
5	1	90.12	47	84	0.93	179.93	170	13	1.30E-02	35.8	
6	0	92.99*	61	119	1.25	185.68	182	8	1.71E-02	35.8	
7	0	143.38*	17	102	0.94	286.49	284	8	4.80E-03	105.4	
8	2	185.90*	84	73	1.16	371.57	365	14	2.34E-02	21.5	5.47E+00
9	2	188.10	21	84	1.25	375.98	365	14	5.83E-03	78.3	
10	7	238.69*	369	60	1.10	477.20	473	16	1.02E-01	6.2	2.73E+00
11	7	241.63	96	60	2.14	483.08	473	16	2.67E-02	23.8	
12	0	270.56	33	76	1.21	540.97	534	11	9.06E-03	54.9	
13	0	277.63	34	61	1.13	555.12	550	10	9.42E-03	46.7	
14	2	295.16*	156	36	1.27	590.18	583	24	4.32E-02	10.8	1.85E+00
15	2	300.32	33	48	1.41	600.51	583	24	9.27E-03	38.0	
16	1	338.43*	92	27	1.32	676.76	672	21	2.55E-02	14.5	1.43E+00
17	1	343.92	18	24	1.33	687.76	672	21	4.89E-03	57.0	
18	0	352.00*	212	55	1.04	703.92	699	11	5.90E-02	9.7	
19	0	369.64	69	51	8.98	739.21	728	23	1.91E-02	29.7	
20	0	462.19	55	15	0.92	924.39	918	12	1.53E-02	19.5	
21	0	510.73*	23	70	1.41	1021.52	1014	14	6.35E-03	90.2	
22	0	532.02	19	17	1.04	1064.11	1061	9	5.30E-03	44.3	
23	0	558.91*	6	11	1.21	1117.92	1114	7	1.79E-03	107.0	
24	0	583.04*	121	24	1.44	1166.20	1160	12	3.37E-02	12.3	
25	0	608.93*	149	14	1.39	1218.01	1210	12	4.14E-02	9.8	
26	0	630.75	16	12	1.71	1261.66	1258	7	4.42E-03	44.1	
27	3	656.18	13	18	1.94	1312.56	1308	27	3.53E-03	58.5	1.86E+00
28	3	661.39	26	15	1.95	1322.97	1308	27	7.10E-03	39.3	
29	0	727.56	45	12	2.11	1455.38	1449	12	1.25E-02	21.4	
30	0	767.05	31	11	2.94	1534.38	1528	11	8.64E-03	27.3	
31	0	785.17	22	8	1.49	1570.66	1564	10	6.14E-03	31.6	
32	0	796.66	17	20	0.85	1593.64	1588	13	4.58E-03	60.4	
33	0	910.81*	63	12	1.56	1822.04	1816	12	1.76E-02	17.3	
34	0	935.55	16	22	0.58	1871.55	1864	17	4.46E-03	70.6	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	968.97	39	20	1.06	1938.44	1934	9	1.08E-02	26.2	
36	0	1001.21*	6	12	1.57	2002.94	1995	10	1.71E-03	122.6	
37	0	1008.00	6	10	0.70	2016.53	2011	7	1.77E-03	92.0	
38	0	1086.29	11	10	1.94	2173.18	2168	10	3.06E-03	61.7	
39	0	1119.57	42	6	2.99	2239.77	2234	11	1.15E-02	19.0	
40	0	1175.33	16	11	3.35	2351.36	2346	12	4.53E-03	48.7	
41	0	1200.56	29	3	5.17	2401.84	2396	14	8.11E-03	22.8	
42	0	1238.33	13	16	0.69	2477.42	2472	9	3.64E-03	61.3	
43	0	1271.23	16	0	0.98	2543.25	2537	12	4.44E-03	25.0	
44	0	1377.36	7	3	1.05	2755.63	2752	6	1.97E-03	53.6	
45	0	1450.18*	5	0	0.96	2901.33	2898	6	1.42E-03	48.7	
46	0	1460.09*	377	4	2.13	2921.16	2911	18	1.05E-01	5.4	
47	0	1607.01	7	2	0.94	3215.17	3212	6	1.81E-03	49.3	
48	0	1763.59*	31	0	1.32	3528.50	3522	13	8.49E-03	19.4	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235043.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 30-NOV-2015 13:59:00 Acquisition date : 3-OCT-2016 06:56:18
Sample ID         : G405235043 Sample quantity : 165.79 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA9 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.51 0.0%
Energy tolerance  : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type   : Linear Efficiencies at : Peak Energy
Abundance limit   : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PA-234M	766.42	NB-95	765.81
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.146E+00	1.361E+01	1.361E+01	10.73	OK
NB-95	765.81	99.81*	1.922E+00	7.079E-02	1.980E+00	64.76	OK
CD-109	88.03	3.70*	4.861E+00	1.169E+00	1.856E+00	105.33	OK
SN-126	64.28	9.60	2.275E+00	1.153E+00	1.153E+00	109.24	OK
	86.94	8.90	4.861E+00	4.860E-01	4.860E-01	105.33	OK
	87.57	37.00*	4.861E+00	1.169E-01	1.169E-01	105.33	OK
BA-137M	661.66	89.90*	2.157E+00	6.441E-02	6.567E-02	78.66	OK
CS-137	661.66	85.10*	2.157E+00	6.804E-02	6.938E-02	78.66	OK
TL-208	277.37	6.60	4.349E+00	6.397E-01	6.397E-01	93.46	OK
	583.19	85.00*	2.382E+00	2.978E-01	2.978E-01	24.69	OK
	860.56	12.50	1.758E+00	-----	Line Not Found	-----	Absent
BI-212	727.33	6.67*	2.003E+00	1.627E+00	1.627E+00	42.86	OK
	785.37	1.10	1.888E+00	5.097E+00	5.097E+00	63.14	OK
	1620.50	1.47	1.045E+00	-----	Line Not Found	-----	Absent
PB-212	74.82	10.28	3.688E+00	9.898E-01	9.898E-01	67.41	OK
	77.11	17.10	3.924E+00	1.334E+00	1.334E+00	26.50	OK
	238.63	43.60*	4.882E+00	9.538E-01	9.538E-01	12.38	OK
	300.09	3.30	4.084E+00	1.329E+00	1.329E+00	76.02	OK
BI-214	609.32	45.49*	2.302E+00	7.025E-01	7.028E-01	19.58	OK
	1120.29	14.92	1.430E+00	8.894E-01	8.898E-01	37.99	OK
	1764.49	15.30	9.661E-01	8.891E-01	8.894E-01	38.85	OK
PB-214	74.82	5.80	3.669E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	3.924E+00	2.351E+00	2.352E+00	26.50	OK
	87.09	3.41	4.849E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	4.832E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	4.142E+00	1.096E+00	1.097E+00	21.60	OK
	351.93	35.60*	3.588E+00	8.760E-01	8.763E-01	19.50	OK
RN-222	609.32	45.49*	2.302E+00	7.025E-01	7.028E-01	19.58	OK
	1120.29	14.92	1.430E+00	8.894E-01	8.898E-01	37.99	OK
	1764.49	15.30	9.661E-01	8.891E-01	8.894E-01	38.85	OK
RA-224	240.99	4.10*	4.838E+00	7.219E-01	7.219E-01	185.06	OK
RA-226	609.32	45.49*	2.302E+00	7.025E-01	7.028E-01	19.58	OK
	1120.29	14.92	1.430E+00	8.894E-01	8.898E-01	37.99	OK
	1764.49	15.30	9.661E-01	8.891E-01	8.894E-01	38.85	OK
AC-228	105.21	1.10	5.896E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.705E+00	1.164E+00	1.164E+00	29.06	OK
	794.95	4.25	1.870E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.799E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.682E+00	6.848E-01	6.848E-01	34.51	OK
	968.97	15.80	1.603E+00	7.182E-01	7.182E-01	52.38	OK
RA-228	105.21	1.10	5.896E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.705E+00	1.164E+00	1.164E+00	29.06	OK
	794.95	4.25	1.870E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.799E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.682E+00	6.848E-01	6.848E-01	34.51	OK
	968.97	15.80	1.603E+00	7.182E-01	7.182E-01	52.38	OK
TH-228	74.82	10.28	3.688E+00	9.898E-01	9.898E-01	67.41	OK
	77.11	17.10	3.924E+00	1.334E+00	1.334E+00	26.50	OK
	238.63	43.60*	4.882E+00	9.538E-01	9.538E-01	12.38	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	300.09	3.30	4.084E+00	1.329E+00	1.329E+00	76.02	OK
	609.32	45.49*	2.302E+00	7.025E-01	7.025E-01	19.58	OK
	1120.29	14.92	1.430E+00	8.894E-01	8.894E-01	37.99	OK
	1764.49	15.30	9.661E-01	8.891E-01	8.891E-01	38.85	OK
PA-231	283.69	1.70	4.275E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	4.084E+00	8.196E-01	8.196E-01	76.02	OK
TH-232	105.21	1.10	5.896E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.705E+00	1.164E+00	1.164E+00	29.06	OK
	835.71	1.61	1.799E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.682E+00	6.848E-01	6.848E-01	34.51	OK
	968.97	15.80	1.603E+00	7.182E-01	7.182E-01	52.38	OK
PA-234M	766.42	0.32	1.924E+00	----- Line	Not Found	-----	<<INT Reject
	1001.03	0.84*	1.562E+00	2.181E+00	2.181E+00	245.11	OK
TH-234	63.29	3.70*	2.275E+00	2.992E+00	2.992E+00	109.24	OK
	92.59	4.23	5.276E+00	1.671E+00	1.671E+00	71.54	OK
U-234	609.32	45.49*	2.302E+00	7.025E-01	7.025E-01	19.58	OK
	1120.29	14.92	1.430E+00	8.894E-01	8.894E-01	37.99	OK
	1764.49	15.30	9.661E-01	8.891E-01	8.891E-01	38.85	OK
U-235	89.96	3.47	5.079E+00	1.616E+00	1.616E+00	71.57	OK
	93.35	5.60	5.276E+00	1.262E+00	1.262E+00	71.54	OK
	143.76	10.96*	6.313E+00	1.450E-01	1.450E-01	210.79	OK
	163.33	5.08	6.096E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	5.741E+00	1.453E-01	1.453E-01	42.94	OK
	205.31	5.01	5.415E+00	----- Line	Not Found	-----	Absent
U-238	63.29	3.70*	2.275E+00	2.992E+00	2.992E+00	109.24	OK
	92.59	4.23	5.276E+00	1.671E+00	1.671E+00	71.54	OK
AM-243	43.53	5.90	1.969E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.688E+00	1.514E-01	1.514E-01	67.41	OK
ANH-511	511.00	100.00*	2.647E+00	4.355E-02	4.355E-02	180.49	OK

Flag: "*" = Keyline

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.361E+01	1.432E+00	4.430E-01
NB-95	1.980E+00	1.257E+00	1.295E+00
CD-109	1.856E+00	1.916E+00	1.782E+00
SN-126	1.169E-01	1.207E-01	1.130E-01
BA-137M	6.567E-02	5.063E-02	4.764E-02
CS-137	6.938E-02	5.348E-02	5.033E-02
TL-208	2.978E-01	7.204E-02	4.698E-02
BI-212	1.627E+00	6.836E-01	7.695E-01
PB-212	9.538E-01	1.157E-01	7.710E-02
BI-214	7.028E-01	1.349E-01	8.726E-02
PB-214	8.763E-01	1.674E-01	9.397E-02
RN-222	7.028E-01	1.349E-01	8.726E-02
RA-224	7.219E-01	1.309E+00	8.266E-01
RA-226	7.028E-01	1.349E-01	8.726E-02
AC-228	6.848E-01	2.316E-01	2.162E-01
RA-228	6.848E-01	2.316E-01	2.162E-01
TH-228	9.538E-01	1.157E-01	7.710E-02
TH-230	7.025E-01	1.348E-01	8.723E-02
PA-231	8.196E-01	6.106E-01	5.796E-01
TH-232	6.848E-01	2.316E-01	2.162E-01
PA-234M	2.181E+00	5.238E+00	6.979E+00
TH-234	2.992E+00	3.203E+00	2.269E+00
U-234	7.025E-01	1.348E-01	8.723E-02
U-235	1.450E-01	2.995E-01	2.542E-01
U-238	2.992E+00	3.203E+00	2.269E+00
AM-243	1.514E-01	1.000E-01	8.182E-02
ANH-511	4.355E-02	7.703E-02	4.957E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-5.083E+00	1.049E+01	2.008E+01	NOT IDENT.
NA-22	-3.298E-02	4.607E-02	6.771E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF

AL-26	-1.929E-02	1.898E-02	1.310E-02	NOT IDENT.
SC-46	-6.499E-04	2.958E-01	5.945E-01	FAIL ABUN
V-48	0.000E+00	1.674E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.952E+02	0.000E+00	SHORT HLIF
MN-54	-2.346E-02	6.064E-02	1.105E-01	NOT IDENT.
CO-56	-7.088E-02	4.541E-01	8.636E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-1.012E-02	3.674E-02	7.207E-02	NOT IDENT.
CO-58	-6.584E-02	5.251E-01	1.017E+00	NOT IDENT.
FE-59	-1.864E+00	7.402E+00	1.343E+01	NOT IDENT.
CO-60	1.303E-02	2.081E-02	5.449E-02	NOT IDENT.
ZN-65	4.101E-02	1.211E-01	2.417E-01	NOT IDENT.
GE-68	-9.442E-01	2.044E+00	3.711E+00	NOT IDENT.
AS-73	6.689E-01	9.848E+00	2.137E+01	NOT IDENT.
AS-74	0.000E+00	5.697E+03	0.000E+00	SHORT HLIF
SE-75	1.556E-01	1.574E-01	3.378E-01	NOT IDENT.
BR-77	0.000E+00	2.072E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	5.913E+02	0.000E+00	SHORT HLIF
RB-83	4.079E-02	5.848E-01	1.190E+00	NOT IDENT.
KR-85	2.432E+00	7.155E+00	1.334E+01	NOT IDENT.
SR-85	2.780E-01	8.211E-01	1.531E+00	NOT IDENT.
RB-86	0.000E+00	3.324E+04	0.000E+00	SHORT HLIF
Y-88	-1.493E-03	1.027E-01	2.683E-01	NOT IDENT.
Y-91	1.700E+01	4.088E+02	7.785E+02	NOT IDENT.
NB-94	2.445E-02	2.626E-02	5.825E-02	NOT IDENT.
NB-95M	8.954E-01	2.118E+00	3.928E+00	NOT IDENT.
ZR-95	7.360E-01	1.261E+00	2.736E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.726E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.060E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-1.272E-02	2.820E-02	5.405E-02	NOT IDENT.
RH-102	7.303E-02	6.318E-02	1.150E-01	FAIL ABUN
RU-103	-1.355E+00	4.568E+00	9.041E+00	FAIL ABUN
RH-106	-1.012E-01	3.653E-01	7.117E-01	NOT IDENT.
RU-106	-1.012E-01	3.653E-01	7.117E-01	NOT IDENT.
AG-108M	1.481E-02	2.037E-02	4.547E-02	NOT IDENT.
AG-110M	-6.400E-03	9.520E-02	1.830E-01	NOT IDENT.
SN-113	6.763E-02	1.714E-01	3.709E-01	NOT IDENT.
CD-115	0.000E+00	3.341E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.103E+05	0.000E+00	SHORT HLIF
TE-123M	2.882E-02	1.070E-01	2.150E-01	NOT IDENT.
SB-124	-9.836E-03	1.580E+00	3.550E+00	NOT IDENT.
SB-125	3.695E-02	8.420E-02	1.797E-01	FAIL ABUN
TE-125M	6.063E+01	2.445E+02	5.020E+02	NOT IDENT.
I-126	0.000E+00	1.057E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.368E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	7.099E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	8.207E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.522E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.630E+27	0.000E+00	SHORT HLIF
BA-133	-2.088E-02	3.135E-02	4.720E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	6.551E-02	7.757E-02	9.008E-02	FAIL ABUN
CS-135	-1.554E-02	9.616E-02	1.812E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.927E+05	0.000E+00	SHORT HLIF
CE-139	-5.700E-02	8.154E-02	1.496E-01	NOT IDENT.
BA-140	0.000E+00	1.548E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.165E+05	0.000E+00	SHORT HLIF
CE-141	-2.573E+00	2.420E+01	4.376E+01	NOT IDENT.
CE-143	0.000E+00	1.305E+41	0.000E+00	SHORT HLIF
CE-144	1.490E-01	2.697E-01	5.630E-01	NOT IDENT.
PM-144	-1.161E-02	4.815E-02	9.171E-02	NOT IDENT.
PR-144	-1.012E+00	4.200E+00	7.999E+00	NOT IDENT.
PM-146	-2.848E-02	3.418E-02	6.265E-02	NOT IDENT.
ND-147	0.000E+00	6.773E+07	0.000E+00	SHORT HLIF
PM-147	-3.271E+02	6.308E+02	1.212E+03	NOT IDENT.
PM-149	0.000E+00	1.636E+41	0.000E+00	SHORT HLIF
EU-150	1.443E-02	2.087E-02	4.023E-02	FAIL ABUN
EU-152	9.991E-02	1.117E-01	1.407E-01	FAIL ABUN
GD-153	-7.806E-02	1.391E-01	2.692E-01	NOT IDENT.
EU-154	-7.594E-02	1.133E-01	1.693E-01	NOT IDENT.
EU-155	5.660E-02	8.148E-02	1.747E-01	FAIL ABUN
TB-160	8.732E-01	1.486E+00	3.303E+00	FAIL ABUN
HO-166M	-1.685E-02	3.937E-02	7.378E-02	FAIL ABUN
TM-171	-6.819E+00	2.278E+01	4.796E+01	NOT IDENT.
HF-172	-2.022E-02	1.833E-01	3.626E-01	FAIL ABUN

LU-172	1.477E-03	6.615E-02	1.284E-01	FAIL ABUN
LU-176	1.063E-02	2.043E-02	4.075E-02	FAIL ABUN
HF-181	2.753E+00	3.720E+00	8.291E+00	NOT IDENT.
TA-182	-4.634E-01	8.979E-01	1.665E+00	NOT IDENT.
RE-183	-5.402E-01	3.429E+00	7.173E+00	NOT IDENT.
RE-184	5.587E-01	3.089E+01	6.047E+01	NOT IDENT.
W-188	-8.200E+00	9.014E+01	1.569E+02	FAIL ABUN
IR-192	-7.425E-02	4.095E-01	7.529E-01	FAIL ABUN
HG-203	-4.247E-02	2.137E+00	3.752E+00	NOT IDENT.
BI-207	-1.958E-02	3.944E-02	7.065E-02	FAIL ABUN
PB-210	-7.391E-01	5.468E+00	1.150E+01	NOT IDENT.
BI-211	0.000E+00	4.612E-01	7.057E-01	FAIL ABUN
PB-211	1.140E-01	4.836E-01	1.024E+00	NOT IDENT.
RN-219	-5.026E-02	2.822E-01	5.695E-01	FAIL ABUN
RA-223	2.867E-01	4.449E-01	9.125E-01	FAIL ABUN
AC-227	-8.344E-02	1.874E-01	3.388E-01	FAIL ABUN
TH-227	-8.344E-02	1.874E-01	3.388E-01	FAIL ABUN
TH-229	-3.259E-01	3.564E-01	6.281E-01	FAIL ABUN
TH-231	2.867E-01	4.449E-01	9.125E-01	FAIL ABUN
PA-233	1.935E-02	4.971E-02	9.780E-02	FAIL ABUN
PA-234	4.847E-02	2.372E-01	4.792E-01	NOT IDENT.
NP-237	1.935E-02	4.971E-02	9.780E-02	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-4.255E-02	1.709E-01	3.385E-01	FAIL ABUN
PU-239	4.167E+01	2.540E+02	5.099E+02	NOT IDENT.
AM-241	5.728E-02	1.417E-01	3.076E-01	NOT IDENT.
CM-243	3.221E-03	7.276E-02	1.489E-01	FAIL ABUN
BK-247	3.348E-02	5.776E-02	1.107E-01	NOT IDENT.
CM-247	2.355E-03	2.560E-02	5.329E-02	FAIL ABUN
CF-249	3.848E-02	2.778E-02	6.265E-02	NOT IDENT.
CF-251	-3.990E-02	8.458E-02	1.579E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	367	10.66*	1.146E+00	1.361E+01	1.361E+01	10.73
NB-95	765.81	33	99.81*	1.922E+00	7.778E-02	2.176E+00	54.67
CD-109	88.03	87	3.70*	4.861E+00	2.179E+00	3.460E+00	55.60
SN-126	64.28	56	9.60	2.275E+00	1.153E+00	1.153E+00	109.24
	86.94	87	8.90	4.861E+00	9.061E-01	9.061E-01	55.60
	87.57	87	37.00*	4.861E+00	2.179E-01	2.179E-01	55.60
BA-137M	661.66	28	89.90*	2.157E+00	6.441E-02	6.567E-02	78.66
CS-137	661.66	28	85.10*	2.157E+00	6.804E-02	6.938E-02	78.66
TL-208	277.37	41	6.60	4.349E+00	6.397E-01	6.397E-01	93.46
	583.19	133	85.00*	2.382E+00	2.978E-01	2.978E-01	24.69
	860.56	-----	12.50	1.758E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.448E+00	-----	Line Not Found	-----
	351.06	247	12.92*	3.588E+00	2.414E+00	2.414E+00	19.50
BI-212	727.33	48	6.67*	2.003E+00	1.627E+00	1.627E+00	42.86
	785.37	23	1.10	1.888E+00	5.097E+00	5.097E+00	63.14
	1620.50	-----	1.47	1.045E+00	-----	Line Not Found	-----
PB-212	74.82	135	10.28	3.688E+00	1.608E+00	1.608E+00	40.64
	77.11	198	17.10	3.924E+00	1.334E+00	1.334E+00	26.50
	238.63	448	43.60*	4.882E+00	9.538E-01	9.538E-01	12.38
	300.09	40	3.30	4.084E+00	1.329E+00	1.329E+00	76.02
BI-214	609.32	162	45.49*	2.302E+00	7.025E-01	7.028E-01	19.58
	1120.29	42	14.92	1.430E+00	8.894E-01	8.898E-01	37.99
	1764.49	29	15.30	9.661E-01	8.891E-01	8.894E-01	38.85
PB-214	74.82	135	5.80	3.688E+00	2.851E+00	2.852E+00	40.64
	77.11	198	9.70	3.924E+00	2.351E+00	2.352E+00	26.50
	87.09	87	3.41	4.861E+00	2.365E+00	2.366E+00	55.60
	242.00	117	7.25	4.838E+00	1.505E+00	1.505E+00	47.68
	295.22	185	18.42	4.142E+00	1.096E+00	1.097E+00	21.60
	351.93	247	35.60*	3.588E+00	8.760E-01	8.763E-01	19.50
RN-222	609.32	162	45.49*	2.302E+00	7.025E-01	7.028E-01	19.58
	1120.29	42	14.92	1.430E+00	8.894E-01	8.898E-01	37.99
	1764.49	29	15.30	9.661E-01	8.891E-01	8.894E-01	38.85
RA-224	240.99	117	4.10*	4.838E+00	2.661E+00	2.661E+00	47.68
RA-226	609.32	162	45.49*	2.302E+00	7.025E-01	7.028E-01	19.58
	1120.29	42	14.92	1.430E+00	8.894E-01	8.898E-01	37.99
	1764.49	29	15.30	9.661E-01	8.891E-01	8.894E-01	38.85
AC-228	105.21	-----	1.10	5.896E+00	-----	Line Not Found	-----
	338.32	107	11.27	3.705E+00	1.164E+00	1.164E+00	29.06
	794.95	-----	4.25	1.870E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.799E+00	-----	Line Not Found	-----
	911.20	66	25.80*	1.682E+00	6.848E-01	6.848E-01	34.51
	968.97	40	15.80	1.603E+00	7.182E-01	7.182E-01	52.38
RA-228	105.21	-----	1.10	5.896E+00	-----	Line Not Found	-----
	338.32	107	11.27	3.705E+00	1.164E+00	1.164E+00	29.06
	794.95	-----	4.25	1.870E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.799E+00	-----	Line Not Found	-----
	911.20	66	25.80*	1.682E+00	6.848E-01	6.848E-01	34.51

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	968.97	40	15.80	1.603E+00	7.182E-01	7.182E-01	52.38
	74.82	135	10.28	3.688E+00	1.608E+00	1.608E+00	40.64
	77.11	198	17.10	3.924E+00	1.334E+00	1.334E+00	26.50
	238.63	448	43.60*	4.882E+00	9.538E-01	9.538E-01	12.38
TH-230	300.09	40	3.30	4.084E+00	1.329E+00	1.329E+00	76.02
	609.32	162	45.49*	2.302E+00	7.025E-01	7.025E-01	19.58
	1120.29	42	14.92	1.430E+00	8.894E-01	8.894E-01	37.99
	1764.49	29	15.30	9.661E-01	8.891E-01	8.891E-01	38.85
PA-231	283.69	-----	1.70	4.275E+00	-----	Line Not Found	-----
	301.36	40	5.35*	4.084E+00	8.196E-01	8.196E-01	76.02
TH-232	105.21	-----	1.10	5.896E+00	-----	Line Not Found	-----
	338.32	107	11.27	3.705E+00	1.164E+00	1.164E+00	29.06
	835.71	-----	1.61	1.799E+00	-----	Line Not Found	-----
	911.20	66	25.80*	1.682E+00	6.848E-01	6.848E-01	34.51
PA-234M	968.97	40	15.80	1.603E+00	7.182E-01	7.182E-01	52.38
	766.42	33	0.32	1.922E+00	2.426E+01	2.426E+01	54.67
	1001.03	6	0.84*	1.562E+00	2.181E+00	2.181E+00	245.11
	63.29	56	3.70*	2.275E+00	2.992E+00	2.992E+00	109.24
TH-234	92.59	82	4.23	5.276E+00	1.671E+00	1.671E+00	71.54
	609.32	162	45.49*	2.302E+00	7.025E-01	7.025E-01	19.58
U-234	1120.29	42	14.92	1.430E+00	8.894E-01	8.894E-01	37.99
	1764.49	29	15.30	9.661E-01	8.891E-01	8.891E-01	38.85
	89.96	63	3.47	5.079E+00	1.616E+00	1.616E+00	71.57
	93.35	82	5.60	5.276E+00	1.262E+00	1.262E+00	71.54
U-235	143.76	22	10.96*	6.313E+00	1.450E-01	1.450E-01	210.79
	163.33	-----	5.08	6.096E+00	-----	Line Not Found	-----
	185.72	105	57.20	5.741E+00	1.453E-01	1.453E-01	42.94
	205.31	-----	5.01	5.415E+00	-----	Line Not Found	-----
U-238	63.29	56	3.70*	2.275E+00	2.992E+00	2.992E+00	109.24
	92.59	82	4.23	5.276E+00	1.671E+00	1.671E+00	71.54
AM-243	43.53	-----	5.90	1.969E-01	-----	Line Not Found	-----
ANH-511	74.66	135	67.20*	3.688E+00	2.460E-01	2.461E-01	40.64
	511.00	25	100.00*	2.647E+00	4.355E-02	4.355E-02	180.49

Flag: "*" = Keyline

Total number of lines in spectrum 48
Number of unidentified lines 11
Number of lines tentatively identified by NID 37 77.08%

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	1.361E+01	1.361E+01	0.146E+01	10.73	
NB-95	64.03D	28.0	7.778E-02	2.176E+00	1.190E+00	54.67	
CD-109	461.40D	1.59	2.179E+00	3.460E+00	1.924E+00	55.60	
SN-126	2.30E+05Y	1.00	2.179E-01	2.179E-01	1.212E-01	55.60	
BA-137M	30.08Y	1.02	6.441E-02	6.567E-02	5.166E-02	78.66	
CS-137	30.08Y	1.02	6.804E-02	6.938E-02	5.457E-02	78.66	
TL-208	1.41E+10Y	1.00	2.978E-01	2.978E-01	0.735E-01	24.69	
BI-211	7.04E+08Y	1.00	2.414E+00	2.414E+00	0.471E+00	19.50	
BI-212	1.41E+10Y	1.00	1.627E+00	1.627E+00	0.698E+00	42.86	
PB-212	1.41E+10Y	1.00	9.538E-01	9.538E-01	1.181E-01	12.38	
BI-214	1600.00Y	1.00	7.025E-01	7.028E-01	1.376E-01	19.58	
PB-214	1600.00Y	1.00	8.760E-01	8.763E-01	1.709E-01	19.50	
RN-222	1600.00Y	1.00	7.025E-01	7.028E-01	1.376E-01	19.58	
RA-224	1.41E+10Y	1.00	2.661E+00	2.661E+00	1.269E+00	47.68	
RA-226	1600.00Y	1.00	7.025E-01	7.028E-01	1.376E-01	19.58	
AC-228	1.41E+10Y	1.00	6.848E-01	6.848E-01	2.363E-01	34.51	
RA-228	1.41E+10Y	1.00	6.848E-01	6.848E-01	2.363E-01	34.51	
TH-228	1.41E+10Y	1.00	9.538E-01	9.538E-01	1.181E-01	12.38	
TH-230	7.54E+04Y	1.00	7.025E-01	7.025E-01	1.376E-01	19.58	
PA-231	7.04E+08Y	1.00	8.196E-01	8.196E-01	6.231E-01	76.02	
TH-232	1.41E+10Y	1.00	6.848E-01	6.848E-01	2.363E-01	34.51	
PA-234M	4.47E+09Y	1.00	2.181E+00	2.181E+00	5.345E+00	245.11	
TH-234	4.47E+09Y	1.00	2.992E+00	2.992E+00	3.268E+00	109.24	
U-234	2.45E+05Y	1.00	7.025E-01	7.025E-01	1.376E-01	19.58	
U-235	7.04E+08Y	1.00	1.450E-01	1.450E-01	3.056E-01	210.79	
U-238	4.47E+09Y	1.00	2.992E+00	2.992E+00	3.268E+00	109.24	
AM-243	7370.00Y	1.00	2.460E-01	2.461E-01	1.000E-01	40.64	
ANH-511	1.00E+09Y	1.00	4.355E-02	4.355E-02	7.860E-02	180.49	

Total Activity : 4.099E+01 4.437E+01

Grand Total Activity : 4.099E+01 4.437E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	188.10	26	105	1.25	375.98	365	14	5.83E-03	****	5.70E+00	
0	270.56	39	92	1.21	540.97	534	11	9.06E-03	****	4.44E+00	T
1	343.92	21	29	1.33	687.76	672	21	4.89E-03	****	3.66E+00	T
0	369.64	80	59	8.98	739.21	728	23	1.91E-02	59.4	3.45E+00	
0	462.19	62	17	0.92	924.39	918	12	1.53E-02	39.0	2.87E+00	T
0	532.02	21	19	1.04	1064.11	1061	9	5.30E-03	88.6	2.56E+00	T
0	558.91	7	12	1.21	1117.92	1114	7	1.79E-03	****	2.46E+00	
0	630.75	17	13	1.71	1261.66	1258	7	4.42E-03	88.3	2.24E+00	T
3	656.18	14	20	1.94	1312.56	1308	27	3.53E-03	****	2.17E+00	
0	796.66	17	21	0.85	1593.64	1588	13	4.58E-03	****	1.87E+00	T
0	935.55	17	23	0.58	1871.55	1864	17	4.46E-03	****	1.65E+00	
0	1008.00	7	10	0.70	2016.53	2011	7	1.77E-03	****	1.55E+00	
0	1086.29	11	10	1.94	2173.18	2168	10	3.06E-03	****	1.46E+00	T
0	1175.33	16	11	3.35	2351.36	2346	12	4.53E-03	97.4	1.37E+00	
0	1200.56	29	3	5.17	2401.84	2396	14	8.11E-03	45.6	1.35E+00	
0	1238.33	13	16	0.69	2477.42	2472	9	3.64E-03	****	1.32E+00	T
0	1271.23	16	0	0.98	2543.25	2537	12	4.44E-03	50.0	1.29E+00	T
0	1377.36	7	3	1.05	2755.63	2752	6	1.97E-03	****	1.21E+00	
0	1450.18	5	0	0.96	2901.33	2898	6	1.42E-03	97.4	1.15E+00	
0	1607.01	6	1	0.94	3215.17	3212	6	1.81E-03	98.5	1.05E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235043.CNF;1
* Acquisition date   : 3-OCT-2016 06:56:18 Sensitivity      : 3.000
* Detector ID        : GAM09 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.51 Half life ratio : *****
* Sample date        : 30-NOV-2015 13:59:00 Nuclide Library : SOLID
* Sample ID          : G405235043 Analyst initials: MXR1
* Batch Number       : 1596252 Sample Quantity : 1.6579E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 3-JUN-2016 07:32:22 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM09 CAN.CNF;16
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.708E-01
NB-95	5.553E-01
CD-109	8.325E-01
SN-126	5.280E-02
BA-137M	2.049E-02
CS-137	2.164E-02
TL-208	2.035E-02
BI-212	3.374E-01
PB-212	3.549E-02
BI-214	3.755E-02
PB-214	4.193E-02
RN-222	3.755E-02
RA-224	3.805E-01
RA-226	3.755E-02
AC-228	9.363E-02
RA-228	9.363E-02
TH-228	3.549E-02
TH-230	3.754E-02
PA-231	2.600E-01
TH-232	9.363E-02
PA-234M	3.012E+00
TH-234	1.054E+00
U-234	3.754E-02
U-235	1.175E-01
U-238	1.054E+00
AM-243	3.817E-02
ANH-511	2.237E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	8.834E+00	NOT IDENT.
NA-22	2.780E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	0.000E+00	NOT IDENT.

SC-46	2.505E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	4.830E-02	NOT IDENT.
CO-56	3.758E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	3.333E-02	NOT IDENT.
CO-58	4.387E-01	NOT IDENT.
FE-59	5.795E+00	NOT IDENT.
CO-60	2.164E-02	NOT IDENT.
ZN-65	1.002E-01	NOT IDENT.
GE-68	1.566E+00	NOT IDENT.
AS-73	9.783E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.544E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.305E-01	NOT IDENT.
KR-85	6.080E+00	NOT IDENT.
SR-85	6.976E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	8.480E-02	NOT IDENT.
Y-91	3.212E+02	NOT IDENT.
NB-94	2.604E-02	NOT IDENT.
NB-95M	1.815E+00	NOT IDENT.
ZR-95	1.201E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.519E-02	NOT IDENT.
RH-102	5.160E-02	FAIL ABUN
RU-103	3.926E+00	FAIL ABUN
RH-106	3.057E-01	NOT IDENT.
RU-106	3.057E-01	NOT IDENT.
AG-108M	2.038E-02	NOT IDENT.
AG-110M	7.968E-02	NOT IDENT.
SN-113	1.662E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	9.984E-02	NOT IDENT.
SB-124	1.329E+00	NOT IDENT.
SB-125	8.112E-02	FAIL ABUN
TE-125M	2.342E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.050E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	3.981E-02	FAIL ABUN
CS-135	8.150E-02	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	6.840E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.034E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.616E-01	NOT IDENT.
PM-144	4.033E-02	NOT IDENT.
PR-144	3.518E+00	NOT IDENT.
PM-146	2.756E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	5.593E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.829E-02	FAIL ABUN
EU-152	6.342E-02	FAIL ABUN
GD-153	1.245E-01	NOT IDENT.
EU-154	6.989E-02	NOT IDENT.
EU-155	8.128E-02	FAIL ABUN
TB-160	1.421E+00	FAIL ABUN
HO-166M	3.114E-02	FAIL ABUN
TM-171	2.187E+01	NOT IDENT.
HF-172	1.686E-01	FAIL ABUN
LU-172	5.492E-02	FAIL ABUN

LU-176	1.865E-02	FAIL ABUN
HF-181	3.706E+00	NOT IDENT.
TA-182	7.209E-01	NOT IDENT.
RE-183	3.324E+00	NOT IDENT.
RE-184	2.621E+01	NOT IDENT.
W-188	7.025E+01	FAIL ABUN
IR-192	3.405E-01	FAIL ABUN
HG-203	1.697E+00	NOT IDENT.
BI-207	2.960E-02	FAIL ABUN
PB-210	5.325E+00	NOT IDENT.
BI-211	3.391E-01	FAIL ABUN
PB-211	4.586E-01	NOT IDENT.
RN-219	2.545E-01	FAIL ABUN
RA-223	4.140E-01	FAIL ABUN
AC-227	1.546E-01	FAIL ABUN
TH-227	1.546E-01	FAIL ABUN
TH-229	2.875E-01	FAIL ABUN
TH-231	4.140E-01	FAIL ABUN
PA-233	4.465E-02	FAIL ABUN
PA-234	2.076E-01	NOT IDENT.
NP-237	4.465E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.558E-01	FAIL ABUN
PU-239	2.384E+02	NOT IDENT.
AM-241	1.432E-01	NOT IDENT.
CM-243	6.888E-02	FAIL ABUN
BK-247	5.055E-02	NOT IDENT.
CM-247	2.386E-02	FAIL ABUN
CF-249	2.838E-02	NOT IDENT.
CF-251	7.248E-02	NOT IDENT.

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*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                          *
*                               Charleston, SC 29407                     *
*                               *****                                  *
*                               *                                         *
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235043.CNF;1 *
* Acquisition date   : 3-OCT-2016 06:56:18 Sensitivity      : 3.000      *
* Detector ID        : GAM09 Energy tolerance: 1.500      *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.51 Half life ratio : *****      *
* Sample date        : 30-NOV-2015 13:59:00 Nuclide Library : SOLID      *
* Sample ID          : G405235043 Analyst initials: MXR1      *
* Batch Number       : 1596252 Sample Quantity : 1.6579E+02 GRAM      *
*                               Quantity Err(%) : 1.2063E-03 %      *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000      *
*                               Dry Weight : 0.00000      *
*                               *****                                  *
*                               *                                         *
*                               CALIBRATION INFORMATION                   *
*                               *                                         *
* Eff. Cal. date     : 3-JUN-2016 07:32:22 Eff. Geometry : CAN      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM09 CAN.CNF;16      *
*                               *****                                  *

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
      (pCi/GRAM )      (1.96-sigma)      (1.96-sigma)
K-40          1.361E+01      1.598E+00      1.598E+00
NB-95          1.980E+00      1.260E+00      1.260E+00
CD-109         1.856E+00      1.932E+00      1.932E+00
SN-126         1.169E-01      1.215E-01      1.215E-01
BA-137M        6.567E-02      5.071E-02      5.071E-02
CS-137         6.938E-02      5.356E-02      5.356E-02
TL-208         2.978E-01      7.314E-02      7.314E-02
BI-212         1.627E+00      6.885E-01      6.885E-01
PB-212         9.538E-01      1.262E-01      1.262E-01
BI-214         7.028E-01      1.382E-01      1.382E-01
PB-214         8.763E-01      1.713E-01      1.713E-01
RN-222         7.028E-01      1.382E-01      1.382E-01
RA-224         7.219E-01      1.316E+00      1.316E+00
RA-226         7.028E-01      1.382E-01      1.382E-01
AC-228         6.848E-01      2.342E-01      2.342E-01
RA-228         6.848E-01      2.342E-01      2.342E-01
TH-228         9.538E-01      1.262E-01      1.262E-01
TH-230         7.025E-01      1.381E-01      1.381E-01
PA-231         8.196E-01      6.352E-01      6.352E-01
TH-232         6.848E-01      2.342E-01      2.342E-01
PA-234M        2.181E+00      5.239E+00      5.239E+00
TH-234         2.992E+00      3.271E+00      3.271E+00
U-234          7.025E-01      1.381E-01      1.381E-01
U-235          1.450E-01      2.996E-01      2.996E-01
U-238          2.992E+00      3.271E+00      3.271E+00
AM-243         1.514E-01      1.012E-01      1.012E-01
ANH-511        4.355E-02      7.705E-02      7.705E-02

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

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Nuclide      Key-Line      K.L Act error      TPU
      (pCi/GRAM )      (1.96-sigma)      (1.96-sigma)
BE-7          -5.083E+00      1.050E+01      1.074E+01 NOT IDENT.
NA-22         -3.298E-02      4.608E-02      4.842E-02 NOT IDENT.
NA-24         1.000E+41      2.714E+41      0.000E+00 SHORT HLIF

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AL-26	-1.929E-02	1.902E-02	2.091E-02	NOT IDENT.
SC-46	-6.499E-04	2.958E-01	2.958E-01	FAIL ABUN
V-48	6.456E+03	1.675E+04	1.700E+04	SHORT HLIF
CR-51	8.305E+01	3.952E+02	3.970E+02	SHORT HLIF
MN-54	-2.346E-02	6.064E-02	6.156E-02	NOT IDENT.
CO-56	-7.088E-02	4.541E-01	4.552E-01	FAIL ABUN
MN-56	-1.000E+41	6.120E+41	0.000E+00	SHORT HLIF
CO-57	-1.012E-02	3.674E-02	3.702E-02	NOT IDENT.
CO-58	-6.584E-02	5.251E-01	5.260E-01	NOT IDENT.
FE-59	-1.864E+00	7.403E+00	7.451E+00	NOT IDENT.
CO-60	1.303E-02	2.081E-02	2.162E-02	NOT IDENT.
ZN-65	4.101E-02	1.211E-01	1.225E-01	NOT IDENT.
GE-68	-9.442E-01	2.044E+00	2.088E+00	NOT IDENT.
AS-73	6.689E-01	9.849E+00	9.853E+00	NOT IDENT.
AS-74	3.681E+01	5.697E+03	5.697E+03	SHORT HLIF
SE-75	1.556E-01	1.576E-01	1.725E-01	NOT IDENT.
BR-77	1.707E+39	1.516E+40	0.000E+00	SHORT HLIF
SR-82	-2.042E+02	5.914E+02	5.985E+02	SHORT HLIF
RB-83	4.079E-02	5.848E-01	5.851E-01	NOT IDENT.
KR-85	2.432E+00	7.156E+00	7.239E+00	NOT IDENT.
SR-85	2.780E-01	8.212E-01	8.307E-01	NOT IDENT.
RB-86	-1.835E+04	3.325E+04	3.426E+04	SHORT HLIF
Y-88	-1.493E-03	1.027E-01	1.027E-01	NOT IDENT.
Y-91	1.700E+01	4.088E+02	4.088E+02	NOT IDENT.
NB-94	2.445E-02	2.628E-02	2.850E-02	NOT IDENT.
NB-95M	8.954E-01	2.120E+00	2.158E+00	NOT IDENT.
ZR-95	7.360E-01	1.261E+00	1.304E+00	NOT IDENT.
NB-97	1.000E+41	7.501E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.727E+41	0.000E+00	SHORT HLIF
MO-99	-2.204E+32	1.060E+33	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	3.088E+41	0.000E+00	SHORT HLIF
RH-101	-1.272E-02	2.829E-02	2.887E-02	NOT IDENT.
RH-102	7.303E-02	6.346E-02	7.150E-02	FAIL ABUN
RU-103	-1.355E+00	4.569E+00	4.609E+00	FAIL ABUN
RH-106	-1.012E-01	3.653E-01	3.682E-01	NOT IDENT.
RU-106	-1.012E-01	3.653E-01	3.682E-01	NOT IDENT.
AG-108M	1.481E-02	2.038E-02	2.145E-02	NOT IDENT.
AG-110M	-6.400E-03	9.520E-02	9.524E-02	NOT IDENT.
SN-113	6.763E-02	1.715E-01	1.742E-01	NOT IDENT.
CD-115	6.029E+39	3.343E+40	0.000E+00	SHORT HLIF
SN-117M	3.007E+04	1.104E+05	1.112E+05	SHORT HLIF
TE-123M	2.882E-02	1.070E-01	1.078E-01	NOT IDENT.
SB-124	-9.836E-03	1.580E+00	1.580E+00	NOT IDENT.
SB-125	3.695E-02	8.422E-02	8.585E-02	FAIL ABUN
TE-125M	6.063E+01	2.445E+02	2.461E+02	NOT IDENT.
I-126	3.889E+05	1.059E+06	1.073E+06	SHORT HLIF
SB-126	2.324E+05	1.369E+06	1.373E+06	SHORT HLIF
SB-127	-5.464E+22	1.048E+23	0.000E+00	SHORT HLIF
I-131	-1.029E+09	8.207E+09	8.220E+09	SHORT HLIF
I-132	-1.000E+41	1.903E+42	0.000E+00	SHORT HLIF
TE-132	7.295E+25	1.630E+27	0.000E+00	SHORT HLIF
BA-133	-2.088E-02	3.136E-02	3.275E-02	FAIL ABUN
I-133	1.000E+41	8.721E+42	0.000E+00	SHORT HLIF
CS-134	6.551E-02	7.763E-02	8.305E-02	FAIL ABUN
CS-135	-1.554E-02	9.616E-02	9.642E-02	NOT IDENT.
I-135	-1.000E+41	1.188E+42	0.000E+00	SHORT HLIF
CS-136	-2.153E+04	3.927E+05	3.929E+05	SHORT HLIF
CE-139	-5.700E-02	8.235E-02	8.626E-02	NOT IDENT.
BA-140	1.218E+06	1.548E+06	1.643E+06	SHORT HLIF
LA-140	5.954E+04	4.165E+05	4.173E+05	SHORT HLIF
CE-141	-2.573E+00	2.420E+01	2.423E+01	NOT IDENT.
CE-143	1.000E+41	1.309E+41	0.000E+00	SHORT HLIF
CE-144	1.490E-01	2.698E-01	2.780E-01	NOT IDENT.
PM-144	-1.161E-02	4.815E-02	4.844E-02	NOT IDENT.
PR-144	-1.012E+00	4.200E+00	4.225E+00	NOT IDENT.
PM-146	-2.848E-02	3.424E-02	3.657E-02	NOT IDENT.
ND-147	7.802E+07	6.787E+07	7.644E+07	SHORT HLIF
PM-147	-3.271E+02	6.310E+02	6.480E+02	NOT IDENT.
PM-149	1.000E+41	1.651E+41	0.000E+00	SHORT HLIF
EU-150	1.443E-02	2.088E-02	2.187E-02	FAIL ABUN
EU-152	9.991E-02	1.118E-01	1.206E-01	FAIL ABUN
GD-153	-7.806E-02	1.392E-01	1.436E-01	NOT IDENT.
EU-154	-7.594E-02	1.134E-01	1.184E-01	NOT IDENT.
EU-155	5.660E-02	8.158E-02	8.548E-02	FAIL ABUN
TB-160	8.732E-01	1.487E+00	1.538E+00	FAIL ABUN
HO-166M	-1.685E-02	3.938E-02	4.011E-02	FAIL ABUN
TM-171	-6.819E+00	2.279E+01	2.299E+01	NOT IDENT.
HF-172	-2.022E-02	1.834E-01	1.836E-01	FAIL ABUN

LU-172	1.477E-03	6.615E-02	6.616E-02	FAIL ABUN
LU-176	1.063E-02	2.043E-02	2.099E-02	FAIL ABUN
HF-181	2.753E+00	3.721E+00	3.923E+00	NOT IDENT.
TA-182	-4.634E-01	8.981E-01	9.220E-01	NOT IDENT.
RE-183	-5.402E-01	3.430E+00	3.438E+00	NOT IDENT.
RE-184	5.587E-01	3.089E+01	3.089E+01	NOT IDENT.
W-188	-8.200E+00	9.014E+01	9.022E+01	FAIL ABUN
IR-192	-7.425E-02	4.095E-01	4.108E-01	FAIL ABUN
HG-203	-4.247E-02	2.137E+00	2.137E+00	NOT IDENT.
BI-207	-1.958E-02	3.944E-02	4.042E-02	FAIL ABUN
PB-210	-7.391E-01	5.468E+00	5.478E+00	NOT IDENT.
BI-211	2.414E+00	4.735E-01	1.187E+00	FAIL ABUN
PB-211	1.140E-01	4.837E-01	4.864E-01	NOT IDENT.
RN-219	-5.026E-02	2.823E-01	2.832E-01	FAIL ABUN
RA-223	2.867E-01	4.452E-01	4.636E-01	FAIL ABUN
AC-227	-8.344E-02	1.878E-01	1.915E-01	FAIL ABUN
TH-227	-8.344E-02	1.878E-01	1.915E-01	FAIL ABUN
TH-229	-3.259E-01	3.567E-01	3.858E-01	FAIL ABUN
TH-231	2.867E-01	4.452E-01	4.636E-01	FAIL ABUN
PA-233	1.935E-02	4.971E-02	5.047E-02	FAIL ABUN
PA-234	4.847E-02	2.436E-01	2.445E-01	NOT IDENT.
NP-237	1.935E-02	4.971E-02	5.047E-02	FAIL ABUN
NP-238	-1.000E+41	2.896E+41	0.000E+00	SHORT HLIF
NP-239	-4.255E-02	1.709E-01	1.720E-01	FAIL ABUN
PU-239	4.167E+01	2.540E+02	2.547E+02	NOT IDENT.
AM-241	5.728E-02	1.418E-01	1.441E-01	NOT IDENT.
CM-243	3.221E-03	7.276E-02	7.277E-02	FAIL ABUN
BK-247	3.348E-02	5.816E-02	6.008E-02	NOT IDENT.
CM-247	2.355E-03	2.560E-02	2.562E-02	FAIL ABUN
CF-249	3.848E-02	2.795E-02	3.290E-02	NOT IDENT.
CF-251	-3.990E-02	8.470E-02	8.659E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	41.9090	87.09	67.6372	136.47	52.7609
45.60	52.3724	87.57	67.7092	140.51	0.0000
46.54	45.4820	88.03	67.7770	143.76	50.4599
49.72	0.0000	88.34	67.8230	144.24	50.4972
51.35	43.8109	88.47	67.8425	145.44	60.9684
51.87	40.6912	89.96	68.0626	152.43	54.0777
52.39	40.7574	1093.63	31.7307	153.25	0.0000
52.97	44.8339	91.11	0.0000	323.87	55.2053
53.44	38.4847	92.59	49.5644	156.02	0.0000
54.07	46.5922	93.35	49.6439	158.56	0.0000
57.36	0.0000	94.56	53.3249	159.00	51.6207
57.53	55.1932	94.65	53.3345	162.33	40.8949
57.98	56.8908	94.67	53.3368	162.66	0.0000
59.27	53.0245	94.87	53.3592	163.33	47.9451
59.32	53.0322	97.43	57.2173	165.86	51.1230
59.54	53.0654	98.43	54.6465	176.31	47.7896
60.96	59.0175	98.44	54.6474	176.60	0.0000
61.17	59.0523	99.53	52.9723	177.52	50.9224
62.93	56.8698	100.11	58.4272	181.07	0.0000
63.29	56.9261	102.03	46.9207	181.52	40.9528
63.58	56.9712	103.18	52.4532	184.41	55.4939
64.28	57.0801	103.37	49.7586	143.76	55.5878
66.73	51.0724	105.21	49.0294	193.51	57.1778
67.24	50.0294	105.31	46.3145	197.03	57.4271
125.81	63.4443	106.12	51.8441	198.01	52.2697
67.75	64.2902	106.47	53.6992	201.83	46.2115
69.67	57.0601	109.28	59.4770	203.43	46.3008
70.83	68.4506	111.00	71.6028	205.31	43.2409
72.81	72.1764	111.76	0.0000	210.85	49.8938
72.87	72.1875	114.06	56.3140	215.65	38.4296
74.66	64.5773	116.30	0.0000	222.11	51.6174
74.82	64.6028	116.74	49.1667	227.09	42.1724
74.97	64.6266	119.76	42.9032	227.38	31.3692
77.11	64.9623	121.12	58.8996	228.16	0.0000
78.74	61.7827	121.22	58.9097	228.18	40.0583
79.69	74.5347	121.78	48.6714	116.74	40.0583
80.12	68.7808	122.06	56.1868	235.69	40.7507
80.19	0.0000	122.92	48.7681	235.96	49.4976
80.57	67.7938	123.07	47.8425	238.63	44.8938
81.00	70.1620	265.00	61.0402	238.98	0.0000
81.07	73.6250	125.81	61.2633	240.99	45.0064
81.75	65.6755	127.23	72.7485	242.00	45.0546
83.79	74.0853	127.91	63.3738	244.70	27.9175
84.00	74.1204	129.30	65.4171	252.40	0.0000
85.43	73.1975	131.20	64.6735	252.80	31.1155
86.55	67.5563	133.02	57.2360	254.15	0.0000
86.79	67.5923	133.52	46.7809	256.23	44.6057
86.94	67.6147	136.00	55.5968	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	22.4908	355.39	0.0000	584.27	14.0930
264.80	20.9943	356.01	24.3646	595.83	0.0000
265.00	26.9978	364.49	0.0000	427.87	24.6374
268.22	29.3405	366.42	0.0000	602.52	0.0000
269.46	29.3762	372.51	17.2731	604.72	14.2444
270.03	29.3920	375.05	29.6682	607.14	12.3605
271.23	36.2168	377.52	19.8154	609.32	12.8502
273.65	0.0000	356.01	14.9315	610.33	18.5709
276.40	31.8478	388.16	12.4826	614.28	13.3597
277.37	31.8768	388.63	0.0000	618.01	12.4292
277.60	31.8837	391.69	20.0239	620.36	16.2723
278.00	31.8956	264.66	25.1923	621.93	15.3275
279.20	30.4118	401.81	26.0528	630.19	0.0000
279.54	30.4215	402.40	23.5418	631.29	24.5423
279.70	31.9469	404.85	21.8984	633.25	23.1211
280.46	31.9700	410.95	26.2218	634.78	0.0000
283.69	37.7937	413.71	28.8148	635.95	19.2936
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	20.6477	423.72	0.0000	645.85	12.6017
285.90	0.0000	427.09	23.0944	657.76	12.6747
287.50	33.3304	427.87	23.1064	657.90	0.0000
290.67	26.1274	433.94	16.3270	661.66	12.6985
293.27	0.0000	439.40	21.5612	664.57	0.0000
351.93	25.4644	453.88	28.7320	666.33	0.0000
295.96	25.4811	463.37	18.3959	666.50	0.0000
879.38	25.5416	468.07	26.3580	667.71	0.0000
299.98	25.5738	473.00	0.0000	677.62	12.7948
300.09	25.5758	475.06	18.5322	685.70	0.0000
300.13	25.5771	476.78	21.2021	695.00	0.0000
301.36	25.6053	477.60	22.0968	696.49	20.8505
302.85	29.5236	482.18	15.0687	696.51	20.8505
256.23	37.3477	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	17.8784
306.78	30.4061	497.08	17.8894	697.49	17.8799
308.46	40.9921	505.52	20.2277	702.65	12.9434
311.90	30.5425	507.63	0.0000	706.68	15.9596
316.51	33.0236	511.00	28.8613	711.68	13.9966
319.41	0.0000	514.00	29.8163	720.70	0.0000
320.08	0.0000	514.00	29.8163	721.93	0.0000
321.04	34.3348	520.40	21.7656	722.78	15.0708
323.87	22.5492	520.69	0.0000	722.91	15.0714
325.23	45.1505	522.65	0.0000	723.31	13.5670
328.76	0.0000	527.90	0.0000	724.19	19.6039
333.37	23.9252	528.26	15.0317	727.33	17.1148
333.97	22.3410	529.59	17.7782	733.00	9.6891
334.37	20.7521	529.87	0.0000	735.93	14.1481
338.28	20.4184	531.02	0.0000	333.97	12.1348
338.32	20.4189	537.26	0.0000	739.50	0.0000
311.90	20.4547	546.56	0.0000	747.24	20.3109
340.48	20.4547	552.55	22.1660	748.06	18.2864
340.55	0.0000	563.25	19.5089	752.31	13.2312
344.28	20.5180	569.33	21.4380	753.82	0.0000
345.93	22.5592	946.00	21.4399	756.73	11.2166
351.06	23.0559	569.70	19.5773	756.80	11.2171
351.93	23.0722	583.19	14.0851	884.68	10.7401

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	12.2837	1274.44	11.7296	1620.50	2.9833
766.42	12.2871	1001.03	13.4272	1621.92	1.9895
766.84	12.2891	1002.74	13.4351	1678.03	0.0000
772.60	0.0000	1004.73	11.2032	1690.97	3.0300
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	2.0519
778.90	7.4112	1028.54	0.0000	1063.66	4.1089
783.70	0.0000	1037.84	7.9297	1771.35	4.1096
785.37	9.2889	1038.76	0.0000	1791.20	0.0000
792.07	15.5243	631.29	11.3607	1808.65	2.0708
794.95	9.3256	1048.07	0.0000	1810.72	0.0000
795.86	9.3292	1049.04	11.3696	1836.06	1.0411
810.06	15.6390	1050.41	19.3367		
810.29	13.5549	1063.66	11.4233		
344.28	13.5559	1077.00	0.0000		
810.76	14.6004	1077.34	12.6212		
815.77	0.0000	1085.87	4.6019		
1048.07	0.0000	1093.63	11.5332		
832.01	12.6216	1099.45	16.1761		
834.85	21.0596	1112.07	15.0799		
835.71	14.7468	1112.84	11.6024		
836.80	0.0000	1115.54	5.2255		
846.75	0.0000	1120.29	10.4663		
846.77	16.9264	1120.55	10.4670		
856.80	0.0000	1221.41	6.9795		
860.56	17.0176	1129.67	9.3301		
871.09	7.4751	1131.51	0.0000		
873.19	5.3436	1147.95	0.0000		
875.33	0.0000	1173.23	15.5987		
879.38	7.4987	1177.95	9.9401		
880.51	18.2188	1189.05	16.0280		
883.24	9.6552	1204.77	7.1563		
884.68	16.1011	1221.41	19.7737		
889.28	9.6771	1231.02	14.4209		
894.76	16.1615	1235.36	0.0000		
898.04	11.8665	1238.28	18.7853		
900.72	20.5168	1260.41	0.0000		
903.28	14.0511	1271.87	2.7350		
911.20	14.0923	1274.44	14.5977		
912.08	21.1456	1274.54	14.5977		
923.98	0.0000	1291.59	6.4168		
926.50	10.9009	1298.22	0.0000		
929.11	8.1833	1312.11	0.0000		
937.49	12.0384	1332.49	1.8536		
944.13	0.0000	1362.66	0.0000		
946.00	12.0751	1365.19	7.4790		
949.00	14.2859	1368.63	0.0000		
667.71	0.0000	1384.29	11.2742		
962.31	15.4572	1408.01	3.7808		
964.08	18.2288	1457.56	0.0000		
966.17	28.1926	1460.82	3.8311		
911.20	18.8130	1489.16	4.8221		
968.97	18.8130	1505.03	5.8088		
983.53	0.0000	1584.12	12.8215		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 07:59:26.88

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235044.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM32.CNF;277
Background date    : Z-OCT-2016 11:01:57.
Sample date       : 30-NOV-2015 13:50:00 Acquisition date : 3-OCT-2016 06:56:59.
Sample ID        : G405235044 Sample quantity : 1.28844E+02 GRAM
Detector name    : GAM32 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.59 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596252 Detector SN# :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	54.86	38	83	1.11	110.93	107	8	1.05E-02	44.8	
2	4	75.44	130	180	1.59	152.10	147	14	3.62E-02	22.5	1.51E+00
3	4	77.42	151	126	1.15	156.04	147	14	4.19E-02	15.1	
4	0	89.77	51	263	3.52	180.75	172	12	1.42E-02	65.4	
5	0	93.17*	51	125	1.15	187.55	184	8	1.41E-02	43.2	
6	0	186.38*	115	148	1.59	373.98	368	15	3.20E-02	25.3	
7	0	210.19	53	121	2.38	421.60	415	11	1.46E-02	43.3	
8	2	239.04*	388	58	1.26	479.30	472	17	1.08E-01	6.2	2.43E+00
9	2	242.11	97	44	1.49	485.45	472	17	2.70E-02	15.9	
10	0	271.41	25	68	1.42	544.04	538	9	6.81E-03	63.7	
11	0	295.65*	146	52	1.43	592.53	587	10	4.06E-02	12.6	
12	0	299.84	34	43	1.58	600.89	598	8	9.45E-03	37.3	
13	0	339.15	63	103	1.30	679.52	672	15	1.75E-02	37.1	
14	0	352.37*	232	59	1.31	705.97	701	12	6.43E-02	9.5	
15	0	391.59	21	44	2.32	784.40	780	10	5.85E-03	63.3	
16	0	466.45	20	59	5.18	934.13	925	15	5.61E-03	86.4	
17	0	511.13*	71	41	2.83	1023.49	1015	14	1.96E-02	26.3	
18	0	583.63*	107	35	1.27	1168.50	1162	12	2.97E-02	15.0	
19	0	609.82*	181	36	1.60	1220.89	1215	10	5.04E-02	9.8	
20	0	662.31	93	43	1.22	1325.87	1321	12	2.59E-02	17.4	
21	0	729.12*	26	48	0.74	1459.49	1451	17	7.21E-03	64.3	
22	0	774.90	9	31	4.60	1551.05	1544	14	2.57E-03	132.5	
23	0	795.25	13	18	1.03	1591.76	1586	10	3.58E-03	67.2	
24	0	835.57	20	6	4.54	1672.40	1666	12	5.56E-03	33.2	
25	0	841.13	22	6	1.58	1683.51	1678	11	5.97E-03	30.2	
26	0	860.36	40	10	2.46	1721.97	1715	13	1.12E-02	22.3	
27	0	911.98*	80	31	1.59	1825.21	1820	12	2.23E-02	18.4	
28	0	969.82	71	11	1.47	1940.90	1935	12	1.97E-02	15.3	
29	0	993.29	20	6	1.51	1987.85	1981	14	5.53E-03	35.7	
30	0	1028.32	10	5	2.60	2057.90	2051	10	2.72E-03	53.5	
31	0	1038.30	8	8	0.66	2077.88	2073	8	2.22E-03	70.7	
32	0	1120.99*	40	24	1.68	2243.25	2238	13	1.12E-02	29.4	
33	0	1157.37	16	5	2.46	2316.02	2312	9	4.38E-03	38.1	
34	0	1171.94	12	6	1.87	2345.15	2341	8	3.40E-03	44.8	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1322.39	7	8	3.09	2646.06	2639	11	1.97E-03	86.5	
36	0	1377.89	22	7	1.35	2757.07	2749	14	6.11E-03	33.2	
37	0	1461.23*	330	0	2.11	2923.75	2918	13	9.16E-02	5.6	
38	5	1492.06	7	1	1.39	2985.42	2984	11	1.83E-03	27.3	6.33E-01
39	5	1494.77*	10	2	1.92	2990.84	2984	11	2.68E-03	46.7	
40	0	1765.20*	34	3	2.54	3531.71	3526	11	9.53E-03	20.2	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235044.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 30-NOV-2015 13:50:00 Acquisition date : 3-OCT-2016 06:56:59
 Sample ID : G405235044 Sample quantity : 128.84 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA32 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.59 0.0%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.119E+00	1.532E+01	1.532E+01	11.13	OK
MN-54	834.85	99.98*	1.753E+00	6.575E-02	1.302E-01	66.33	OK
AS-73	53.44	10.30*	1.124E+00	2.236E+00	3.186E+01	89.65	OK
SN-113	391.69	64.94*	3.225E+00	6.089E-02	3.886E-01	126.61	OK
BA-137M	661.66	89.90*	2.104E+00	2.882E-01	2.939E-01	34.77	OK
CS-137	661.66	85.10*	2.104E+00	3.045E-01	3.105E-01	34.77	OK
TL-208	277.37	6.60	4.277E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.326E+00	3.194E-01	3.194E-01	29.96	OK
	860.56	12.50	1.714E+00	1.087E+00	1.087E+00	44.65	OK
PB-212	74.82	10.28	3.488E+00	1.754E+00	1.754E+00	63.15	OK
	77.11	17.10	3.688E+00	1.602E+00	1.602E+00	30.19	OK
	238.63	43.60*	4.787E+00	1.161E+00	1.161E+00	12.49	OK
	300.09	3.30	4.019E+00	1.581E+00	1.581E+00	74.58	OK
BI-214	609.32	45.49*	2.246E+00	1.044E+00	1.045E+00	19.61	OK
	1120.29	14.92	1.392E+00	1.099E+00	1.099E+00	58.70	OK
	1764.49	15.30	9.460E-01	1.296E+00	1.297E+00	40.46	OK
PB-214	74.82	5.80	3.423E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.688E+00	2.824E+00	2.825E+00	30.19	OK
	87.09	3.41	4.545E+00	----- Line	Not Found	-----	Absent
	242.00	7.25	4.745E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.065E+00	1.204E+00	1.204E+00	25.26	OK
	351.93	35.60*	3.520E+00	1.127E+00	1.128E+00	18.92	OK
RN-222	609.32	45.49*	2.246E+00	1.044E+00	1.045E+00	19.61	OK
	1120.29	14.92	1.392E+00	1.099E+00	1.099E+00	58.70	OK
	1764.49	15.30	9.460E-01	1.296E+00	1.297E+00	40.46	OK
RA-224	240.99	4.10*	4.743E+00	9.949E-01	9.949E-01	113.31	OK
RA-226	609.32	45.49*	2.246E+00	1.044E+00	1.045E+00	19.61	OK
	1120.29	14.92	1.392E+00	1.099E+00	1.099E+00	58.70	OK
	1764.49	15.30	9.460E-01	1.296E+00	1.297E+00	40.46	OK
AC-228	105.21	1.10	5.586E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.634E+00	9.413E-01	9.413E-01	74.12	OK
	794.95	4.25	1.822E+00	9.610E-01	9.610E-01	134.35	OK
	835.71	1.61	1.753E+00	4.083E+00	4.083E+00	66.33	OK
	911.20	25.80*	1.638E+00	1.089E+00	1.089E+00	36.74	OK
	968.97	15.80	1.561E+00	1.644E+00	1.644E+00	30.57	OK
RA-228	105.21	1.10	5.586E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.634E+00	9.413E-01	9.413E-01	74.12	OK
	794.95	4.25	1.822E+00	9.610E-01	9.610E-01	134.35	OK
	835.71	1.61	1.753E+00	4.083E+00	4.083E+00	66.33	OK
	911.20	25.80*	1.638E+00	1.089E+00	1.089E+00	36.74	OK
	968.97	15.80	1.561E+00	1.644E+00	1.644E+00	30.57	OK
TH-228	74.82	10.28	3.488E+00	1.754E+00	1.754E+00	63.15	OK
	77.11	17.10	3.688E+00	1.602E+00	1.602E+00	30.19	OK
	238.63	43.60*	4.787E+00	1.161E+00	1.161E+00	12.49	OK
	300.09	3.30	4.019E+00	1.581E+00	1.581E+00	74.58	OK
TH-230	609.32	45.49*	2.246E+00	1.044E+00	1.044E+00	19.61	OK
	1120.29	14.92	1.392E+00	1.099E+00	1.099E+00	58.70	OK
	1764.49	15.30	9.460E-01	1.296E+00	1.296E+00	40.46	OK
TH-232	105.21	1.10	5.586E+00	----- Line	Not Found	-----	Absent

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	338.32	11.27	3.634E+00	9.413E-01	9.413E-01	74.12	OK
	835.71	1.61	1.753E+00	4.083E+00	4.083E+00	66.33	OK
	911.20	25.80*	1.638E+00	1.089E+00	1.089E+00	36.74	OK
	968.97	15.80	1.561E+00	1.644E+00	1.644E+00	30.57	OK
U-234	609.32	45.49*	2.246E+00	1.044E+00	1.044E+00	19.61	OK
	1120.29	14.92	1.392E+00	1.099E+00	1.099E+00	58.70	OK
	1764.49	15.30	9.460E-01	1.296E+00	1.296E+00	40.46	OK
U-235	89.96	3.47	4.745E+00	2.057E+00	2.057E+00	130.83	OK
	93.35	5.60	4.974E+00	1.206E+00	1.206E+00	86.31	OK
	143.76	10.96*	6.095E+00	-----	Line Not Found	-----	Absent
	163.33	5.08	5.924E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	5.599E+00	2.286E-01	2.286E-01	50.50	OK
	205.31	5.01	5.302E+00	-----	Line Not Found	-----	Absent
AM-243	43.53	5.90	1.701E-01	-----	Line Not Found	-----	Absent
	74.66	67.20*	3.488E+00	2.684E-01	2.684E-01	63.15	OK
ANH-511	511.00	100.00*	2.589E+00	1.623E-01	1.623E-01	52.51	OK

Flag: "*" = Keyline

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.532E+01	1.671E+00	4.511E-01
MN-54	1.302E-01	8.467E-02	1.251E-01
AS-73	3.186E+01	2.799E+01	3.319E+01
SN-113	3.886E-01	4.821E-01	5.433E-01
BA-137M	2.939E-01	1.001E-01	7.404E-02
CS-137	3.105E-01	1.058E-01	7.822E-02
TL-208	3.194E-01	9.377E-02	7.671E-02
PB-212	1.161E+00	1.422E-01	1.001E-01
BI-214	1.045E+00	2.008E-01	1.519E-01
PB-214	1.128E+00	2.091E-01	1.500E-01
RN-222	1.045E+00	2.008E-01	1.519E-01
RA-224	9.949E-01	1.105E+00	1.072E+00
RA-226	1.045E+00	2.008E-01	1.519E-01
AC-228	1.089E+00	3.921E-01	2.638E-01
RA-228	1.089E+00	3.921E-01	2.638E-01
TH-228	1.161E+00	1.422E-01	1.001E-01
TH-230	1.044E+00	2.008E-01	1.518E-01
TH-232	1.089E+00	3.921E-01	2.638E-01
U-234	1.044E+00	2.007E-01	1.518E-01
U-235	5.108E-02	1.911E-01	3.779E-01
AM-243	2.684E-01	1.661E-01	1.194E-01
ANH-511	1.623E-01	8.350E-02	5.915E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	2.506E+00	1.547E+01	3.001E+01	NOT IDENT.
NA-22	-8.921E-03	5.188E-02	1.010E-01	NOT IDENT.
NA-24	0.000E+00	9.800E+40	0.000E+00	SHORT HLIF
AL-26	6.046E-03	2.175E-02	5.847E-02	NOT IDENT.
SC-46	4.123E-02	4.229E-01	8.253E-01	FAIL ABUN
V-48	0.000E+00	2.167E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	6.341E+02	0.000E+00	SHORT HLIF
CO-56	5.512E-01	5.713E-01	1.223E+00	FAIL ABUN

MN-56	0.000E+00	1.040E+41	0.000E+00	SHORT HLIF
CO-57	3.406E-02	5.823E-02	1.086E-01	NOT IDENT.
CO-58	-1.143E-01	7.650E-01	1.399E+00	NOT IDENT.
FE-59	-4.330E+00	7.303E+00	1.328E+01	NOT IDENT.
CO-60	-1.343E-02	4.507E-02	8.589E-02	FAIL ABUN
ZN-65	4.067E-02	1.891E-01	3.581E-01	NOT IDENT.
GE-68	-5.810E-01	2.754E+00	5.325E+00	NOT IDENT.
AS-74	0.000E+00	9.203E+03	0.000E+00	SHORT HLIF
SE-75	2.311E-02	2.574E-01	4.937E-01	NOT IDENT.
BR-77	0.000E+00	2.549E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	8.952E+02	0.000E+00	SHORT HLIF
RB-83	1.167E-01	7.457E-01	1.459E+00	NOT IDENT.
KR-85	6.281E+00	9.799E+00	1.784E+01	NOT IDENT.
SR-85	7.154E-01	1.124E+00	2.045E+00	NOT IDENT.
RB-86	0.000E+00	4.291E+04	0.000E+00	SHORT HLIF
Y-88	-4.482E-03	1.911E-01	4.407E-01	NOT IDENT.
Y-91	-3.384E+02	7.146E+02	1.301E+03	NOT IDENT.
NB-94	1.416E-02	4.069E-02	7.803E-02	NOT IDENT.
NB-95	-1.161E+00	1.098E+00	1.683E+00	NOT IDENT.
NB-95M	-1.288E+00	3.004E+00	4.916E+00	NOT IDENT.
ZR-95	-2.196E-01	1.750E+00	3.245E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.025E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.442E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-1.262E-02	4.516E-02	7.724E-02	NOT IDENT.
RH-102	-2.012E-02	6.996E-02	1.264E-01	NOT IDENT.
RU-103	2.299E+00	7.164E+00	1.426E+01	FAIL ABUN
RH-106	-4.744E-01	5.920E-01	9.785E-01	NOT IDENT.
RU-106	-4.744E-01	5.920E-01	9.785E-01	NOT IDENT.
AG-108M	2.176E-02	3.465E-02	6.963E-02	NOT IDENT.
CD-109	2.428E+00	1.849E+00	3.319E+00	NOT IDENT.
AG-110M	3.685E-02	1.118E-01	2.257E-01	NOT IDENT.
CD-115	0.000E+00	4.189E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.595E+05	0.000E+00	SHORT HLIF
TE-123M	5.386E-02	1.461E-01	2.907E-01	NOT IDENT.
SB-124	-9.120E-01	2.422E+00	4.624E+00	NOT IDENT.
SB-125	8.443E-02	1.266E-01	2.561E-01	NOT IDENT.
TE-125M	5.334E+02	3.889E+02	7.665E+02	NOT IDENT.
I-126	0.000E+00	1.684E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	2.052E+06	0.000E+00	SHORT HLIF
SN-126	1.573E-01	1.174E-01	2.112E-01	NOT IDENT.
SB-127	0.000E+00	1.116E+23	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.133E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.453E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.439E+27	0.000E+00	SHORT HLIF
BA-133	1.622E-02	4.874E-02	8.748E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	6.337E-02	8.343E-02	1.326E-01	FAIL ABUN
CS-135	1.792E-02	1.576E-01	2.761E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	4.740E+05	0.000E+00	SHORT HLIF
CE-139	9.947E-03	1.365E-01	2.636E-01	NOT IDENT.
BA-140	0.000E+00	2.122E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	7.184E+05	0.000E+00	SHORT HLIF
CE-141	-6.399E+00	3.227E+01	6.163E+01	NOT IDENT.
CE-143	0.000E+00	1.187E+41	0.000E+00	SHORT HLIF
CE-144	9.855E-02	4.739E-01	8.445E-01	NOT IDENT.
PM-144	3.148E-02	6.516E-02	1.308E-01	NOT IDENT.
PR-144	2.710E+00	5.678E+00	1.139E+01	NOT IDENT.
PM-146	3.352E-03	5.285E-02	1.005E-01	NOT IDENT.
ND-147	0.000E+00	6.956E+07	0.000E+00	SHORT HLIF
PM-147	-1.808E+02	1.058E+03	1.838E+03	NOT IDENT.
PM-149	0.000E+00	1.233E+41	0.000E+00	SHORT HLIF
EU-150	6.617E-03	3.070E-02	5.401E-02	FAIL ABUN
EU-152	-5.155E-02	1.185E-01	1.897E-01	NOT IDENT.
GD-153	-1.069E-01	2.415E-01	4.129E-01	NOT IDENT.
EU-154	2.369E-03	1.204E-01	2.444E-01	NOT IDENT.
EU-155	1.676E-01	1.345E-01	2.648E-01	NOT IDENT.
TB-160	5.871E-01	1.933E+00	3.981E+00	FAIL ABUN
HO-166M	-4.417E-02	6.777E-02	1.138E-01	NOT IDENT.
TM-171	7.814E-01	4.477E+01	7.632E+01	NOT IDENT.
HF-172	3.331E-01	2.772E-01	5.414E-01	FAIL ABUN
LU-172	-3.785E-03	7.576E-02	1.534E-01	FAIL ABUN
LU-176	4.001E-03	2.484E-02	4.856E-02	FAIL ABUN
HF-181	3.763E+00	5.799E+00	1.183E+01	NOT IDENT.
TA-182	-6.339E-01	1.090E+00	1.950E+00	FAIL ABUN
RE-183	-8.362E-01	6.026E+00	9.996E+00	NOT IDENT.

RE-184	-2.181E+01	4.265E+01	7.224E+01	NOT IDENT.
W-188	-1.266E+02	1.539E+02	2.354E+02	NOT IDENT.
IR-192	-9.195E-02	5.634E-01	1.057E+00	FAIL ABUN
HG-203	6.113E-01	3.203E+00	6.174E+00	NOT IDENT.
BI-207	-4.214E-02	4.513E-02	7.618E-02	FAIL ABUN
PB-210	1.356E+00	1.040E+01	1.925E+01	NOT IDENT.
BI-211	0.000E+00	5.759E-01	8.395E-01	FAIL ABUN
PB-211	-1.771E-01	7.765E-01	1.433E+00	NOT IDENT.
BI-212	1.169E+00	7.675E-01	1.618E+00	NOT IDENT.
RN-219	1.888E-02	4.558E-01	8.647E-01	FAIL ABUN
RA-223	-3.368E-01	7.014E-01	1.268E+00	FAIL ABUN
AC-227	-3.623E-02	2.456E-01	4.646E-01	FAIL ABUN
TH-227	-3.623E-02	2.456E-01	4.646E-01	FAIL ABUN
TH-229	3.743E-02	5.301E-01	1.021E+00	FAIL ABUN
PA-231	5.779E-01	4.931E-01	9.741E-01	NOT IDENT.
TH-231	-3.368E-01	7.014E-01	1.268E+00	FAIL ABUN
PA-233	4.165E-02	6.750E-02	1.359E-01	FAIL ABUN
PA-234	-1.260E-01	2.940E-01	5.549E-01	FAIL ABUN
PA-234M	1.419E+00	4.281E+00	9.168E+00	NOT IDENT.
TH-234	-2.028E+00	2.086E+00	3.544E+00	FAIL ABUN
NP-237	4.165E-02	6.750E-02	1.359E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
U-238	-2.028E+00	2.086E+00	3.544E+00	FAIL ABUN
NP-239	2.873E-02	3.333E-01	5.902E-01	NOT IDENT.
PU-239	3.179E+02	4.286E+02	7.909E+02	NOT IDENT.
AM-241	-2.473E-02	2.382E-01	4.294E-01	NOT IDENT.
CM-243	-1.356E-01	1.305E-01	2.098E-01	NOT IDENT.
BK-247	2.219E-03	8.321E-02	1.591E-01	NOT IDENT.
CM-247	2.447E-02	3.973E-02	8.037E-02	NOT IDENT.
CF-249	-2.829E-02	4.991E-02	7.748E-02	NOT IDENT.
CF-251	-2.551E-03	1.168E-01	2.259E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	314	10.66*	1.119E+00	1.532E+01	1.532E+01	11.13
MN-54	834.85	20	99.98*	1.753E+00	6.575E-02	1.302E-01	66.33
AS-73	53.44	44	10.30*	1.124E+00	2.236E+00	3.186E+01	89.65
SN-113	391.69	22	64.94*	3.225E+00	6.089E-02	3.886E-01	126.61
BA-137M	661.66	94	89.90*	2.104E+00	2.882E-01	2.939E-01	34.77
CS-137	661.66	94	85.10*	2.104E+00	3.045E-01	3.105E-01	34.77
TL-208	277.37	-----	6.60	4.277E+00	-----	Line Not Found	-----
	583.19	108	85.00*	2.326E+00	3.194E-01	3.194E-01	29.96
	860.56	40	12.50	1.714E+00	1.087E+00	1.087E+00	44.65
BI-211	72.87	-----	1.23	3.214E+00	-----	Line Not Found	-----
	351.06	242	12.92*	3.520E+00	3.106E+00	3.106E+00	18.92
PB-212	74.82	150	10.28	3.488E+00	2.434E+00	2.434E+00	44.97
	77.11	173	17.10	3.688E+00	1.602E+00	1.602E+00	30.19
	238.63	416	43.60*	4.787E+00	1.161E+00	1.161E+00	12.49
	300.09	36	3.30	4.019E+00	1.581E+00	1.581E+00	74.58
BI-214	609.32	183	45.49*	2.246E+00	1.044E+00	1.045E+00	19.61
	1120.29	39	14.92	1.392E+00	1.099E+00	1.099E+00	58.70
	1764.49	32	15.30	9.460E-01	1.296E+00	1.297E+00	40.46
PB-214	74.82	150	5.80	3.488E+00	4.314E+00	4.315E+00	44.97
	77.11	173	9.70	3.688E+00	2.824E+00	2.825E+00	30.19
	87.09	-----	3.41	4.545E+00	-----	Line Not Found	-----
	242.00	104	7.25	4.743E+00	1.766E+00	1.767E+00	31.72
	295.22	155	18.42	4.065E+00	1.204E+00	1.204E+00	25.26
	351.93	242	35.60*	3.520E+00	1.127E+00	1.128E+00	18.92
RN-222	609.32	183	45.49*	2.246E+00	1.044E+00	1.045E+00	19.61
	1120.29	39	14.92	1.392E+00	1.099E+00	1.099E+00	58.70
	1764.49	32	15.30	9.460E-01	1.296E+00	1.297E+00	40.46
RA-224	240.99	104	4.10*	4.743E+00	3.124E+00	3.124E+00	31.72
RA-226	609.32	183	45.49*	2.246E+00	1.044E+00	1.045E+00	19.61
	1120.29	39	14.92	1.392E+00	1.099E+00	1.099E+00	58.70
	1764.49	32	15.30	9.460E-01	1.296E+00	1.297E+00	40.46
AC-228	105.21	-----	1.10	5.586E+00	-----	Line Not Found	-----
	338.32	66	11.27	3.634E+00	9.413E-01	9.413E-01	74.12
	794.95	13	4.25	1.822E+00	9.610E-01	9.610E-01	134.35
	835.71	20	1.61	1.753E+00	4.083E+00	4.083E+00	66.33
	911.20	79	25.80*	1.638E+00	1.089E+00	1.089E+00	36.74
	968.97	70	15.80	1.561E+00	1.644E+00	1.644E+00	30.57
RA-228	105.21	-----	1.10	5.586E+00	-----	Line Not Found	-----
	338.32	66	11.27	3.634E+00	9.413E-01	9.413E-01	74.12
	794.95	13	4.25	1.822E+00	9.610E-01	9.610E-01	134.35
	835.71	20	1.61	1.753E+00	4.083E+00	4.083E+00	66.33
	911.20	79	25.80*	1.638E+00	1.089E+00	1.089E+00	36.74
	968.97	70	15.80	1.561E+00	1.644E+00	1.644E+00	30.57
TH-228	74.82	150	10.28	3.488E+00	2.434E+00	2.434E+00	44.97
	77.11	173	17.10	3.688E+00	1.602E+00	1.602E+00	30.19
	238.63	416	43.60*	4.787E+00	1.161E+00	1.161E+00	12.49
	300.09	36	3.30	4.019E+00	1.581E+00	1.581E+00	74.58

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-230	609.32	183	45.49*	2.246E+00	1.044E+00	1.044E+00	19.61
	1120.29	39	14.92	1.392E+00	1.099E+00	1.099E+00	58.70
	1764.49	32	15.30	9.460E-01	1.296E+00	1.296E+00	40.46
TH-232	105.21	-----	1.10	5.586E+00	-----	Line Not Found	-----
	338.32	66	11.27	3.634E+00	9.413E-01	9.413E-01	74.12
	835.71	20	1.61	1.753E+00	4.083E+00	4.083E+00	66.33
	911.20	79	25.80*	1.638E+00	1.089E+00	1.089E+00	36.74
	968.97	70	15.80	1.561E+00	1.644E+00	1.644E+00	30.57
U-234	609.32	183	45.49*	2.246E+00	1.044E+00	1.044E+00	19.61
	1120.29	39	14.92	1.392E+00	1.099E+00	1.099E+00	58.70
	1764.49	32	15.30	9.460E-01	1.296E+00	1.296E+00	40.46
U-235	89.96	58	3.47	4.745E+00	2.057E+00	2.057E+00	130.83
	93.35	58	5.60	4.974E+00	1.206E+00	1.206E+00	86.31
	143.76	-----	10.96*	6.095E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.924E+00	-----	Line Not Found	-----
	185.72	126	57.20	5.599E+00	2.286E-01	2.286E-01	50.50
	205.31	-----	5.01	5.302E+00	-----	Line Not Found	-----
AM-243	43.53	-----	5.90	1.701E-01	-----	Line Not Found	-----
	74.66	150	67.20*	3.488E+00	3.723E-01	3.723E-01	44.97
ANH-511	511.00	72	100.00*	2.589E+00	1.623E-01	1.623E-01	52.51

Flag: "*" = Keyline

Total number of lines in spectrum 40
Number of unidentified lines 10
Number of lines tentatively identified by NID 30 75.00%

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	1.532E+01	1.532E+01	0.171E+01	11.13	
MN-54	312.05D	1.98	6.575E-02	1.302E-01	0.864E-01	66.33	
AS-73	80.30D	14.2	2.236E+00	3.186E+01	2.856E+01	89.65	
SN-113	115.09D	6.38	6.089E-02	3.886E-01	4.919E-01	126.61	
BA-137M	30.08Y	1.02	2.882E-01	2.939E-01	1.022E-01	34.77	
CS-137	30.08Y	1.02	3.045E-01	3.105E-01	1.079E-01	34.77	
TL-208	1.41E+10Y	1.00	3.194E-01	3.194E-01	0.957E-01	29.96	
BI-211	7.04E+08Y	1.00	3.106E+00	3.106E+00	0.588E+00	18.92	
PB-212	1.41E+10Y	1.00	1.161E+00	1.161E+00	0.145E+00	12.49	
BI-214	1600.00Y	1.00	1.044E+00	1.045E+00	0.205E+00	19.61	
PB-214	1600.00Y	1.00	1.127E+00	1.128E+00	0.213E+00	18.92	
RN-222	1600.00Y	1.00	1.044E+00	1.045E+00	0.205E+00	19.61	
RA-224	1.41E+10Y	1.00	3.124E+00	3.124E+00	0.991E+00	31.72	
RA-226	1600.00Y	1.00	1.044E+00	1.045E+00	0.205E+00	19.61	
AC-228	1.41E+10Y	1.00	1.089E+00	1.089E+00	0.400E+00	36.74	
RA-228	1.41E+10Y	1.00	1.089E+00	1.089E+00	0.400E+00	36.74	
TH-228	1.41E+10Y	1.00	1.161E+00	1.161E+00	0.145E+00	12.49	
TH-230	7.54E+04Y	1.00	1.044E+00	1.044E+00	0.205E+00	19.61	
TH-232	1.41E+10Y	1.00	1.089E+00	1.089E+00	0.400E+00	36.74	
U-234	2.45E+05Y	1.00	1.044E+00	1.044E+00	0.205E+00	19.61	
U-235	7.04E+08Y	1.00	2.286E-01	2.286E-01	1.155E-01	50.50	K
AM-243	7370.00Y	1.00	3.723E-01	3.723E-01	1.675E-01	44.97	
ANH-511	1.00E+09Y	1.00	1.623E-01	1.623E-01	0.852E-01	52.51	

Total Activity : 3.753E+01 6.756E+01

Grand Total Activity : 3.753E+01 6.756E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	210.19	57	131	2.38	421.60	415	11	1.46E-02	86.7	5.22E+00	T
0	271.41	26	72	1.42	544.04	538	9	6.81E-03	****	4.35E+00	T
0	466.45	21	60	5.18	934.13	925	15	5.61E-03	****	2.79E+00	
0	729.12	26	48	0.74	1459.49	1451	17	7.21E-03	****	1.95E+00	
0	774.90	9	31	4.60	1551.05	1544	14	2.57E-03	****	1.86E+00	
0	841.13	21	5	1.58	1683.51	1678	11	5.97E-03	60.4	1.74E+00	
0	993.29	19	6	1.51	1987.85	1981	14	5.53E-03	71.3	1.53E+00	
0	1028.32	10	5	2.60	2057.90	2051	10	2.72E-03	****	1.49E+00	T
0	1038.30	8	8	0.66	2077.88	2073	8	2.22E-03	****	1.48E+00	T
0	1157.37	15	5	2.46	2316.02	2312	9	4.38E-03	76.2	1.36E+00	
0	1171.94	12	6	1.87	2345.15	2341	8	3.40E-03	89.6	1.34E+00	T
0	1322.39	7	8	3.09	2646.06	2639	11	1.97E-03	****	1.22E+00	
0	1377.89	21	7	1.35	2757.07	2749	14	6.11E-03	66.5	1.18E+00	
5	1492.06	6	1	1.39	2985.42	2984	11	1.83E-03	54.6	1.10E+00	
5	1494.77	9	2	1.92	2990.84	2984	11	2.68E-03	93.3	1.10E+00	

Flags: "T" = Tentatively associated

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*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                         *
*                               Charleston, SC 29407                     *
*                               *                                     *
*****
*                               DETECTOR AND SAMPLE DATA                *
*                               *                                     *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235044.CNF;1 *
* Acquisition date   : 3-OCT-2016 06:56:59 Sensitivity      : 3.000      *
* Detector ID        : GAM32 Energy tolerance: 1.500      *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.59 Half life ratio : *****      *
* Sample date       : 30-NOV-2015 13:50:00 Nuclide Library : SOLID      *
* Sample ID         : G405235044 Analyst initials: MXR1      *
* Batch Number      : 1596252 Sample Quantity : 1.2884E+02 GRAM      *
* Wet wt corr       : 1.00000 Wet Weight : 0.00000      *
*                               Dry Weight : 0.00000      *
*****
*                               CALIBRATION INFORMATION                  *
*                               *                                     *
* Eff. Cal. date    : 23-AUG-2016 07:56:33 Eff. Geometry   : CAN      *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM32 CAN.CNF;11      *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.595E-01
MN-54	5.356E-02
AS-73	1.542E+01
SN-113	2.472E-01
BA-137M	3.273E-02
CS-137	3.458E-02
TL-208	3.433E-02
PB-212	4.617E-02
BI-214	6.814E-02
PB-214	6.861E-02
RN-222	6.814E-02
RA-224	4.948E-01
RA-226	6.814E-02
AC-228	1.132E-01
RA-228	1.132E-01
TH-228	4.617E-02
TH-230	6.812E-02
TH-232	1.132E-01
U-234	6.812E-02
U-235	1.768E-01
AM-243	5.614E-02
ANH-511	2.649E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.346E+01	NOT IDENT.
NA-22	4.261E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.071E-02	NOT IDENT.
SC-46	3.521E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
CO-56	5.390E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF

CO-57	5.083E-02	NOT IDENT.
CO-58	6.092E-01	NOT IDENT.
FE-59	5.444E+00	NOT IDENT.
CO-60	3.566E-02	FAIL ABUN
ZN-65	1.523E-01	NOT IDENT.
GE-68	2.287E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	2.285E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.466E-01	NOT IDENT.
KR-85	8.165E+00	NOT IDENT.
SR-85	9.362E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.562E-01	NOT IDENT.
Y-91	5.618E+02	NOT IDENT.
NB-94	3.505E-02	NOT IDENT.
NB-95	7.227E-01	NOT IDENT.
NB-95M	2.270E+00	NOT IDENT.
ZR-95	1.407E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.627E-02	NOT IDENT.
RH-102	5.558E-02	NOT IDENT.
RU-103	6.369E+00	FAIL ABUN
RH-106	4.248E-01	NOT IDENT.
RU-106	4.248E-01	NOT IDENT.
AG-108M	3.183E-02	NOT IDENT.
CD-109	1.584E+00	NOT IDENT.
AG-110M	9.756E-02	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.357E-01	NOT IDENT.
SB-124	1.731E+00	NOT IDENT.
SB-125	1.170E-01	NOT IDENT.
TE-125M	3.616E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SN-126	1.008E-01	NOT IDENT.
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.982E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.953E-02	FAIL ABUN
CS-135	1.266E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.237E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.886E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.969E-01	NOT IDENT.
PM-144	5.828E-02	NOT IDENT.
PR-144	5.074E+00	NOT IDENT.
PM-146	4.548E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	8.597E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.469E-02	FAIL ABUN
EU-152	8.606E-02	NOT IDENT.
GD-153	1.933E-01	NOT IDENT.
EU-154	1.030E-01	NOT IDENT.
EU-155	1.246E-01	NOT IDENT.
TB-160	1.692E+00	FAIL ABUN
HO-166M	4.951E-02	NOT IDENT.
TM-171	3.540E+01	NOT IDENT.
HF-172	2.545E-01	FAIL ABUN
LU-172	6.462E-02	FAIL ABUN
LU-176	2.210E-02	FAIL ABUN
HF-181	5.354E+00	NOT IDENT.
TA-182	8.296E-01	FAIL ABUN
RE-183	4.656E+00	NOT IDENT.
RE-184	3.090E+01	NOT IDENT.

W-188	1.073E+02	NOT IDENT.
IR-192	4.829E-01	FAIL ABUN
HG-203	2.861E+00	NOT IDENT.
BI-207	3.065E-02	FAIL ABUN
PB-210	9.049E+00	NOT IDENT.
BI-211	4.023E-01	FAIL ABUN
PB-211	6.490E-01	NOT IDENT.
BI-212	7.481E-01	NOT IDENT.
RN-219	3.939E-01	FAIL ABUN
RA-223	5.808E-01	FAIL ABUN
AC-227	2.136E-01	FAIL ABUN
TH-227	2.136E-01	FAIL ABUN
TH-229	4.771E-01	FAIL ABUN
PA-231	4.495E-01	NOT IDENT.
TH-231	5.808E-01	FAIL ABUN
PA-233	6.260E-02	FAIL ABUN
PA-234	2.360E-01	FAIL ABUN
PA-234M	3.965E+00	NOT IDENT.
TH-234	1.667E+00	FAIL ABUN
NP-237	6.260E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	1.667E+00	FAIL ABUN
NP-239	2.778E-01	NOT IDENT.
PU-239	3.743E+02	NOT IDENT.
AM-241	2.009E-01	NOT IDENT.
CM-243	9.768E-02	NOT IDENT.
BK-247	7.347E-02	NOT IDENT.
CM-247	3.665E-02	NOT IDENT.
CF-249	3.499E-02	NOT IDENT.
CF-251	1.048E-01	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.532E+01	1.853E+00	1.853E+00
MN-54	1.302E-01	8.485E-02	8.485E-02
AS-73	3.186E+01	2.875E+01	2.875E+01
SN-113	3.886E-01	4.824E-01	4.824E-01
BA-137M	2.939E-01	1.009E-01	1.009E-01
CS-137	3.105E-01	1.066E-01	1.066E-01
TL-208	3.194E-01	9.475E-02	9.475E-02
PB-212	1.161E+00	1.550E-01	1.550E-01
BI-214	1.045E+00	2.058E-01	2.058E-01
PB-214	1.128E+00	2.143E-01	2.143E-01
RN-222	1.045E+00	2.058E-01	2.058E-01
RA-224	9.949E-01	1.115E+00	1.115E+00
RA-226	1.045E+00	2.058E-01	2.058E-01
AC-228	1.089E+00	3.960E-01	3.960E-01
RA-228	1.089E+00	3.960E-01	3.960E-01
TH-228	1.161E+00	1.550E-01	1.550E-01
TH-230	1.044E+00	2.057E-01	2.057E-01
TH-232	1.089E+00	3.960E-01	3.960E-01
U-234	1.044E+00	2.057E-01	2.057E-01
U-235	5.108E-02	1.911E-01	1.911E-01
AM-243	2.684E-01	1.675E-01	1.675E-01
ANH-511	1.623E-01	8.376E-02	8.376E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	2.506E+00	1.547E+01	1.551E+01	NOT IDENT.
NA-22	-8.921E-03	5.188E-02	5.203E-02	NOT IDENT.
NA-24	1.000E+41	1.077E+41	0.000E+00	SHORT HLIF
AL-26	6.046E-03	2.176E-02	2.193E-02	NOT IDENT.
SC-46	4.123E-02	4.229E-01	4.234E-01	FAIL ABUN
V-48	-1.319E+04	2.167E+04	2.248E+04	SHORT HLIF
CR-51	-1.960E+02	6.341E+02	6.403E+02	SHORT HLIF
CO-56	5.512E-01	5.717E-01	6.234E-01	FAIL ABUN

MN-56	1.000E+41	1.040E+41	0.000E+00	SHORT HLIF
CO-57	3.406E-02	5.825E-02	6.024E-02	NOT IDENT.
CO-58	-1.143E-01	7.650E-01	7.667E-01	NOT IDENT.
FE-59	-4.330E+00	7.310E+00	7.566E+00	NOT IDENT.
CO-60	-1.343E-02	4.507E-02	4.547E-02	FAIL ABUN
ZN-65	4.067E-02	1.891E-01	1.900E-01	NOT IDENT.
GE-68	-5.810E-01	2.755E+00	2.767E+00	NOT IDENT.
AS-74	3.403E+03	9.208E+03	9.335E+03	SHORT HLIF
SE-75	2.311E-02	2.574E-01	2.576E-01	NOT IDENT.
BR-77	2.083E+39	1.850E+40	0.000E+00	SHORT HLIF
SR-82	9.421E+02	8.963E+02	9.918E+02	SHORT HLIF
RB-83	1.167E-01	7.459E-01	7.478E-01	NOT IDENT.
KR-85	6.281E+00	9.802E+00	1.020E+01	NOT IDENT.
SR-85	7.154E-01	1.125E+00	1.170E+00	NOT IDENT.
RB-86	-1.259E+04	4.291E+04	4.328E+04	SHORT HLIF
Y-88	-4.482E-03	1.911E-01	1.911E-01	NOT IDENT.
Y-91	-3.384E+02	7.147E+02	7.308E+02	NOT IDENT.
NB-94	1.416E-02	4.069E-02	4.119E-02	NOT IDENT.
NB-95	-1.161E+00	1.099E+00	1.218E+00	NOT IDENT.
NB-95M	-1.288E+00	3.005E+00	3.061E+00	NOT IDENT.
ZR-95	-2.196E-01	1.750E+00	1.753E+00	NOT IDENT.
NB-97	1.000E+41	2.404E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.026E+41	0.000E+00	SHORT HLIF
MO-99	-1.064E+32	1.442E+33	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	3.275E+41	0.000E+00	SHORT HLIF
RH-101	-1.262E-02	4.522E-02	4.558E-02	NOT IDENT.
RH-102	-2.012E-02	6.998E-02	7.056E-02	NOT IDENT.
RU-103	2.299E+00	7.164E+00	7.239E+00	FAIL ABUN
RH-106	-4.744E-01	5.927E-01	6.301E-01	NOT IDENT.
RU-106	-4.744E-01	5.927E-01	6.301E-01	NOT IDENT.
AG-108M	2.176E-02	3.466E-02	3.602E-02	NOT IDENT.
CD-109	2.428E+00	1.859E+00	2.157E+00	NOT IDENT.
AG-110M	3.685E-02	1.119E-01	1.131E-01	NOT IDENT.
CD-115	2.749E+39	4.189E+40	0.000E+00	SHORT HLIF
SN-117M	-4.939E+04	1.596E+05	1.612E+05	SHORT HLIF
TE-123M	5.386E-02	1.461E-01	1.481E-01	NOT IDENT.
SB-124	-9.120E-01	2.422E+00	2.457E+00	NOT IDENT.
SB-125	8.443E-02	1.267E-01	1.323E-01	NOT IDENT.
TE-125M	5.334E+02	3.901E+02	4.583E+02	NOT IDENT.
I-126	1.239E+05	1.684E+06	1.685E+06	SHORT HLIF
SB-126	-1.046E+06	2.062E+06	2.115E+06	SHORT HLIF
SN-126	1.573E-01	1.179E-01	1.375E-01	NOT IDENT.
SB-127	5.625E+22	1.369E+23	0.000E+00	SHORT HLIF
I-131	1.357E+09	1.133E+10	1.135E+10	SHORT HLIF
I-132	-1.000E+41	1.902E+42	0.000E+00	SHORT HLIF
TE-132	-7.437E+26	2.459E+27	0.000E+00	SHORT HLIF
BA-133	1.622E-02	4.874E-02	4.929E-02	NOT IDENT.
I-133	-1.000E+41	1.905E+42	0.000E+00	SHORT HLIF
CS-134	6.337E-02	8.347E-02	8.822E-02	FAIL ABUN
CS-135	1.792E-02	1.576E-01	1.578E-01	NOT IDENT.
I-135	-1.000E+41	5.696E+42	0.000E+00	SHORT HLIF
CS-136	-3.287E+05	4.753E+05	4.979E+05	SHORT HLIF
CE-139	9.947E-03	1.365E-01	1.366E-01	NOT IDENT.
BA-140	1.717E+06	2.123E+06	2.259E+06	SHORT HLIF
LA-140	-5.228E+05	7.189E+05	7.565E+05	SHORT HLIF
CE-141	-6.399E+00	3.227E+01	3.240E+01	NOT IDENT.
CE-143	1.000E+41	1.191E+41	0.000E+00	SHORT HLIF
CE-144	9.855E-02	4.739E-01	4.760E-01	NOT IDENT.
PM-144	3.148E-02	6.519E-02	6.672E-02	NOT IDENT.
PR-144	2.710E+00	5.679E+00	5.809E+00	NOT IDENT.
PM-146	3.352E-03	5.285E-02	5.287E-02	NOT IDENT.
ND-147	3.136E+06	6.956E+07	6.957E+07	SHORT HLIF
PM-147	-1.808E+02	1.058E+03	1.062E+03	NOT IDENT.
PM-149	-1.000E+41	1.253E+41	0.000E+00	SHORT HLIF
EU-150	6.617E-03	3.070E-02	3.084E-02	FAIL ABUN
EU-152	-5.155E-02	1.186E-01	1.208E-01	NOT IDENT.
GD-153	-1.069E-01	2.416E-01	2.463E-01	NOT IDENT.
EU-154	2.369E-03	1.204E-01	1.204E-01	NOT IDENT.
EU-155	1.676E-01	1.350E-01	1.547E-01	NOT IDENT.
TB-160	5.871E-01	1.933E+00	1.951E+00	FAIL ABUN
HO-166M	-4.417E-02	6.781E-02	7.067E-02	NOT IDENT.
TM-171	7.814E-01	4.477E+01	4.477E+01	NOT IDENT.
HF-172	3.331E-01	2.825E-01	3.199E-01	FAIL ABUN
LU-172	-3.785E-03	7.576E-02	7.578E-02	FAIL ABUN
LU-176	4.001E-03	2.484E-02	2.491E-02	FAIL ABUN
HF-181	3.763E+00	5.801E+00	6.044E+00	NOT IDENT.
TA-182	-6.339E-01	1.090E+00	1.127E+00	FAIL ABUN
RE-183	-8.362E-01	6.027E+00	6.039E+00	NOT IDENT.

RE-184	-2.181E+01	4.298E+01	4.409E+01	NOT IDENT.
W-188	-1.266E+02	1.546E+02	1.648E+02	NOT IDENT.
IR-192	-9.195E-02	5.635E-01	5.650E-01	FAIL ABUN
HG-203	6.113E-01	3.203E+00	3.215E+00	NOT IDENT.
BI-207	-4.214E-02	4.516E-02	4.900E-02	FAIL ABUN
PB-210	1.356E+00	1.040E+01	1.042E+01	NOT IDENT.
BI-211	3.106E+00	5.925E-01	1.521E+00	FAIL ABUN
PB-211	-1.771E-01	7.766E-01	7.807E-01	NOT IDENT.
BI-212	1.169E+00	7.697E-01	9.328E-01	NOT IDENT.
RN-219	1.888E-02	4.558E-01	4.559E-01	FAIL ABUN
RA-223	-3.368E-01	7.017E-01	7.179E-01	FAIL ABUN
AC-227	-3.623E-02	2.457E-01	2.462E-01	FAIL ABUN
TH-227	-3.623E-02	2.457E-01	2.462E-01	FAIL ABUN
TH-229	3.743E-02	5.301E-01	5.304E-01	FAIL ABUN
PA-231	5.779E-01	5.082E-01	5.711E-01	NOT IDENT.
TH-231	-3.368E-01	7.017E-01	7.179E-01	FAIL ABUN
PA-233	4.165E-02	6.753E-02	7.009E-02	FAIL ABUN
PA-234	-1.260E-01	3.274E-01	3.323E-01	FAIL ABUN
PA-234M	1.419E+00	4.282E+00	4.329E+00	NOT IDENT.
TH-234	-2.028E+00	2.134E+00	2.321E+00	FAIL ABUN
NP-237	4.165E-02	6.753E-02	7.009E-02	FAIL ABUN
NP-238	-1.000E+41	3.908E+41	0.000E+00	SHORT HLIF
U-238	-2.028E+00	2.134E+00	2.321E+00	FAIL ABUN
NP-239	2.873E-02	3.333E-01	3.335E-01	NOT IDENT.
PU-239	3.179E+02	4.289E+02	4.522E+02	NOT IDENT.
AM-241	-2.473E-02	2.382E-01	2.384E-01	NOT IDENT.
CM-243	-1.356E-01	1.311E-01	1.447E-01	NOT IDENT.
BK-247	2.219E-03	8.321E-02	8.321E-02	NOT IDENT.
CM-247	2.447E-02	3.995E-02	4.144E-02	NOT IDENT.
CF-249	-2.829E-02	4.996E-02	5.156E-02	NOT IDENT.
CF-251	-2.551E-03	1.168E-01	1.168E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	81.3617	87.09	99.8288	136.47	73.4470
45.60	69.3616	87.57	99.8871	140.51	0.0000
46.54	72.8394	88.03	99.9429	143.76	64.6930
49.72	0.0000	88.34	99.9801	144.24	67.2428
51.35	54.2351	88.47	99.9961	145.44	77.4116
51.87	52.7743	89.96	81.0940	152.43	66.0339
52.39	54.3289	1093.63	81.1599	153.25	0.0000
52.97	55.8913	91.11	0.0000	323.87	62.7439
53.44	57.4459	92.59	94.1075	156.02	0.0000
54.07	56.7480	93.35	94.1909	158.56	0.0000
57.36	0.0000	94.56	62.3499	159.00	57.8910
57.53	63.9085	94.65	62.3562	162.33	70.0033
57.98	65.4759	94.67	62.3578	162.66	0.0000
59.27	74.3794	94.87	62.3721	163.33	81.1690
59.32	83.5401	97.43	84.2091	165.86	76.2001
59.54	73.2654	98.43	65.0351	176.31	69.0706
60.96	74.5708	98.44	65.0359	176.60	0.0000
61.17	78.0372	99.53	81.9977	177.52	55.3086
62.93	90.8994	100.11	80.8445	181.07	0.0000
63.29	97.8550	102.03	66.5067	181.52	52.0135
63.58	85.2279	103.18	93.2275	184.41	57.3418
64.28	72.6333	103.37	87.1919	143.76	61.7473
66.73	80.9898	105.21	54.6045	193.51	66.4830
67.24	99.5746	105.31	54.6106	197.03	81.5652
125.81	90.3684	106.12	72.8778	198.01	63.1926
67.75	90.3773	106.47	76.5505	201.83	75.6892
69.67	101.0780	109.28	58.4996	203.43	67.8465
70.83	96.1976	111.00	84.2464	205.31	74.1135
72.81	71.5662	111.76	0.0000	210.85	65.1035
72.87	85.5750	114.06	78.3911	215.65	72.8753
74.66	81.8822	116.30	0.0000	222.11	61.5935
74.82	81.8999	116.74	83.5193	227.09	53.7390
74.97	81.9164	119.76	72.6868	227.38	54.6452
77.11	82.1487	121.12	74.0195	228.16	0.0000
78.74	87.8116	121.22	74.0268	228.18	60.9485
79.69	87.9193	121.78	59.2544	116.74	60.9485
80.12	84.8260	122.06	58.0361	235.69	58.0982
80.19	0.0000	122.92	85.2740	235.96	58.1080
80.57	103.7360	123.07	85.2866	238.63	47.8307
81.00	89.6389	265.00	66.7860	238.98	0.0000
81.07	89.6470	125.81	53.2924	240.99	47.9035
81.75	80.2800	127.23	86.8741	242.00	47.9342
83.79	104.1583	127.91	99.3503	244.70	54.3591
84.00	102.6066	129.30	83.3165	252.40	0.0000
85.43	98.0449	131.20	83.4678	252.80	43.7090
86.55	99.7628	133.02	81.1151	254.15	0.0000
86.79	99.7923	133.52	76.1588	256.23	46.5396
86.94	99.8109	136.00	72.5805	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	50.4491	355.39	0.0000	584.27	24.3720
264.80	48.6189	356.01	28.9227	595.83	0.0000
265.00	48.6243	364.49	0.0000	427.87	15.9851
268.22	38.6068	366.42	0.0000	602.52	0.0000
269.46	40.0157	372.51	36.9316	604.72	30.4146
270.03	42.3295	375.05	29.1919	607.14	24.0317
271.23	42.3595	377.52	36.0455	609.32	25.6533
273.65	0.0000	356.01	34.1996	610.33	22.4543
276.40	43.4132	388.16	39.6538	614.28	19.2722
277.37	54.5287	388.63	0.0000	618.01	17.1523
277.60	52.6872	391.69	34.3250	620.36	7.5101
278.00	49.9252	264.66	36.4369	621.93	24.6892
279.20	49.9603	401.81	34.4852	630.19	0.0000
279.54	59.2240	402.40	26.6100	631.29	21.5365
279.70	59.2292	404.85	34.5329	633.25	19.3953
280.46	61.1069	410.95	29.6814	634.78	0.0000
283.69	38.9597	413.71	29.7180	635.95	18.3344
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	48.2834	423.72	0.0000	645.85	23.8038
285.90	0.0000	427.09	31.8874	657.76	14.6640
287.50	31.6073	427.87	26.9143	657.90	0.0000
290.67	53.0850	433.94	27.9846	661.66	19.5762
293.27	0.0000	439.40	29.0525	664.57	0.0000
351.93	46.2189	453.88	29.2313	666.33	0.0000
295.96	46.2381	463.37	29.3469	666.50	0.0000
879.38	33.6768	468.07	27.3763	667.71	0.0000
299.98	39.3203	473.00	0.0000	677.62	14.2108
300.09	39.3229	475.06	23.3870	685.70	0.0000
300.13	39.3237	476.78	24.4209	695.00	0.0000
301.36	26.7019	477.60	23.4113	696.49	16.4941
302.85	40.7892	482.18	21.4149	696.51	16.4941
256.23	30.9717	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	20.8980
306.78	31.9504	497.08	19.4905	697.49	24.1995
308.46	43.2663	505.52	30.8765	702.65	19.8311
311.90	34.8667	507.63	0.0000	706.68	25.3706
316.51	40.6213	511.00	24.7539	711.68	23.2003
319.41	0.0000	514.00	27.8800	720.70	0.0000
320.08	0.0000	514.00	27.8800	721.93	0.0000
321.04	40.7193	520.40	18.6328	722.78	9.9767
323.87	48.3676	520.69	0.0000	722.91	16.6284
325.23	48.4019	522.65	0.0000	723.31	16.6302
328.76	0.0000	527.90	0.0000	724.19	18.2980
333.37	22.8745	528.26	19.7267	727.33	21.0905
333.97	34.3220	529.59	21.8135	733.00	16.6785
334.37	38.6205	529.87	0.0000	735.93	13.3545
338.28	34.3982	531.02	0.0000	333.97	14.4742
338.32	34.3989	537.26	0.0000	739.50	0.0000
311.90	34.4370	546.56	0.0000	747.24	20.0991
340.48	34.4370	552.55	25.1436	748.06	14.5197
340.55	0.0000	563.25	17.8792	752.31	10.0646
344.28	40.2543	569.33	15.8105	753.82	0.0000
345.93	36.4515	946.00	15.8112	756.73	15.6765
351.06	41.8344	569.70	20.0290	756.80	15.6771
351.93	38.4855	583.19	24.3626	884.68	15.7096

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	25.8226	1274.44	4.2940	1620.50	2.0240
766.42	26.9502	1001.03	8.0607	1621.92	1.0123
766.84	21.3379	1002.74	8.0640	1678.03	0.0000
772.60	0.0000	1004.73	11.6535	1690.97	5.1187
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	2.0714
778.90	11.8330	1028.54	0.0000	1063.66	5.1831
783.70	0.0000	1037.84	11.7440	1771.35	2.0736
785.37	9.0322	1038.76	0.0000	1791.20	0.0000
792.07	10.1807	631.29	10.8625	1808.65	1.0427
794.95	16.9818	1048.07	0.0000	1810.72	0.0000
795.86	16.9861	1049.04	10.8691	1836.06	2.0941
810.06	17.0538	1050.41	9.9667		
810.29	17.0551	1063.66	9.9969		
344.28	17.0557	1077.00	0.0000		
810.76	17.0569	1077.34	14.5859		
815.77	0.0000	1085.87	13.7009		
1048.07	0.0000	1093.63	10.0648		
832.01	13.7256	1099.45	11.9098		
834.85	12.0193	1112.07	12.8618		
835.71	12.0223	1112.84	13.7833		
836.80	0.0000	1115.54	8.8266		
846.75	0.0000	1120.29	11.9645		
846.77	8.2685	1120.55	11.9653		
856.80	0.0000	1221.41	11.9677		
860.56	13.8320	1129.67	7.3779		
871.09	13.8706	1131.51	0.0000		
873.19	13.8784	1147.95	0.0000		
875.33	0.0000	1173.23	19.3629		
879.38	8.1088	1177.95	17.7058		
880.51	16.2222	1189.05	11.2083		
883.24	6.9575	1204.77	18.7427		
884.68	10.4399	1221.41	16.9255		
889.28	10.4528	1231.02	19.7862		
894.76	8.1413	1235.36	0.0000		
898.04	13.9688	1238.28	18.8721		
900.72	3.4945	1260.41	0.0000		
903.28	17.4841	1271.87	4.7501		
911.20	12.2637	1274.44	9.5050		
912.08	12.2667	1274.54	11.4060		
923.98	0.0000	1291.59	7.6299		
926.50	7.9146	1298.22	0.0000		
929.11	14.9596	1312.11	0.0000		
937.49	15.8730	1332.49	10.5750		
944.13	0.0000	1362.66	0.0000		
946.00	15.0229	1365.19	5.8041		
949.00	12.3812	1368.63	0.0000		
667.71	0.0000	1384.29	4.4381		
962.31	17.7454	1408.01	3.9004		
964.08	12.7824	1457.56	0.0000		
966.17	19.8939	1460.82	1.9691		
911.20	24.8845	1489.16	3.1666		
968.97	24.8845	1505.03	5.9539		
983.53	0.0000	1584.12	8.0474		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:00:16.02

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235045.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM39.CNF;134
Background date    : Z-OCT-2016 11:02:13.
Sample date       : 30-NOV-2015 14:15:00 Acquisition date : 3-OCT-2016 06:57:26.
Sample ID        : G405235045 Sample quantity : 1.30599E+02 GRAM
Detector name     : GAM39 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:06.96 0.2%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1596252 Detector SN# :
Matrix Spike ID   : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.69*	45	126	0.82	93.22	90	8	1.25E-02	47.8	
2	0	63.24*	94	265	1.19	126.33	121	12	2.62E-02	37.2	
3	2	74.84*	212	189	1.41	149.51	143	18	5.89E-02	13.3	2.59E+00
4	2	77.22*	319	173	1.27	154.29	143	18	8.87E-02	9.7	
5	2	87.36	77	167	1.42	174.55	171	20	2.14E-02	28.8	2.92E+00
6	2	89.78	71	172	1.28	179.41	171	20	1.97E-02	33.6	
7	2	92.73*	92	132	1.20	185.29	171	20	2.54E-02	26.3	
8	0	98.29	33	128	0.63	196.43	193	8	9.03E-03	62.8	
9	0	129.50	60	137	1.58	258.85	253	13	1.65E-02	42.5	
10	1	185.71*	58	59	1.44	371.26	365	19	1.62E-02	32.2	3.39E+00
11	1	188.58	36	57	1.32	377.00	365	19	9.93E-03	43.3	
12	4	238.76*	293	102	1.27	477.36	473	15	8.14E-02	8.7	1.57E+00
13	4	241.52	110	107	1.92	482.89	473	15	3.06E-02	26.5	
14	0	253.81	31	144	3.13	507.47	496	19	8.58E-03	94.5	
15	0	270.62*	38	124	2.47	541.09	538	13	1.04E-02	63.2	
16	0	295.68*	129	111	1.70	591.20	585	13	3.59E-02	19.2	
17	0	328.16	28	49	0.91	656.17	652	9	7.87E-03	48.4	
18	0	338.56*	53	65	1.51	676.97	671	11	1.47E-02	33.3	
19	0	352.21*	205	83	1.41	704.28	696	16	5.70E-02	12.4	
20	0	402.02	23	34	1.43	803.90	798	11	6.37E-03	54.3	
21	0	405.46	18	8	0.72	810.79	808	6	5.11E-03	33.2	
22	0	511.00*	27	60	1.44	1021.86	1015	15	7.63E-03	73.8	
23	0	518.51	19	35	4.84	1036.89	1031	14	5.28E-03	69.9	
24	0	550.08	43	29	7.41	1100.04	1090	23	1.19E-02	36.1	
25	0	583.56*	119	44	1.97	1167.01	1158	19	3.31E-02	16.9	
26	0	609.72*	104	67	1.67	1219.33	1212	15	2.90E-02	20.0	
27	0	626.25	14	30	0.54	1252.38	1246	13	3.93E-03	83.3	
28	0	634.04	13	18	1.26	1267.96	1262	8	3.63E-03	64.5	
29	0	653.39	8	27	0.93	1306.68	1299	12	2.12E-03	141.4	
30	0	661.71	223	45	1.27	1323.32	1316	14	6.19E-02	9.3	
31	0	731.13	78	48	11.48	1462.16	1446	40	2.16E-02	32.2	
32	0	801.05	6	23	3.85	1602.02	1593	12	1.80E-03	161.8	
33	0	911.52*	63	31	1.45	1822.98	1815	16	1.75E-02	24.4	
34	0	949.47	13	7	2.86	1898.90	1893	10	3.49E-03	49.6	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	1	965.08	24	21	2.03	1930.11	1921	23	6.77E-03	37.6	8.95E-01
36	1	969.68*	25	13	2.03	1939.31	1921	23	6.86E-03	37.1	
37	0	1120.38	26	11	1.89	2240.76	2236	10	7.08E-03	30.6	
38	0	1219.97	9	8	1.03	2439.98	2435	8	2.58E-03	61.8	
39	0	1351.60	7	2	0.80	2703.30	2697	10	1.82E-03	59.6	
40	0	1461.00*	218	3	1.69	2922.13	2916	15	6.05E-02	7.2	
41	0	1764.89*	25	6	2.03	3530.06	3522	12	6.96E-03	28.6	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235045.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 30-NOV-2015 14:15:00 Acquisition date : 3-OCT-2016 06:57:26
Sample ID : G405235045 Sample quantity : 130.60 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA39 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:06.96 0.2%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	8.983E-01	1.246E+01	1.246E+01	14.40	OK
CD-109	88.03	3.70*	6.753E+00	9.131E-01	1.450E+00	137.17	OK
SN-126	64.28	9.60	6.931E+00	9.550E-01	9.550E-01	74.43	OK
	86.94	8.90	6.753E+00	3.796E-01	3.796E-01	137.17	OK
	87.57	37.00*	6.753E+00	9.131E-02	9.131E-02	137.17	OK
BA-137M	661.66	89.90*	1.758E+00	8.171E-01	8.331E-01	18.55	OK
CS-137	661.66	85.10*	1.758E+00	8.632E-01	8.801E-01	18.55	OK
TL-208	277.37	6.60	3.709E+00	-----	Line Not Found	-----	Absent
	583.19	85.00*	1.952E+00	4.201E-01	4.201E-01	33.77	OK
	860.56	12.50	1.416E+00	-----	Line Not Found	-----	Absent
PB-210	46.54	4.25*	6.835E+00	1.060E+00	1.088E+00	95.59	OK
PB-212	74.82	10.28	6.812E+00	1.330E+00	1.330E+00	44.93	OK
	77.11	17.10	6.799E+00	1.830E+00	1.830E+00	19.49	OK
	238.63	43.60*	4.209E+00	9.906E-01	9.906E-01	17.39	OK
	300.09	3.30	3.465E+00	-----	Line Not Found	-----	Absent
BI-214	609.32	45.49*	1.882E+00	7.116E-01	7.119E-01	40.00	OK
	1120.29	14.92	1.136E+00	8.399E-01	8.402E-01	61.26	OK
	1764.49	15.30	7.483E-01	1.182E+00	1.182E+00	57.30	OK
PB-214	74.82	5.80	6.812E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	6.799E+00	3.226E+00	3.227E+00	19.49	OK
	87.09	3.41	6.755E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	4.163E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	3.510E+00	1.225E+00	1.226E+00	38.30	OK
	351.93	35.60*	3.012E+00	1.158E+00	1.159E+00	24.76	OK
RN-219	271.23	10.80	3.788E+00	5.644E-01	5.644E-01	126.49	OK
	401.81	6.60*	2.683E+00	7.771E-01	7.771E-01	108.62	OK
RN-222	609.32	45.49*	1.882E+00	7.116E-01	7.119E-01	40.00	OK
	1120.29	14.92	1.136E+00	8.399E-01	8.402E-01	61.26	OK
	1764.49	15.30	7.483E-01	1.182E+00	1.182E+00	57.30	OK
RA-224	240.99	4.10*	4.170E+00	1.830E+00	1.830E+00	124.19	OK
RA-226	609.32	45.49*	1.882E+00	7.116E-01	7.119E-01	40.00	OK
	1120.29	14.92	1.136E+00	8.399E-01	8.402E-01	61.26	OK
	1764.49	15.30	7.483E-01	1.182E+00	1.182E+00	57.30	OK
AC-228	105.21	1.10	6.612E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.118E+00	9.148E-01	9.148E-01	66.59	OK
	794.95	4.25	1.512E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.451E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.351E+00	1.024E+00	1.024E+00	48.76	OK
	968.97	15.80	1.283E+00	6.878E-01	6.878E-01	74.10	OK
RA-228	105.21	1.10	6.612E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.118E+00	9.148E-01	9.148E-01	66.59	OK
	794.95	4.25	1.512E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.451E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.351E+00	1.024E+00	1.024E+00	48.76	OK
	968.97	15.80	1.283E+00	6.878E-01	6.878E-01	74.10	OK
TH-228	74.82	10.28	6.812E+00	1.330E+00	1.330E+00	44.93	OK
	77.11	17.10	6.799E+00	1.830E+00	1.830E+00	19.49	OK
	238.63	43.60*	4.209E+00	9.906E-01	9.906E-01	17.39	OK
	300.09	3.30	3.465E+00	-----	Line Not Found	-----	Absent

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	609.32	45.49*	1.882E+00	7.116E-01	7.116E-01	40.00	OK
	1120.29	14.92	1.136E+00	8.399E-01	8.399E-01	61.26	OK
	1764.49	15.30	7.483E-01	1.182E+00	1.182E+00	57.30	OK
TH-232	105.21	1.10	6.612E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.118E+00	9.148E-01	9.148E-01	66.59	OK
	835.71	1.61	1.451E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.351E+00	1.024E+00	1.024E+00	48.76	OK
TH-234	968.97	15.80	1.283E+00	6.878E-01	6.878E-01	74.10	OK
	63.29	3.70*	6.931E+00	2.478E+00	2.478E+00	74.43	OK
	92.59	4.23	6.723E+00	2.120E+00	2.120E+00	52.64	OK
U-234	609.32	45.49*	1.882E+00	7.116E-01	7.116E-01	40.00	OK
	1120.29	14.92	1.136E+00	8.399E-01	8.399E-01	61.26	OK
	1764.49	15.30	7.483E-01	1.182E+00	1.182E+00	57.30	OK
U-235	89.96	3.47	6.741E+00	2.003E+00	2.003E+00	67.29	OK
	93.35	5.60	6.723E+00	1.602E+00	1.602E+00	52.64	OK
	143.76	10.96*	5.959E+00	----- Line	Not Found	-----	Absent
	163.33	5.08	5.556E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	5.108E+00	1.256E-01	1.256E-01	64.32	OK
U-238	205.31	5.01	4.746E+00	----- Line	Not Found	-----	Absent
	63.29	3.70*	6.931E+00	2.478E+00	2.478E+00	74.43	OK
	92.59	4.23	6.723E+00	2.120E+00	2.120E+00	52.64	OK
AM-243	43.53	5.90	6.236E+00	----- Line	Not Found	-----	Absent
	74.66	67.20*	6.812E+00	2.035E-01	2.035E-01	44.93	OK
CM-247	278.00	3.40	3.702E+00	----- Line	Not Found	-----	Absent
	287.50	2.00	3.596E+00	----- Line	Not Found	-----	Absent
ANH-511	402.40	72.00*	2.683E+00	7.124E-02	7.124E-02	108.62	OK
	511.00	100.00*	2.183E+00	7.425E-02	7.425E-02	147.59	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235045.CNF;1
* Acquisition date   : 3-OCT-2016 06:57:26 Sensitivity      : 3.000
* Detector ID        : GAM39 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:06.96 Half life ratio : *****
* Sample date       : 30-NOV-2015 14:15:00 Analyst initials: MXR1
* Sample ID         : G405235045 Sample Quantity : 1.3060E+02 GRAM
* Batch Number      : 1596252 Wet Weight      : 0.00000
* Wet wt corr       : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 27-JUL-2016 13:04:01 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM39 CAN.CNF;4
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.246E+01	1.759E+00	9.655E-01
CD-109	1.450E+00	1.949E+00	2.011E+00
SN-126	9.131E-02	1.227E-01	1.266E-01
BA-137M	8.331E-01	1.515E-01	8.879E-02
CS-137	8.801E-01	1.600E-01	9.379E-02
TL-208	4.201E-01	1.390E-01	8.596E-02
PB-210	1.088E+00	1.019E+00	1.013E+00
PB-212	9.906E-01	1.688E-01	1.370E-01
BI-214	7.119E-01	2.791E-01	1.914E-01
PB-214	1.159E+00	2.811E-01	1.463E-01
RN-219	7.771E-01	8.272E-01	8.942E-01
RN-222	7.119E-01	2.791E-01	1.914E-01
RA-224	1.830E+00	2.228E+00	1.470E+00
RA-226	7.119E-01	2.791E-01	1.914E-01
AC-228	1.024E+00	4.895E-01	3.751E-01
RA-228	1.024E+00	4.895E-01	3.751E-01
TH-228	9.906E-01	1.688E-01	1.370E-01
TH-230	7.116E-01	2.790E-01	1.913E-01
TH-232	1.024E+00	4.895E-01	3.751E-01
TH-234	2.478E+00	1.807E+00	1.248E+00
U-234	7.116E-01	2.790E-01	1.913E-01
U-235	-1.990E-01	1.996E-01	3.622E-01
U-238	2.478E+00	1.807E+00	1.248E+00
AM-243	2.035E-01	8.962E-02	6.731E-02
CM-247	7.124E-02	7.583E-02	8.208E-02
ANH-511	7.425E-02	1.074E-01	6.394E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	1.751E+00	2.149E+01	4.017E+01	NOT IDENT.
NA-22	4.445E-02	5.918E-02	1.349E-01	NOT IDENT.
NA-24	0.000E+00	1.432E+41	0.000E+00	SHORT HLIF
AL-26	-8.668E-03	1.699E-02	2.134E-02	NOT IDENT.

SC-46	-5.846E-02	5.860E-01	1.146E+00	FAIL ABUN
V-48	0.000E+00	3.139E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	6.613E+02	0.000E+00	SHORT HLIF
MN-54	1.545E-02	8.954E-02	1.816E-01	NOT IDENT.
CO-56	4.078E-01	6.426E-01	1.407E+00	NOT IDENT.
MN-56	0.000E+00	1.576E+41	0.000E+00	SHORT HLIF
CO-57	-3.654E-03	5.449E-02	9.604E-02	NOT IDENT.
CO-58	-4.402E-01	7.885E-01	1.456E+00	NOT IDENT.
FE-59	2.037E+00	9.875E+00	2.042E+01	NOT IDENT.
CO-60	3.264E-02	5.325E-02	1.195E-01	NOT IDENT.
ZN-65	1.253E-01	2.324E-01	4.662E-01	NOT IDENT.
GE-68	6.924E-01	2.970E+00	6.224E+00	NOT IDENT.
AS-73	-4.170E-01	3.118E+00	5.609E+00	NOT IDENT.
AS-74	0.000E+00	1.086E+04	0.000E+00	SHORT HLIF
SE-75	-2.095E-01	2.733E-01	4.849E-01	FAIL ABUN
BR-77	0.000E+00	3.012E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	1.209E+03	0.000E+00	SHORT HLIF
RB-83	-3.386E-01	1.046E+00	1.656E+00	NOT IDENT.
KR-85	1.421E+01	1.096E+01	1.978E+01	NOT IDENT.
SR-85	1.628E+00	1.257E+00	2.269E+00	NOT IDENT.
RB-86	0.000E+00	4.581E+04	0.000E+00	SHORT HLIF
Y-88	-1.176E-01	2.608E-01	4.803E-01	NOT IDENT.
Y-91	6.397E+02	8.695E+02	1.859E+03	NOT IDENT.
NB-94	-1.941E-02	4.900E-02	8.496E-02	NOT IDENT.
NB-95	7.626E-02	1.446E+00	2.664E+00	NOT IDENT.
NB-95M	1.422E+00	3.906E+00	6.866E+00	NOT IDENT.
ZR-95	-2.056E-01	1.979E+00	3.678E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.815E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-4.958E-03	4.141E-02	6.638E-02	NOT IDENT.
RH-102	7.185E-02	1.172E-01	1.808E-01	NOT IDENT.
RU-103	2.587E+00	9.471E+00	1.836E+01	FAIL ABUN
RH-106	1.318E-01	7.418E-01	1.294E+00	NOT IDENT.
RU-106	1.318E-01	7.418E-01	1.294E+00	NOT IDENT.
AG-108M	-6.352E-03	3.896E-02	7.200E-02	NOT IDENT.
AG-110M	-5.919E-03	1.410E-01	2.799E-01	NOT IDENT.
SN-113	6.530E-02	3.406E-01	6.542E-01	NOT IDENT.
CD-115	0.000E+00	5.024E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.651E+05	0.000E+00	SHORT HLIF
TE-123M	3.697E-02	1.543E-01	3.045E-01	NOT IDENT.
SB-124	1.262E+00	3.157E+00	7.318E+00	NOT IDENT.
SB-125	2.918E-02	1.279E-01	2.511E-01	NOT IDENT.
TE-125M	1.444E+02	3.487E+02	6.389E+02	NOT IDENT.
I-126	0.000E+00	2.273E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	3.068E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.232E+23	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.435E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.922E+27	0.000E+00	SHORT HLIF
BA-133	1.791E-03	5.375E-02	9.266E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	8.342E-02	9.081E-02	1.777E-01	FAIL ABUN
CS-135	1.249E-02	2.037E-01	3.500E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	6.216E+05	0.000E+00	SHORT HLIF
CE-139	-5.362E-02	1.317E-01	2.472E-01	NOT IDENT.
BA-140	0.000E+00	3.037E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	1.052E+06	0.000E+00	SHORT HLIF
CE-141	-2.619E+01	3.200E+01	5.883E+01	NOT IDENT.
CE-143	0.000E+00	1.346E+41	0.000E+00	SHORT HLIF
CE-144	-1.957E-01	4.220E-01	7.114E-01	NOT IDENT.
PM-144	-2.872E-03	8.994E-02	1.642E-01	NOT IDENT.
PR-144	3.310E-01	7.749E+00	1.431E+01	NOT IDENT.
PM-146	9.024E-03	6.539E-02	1.242E-01	FAIL ABUN
ND-147	0.000E+00	8.100E+07	0.000E+00	SHORT HLIF
PM-147	-9.931E+01	9.089E+02	1.598E+03	NOT IDENT.
PM-149	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
EU-150	-1.350E-02	4.044E-02	6.529E-02	FAIL ABUN
EU-152	7.796E-02	1.224E-01	2.469E-01	FAIL ABUN
GD-153	2.676E-01	3.293E-01	3.699E-01	FAIL ABUN
EU-154	1.120E-01	1.453E-01	3.316E-01	NOT IDENT.
EU-155	1.119E-01	1.167E-01	2.243E-01	FAIL ABUN
TB-160	3.131E-01	2.750E+00	5.584E+00	FAIL ABUN
HO-166M	-5.493E-02	8.688E-02	1.449E-01	FAIL ABUN
TM-171	-4.845E+00	6.447E+00	1.105E+01	NOT IDENT.
HF-172	-9.526E-02	2.935E-01	4.588E-01	FAIL ABUN

LU-172	8.858E-02	1.092E-01	2.413E-01	FAIL ABUN
LU-176	-1.185E-03	3.308E-02	6.085E-02	FAIL ABUN
HF-181	-2.819E+00	6.867E+00	1.225E+01	NOT IDENT.
TA-182	1.167E+00	1.413E+00	2.752E+00	FAIL ABUN
RE-183	-2.629E-01	1.463E+00	2.617E+00	NOT IDENT.
RE-184	-1.577E+01	4.880E+01	9.253E+01	NOT IDENT.
W-188	-9.552E+01	2.001E+02	3.197E+02	FAIL ABUN
IR-192	1.602E-01	6.201E-01	1.215E+00	FAIL ABUN
HG-203	-6.154E-01	3.619E+00	6.762E+00	NOT IDENT.
BI-207	1.393E-02	6.840E-02	1.392E-01	FAIL ABUN
BI-211	0.000E+00	7.743E-01	1.056E+00	FAIL ABUN
PB-211	1.095E+00	7.122E-01	1.517E+00	FAIL ABUN
BI-212	6.161E-01	8.263E-01	1.649E+00	NOT IDENT.
RA-223	1.374E-01	8.338E-01	1.453E+00	FAIL ABUN
AC-227	-1.511E-01	3.262E-01	5.279E-01	NOT IDENT.
TH-227	-1.511E-01	3.262E-01	5.279E-01	NOT IDENT.
TH-229	1.256E-01	6.026E-01	1.067E+00	FAIL ABUN
PA-231	7.262E-01	6.223E-01	1.248E+00	NOT IDENT.
TH-231	1.374E-01	8.338E-01	1.453E+00	FAIL ABUN
PA-233	-1.932E-02	7.146E-02	1.329E-01	NOT IDENT..
PA-234	-3.674E-01	4.776E-01	6.938E-01	FAIL ABUN
PA-234M	-2.144E+00	6.396E+00	1.208E+01	NOT IDENT.
NP-237	-1.932E-02	7.146E-02	1.329E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-5.772E-02	2.933E-01	5.093E-01	FAIL ABUN
PU-239	0.000E+00	8.128E+02	7.298E+02	FAIL ABUN
AM-241	3.412E-03	7.181E-02	1.204E-01	NOT IDENT.
CM-243	-3.753E-02	1.064E-01	1.836E-01	FAIL ABUN
BK-247	-5.036E-02	9.351E-02	1.696E-01	NOT IDENT.
CF-249	-7.312E-03	4.930E-02	9.183E-02	FAIL ABUN
CF-251	-6.946E-03	1.387E-01	2.661E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	208	10.66*	8.983E-01	1.246E+01	1.246E+01	14.40
CD-109	88.03	89	3.70*	6.753E+00	2.042E+00	3.242E+00	57.56
SN-126	64.28	111	9.60	6.931E+00	9.550E-01	9.550E-01	74.43
	86.94	89	8.90	6.753E+00	8.490E-01	8.490E-01	57.56
	87.57	89	37.00*	6.753E+00	2.042E-01	2.042E-01	57.56
BA-137M	661.66	225	89.90*	1.758E+00	8.171E-01	8.331E-01	18.55
CS-137	661.66	225	85.10*	1.758E+00	8.632E-01	8.801E-01	18.55
TL-208	277.37	-----	6.60	3.709E+00	-----	Line Not Found	-----
	583.19	121	85.00*	1.952E+00	4.201E-01	4.201E-01	33.77
	860.56	-----	12.50	1.416E+00	-----	Line Not Found	-----
PB-210	46.54	54	4.25*	6.835E+00	1.060E+00	1.088E+00	95.59
BI-211	72.87	-----	1.23	6.824E+00	-----	Line Not Found	-----
	351.06	216	12.92*	3.012E+00	3.191E+00	3.191E+00	24.76
PB-212	74.82	246	10.28	6.812E+00	2.022E+00	2.022E+00	26.51
	77.11	370	17.10	6.799E+00	1.830E+00	1.830E+00	19.49
	238.63	316	43.60*	4.209E+00	9.906E-01	9.906E-01	17.39
	300.09	-----	3.30	3.465E+00	-----	Line Not Found	-----
BI-214	609.32	106	45.49*	1.882E+00	7.116E-01	7.119E-01	40.00
	1120.29	25	14.92	1.136E+00	8.399E-01	8.402E-01	61.26
	1764.49	24	15.30	7.483E-01	1.182E+00	1.182E+00	57.30
PB-214	74.82	246	5.80	6.812E+00	3.583E+00	3.584E+00	26.51
	77.11	370	9.70	6.799E+00	3.226E+00	3.227E+00	19.49
	87.09	89	3.41	6.753E+00	2.216E+00	2.217E+00	57.56
	242.00	119	7.25	4.170E+00	2.260E+00	2.261E+00	52.95
	295.22	138	18.42	3.510E+00	1.225E+00	1.226E+00	38.30
	351.93	216	35.60*	3.012E+00	1.158E+00	1.159E+00	24.76
RN-219	271.23	40	10.80	3.788E+00	5.644E-01	5.644E-01	126.49
	401.81	24	6.60*	2.683E+00	7.771E-01	7.771E-01	108.62
RN-222	609.32	106	45.49*	1.882E+00	7.116E-01	7.119E-01	40.00
	1120.29	25	14.92	1.136E+00	8.399E-01	8.402E-01	61.26
	1764.49	24	15.30	7.483E-01	1.182E+00	1.182E+00	57.30
RA-224	240.99	119	4.10*	4.170E+00	3.997E+00	3.997E+00	52.95
RA-226	609.32	106	45.49*	1.882E+00	7.116E-01	7.119E-01	40.00
	1120.29	25	14.92	1.136E+00	8.399E-01	8.402E-01	61.26
	1764.49	24	15.30	7.483E-01	1.182E+00	1.182E+00	57.30
AC-228	105.21	-----	1.10	6.612E+00	-----	Line Not Found	-----
	338.32	56	11.27	3.118E+00	9.148E-01	9.148E-01	66.59
	794.95	-----	4.25	1.512E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.451E+00	-----	Line Not Found	-----
	911.20	62	25.80*	1.351E+00	1.024E+00	1.024E+00	48.76
	968.97	24	15.80	1.283E+00	6.878E-01	6.878E-01	74.10
RA-228	105.21	-----	1.10	6.612E+00	-----	Line Not Found	-----
	338.32	56	11.27	3.118E+00	9.148E-01	9.148E-01	66.59
	794.95	-----	4.25	1.512E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.451E+00	-----	Line Not Found	-----
	911.20	62	25.80*	1.351E+00	1.024E+00	1.024E+00	48.76
	968.97	24	15.80	1.283E+00	6.878E-01	6.878E-01	74.10

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	246	10.28	6.812E+00	2.022E+00	2.022E+00	26.51
	77.11	370	17.10	6.799E+00	1.830E+00	1.830E+00	19.49
	238.63	316	43.60*	4.209E+00	9.906E-01	9.906E-01	17.39
	300.09	-----	3.30	3.465E+00	-----	Line Not Found	-----
TH-230	609.32	106	45.49*	1.882E+00	7.116E-01	7.116E-01	40.00
	1120.29	25	14.92	1.136E+00	8.399E-01	8.399E-01	61.26
	1764.49	24	15.30	7.483E-01	1.182E+00	1.182E+00	57.30
TH-232	105.21	-----	1.10	6.612E+00	-----	Line Not Found	-----
	338.32	56	11.27	3.118E+00	9.148E-01	9.148E-01	66.59
	835.71	-----	1.61	1.451E+00	-----	Line Not Found	-----
	911.20	62	25.80*	1.351E+00	1.024E+00	1.024E+00	48.76
	968.97	24	15.80	1.283E+00	6.878E-01	6.878E-01	74.10
TH-234	63.29	111	3.70*	6.931E+00	2.478E+00	2.478E+00	74.43
	92.59	105	4.23	6.723E+00	2.120E+00	2.120E+00	52.64
U-234	609.32	106	45.49*	1.882E+00	7.116E-01	7.116E-01	40.00
	1120.29	25	14.92	1.136E+00	8.399E-01	8.399E-01	61.26
	1764.49	24	15.30	7.483E-01	1.182E+00	1.182E+00	57.30
U-235	89.96	81	3.47	6.741E+00	2.003E+00	2.003E+00	67.29
	93.35	105	5.60	6.723E+00	1.602E+00	1.602E+00	52.64
	143.76	-----	10.96*	5.959E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.556E+00	-----	Line Not Found	-----
	185.72	64	57.20	5.108E+00	1.256E-01	1.256E-01	64.32
	205.31	-----	5.01	4.746E+00	-----	Line Not Found	-----
U-238	63.29	111	3.70*	6.931E+00	2.478E+00	2.478E+00	74.43
	92.59	105	4.23	6.723E+00	2.120E+00	2.120E+00	52.64
AM-243	43.53	-----	5.90	6.236E+00	-----	Line Not Found	-----
	74.66	246	67.20*	6.812E+00	3.093E-01	3.093E-01	26.51
CM-247	278.00	-----	3.40	3.702E+00	-----	Line Not Found	-----
	287.50	-----	2.00	3.596E+00	-----	Line Not Found	-----
	402.40	24	72.00*	2.683E+00	7.124E-02	7.124E-02	108.62
ANH-511	511.00	28	100.00*	2.183E+00	7.425E-02	7.425E-02	147.59

Flag: "*" = Keyline

Total number of lines in spectrum 41
Number of unidentified lines 7
Number of lines tentatively identified by NID 34 82.93%

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	1.246E+01	1.246E+01	0.179E+01	14.40	
CD-109	461.40D	1.59	2.042E+00	3.242E+00	1.866E+00	57.56	
SN-126	2.30E+05Y	1.00	2.042E-01	2.042E-01	1.175E-01	57.56	
BA-137M	30.08Y	1.02	8.171E-01	8.331E-01	1.546E-01	18.55	
CS-137	30.08Y	1.02	8.632E-01	8.801E-01	1.633E-01	18.55	
TL-208	1.41E+10Y	1.00	4.201E-01	4.201E-01	1.419E-01	33.77	
PB-210	22.20Y	1.03	1.060E+00	1.088E+00	1.040E+00	95.59	
BI-211	7.04E+08Y	1.00	3.191E+00	3.191E+00	0.790E+00	24.76	
PB-212	1.41E+10Y	1.00	9.906E-01	9.906E-01	1.723E-01	17.39	
BI-214	1600.00Y	1.00	7.116E-01	7.119E-01	2.848E-01	40.00	
PB-214	1600.00Y	1.00	1.158E+00	1.159E+00	0.287E+00	24.76	
RN-219	7.04E+08Y	1.00	7.771E-01	7.771E-01	8.441E-01	108.62	
RN-222	1600.00Y	1.00	7.116E-01	7.119E-01	2.848E-01	40.00	
RA-224	1.41E+10Y	1.00	3.997E+00	3.997E+00	2.116E+00	52.95	
RA-226	1600.00Y	1.00	7.116E-01	7.119E-01	2.848E-01	40.00	
AC-228	1.41E+10Y	1.00	1.024E+00	1.024E+00	0.499E+00	48.76	
RA-228	1.41E+10Y	1.00	1.024E+00	1.024E+00	0.499E+00	48.76	
TH-228	1.41E+10Y	1.00	9.906E-01	9.906E-01	1.723E-01	17.39	
TH-230	7.54E+04Y	1.00	7.116E-01	7.116E-01	2.847E-01	40.00	
TH-232	1.41E+10Y	1.00	1.024E+00	1.024E+00	0.499E+00	48.76	
TH-234	4.47E+09Y	1.00	2.478E+00	2.478E+00	1.844E+00	74.43	
U-234	2.45E+05Y	1.00	7.116E-01	7.116E-01	2.847E-01	40.00	
U-235	7.04E+08Y	1.00	1.256E-01	1.256E-01	0.808E-01	64.32	K
U-238	4.47E+09Y	1.00	2.478E+00	2.478E+00	1.844E+00	74.43	
AM-243	7370.00Y	1.00	3.093E-01	3.093E-01	0.820E-01	26.51	
CM-247	1.56E+07Y	1.00	7.124E-02	7.124E-02	7.738E-02	108.62	
ANH-511	1.00E+09Y	1.00	7.425E-02	7.425E-02	10.96E-02	147.59	

Total Activity : 4.114E+01 4.240E+01

Grand Total Activity : 4.114E+01 4.240E+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	98.29	37	147	0.63	196.43	193	8	9.03E-03	****	6.68E+00	T
0	129.50	67	153	1.58	258.85	253	13	1.65E-02	85.0	6.24E+00	T
1	188.58	39	62	1.32	377.00	365	19	9.93E-03	86.7	5.05E+00	
0	253.81	33	155	3.13	507.47	496	19	8.58E-03	****	4.00E+00	T
0	328.16	30	51	0.91	656.17	652	9	7.87E-03	96.9	3.20E+00	T
0	405.46	19	8	0.72	810.79	808	6	5.11E-03	66.4	2.66E+00	T
0	518.51	19	36	4.84	1036.89	1031	14	5.28E-03	****	2.16E+00	
0	550.08	44	30	7.41	1100.04	1090	23	1.19E-02	72.2	2.05E+00	
0	626.25	14	30	0.54	1252.38	1246	13	3.93E-03	****	1.84E+00	
0	634.04	13	18	1.26	1267.96	1262	8	3.63E-03	****	1.82E+00	T
0	653.39	8	28	0.93	1306.68	1299	12	2.12E-03	****	1.78E+00	
0	731.13	78	48	11.48	1462.16	1446	40	2.16E-02	64.5	1.62E+00	
0	801.05	6	22	3.85	1602.02	1593	12	1.80E-03	****	1.50E+00	T
0	949.47	12	7	2.86	1898.90	1893	10	3.49E-03	99.2	1.31E+00	T
1	965.08	24	21	2.03	1930.11	1921	23	6.77E-03	75.2	1.29E+00	T
0	1219.97	9	7	1.03	2439.98	2435	8	2.58E-03	****	1.06E+00	T
0	1351.60	6	2	0.80	2703.30	2697	10	1.82E-03	****	9.64E-01	

Flags: "T" = Tentatively associated


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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235045.CNF;1
* Acquisition date   : 3-OCT-2016 06:57:26 Sensitivity      : 3.000
* Detector ID        : GAM39 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:06.96 Half life ratio : *****
* Sample date        : 30-NOV-2015 14:15:00 Nuclide Library : SOLID
* Sample ID          : G405235045 Analyst initials: MXR1
* Batch Number       : 1596252 Sample Quantity : 1.3060E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 27-JUL-2016 13:04:01 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM39 CAN.CNF;4
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	4.016E-01
CD-109	9.544E-01
SN-126	6.008E-02
BA-137M	3.932E-02
CS-137	4.154E-02
TL-208	3.823E-02
PB-210	4.774E-01
PB-212	6.418E-02
BI-214	8.649E-02
PB-214	6.573E-02
RN-219	4.024E-01
RN-222	8.649E-02
RA-224	6.886E-01
RA-226	8.649E-02
AC-228	1.651E-01
RA-228	1.651E-01
TH-228	6.418E-02
TH-230	8.646E-02
TH-232	1.651E-01
TH-234	5.923E-01
U-234	8.646E-02
U-235	1.688E-01
U-238	5.923E-01
AM-243	3.189E-02
CM-247	3.694E-02
ANH-511	2.835E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.828E+01	NOT IDENT.
NA-22	5.784E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	0.000E+00	NOT IDENT.
SC-46	5.007E-01	FAIL ABUN

V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	8.010E-02	NOT IDENT.
CO-56	6.172E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.478E-02	NOT IDENT.
CO-58	6.206E-01	NOT IDENT.
FE-59	8.768E+00	NOT IDENT.
CO-60	5.086E-02	NOT IDENT.
ZN-65	2.007E-01	NOT IDENT.
GE-68	2.659E+00	NOT IDENT.
AS-73	2.646E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	2.217E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	7.310E-01	NOT IDENT.
KR-85	9.005E+00	NOT IDENT.
SR-85	1.033E+00	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.597E-01	NOT IDENT.
Y-91	8.218E+02	NOT IDENT.
NB-94	3.778E-02	NOT IDENT.
NB-95	1.191E+00	NOT IDENT.
NB-95M	3.222E+00	NOT IDENT.
ZR-95	1.582E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.094E-02	NOT IDENT.
RH-102	8.143E-02	NOT IDENT.
RU-103	8.293E+00	FAIL ABUN
RH-106	5.710E-01	NOT IDENT.
RU-106	5.710E-01	NOT IDENT.
AG-108M	3.251E-02	NOT IDENT.
AG-110M	1.216E-01	NOT IDENT.
SN-113	2.988E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.421E-01	NOT IDENT.
SB-124	2.937E+00	NOT IDENT.
SB-125	1.126E-01	NOT IDENT.
TE-125M	3.008E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	4.180E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	8.080E-02	FAIL ABUN
CS-135	1.620E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.150E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.743E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.308E-01	NOT IDENT.
PM-144	7.367E-02	NOT IDENT.
PR-144	6.419E+00	NOT IDENT.
PM-146	5.651E-02	FAIL ABUN
ND-147	0.000E+00	SHORT HLIF
PM-147	7.439E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.998E-02	FAIL ABUN
EU-152	1.133E-01	FAIL ABUN
GD-153	1.749E-01	FAIL ABUN
EU-154	1.424E-01	NOT IDENT.
EU-155	1.056E-01	FAIL ABUN
TB-160	2.434E+00	FAIL ABUN
HO-166M	6.366E-02	FAIL ABUN
TM-171	5.196E+00	NOT IDENT.
HF-172	2.140E-01	FAIL ABUN
LU-172	1.061E-01	FAIL ABUN

LU-176	2.793E-02	FAIL ABUN
HF-181	5.468E+00	NOT IDENT.
TA-182	1.200E+00	FAIL ABUN
RE-183	1.238E+00	NOT IDENT.
RE-184	4.001E+01	NOT IDENT.
W-188	1.480E+02	FAIL ABUN
IR-192	5.550E-01	FAIL ABUN
HG-203	3.123E+00	NOT IDENT.
BI-207	6.061E-02	FAIL ABUN
BI-211	5.080E-01	FAIL ABUN
PB-211	6.800E-01	FAIL ABUN
BI-212	7.520E-01	NOT IDENT.
RA-223	6.649E-01	FAIL ABUN
AC-227	2.428E-01	NOT IDENT.
TH-227	2.428E-01	NOT IDENT.
TH-229	4.967E-01	FAIL ABUN
PA-231	5.811E-01	NOT IDENT.
TH-231	6.649E-01	FAIL ABUN
PA-233	6.028E-02	NOT IDENT.
PA-234	2.971E-01	FAIL ABUN
PA-234M	5.297E+00	NOT IDENT.
NP-237	6.028E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.389E-01	FAIL ABUN
PU-239	3.445E+02	FAIL ABUN
AM-241	5.694E-02	NOT IDENT.
CM-243	8.584E-02	FAIL ABUN
BK-247	7.793E-02	NOT IDENT.
CF-249	4.157E-02	FAIL ABUN
CF-251	1.243E-01	NOT IDENT.

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*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road      *
*               Charleston, SC 29407  *
*                                     *
*****
*               DETECTOR AND SAMPLE DATA               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235045.CNF;1 *
* Acquisition date   : 3-OCT-2016 06:57:26 Sensitivity      : 3.000      *
* Detector ID        : GAM39          Energy tolerance     : 1.500      *
* Elapsed live time  : 0 01:00:00.00 Abundance limit      : 75.000     *
* Elapsed real time  : 0 01:00:06.96 Half life ratio      : *****   *
* Sample date        : 30-NOV-2015 14:15:00 Nuclide Library : SOLID      *
* Sample ID          : G405235045    Analyst initials    : MXR1       *
* Batch Number       : 1596252       Sample Quantity     : 1.3060E+02 GRAM *
*                   :                 Quantity Err(%)      : 1.5314E-03 %  *
* Wet wt corr        : 1.00000       Wet Weight          : 0.00000     *
*                   :                 Dry Weight           : 0.00000     *
*****
*               CALIBRATION INFORMATION                 *
*
* Eff. Cal. date     : 27-JUL-2016 13:04:01 Eff. Geometry  : CAN      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM39 CAN.CNF;4 *
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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.246E+01	1.876E+00	1.876E+00
CD-109	1.450E+00	1.965E+00	1.965E+00
SN-126	9.131E-02	1.237E-01	1.237E-01
BA-137M	8.331E-01	1.557E-01	1.557E-01
CS-137	8.801E-01	1.644E-01	1.644E-01
TL-208	4.201E-01	1.402E-01	1.402E-01
PB-210	1.088E+00	1.023E+00	1.023E+00
PB-212	9.906E-01	1.768E-01	1.768E-01
BI-214	7.119E-01	2.807E-01	2.807E-01
PB-214	1.159E+00	2.852E-01	2.852E-01
RN-219	7.771E-01	8.329E-01	8.329E-01
RN-222	7.119E-01	2.807E-01	2.807E-01
RA-224	1.830E+00	2.234E+00	2.234E+00
RA-226	7.119E-01	2.807E-01	2.807E-01
AC-228	1.024E+00	4.923E-01	4.923E-01
RA-228	1.024E+00	4.923E-01	4.923E-01
TH-228	9.906E-01	1.768E-01	1.768E-01
TH-230	7.116E-01	2.806E-01	2.806E-01
TH-232	1.024E+00	4.923E-01	4.923E-01
TH-234	2.478E+00	1.889E+00	1.889E+00
U-234	7.116E-01	2.806E-01	2.806E-01
U-235	-1.990E-01	1.999E-01	1.999E-01
U-238	2.478E+00	1.889E+00	1.889E+00
AM-243	2.035E-01	9.148E-02	9.148E-02
CM-247	7.124E-02	7.677E-02	7.677E-02
ANH-511	7.425E-02	1.074E-01	1.074E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	1.751E+00	2.149E+01	2.150E+01	NOT IDENT.
NA-22	4.445E-02	5.920E-02	6.250E-02	NOT IDENT.
NA-24	-1.000E+41	1.500E+41	0.000E+00	SHORT HLIF
AL-26	-8.668E-03	1.700E-02	1.744E-02	NOT IDENT.

SC-46	-5.846E-02	5.860E-01	5.866E-01	FAIL ABUN
V-48	2.548E+03	3.139E+04	3.141E+04	SHORT HLIF
CR-51	-2.672E+02	6.614E+02	6.723E+02	SHORT HLIF
MN-54	1.545E-02	8.955E-02	8.982E-02	NOT IDENT.
CO-56	4.078E-01	6.429E-01	6.686E-01	NOT IDENT.
MN-56	1.000E+41	1.576E+41	0.000E+00	SHORT HLIF
CO-57	-3.654E-03	5.449E-02	5.451E-02	NOT IDENT.
CO-58	-4.402E-01	7.887E-01	8.133E-01	NOT IDENT.
FE-59	2.037E+00	9.876E+00	9.919E+00	NOT IDENT.
CO-60	3.264E-02	5.327E-02	5.526E-02	NOT IDENT.
ZN-65	1.253E-01	2.325E-01	2.392E-01	NOT IDENT.
GE-68	6.924E-01	2.970E+00	2.987E+00	NOT IDENT.
AS-73	-4.170E-01	3.119E+00	3.125E+00	NOT IDENT.
AS-74	-4.862E+03	1.086E+04	1.108E+04	SHORT HLIF
SE-75	-2.095E-01	2.735E-01	2.894E-01	FAIL ABUN
BR-77	1.768E+39	1.570E+40	0.000E+00	SHORT HLIF
SR-82	-2.467E+02	1.210E+03	1.215E+03	SHORT HLIF
RB-83	-3.386E-01	1.048E+00	1.059E+00	NOT IDENT.
KR-85	1.421E+01	1.097E+01	1.270E+01	NOT IDENT.
SR-85	1.628E+00	1.259E+00	1.457E+00	NOT IDENT.
RB-86	5.743E+03	4.581E+04	4.589E+04	SHORT HLIF
Y-88	-1.176E-01	2.609E-01	2.662E-01	NOT IDENT.
Y-91	6.397E+02	8.698E+02	9.164E+02	NOT IDENT.
NB-94	-1.941E-02	4.901E-02	4.979E-02	NOT IDENT.
NB-95	7.626E-02	1.446E+00	1.446E+00	NOT IDENT.
NB-95M	1.422E+00	3.907E+00	3.959E+00	NOT IDENT.
ZR-95	-2.056E-01	1.979E+00	1.982E+00	NOT IDENT.
NB-97	-1.000E+41	3.808E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	2.985E+42	0.000E+00	SHORT HLIF
MO-99	-8.621E+32	1.816E+33	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	2.893E+41	0.000E+00	SHORT HLIF
RH-101	-4.958E-03	4.142E-02	4.148E-02	NOT IDENT.
RH-102	7.185E-02	1.174E-01	1.218E-01	NOT IDENT.
RU-103	2.587E+00	9.472E+00	9.544E+00	FAIL ABUN
RH-106	1.318E-01	7.419E-01	7.443E-01	NOT IDENT.
RU-106	1.318E-01	7.419E-01	7.443E-01	NOT IDENT.
AG-108M	-6.352E-03	3.896E-02	3.907E-02	NOT IDENT.
AG-110M	-5.919E-03	1.410E-01	1.411E-01	NOT IDENT.
SN-113	6.530E-02	3.406E-01	3.419E-01	NOT IDENT.
CD-115	-4.432E+40	5.090E+40	0.000E+00	SHORT HLIF
SN-117M	6.192E+04	1.653E+05	1.676E+05	SHORT HLIF
TE-123M	3.697E-02	1.543E-01	1.552E-01	NOT IDENT.
SB-124	1.262E+00	3.157E+00	3.208E+00	NOT IDENT.
SB-125	2.918E-02	1.279E-01	1.286E-01	NOT IDENT.
TE-125M	1.444E+02	3.488E+02	3.548E+02	NOT IDENT.
I-126	-2.537E+04	2.273E+06	2.273E+06	SHORT HLIF
SB-126	-6.603E+05	3.070E+06	3.085E+06	SHORT HLIF
SB-127	-6.841E+22	1.565E+23	0.000E+00	SHORT HLIF
I-131	7.795E+09	1.435E+10	1.478E+10	SHORT HLIF
I-132	1.000E+41	2.206E+42	0.000E+00	SHORT HLIF
TE-132	-2.439E+27	3.094E+27	0.000E+00	SHORT HLIF
BA-133	1.791E-03	5.375E-02	5.375E-02	NOT IDENT.
I-133	1.000E+41	6.330E+41	0.000E+00	SHORT HLIF
CS-134	8.342E-02	9.088E-02	9.835E-02	FAIL ABUN
CS-135	1.249E-02	2.037E-01	2.038E-01	NOT IDENT.
I-135	-1.000E+41	8.207E+41	0.000E+00	SHORT HLIF
CS-136	-2.253E+05	6.221E+05	6.304E+05	SHORT HLIF
CE-139	-5.362E-02	1.321E-01	1.343E-01	NOT IDENT.
BA-140	-2.679E+06	3.039E+06	3.270E+06	SHORT HLIF
LA-140	-1.973E+05	1.052E+06	1.056E+06	SHORT HLIF
CE-141	-2.619E+01	3.202E+01	3.413E+01	NOT IDENT.
CE-143	1.000E+41	1.350E+41	0.000E+00	SHORT HLIF
CE-144	-1.957E-01	4.221E-01	4.313E-01	NOT IDENT.
PM-144	-2.872E-03	8.994E-02	8.995E-02	NOT IDENT.
PR-144	3.310E-01	7.749E+00	7.750E+00	NOT IDENT.
PM-146	9.024E-03	6.539E-02	6.552E-02	FAIL ABUN
ND-147	6.312E+07	8.107E+07	8.592E+07	SHORT HLIF
PM-147	-9.931E+01	9.089E+02	9.100E+02	NOT IDENT.
PM-149	-1.000E+41	2.673E+41	0.000E+00	SHORT HLIF
EU-150	-1.350E-02	4.044E-02	4.090E-02	FAIL ABUN
EU-152	7.796E-02	1.225E-01	1.274E-01	FAIL ABUN
GD-153	2.676E-01	3.297E-01	3.511E-01	FAIL ABUN
EU-154	1.120E-01	1.454E-01	1.539E-01	NOT IDENT.
EU-155	1.119E-01	1.170E-01	1.274E-01	FAIL ABUN
TB-160	3.131E-01	2.751E+00	2.754E+00	FAIL ABUN
HO-166M	-5.493E-02	8.694E-02	9.039E-02	FAIL ABUN
TM-171	-4.845E+00	6.461E+00	6.820E+00	NOT IDENT.
HF-172	-9.526E-02	2.939E-01	2.970E-01	FAIL ABUN

LU-172	8.858E-02	1.096E-01	1.166E-01	FAIL ABUN
LU-176	-1.185E-03	3.308E-02	3.308E-02	FAIL ABUN
HF-181	-2.819E+00	6.868E+00	6.985E+00	NOT IDENT.
TA-182	1.167E+00	1.414E+00	1.509E+00	FAIL ABUN
RE-183	-2.629E-01	1.464E+00	1.468E+00	NOT IDENT.
RE-184	-1.577E+01	4.895E+01	4.947E+01	NOT IDENT.
W-188	-9.552E+01	2.004E+02	2.049E+02	FAIL ABUN
IR-192	1.602E-01	6.201E-01	6.243E-01	FAIL ABUN
HG-203	-6.154E-01	3.619E+00	3.630E+00	NOT IDENT.
BI-207	1.393E-02	6.840E-02	6.869E-02	FAIL ABUN
BI-211	3.191E+00	7.874E-01	1.640E+00	FAIL ABUN
PB-211	1.095E+00	7.144E-01	8.682E-01	FAIL ABUN
BI-212	6.161E-01	8.269E-01	8.723E-01	NOT IDENT.
RA-223	1.374E-01	8.338E-01	8.361E-01	FAIL ABUN
AC-227	-1.511E-01	3.268E-01	3.338E-01	NOT IDENT.
TH-227	-1.511E-01	3.268E-01	3.338E-01	NOT IDENT.
TH-229	1.256E-01	6.026E-01	6.053E-01	FAIL ABUN
PA-231	7.262E-01	6.414E-01	7.201E-01	NOT IDENT.
TH-231	1.374E-01	8.338E-01	8.361E-01	FAIL ABUN
PA-233	-1.932E-02	7.147E-02	7.200E-02	NOT IDENT.
PA-234	-3.674E-01	6.362E-01	6.574E-01	FAIL ABUN
PA-234M	-2.144E+00	6.397E+00	6.469E+00	NOT IDENT.
NP-237	-1.932E-02	7.147E-02	7.200E-02	FAIL ABUN
NP-238	1.000E+41	5.675E+41	0.000E+00	SHORT HLIF
NP-239	-5.772E-02	2.933E-01	2.945E-01	FAIL ABUN
PU-239	9.757E+02	8.140E+02	9.252E+02	FAIL ABUN
AM-241	3.412E-03	7.181E-02	7.183E-02	NOT IDENT.
CM-243	-3.753E-02	1.064E-01	1.078E-01	FAIL ABUN
BK-247	-5.036E-02	9.406E-02	9.676E-02	NOT IDENT.
CF-249	-7.312E-03	4.931E-02	4.942E-02	FAIL ABUN
CF-251	-6.946E-03	1.387E-01	1.387E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	77.6683	87.09	114.7072	136.47	61.8774
45.60	86.8333	87.57	114.7827	140.51	0.0000
46.54	90.6860	88.03	114.8560	143.76	73.2930
49.72	0.0000	88.34	114.9048	144.24	77.5426
51.35	101.5943	88.47	114.9248	145.44	70.0414
51.87	97.2249	89.96	115.1586	152.43	80.7216
52.39	91.7273	1093.63	115.2645	153.25	0.0000
52.97	90.7076	91.11	0.0000	323.87	68.0924
53.44	85.1831	92.59	115.5664	156.02	0.0000
54.07	78.5497	93.35	115.6826	158.56	0.0000
57.36	0.0000	94.56	95.5609	159.00	60.7087
57.53	100.5002	94.65	78.8468	162.33	63.4718
57.98	106.2309	94.67	78.8493	162.66	0.0000
59.27	111.7584	94.87	78.8700	163.33	61.8135
59.32	111.7682	97.43	95.9186	165.86	68.8428
59.54	101.2344	98.43	88.8387	176.31	59.0690
60.96	87.8517	98.44	88.8399	176.60	0.0000
61.17	104.5508	99.53	73.7355	177.52	67.8279
62.93	116.2628	100.11	96.2476	181.07	0.0000
63.29	116.3336	102.03	57.8884	181.52	64.1375
63.58	116.3903	103.18	78.5032	184.41	58.6114
64.28	116.5266	103.37	78.5220	143.76	58.6768
66.73	133.0559	105.21	62.9604	193.51	56.8587
67.24	134.6972	105.31	62.9684	197.03	61.0025
125.81	119.4756	106.12	83.6368	198.01	60.1668
67.75	121.0210	106.47	83.6726	201.83	67.4540
69.67	129.0770	109.28	75.4405	203.43	78.2058
70.83	132.3917	111.00	86.5686	205.31	69.4227
72.81	107.7079	111.76	0.0000	210.85	62.5759
72.87	107.7179	114.06	75.8683	215.65	48.4536
74.66	108.0137	116.30	0.0000	222.11	60.4161
74.82	108.0400	116.74	82.2421	227.09	65.1680
74.97	108.0641	119.76	64.0498	227.38	68.8031
77.11	108.4125	121.12	62.9146	228.16	0.0000
78.74	108.6750	121.22	62.9216	228.18	76.0912
79.69	88.9332	121.78	65.4304	116.74	76.0912
80.12	88.9889	122.06	65.4510	235.69	68.3151
80.19	0.0000	122.92	69.2220	235.96	65.5950
80.57	93.7341	123.07	64.2883	238.63	73.0249
81.00	104.7352	265.00	61.8576	238.98	0.0000
81.07	104.7454	125.81	72.7501	240.99	73.1486
81.75	125.1921	127.23	66.2390	242.00	73.2015
83.79	98.8762	127.91	67.1169	244.70	39.8799
84.00	98.9053	129.30	67.2176	252.40	0.0000
85.43	117.9817	131.20	67.3550	252.80	43.3343
86.55	114.6214	133.02	61.6539	254.15	0.0000
86.79	114.6591	133.52	70.0222	256.23	54.0654
86.94	114.6835	136.00	61.8473	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	52.0522	355.39	0.0000	584.27	21.8066
264.80	49.2691	356.01	27.9990	595.83	0.0000
265.00	52.9945	364.49	0.0000	427.87	34.0122
268.22	50.3130	366.42	0.0000	602.52	0.0000
269.46	47.5573	372.51	32.7100	604.72	28.0214
270.03	53.1719	375.05	32.7543	607.14	34.6454
271.23	56.9492	377.52	35.7781	609.32	29.7202
273.65	0.0000	356.01	34.9003	610.33	29.7323
276.40	63.2318	388.16	32.9792	614.28	21.5051
277.37	54.8354	388.63	0.0000	618.01	23.1909
277.60	49.2188	391.69	34.0408	620.36	14.9216
278.00	48.3876	264.66	27.1560	621.93	16.5894
279.20	52.5547	401.81	27.1719	630.19	0.0000
279.54	54.4434	402.40	27.1802	631.29	16.6461
279.70	54.4493	404.85	22.6781	633.25	9.9950
280.46	46.0232	410.95	31.3406	634.78	0.0000
283.69	41.4129	413.71	38.4701	635.95	20.0090
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	50.8810	423.72	0.0000	645.85	16.7340
285.90	0.0000	427.09	34.6461	657.76	23.5276
287.50	53.7796	427.87	22.4266	657.90	0.0000
290.67	63.8141	433.94	31.6931	661.66	20.1943
293.27	0.0000	439.40	27.6757	664.57	0.0000
351.93	51.1974	453.88	31.9915	666.33	0.0000
295.96	51.2216	463.37	25.9125	666.50	0.0000
879.38	54.1553	468.07	24.9292	667.71	0.0000
299.98	49.9226	473.00	0.0000	677.62	18.0508
300.09	49.9258	475.06	29.1758	685.70	0.0000
300.13	49.9269	476.78	20.8557	695.00	0.0000
301.36	37.6882	477.60	31.2952	696.49	26.1165
302.85	58.1084	482.18	29.2686	696.51	24.9810
256.23	47.6776	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	26.1239
306.78	41.0596	497.08	25.2515	697.49	26.1249
308.46	33.4548	505.52	26.9277	702.65	27.3086
311.90	36.3981	507.63	0.0000	706.68	12.5334
316.51	33.6171	511.00	20.6398	711.68	26.2503
319.41	0.0000	514.00	12.7178	720.70	0.0000
320.08	0.0000	514.00	12.7178	721.93	0.0000
321.04	34.6707	520.40	23.9099	722.78	10.3099
323.87	36.1755	520.69	0.0000	722.91	10.3103
325.23	34.7556	522.65	0.0000	723.31	15.4677
328.76	0.0000	527.90	0.0000	724.19	22.3485
333.37	53.8356	528.26	24.5217	727.33	19.5034
333.97	49.4872	529.59	21.3354	733.00	19.5393
334.37	39.3077	529.87	0.0000	735.93	19.5587
338.28	38.9095	531.02	0.0000	333.97	19.5684
338.32	38.9103	537.26	0.0000	739.50	0.0000
311.90	39.4445	546.56	0.0000	747.24	19.6300
340.48	39.4445	552.55	12.9214	748.06	13.8604
340.55	0.0000	563.25	24.8727	752.31	15.0360
344.28	31.2331	569.33	14.0923	753.82	0.0000
345.93	41.0319	946.00	14.0929	756.73	13.8989
351.06	26.4529	569.70	15.1781	756.80	13.8994
351.93	26.4655	583.19	21.7977	884.68	27.8613

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	23.2316	1274.44	10.2363	1620.50	4.2529
766.42	16.2655	1001.03	16.7706	1621.92	6.3809
766.84	17.4298	1002.74	8.3892	1678.03	0.0000
772.60	0.0000	1004.73	16.7871	1690.97	3.2292
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	6.9754
778.90	12.8302	1028.54	0.0000	1063.66	5.4550
783.70	0.0000	1037.84	15.0479	1771.35	3.2736
785.37	12.2718	1038.76	0.0000	1791.20	0.0000
792.07	20.2022	631.29	10.3682	1808.65	1.0979
794.95	15.4730	1048.07	0.0000	1810.72	0.0000
795.86	19.6984	1049.04	14.1476	1836.06	3.3083
810.06	14.1313	1050.41	12.2653		
810.29	14.1323	1063.66	13.2523		
344.28	14.1333	1077.00	0.0000		
810.76	16.7850	1077.34	9.4977		
815.77	0.0000	1085.87	12.3732		
1048.07	0.0000	1093.63	9.5355		
832.01	15.1142	1099.45	10.5038		
834.85	16.9068	1112.07	13.4087		
835.71	13.3507	1112.84	9.5795		
836.80	0.0000	1115.54	7.6685		
846.75	0.0000	1120.29	14.3948		
846.77	10.7153	1120.55	14.3958		
856.80	0.0000	1221.41	18.4301		
860.56	12.5516	1129.67	11.5415		
871.09	15.2880	1131.51	0.0000		
873.19	15.2973	1147.95	0.0000		
875.33	0.0000	1173.23	8.7446		
879.38	14.4229	1177.95	17.5078		
880.51	16.2307	1189.05	17.5518		
883.24	14.4385	1204.77	10.7643		
884.68	15.3476	1221.41	7.8579		
889.28	17.1753	1231.02	16.7333		
894.76	17.2019	1235.36	0.0000		
898.04	10.8743	1238.28	10.8449		
900.72	15.4171	1260.41	0.0000		
903.28	17.2431	1271.87	10.9248		
911.20	18.1909	1274.44	5.9623		
912.08	18.1952	1274.54	5.9623		
923.98	0.0000	1291.59	7.9785		
926.50	18.2678	1298.22	0.0000		
929.11	19.1947	1312.11	0.0000		
937.49	25.6519	1332.49	6.0359		
944.13	0.0000	1362.66	0.0000		
946.00	22.0378	1365.19	7.0893		
949.00	10.1091	1368.63	0.0000		
667.71	0.0000	1384.29	8.1333		
962.31	14.7563	1408.01	3.0646		
964.08	14.7637	1457.56	0.0000		
966.17	14.7720	1460.82	8.2573		
911.20	14.7827	1489.16	2.0756		
968.97	14.7827	1505.03	6.2457		
983.53	0.0000	1584.12	6.3376		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:01:06.36

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235046.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM20.CNF;515
Background date    : 2-OCT-2016 11:01:13.
Sample date       : 7-DEC-2015 10:02:00. Acquisition date : 3-OCT-2016 06:57:53.
Sample ID        : G405235046 Sample quantity : 1.56928E+02 GRAM
Detector name    : GAM20 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:14.88 0.4%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596252 Detector SN# :
Matrix Spike ID : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	6	27.05*	50	13	1.29	54.31	51	12	1.38E-02	24.7	2.07E+00
2	6	28.79*	29	45	1.13	57.79	51	12	7.95E-03	54.7	
3	0	32.30*	16	90	1.75	64.80	63	6	4.37E-03	103.0	
4	0	36.95*	32	150	2.80	74.10	72	11	8.93E-03	77.4	
5	0	63.44*	47	194	0.85	127.03	124	8	1.31E-02	54.5	
6	2	74.90	178	197	1.36	149.93	145	14	4.95E-02	15.8	2.15E+00
7	2	77.25	310	160	1.11	154.64	145	14	8.60E-02	9.1	
8	0	87.38	120	133	1.05	174.87	172	6	3.32E-02	17.9	
9	0	93.51*	52	280	1.50	187.13	181	10	1.44E-02	65.1	
10	0	99.39*	37	114	1.98	198.89	195	8	1.04E-02	53.0	
11	0	131.15	41	194	3.89	262.37	254	13	1.14E-02	72.5	
12	0	180.90	42	99	1.44	361.81	357	9	1.18E-02	45.1	
13	0	185.56*	107	126	1.81	371.12	366	12	2.98E-02	23.9	
14	0	208.31	17	113	0.72	416.59	414	8	4.84E-03	108.0	
15	2	238.58*	437	62	1.13	477.11	471	19	1.21E-01	5.7	1.05E+00
16	2	241.74	114	74	1.54	483.43	471	19	3.16E-02	17.5	
17	0	295.01*	166	90	1.34	589.92	582	15	4.62E-02	14.7	
18	0	300.35	41	84	0.79	600.60	596	13	1.15E-02	47.8	
19	0	328.73	61	77	4.87	657.34	650	15	1.69E-02	34.3	
20	0	338.48*	61	56	1.13	676.85	671	9	1.69E-02	26.0	
21	0	351.89*	251	51	1.17	703.64	698	10	6.98E-02	8.3	
22	0	445.11	9	30	0.80	890.05	884	8	2.46E-03	114.7	
23	0	510.66*	29	68	2.09	1021.16	1013	14	8.11E-03	70.9	
24	0	548.49	8	17	0.78	1096.82	1089	9	2.11E-03	106.5	
25	0	583.27*	121	48	1.74	1166.38	1160	16	3.37E-02	15.5	
26	0	609.38*	207	22	1.60	1218.60	1213	13	5.74E-02	8.6	
27	0	661.42*	66	24	1.54	1322.72	1315	14	1.82E-02	20.5	
28	0	727.53	32	16	2.18	1454.97	1450	11	8.87E-03	31.5	
29	0	736.94	28	21	4.54	1473.80	1466	14	7.78E-03	39.5	
30	0	768.78	30	37	1.30	1537.51	1531	13	8.30E-03	46.6	
31	0	786.28	29	17	0.79	1572.53	1568	11	7.92E-03	33.4	
32	0	882.98	10	16	1.01	1766.01	1757	12	2.69E-03	92.3	
33	0	887.80	16	7	1.20	1775.67	1770	10	4.32E-03	41.5	
34	0	911.36*	112	17	1.73	1822.82	1816	14	3.11E-02	12.5	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	964.70	13	25	2.59	1929.58	1923	12	3.63E-03	80.4	
36	0	969.38	63	5	1.49	1938.94	1934	10	1.76E-02	14.2	
37	0	989.92	9	4	1.42	1980.05	1977	6	2.43E-03	50.9	
38	0	1010.46	18	12	1.45	2021.17	2016	12	5.00E-03	45.1	
39	0	1080.88	27	8	2.47	2162.12	2153	16	7.54E-03	30.2	
40	2	1117.13	14	0	1.60	2234.70	2233	26	3.77E-03	26.5	5.65E-01
41	2	1120.44	58	6	2.22	2241.33	2233	26	1.60E-02	17.2	
42	0	1174.53	18	14	3.77	2349.61	2342	14	5.00E-03	50.0	
43	0	1214.72	16	10	1.04	2430.08	2423	11	4.32E-03	48.3	
44	0	1238.62	36	13	1.06	2477.94	2471	13	1.01E-02	26.3	
45	0	1263.96	12	3	0.62	2528.68	2525	7	3.28E-03	39.0	
46	0	1377.92	23	4	2.06	2756.91	2750	14	6.25E-03	27.5	
47	0	1460.87*	383	4	1.84	2923.06	2917	15	1.06E-01	5.3	
48	0	1509.50	16	4	3.13	3020.48	3012	14	4.53E-03	34.8	
49	0	1764.35	38	0	1.91	3531.11	3525	12	1.06E-02	16.2	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235046.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 7-DEC-2015 10:02:00   Acquisition date : 3-OCT-2016 06:57:53
Sample ID        : G405235046             Sample quantity  : 156.93 GRAM
Sample type      : SOLID                   Sample geometry   :
Detector name    : GAMMA20                 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00           Elapsed real time: 0 01:00:14.88   0.4%
Energy tolerance : 1.50 keV                Half life ratio  : 10.00
Errors propagated: No                       Systematic Error : 0.00 %
Efficiency type  : Linear                   Efficiencies at  : Peak Energy
Abundance limit  : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.312E+00	1.269E+01	1.269E+01	10.54	OK
SC-46	889.28	99.98*	1.963E+00	3.897E-02	4.696E-01	83.02	OK
	1120.55	99.99	1.635E+00	1.683E-01	2.028E+00	34.44	OK
CD-109	88.03	3.70*	6.851E+00	1.952E+00	3.068E+00	55.60	OK
SN-126	64.28	9.60	4.805E+00	6.542E-01	6.542E-01	108.99	OK
	86.94	8.90	6.851E+00	8.116E-01	8.116E-01	55.60	OK
	87.57	37.00*	6.851E+00	1.952E-01	1.952E-01	55.60	OK
BA-137M	661.66	89.90*	2.465E+00	1.506E-01	1.535E-01	40.91	OK
CS-137	661.66	85.10*	2.465E+00	1.591E-01	1.621E-01	40.91	OK
TL-208	277.37	6.60	4.947E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.719E+00	2.705E-01	2.705E-01	30.91	OK
	860.56	12.50	2.011E+00	----- Line	Not Found	-----	Absent
BI-212	727.33	6.67*	2.289E+00	1.051E+00	1.051E+00	62.94	OK
	785.37	1.10	2.156E+00	5.987E+00	5.987E+00	66.71	OK
	1620.50	1.47	1.197E+00	----- Line	Not Found	-----	Absent
PB-212	74.82	10.28	6.003E+00	1.220E+00	1.220E+00	49.27	OK
	77.11	17.10	6.195E+00	1.837E+00	1.837E+00	18.29	OK
	238.63	43.60*	5.553E+00	1.020E+00	1.020E+00	11.49	OK
	300.09	3.30	4.643E+00	1.487E+00	1.487E+00	95.58	OK
BI-214	609.32	45.49*	2.627E+00	8.865E-01	8.868E-01	17.11	OK
	1120.29	14.92	1.635E+00	1.128E+00	1.128E+00	34.44	OK
	1764.49	15.30	1.106E+00	1.017E+00	1.017E+00	32.44	OK
PB-214	74.82	5.80	5.996E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	6.195E+00	3.239E+00	3.240E+00	18.29	OK
	87.09	3.41	6.836E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	5.495E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.711E+00	1.061E+00	1.062E+00	29.44	OK
	351.93	35.60*	4.084E+00	9.393E-01	9.396E-01	16.64	OK
RN-222	609.32	45.49*	2.627E+00	8.865E-01	8.868E-01	17.11	OK
	1120.29	14.92	1.635E+00	1.128E+00	1.128E+00	34.44	OK
	1764.49	15.30	1.106E+00	1.017E+00	1.017E+00	32.44	OK
RA-224	240.99	4.10*	5.499E+00	9.734E-01	9.734E-01	117.17	OK
RA-226	609.32	45.49*	2.627E+00	8.865E-01	8.868E-01	17.11	OK
	1120.29	14.92	1.635E+00	1.128E+00	1.128E+00	34.44	OK
	1764.49	15.30	1.106E+00	1.017E+00	1.017E+00	32.44	OK
AC-228	105.21	1.10	7.453E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.215E+00	6.986E-01	6.986E-01	51.98	OK
	794.95	4.25	2.138E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	2.057E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.923E+00	1.105E+00	1.105E+00	24.93	OK
	968.97	15.80	1.833E+00	1.062E+00	1.062E+00	28.37	OK
RA-228	105.21	1.10	7.453E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.215E+00	6.986E-01	6.986E-01	51.98	OK
	794.95	4.25	2.138E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	2.057E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.923E+00	1.105E+00	1.105E+00	24.93	OK
	968.97	15.80	1.833E+00	1.062E+00	1.062E+00	28.37	OK
TH-228	74.82	10.28	6.003E+00	1.220E+00	1.220E+00	49.27	OK
	77.11	17.10	6.195E+00	1.837E+00	1.837E+00	18.29	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	238.63	43.60*	5.553E+00	1.020E+00	1.020E+00	11.49	OK
	300.09	3.30	4.643E+00	1.487E+00	1.487E+00	95.58	OK
TH-230	609.32	45.49*	2.627E+00	8.865E-01	8.865E-01	17.11	OK
	1120.29	14.92	1.635E+00	1.128E+00	1.128E+00	34.44	OK
	1764.49	15.30	1.106E+00	1.017E+00	1.017E+00	32.44	OK
PA-231	283.69	1.70	4.860E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	4.643E+00	9.175E-01	9.175E-01	95.58	OK
TH-232	105.21	1.10	7.453E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.215E+00	6.986E-01	6.986E-01	51.98	OK
	835.71	1.61	2.057E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.923E+00	1.105E+00	1.105E+00	24.93	OK
	968.97	15.80	1.833E+00	1.062E+00	1.062E+00	28.37	OK
TH-234	63.29	3.70*	4.805E+00	1.697E+00	1.697E+00	108.99	OK
	92.59	4.23	7.128E+00	1.062E+00	1.062E+00	130.16	OK
U-234	609.32	45.49*	2.627E+00	8.865E-01	8.865E-01	17.11	OK
	1120.29	14.92	1.635E+00	1.128E+00	1.128E+00	34.44	OK
	1764.49	15.30	1.106E+00	1.017E+00	1.017E+00	32.44	OK
U-238	63.29	3.70*	4.805E+00	1.697E+00	1.697E+00	108.99	OK
	92.59	4.23	7.128E+00	1.062E+00	1.062E+00	130.16	OK
AM-243	43.53	5.90	1.315E+00	----- Line	Not Found	-----	Absent
	74.66	67.20*	6.003E+00	1.866E-01	1.866E-01	49.27	OK
ANH-511	511.00	100.00*	3.021E+00	5.052E-02	5.052E-02	141.86	OK

Flag: "*" = Keyline

```

*****
*                                     GEL Laboratories LLC
*                               2040 Savage Road
*                               Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235046.CNF;1
* Acquisition date   : 3-OCT-2016 06:57:53 Sensitivity      : 3.000
* Detector ID        : GAM20 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:14.88 Half life ratio : *****
* Sample date        : 7-DEC-2015 10:02:00 Analyst initials: MXR1
* Sample ID          : G405235046 Sample Quantity : 1.5693E+02 GRAM
* Batch Number       : 1596252 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight      : 0.00000
* Nuclide Library     : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 30-JUN-2016 06:52:39 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM20 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.269E+01	1.311E+00	5.147E-01
SC-46	4.696E-01	3.821E-01	6.020E-01
CD-109	3.068E+00	1.672E+00	1.930E+00
SN-126	1.952E-01	1.064E-01	1.232E-01
BA-137M	1.535E-01	6.152E-02	5.128E-02
CS-137	1.621E-01	6.499E-02	5.417E-02
TL-208	2.705E-01	8.194E-02	5.019E-02
BI-212	1.051E+00	6.481E-01	6.314E-01
PB-212	1.020E+00	1.149E-01	7.929E-02
BI-214	8.868E-01	1.487E-01	8.519E-02
PB-214	9.396E-01	1.532E-01	1.067E-01
RN-222	8.868E-01	1.487E-01	8.519E-02
RA-224	9.734E-01	1.118E+00	8.498E-01
RA-226	8.868E-01	1.487E-01	8.519E-02
AC-228	1.105E+00	2.701E-01	1.828E-01
RA-228	1.105E+00	2.701E-01	1.828E-01
TH-228	1.020E+00	1.149E-01	7.929E-02
TH-230	8.865E-01	1.486E-01	8.516E-02
PA-231	9.175E-01	8.594E-01	6.520E-01
TH-232	1.105E+00	2.701E-01	1.828E-01
TH-234	1.697E+00	1.813E+00	1.671E+00
U-234	8.865E-01	1.486E-01	8.516E-02
U-238	1.697E+00	1.813E+00	1.671E+00
AM-243	1.866E-01	9.009E-02	7.188E-02
ANH-511	5.052E-02	7.024E-02	4.670E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-5.115E+00	1.107E+01	2.023E+01	NOT IDENT.
NA-22	-1.917E-02	4.237E-02	7.807E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	1.086E-02	2.590E-02	6.097E-02	NOT IDENT.
V-48	0.000E+00	1.139E+04	0.000E+00	SHORT HLIF

CR-51	0.000E+00	3.656E+02	0.000E+00	SHORT HLIF
MN-54	-4.845E-02	5.460E-02	8.750E-02	NOT IDENT.
CO-56	1.518E-01	4.115E-01	8.268E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-3.777E-02	3.927E-02	6.622E-02	NOT IDENT.
CO-58	5.550E-03	4.930E-01	9.453E-01	NOT IDENT.
FE-59	-1.985E+00	5.718E+00	1.090E+01	NOT IDENT.
CO-60	1.430E-02	3.034E-02	6.764E-02	FAIL ABUN
ZN-65	3.964E-02	1.497E-01	2.823E-01	NOT IDENT.
GE-68	-1.014E+00	1.792E+00	2.779E+00	NOT IDENT.
AS-73	1.646E+00	4.739E+00	9.386E+00	NOT IDENT.
AS-74	0.000E+00	4.220E+03	0.000E+00	SHORT HLIF
SE-75	3.793E-03	1.565E-01	3.119E-01	NOT IDENT.
BR-77	0.000E+00	2.802E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.008E+02	0.000E+00	SHORT HLIF
RB-83	3.339E-02	5.459E-01	1.068E+00	NOT IDENT.
KR-85	5.665E-01	7.039E+00	1.215E+01	NOT IDENT.
SR-85	5.953E-02	7.518E-01	1.298E+00	NOT IDENT.
RB-86	0.000E+00	2.212E+04	0.000E+00	SHORT HLIF
Y-88	1.568E-02	1.020E-01	2.722E-01	NOT IDENT.
Y-91	-2.924E+02	5.226E+02	9.439E+02	NOT IDENT.
NB-94	2.041E-02	2.513E-02	5.369E-02	NOT IDENT.
NB-95	3.249E-02	9.390E-01	1.569E+00	NOT IDENT.
NB-95M	-6.130E-01	2.090E+00	3.604E+00	NOT IDENT.
ZR-95	1.472E-01	1.330E+00	2.561E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.267E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	2.104E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	9.118E-03	3.061E-02	5.340E-02	NOT IDENT.
RH-102	1.775E-02	4.669E-02	9.560E-02	NOT IDENT.
RU-103	1.059E+00	4.673E+00	9.369E+00	FAIL ABUN
RH-106	-1.928E-01	4.256E-01	7.655E-01	NOT IDENT.
RU-106	-1.928E-01	4.256E-01	7.655E-01	NOT IDENT.
AG-108M	8.832E-03	2.139E-02	4.404E-02	NOT IDENT.
AG-110M	2.149E-03	8.411E-02	1.197E-01	NOT IDENT.
SN-113	-9.181E-02	1.833E-01	3.389E-01	NOT IDENT.
CD-115	0.000E+00	3.586E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	9.641E+04	0.000E+00	SHORT HLIF
TE-123M	3.681E-02	1.211E-01	2.248E-01	NOT IDENT.
SB-124	-3.225E-01	1.841E+00	3.677E+00	NOT IDENT.
SB-125	-5.840E-03	8.387E-02	1.625E-01	NOT IDENT.
TE-125M	1.597E+02	2.287E+02	4.481E+02	NOT IDENT.
I-126	0.000E+00	8.697E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.073E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.244E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.461E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.712E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.775E+26	0.000E+00	SHORT HLIF
BA-133	2.859E-03	3.448E-02	6.442E-02	NOT IDENT.
I-133	0.000E+00	1.850E+41	0.000E+00	SHORT HLIF
CS-134	2.659E-02	4.811E-02	9.665E-02	NOT IDENT.
CS-135	-7.178E-02	1.210E-01	2.261E-01	NOT IDENT.
I-135	0.000E+00	1.632E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.761E+05	0.000E+00	SHORT HLIF
CE-139	-5.926E-02	1.010E-01	1.731E-01	NOT IDENT.
BA-140	0.000E+00	8.619E+05	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.160E+05	0.000E+00	SHORT HLIF
CE-141	3.271E+00	2.081E+01	3.867E+01	NOT IDENT.
CE-143	0.000E+00	7.946E+40	0.000E+00	SHORT HLIF
CE-144	-1.112E-01	3.246E-01	5.279E-01	NOT IDENT.
PM-144	-6.332E-03	4.154E-02	7.840E-02	NOT IDENT.
PR-144	-5.377E-01	3.612E+00	6.822E+00	NOT IDENT.
PM-146	8.016E-03	2.997E-02	6.164E-02	FAIL ABUN
ND-147	0.000E+00	2.688E+07	0.000E+00	SHORT HLIF
PM-147	-2.573E+01	6.262E+02	1.160E+03	NOT IDENT.
PM-149	0.000E+00	4.503E+40	0.000E+00	SHORT HLIF
EU-150	2.957E-02	2.439E-02	4.329E-02	FAIL ABUN
EU-152	-2.624E-02	7.325E-02	1.387E-01	FAIL ABUN
GD-153	-6.298E-02	1.605E-01	2.662E-01	NOT IDENT.
EU-154	-6.036E-02	1.047E-01	1.886E-01	NOT IDENT.
EU-155	3.293E-02	9.435E-02	1.793E-01	FAIL ABUN
TB-160	1.519E-01	1.752E+00	3.037E+00	FAIL ABUN
HO-166M	2.843E-02	4.399E-02	9.315E-02	FAIL ABUN
TM-171	-3.299E+00	1.153E+01	2.173E+01	NOT IDENT.
HF-172	-1.727E-01	2.236E-01	3.476E-01	FAIL ABUN
LU-172	-3.901E-04	7.317E-02	1.447E-01	FAIL ABUN
LU-176	4.360E-03	1.993E-02	3.845E-02	FAIL ABUN

HF-181	-1.825E+00	3.746E+00	6.828E+00	NOT IDENT.
TA-182	-7.189E-02	7.464E-01	1.466E+00	FAIL ABUN
RE-183	8.555E-02	1.801E+00	3.461E+00	NOT IDENT.
RE-184	1.310E+01	2.741E+01	5.575E+01	NOT IDENT.
W-188	-3.759E+01	9.494E+01	1.602E+02	FAIL ABUN
IR-192	1.964E-01	3.964E-01	8.104E-01	FAIL ABUN
HG-203	2.030E-01	2.051E+00	4.059E+00	NOT IDENT.
BI-207	1.858E-02	3.790E-02	8.239E-02	FAIL ABUN
PB-210	1.886E+00	1.478E+00	3.170E+00	NOT IDENT.
BI-211	0.000E+00	4.220E-01	7.389E-01	FAIL ABUN
PB-211	2.369E-01	5.108E-01	1.054E+00	NOT IDENT.
RN-219	-9.674E-03	3.102E-01	6.031E-01	NOT IDENT.
RA-223	2.368E-01	4.959E-01	9.336E-01	FAIL ABUN
AC-227	1.446E-01	2.003E-01	4.146E-01	FAIL ABUN
TH-227	1.446E-01	2.003E-01	4.146E-01	FAIL ABUN
TH-229	2.438E-02	3.644E-01	7.304E-01	FAIL ABUN
TH-231	2.368E-01	4.959E-01	9.336E-01	FAIL ABUN
PA-233	-6.129E-04	4.304E-02	8.536E-02	FAIL ABUN
PA-234	6.111E-02	2.261E-01	4.758E-01	FAIL ABUN
PA-234M	-3.214E-01	3.541E+00	7.209E+00	NOT IDENT.
U-235	-2.878E-02	1.651E-01	2.979E-01	FAIL ABUN
NP-237	-6.129E-04	4.304E-02	8.536E-02	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	1.386E-01	2.049E-01	3.993E-01	FAIL ABUN
PU-239	1.953E+02	2.743E+02	5.298E+02	NOT IDENT.
AM-241	-6.961E-02	8.839E-02	1.588E-01	NOT IDENT.
CM-243	-3.105E-02	8.490E-02	1.530E-01	FAIL ABUN
BK-247	2.122E-02	5.382E-02	1.108E-01	NOT IDENT.
CM-247	-7.907E-03	2.716E-02	5.145E-02	NOT IDENT.
CF-249	-3.610E-03	2.972E-02	5.744E-02	NOT IDENT.
CF-251	-2.636E-02	9.359E-02	1.651E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	371	10.66*	1.312E+00	1.269E+01	1.269E+01	10.54
SC-46	889.28	16	99.98*	1.963E+00	3.897E-02	4.696E-01	83.02
	1120.55	58	99.99	1.635E+00	1.683E-01	2.028E+00	34.44
CD-109	88.03	155	3.70*	6.851E+00	2.930E+00	4.605E+00	35.71
SN-126	64.28	63	9.60	4.805E+00	6.542E-01	6.542E-01	108.99
	86.94	155	8.90	6.851E+00	1.218E+00	1.218E+00	35.71
	87.57	155	37.00*	6.851E+00	2.930E-01	2.930E-01	35.71
BA-137M	661.66	70	89.90*	2.465E+00	1.506E-01	1.535E-01	40.91
CS-137	661.66	70	85.10*	2.465E+00	1.591E-01	1.621E-01	40.91
TL-208	277.37	-----	6.60	4.947E+00	-----	Line Not Found	-----
	583.19	131	85.00*	2.719E+00	2.705E-01	2.705E-01	30.91
	860.56	-----	12.50	2.011E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	5.823E+00	-----	Line Not Found	-----
	351.06	285	12.92*	4.084E+00	2.588E+00	2.588E+00	16.64
BI-212	727.33	34	6.67*	2.289E+00	1.051E+00	1.051E+00	62.94
	785.37	30	1.10	2.156E+00	5.987E+00	5.987E+00	66.71
	1620.50	-----	1.47	1.197E+00	-----	Line Not Found	-----
PB-212	74.82	235	10.28	6.003E+00	1.818E+00	1.818E+00	31.59
	77.11	407	17.10	6.195E+00	1.837E+00	1.837E+00	18.29
	238.63	516	43.60*	5.553E+00	1.020E+00	1.020E+00	11.49
	300.09	48	3.30	4.643E+00	1.487E+00	1.487E+00	95.58
BI-214	609.32	221	45.49*	2.627E+00	8.865E-01	8.868E-01	17.11
	1120.29	58	14.92	1.635E+00	1.128E+00	1.128E+00	34.44
	1764.49	36	15.30	1.106E+00	1.017E+00	1.017E+00	32.44
PB-214	74.82	235	5.80	6.003E+00	3.223E+00	3.224E+00	31.59
	77.11	407	9.70	6.195E+00	3.239E+00	3.240E+00	18.29
	87.09	155	3.41	6.851E+00	3.180E+00	3.181E+00	35.71
	242.00	134	7.25	5.499E+00	1.612E+00	1.612E+00	35.01
	295.22	192	18.42	4.711E+00	1.061E+00	1.062E+00	29.44
	351.93	285	35.60*	4.084E+00	9.393E-01	9.396E-01	16.64
RN-222	609.32	221	45.49*	2.627E+00	8.865E-01	8.868E-01	17.11
	1120.29	58	14.92	1.635E+00	1.128E+00	1.128E+00	34.44
	1764.49	36	15.30	1.106E+00	1.017E+00	1.017E+00	32.44
RA-224	240.99	134	4.10*	5.499E+00	2.850E+00	2.850E+00	35.01
RA-226	609.32	221	45.49*	2.627E+00	8.865E-01	8.868E-01	17.11
	1120.29	58	14.92	1.635E+00	1.128E+00	1.128E+00	34.44
	1764.49	36	15.30	1.106E+00	1.017E+00	1.017E+00	32.44
AC-228	105.21	-----	1.10	7.453E+00	-----	Line Not Found	-----
	338.32	69	11.27	4.215E+00	6.986E-01	6.986E-01	51.98
	794.95	-----	4.25	2.138E+00	-----	Line Not Found	-----
	835.71	-----	1.61	2.057E+00	-----	Line Not Found	-----
	911.20	115	25.80*	1.923E+00	1.105E+00	1.105E+00	24.93
	968.97	64	15.80	1.833E+00	1.062E+00	1.062E+00	28.37
RA-228	105.21	-----	1.10	7.453E+00	-----	Line Not Found	-----
	338.32	69	11.27	4.215E+00	6.986E-01	6.986E-01	51.98
	794.95	-----	4.25	2.138E+00	-----	Line Not Found	-----
	835.71	-----	1.61	2.057E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	115	25.80*	1.923E+00	1.105E+00	1.105E+00	24.93
	968.97	64	15.80	1.833E+00	1.062E+00	1.062E+00	28.37
TH-228	74.82	235	10.28	6.003E+00	1.818E+00	1.818E+00	31.59
	77.11	407	17.10	6.195E+00	1.837E+00	1.837E+00	18.29
	238.63	516	43.60*	5.553E+00	1.020E+00	1.020E+00	11.49
	300.09	48	3.30	4.643E+00	1.487E+00	1.487E+00	95.58
TH-230	609.32	221	45.49*	2.627E+00	8.865E-01	8.865E-01	17.11
	1120.29	58	14.92	1.635E+00	1.128E+00	1.128E+00	34.44
	1764.49	36	15.30	1.106E+00	1.017E+00	1.017E+00	32.44
PA-231	283.69	-----	1.70	4.860E+00	-----	Line Not Found	-----
	301.36	48	5.35*	4.643E+00	9.175E-01	9.175E-01	95.58
TH-232	105.21	-----	1.10	7.453E+00	-----	Line Not Found	-----
	338.32	69	11.27	4.215E+00	6.986E-01	6.986E-01	51.98
	835.71	-----	1.61	2.057E+00	-----	Line Not Found	-----
	911.20	115	25.80*	1.923E+00	1.105E+00	1.105E+00	24.93
	968.97	64	15.80	1.833E+00	1.062E+00	1.062E+00	28.37
TH-234	63.29	63	3.70*	4.805E+00	1.697E+00	1.697E+00	108.99
	92.59	67	4.23	7.128E+00	1.062E+00	1.062E+00	130.16
U-234	609.32	221	45.49*	2.627E+00	8.865E-01	8.865E-01	17.11
	1120.29	58	14.92	1.635E+00	1.128E+00	1.128E+00	34.44
	1764.49	36	15.30	1.106E+00	1.017E+00	1.017E+00	32.44
U-238	63.29	63	3.70*	4.805E+00	1.697E+00	1.697E+00	108.99
	92.59	67	4.23	7.128E+00	1.062E+00	1.062E+00	130.16
AM-243	43.53	-----	5.90	1.315E+00	-----	Line Not Found	-----
	74.66	235	67.20*	6.003E+00	2.782E-01	2.782E-01	31.59
ANH-511	511.00	32	100.00*	3.021E+00	5.052E-02	5.052E-02	141.86

Flag: "*" = Keyline

Total number of lines in spectrum 49
Number of unidentified lines 16
Number of lines tentatively identified by NID 33 67.35%

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	1.269E+01	1.269E+01	0.134E+01	10.54	
SC-46	83.79D	12.1	3.897E-02	4.696E-01	3.899E-01	83.02	
CD-109	461.40D	1.57	2.930E+00	4.605E+00	1.645E+00	35.71	
SN-126	2.30E+05Y	1.00	2.930E-01	2.930E-01	1.047E-01	35.71	
BA-137M	30.08Y	1.02	1.506E-01	1.535E-01	0.628E-01	40.91	
CS-137	30.08Y	1.02	1.591E-01	1.621E-01	0.663E-01	40.91	
TL-208	1.41E+10Y	1.00	2.705E-01	2.705E-01	0.836E-01	30.91	
BI-211	7.04E+08Y	1.00	2.588E+00	2.588E+00	0.431E+00	16.64	
BI-212	1.41E+10Y	1.00	1.051E+00	1.051E+00	0.661E+00	62.94	
PB-212	1.41E+10Y	1.00	1.020E+00	1.020E+00	0.117E+00	11.49	
BI-214	1600.00Y	1.00	8.865E-01	8.868E-01	1.517E-01	17.11	
PB-214	1600.00Y	1.00	9.393E-01	9.396E-01	1.563E-01	16.64	
RN-222	1600.00Y	1.00	8.865E-01	8.868E-01	1.517E-01	17.11	
RA-224	1.41E+10Y	1.00	2.850E+00	2.850E+00	0.998E+00	35.01	
RA-226	1600.00Y	1.00	8.865E-01	8.868E-01	1.517E-01	17.11	
AC-228	1.41E+10Y	1.00	1.105E+00	1.105E+00	0.276E+00	24.93	
RA-228	1.41E+10Y	1.00	1.105E+00	1.105E+00	0.276E+00	24.93	
TH-228	1.41E+10Y	1.00	1.020E+00	1.020E+00	0.117E+00	11.49	
TH-230	7.54E+04Y	1.00	8.865E-01	8.865E-01	1.516E-01	17.11	
PA-231	7.04E+08Y	1.00	9.175E-01	9.175E-01	8.769E-01	95.58	
TH-232	1.41E+10Y	1.00	1.105E+00	1.105E+00	0.276E+00	24.93	
TH-234	4.47E+09Y	1.00	1.697E+00	1.697E+00	1.850E+00	108.99	
U-234	2.45E+05Y	1.00	8.865E-01	8.865E-01	1.516E-01	17.11	
U-238	4.47E+09Y	1.00	1.697E+00	1.697E+00	1.850E+00	108.99	
AM-243	7370.00Y	1.00	2.782E-01	2.782E-01	0.879E-01	31.59	
ANH-511	1.00E+09Y	1.00	5.052E-02	5.052E-02	7.167E-02	141.86	

Total Activity : 3.839E+01 4.050E+01

Grand Total Activity : 3.839E+01 4.050E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
6	27.05	71	19	1.29	54.31	51	12	1.38E-02	49.4	4.65E-07	
6	28.79	41	65	1.13	57.79	51	12	7.95E-03	****	4.59E-05	
0	32.30	22	128	1.75	64.80	63	6	4.37E-03	****	9.28E-03	
0	36.95	45	210	2.80	74.10	72	11	8.93E-03	****	2.24E-01	
0	99.39	48	146	1.98	198.89	195	8	1.04E-02	****	7.32E+00	T
0	131.15	51	243	3.89	262.37	254	13	1.14E-02	****	7.52E+00	T
0	180.90	51	120	1.44	361.81	357	9	1.18E-02	90.2	6.67E+00	T
0	185.56	130	153	1.81	371.12	366	12	2.98E-02	47.9	6.57E+00	T
0	208.31	21	135	0.72	416.59	414	8	4.84E-03	****	6.11E+00	
0	328.73	69	88	4.87	657.34	650	15	1.69E-02	68.5	4.32E+00	T
0	445.11	10	33	0.80	890.05	884	8	2.46E-03	****	3.37E+00	
0	548.49	8	19	0.78	1096.82	1089	9	2.11E-03	****	2.85E+00	
0	736.94	29	22	4.54	1473.80	1466	14	7.78E-03	79.1	2.27E+00	T
0	768.78	31	39	1.30	1537.51	1531	13	8.30E-03	93.1	2.19E+00	
0	882.98	10	17	1.01	1766.01	1757	12	2.69E-03	****	1.97E+00	T
0	964.70	13	25	2.59	1929.58	1923	12	3.63E-03	****	1.84E+00	T
0	989.92	9	4	1.42	1980.05	1977	6	2.43E-03	****	1.80E+00	
0	1010.46	18	12	1.45	2021.17	2016	12	5.00E-03	90.3	1.77E+00	
0	1080.88	27	8	2.47	2162.12	2153	16	7.54E-03	60.3	1.68E+00	
2	1117.13	14	0	1.60	2234.70	2233	26	3.77E-03	53.1	1.64E+00	
0	1174.53	18	14	3.77	2349.61	2342	14	5.00E-03	****	1.57E+00	T
0	1214.72	15	10	1.04	2430.08	2423	11	4.32E-03	96.5	1.53E+00	
0	1238.62	36	13	1.06	2477.94	2471	13	1.01E-02	52.6	1.51E+00	T
0	1263.96	12	3	0.62	2528.68	2525	7	3.28E-03	77.9	1.48E+00	
0	1377.92	22	3	2.06	2756.91	2750	14	6.25E-03	55.0	1.38E+00	
0	1509.50	16	4	3.13	3020.48	3012	14	4.53E-03	69.7	1.28E+00	

Flags: "T" = Tentatively associated

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*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                          *
*                               Charleston, SC 29407                     *
*                               *****                                  *
*                               *                                         *
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235046.CNF;1 *
* Acquisition date   : 3-OCT-2016 06:57:53 Sensitivity      : 3.000        *
* Detector ID        : GAM20 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 01:00:14.88 Half life ratio : *****        *
* Sample date        : 7-DEC-2015 10:02:00 Nuclide Library : SOLID        *
* Sample ID          : G405235046 Analyst initials: MXR1         *
* Batch Number       : 1596252 Sample Quantity : 1.5693E+02 GRAM      *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000          *
*                               Dry Weight      : 0.00000          *
*                               *****                                  *
*                               *                                         *
*                               CALIBRATION INFORMATION                   *
*                               *                                         *
* Eff. Cal. date     : 30-JUN-2016 06:52:39 Eff. Geometry   : CAN        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM20 CAN.CNF;15      *
*                               *****                                  *

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	^{Lc} (pCi/GRAM)
K-40	2.107E-01
SC-46	2.604E-01
CD-109	9.221E-01
SN-126	5.887E-02
BA-137M	2.257E-02
CS-137	2.385E-02
TL-208	2.220E-02
BI-212	2.722E-01
PB-212	3.683E-02
BI-214	3.700E-02
PB-214	4.870E-02
RN-222	3.700E-02
RA-224	3.947E-01
RA-226	3.700E-02
AC-228	7.807E-02
RA-228	7.807E-02
TH-228	3.683E-02
TH-230	3.699E-02
PA-231	2.986E-01
TH-232	7.807E-02
TH-234	7.959E-01
U-234	3.699E-02
U-238	7.959E-01
AM-243	3.420E-02
ANH-511	2.113E-02

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

Nuclide	^{Lc} (pCi/GRAM)	
BE-7	9.099E+00	NOT IDENT.
NA-22	3.350E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.447E-02	NOT IDENT.
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF

MN-54	3.747E-02	NOT IDENT.
CO-56	3.650E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	3.081E-02	NOT IDENT.
CO-58	4.126E-01	NOT IDENT.
FE-59	4.690E+00	NOT IDENT.
CO-60	2.869E-02	FAIL ABUN
ZN-65	1.226E-01	NOT IDENT.
GE-68	1.128E+00	NOT IDENT.
AS-73	4.414E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.431E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.779E-01	NOT IDENT.
KR-85	5.535E+00	NOT IDENT.
SR-85	5.911E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	9.266E-02	NOT IDENT.
Y-91	4.143E+02	NOT IDENT.
NB-94	2.401E-02	NOT IDENT.
NB-95	7.061E-01	NOT IDENT.
NB-95M	1.674E+00	NOT IDENT.
ZR-95	1.138E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.510E-02	NOT IDENT.
RH-102	4.237E-02	NOT IDENT.
RU-103	4.200E+00	FAIL ABUN
RH-106	3.372E-01	NOT IDENT.
RU-106	3.372E-01	NOT IDENT.
AG-108M	1.986E-02	NOT IDENT.
AG-110M	4.917E-02	NOT IDENT.
SN-113	1.524E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.058E-01	NOT IDENT.
SB-124	1.459E+00	NOT IDENT.
SB-125	7.327E-02	NOT IDENT.
TE-125M	2.111E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.937E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	4.355E-02	NOT IDENT.
CS-135	1.047E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	8.093E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.815E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.467E-01	NOT IDENT.
PM-144	3.419E-02	NOT IDENT.
PR-144	2.975E+00	NOT IDENT.
PM-146	2.736E-02	FAIL ABUN
ND-147	0.000E+00	SHORT HLIF
PM-147	5.399E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.997E-02	FAIL ABUN
EU-152	6.296E-02	FAIL ABUN
GD-153	1.252E-01	NOT IDENT.
EU-154	8.073E-02	NOT IDENT.
EU-155	8.469E-02	FAIL ABUN
TB-160	1.320E+00	FAIL ABUN
HO-166M	4.130E-02	FAIL ABUN
TM-171	1.022E+01	NOT IDENT.
HF-172	1.628E-01	FAIL ABUN
LU-172	6.387E-02	FAIL ABUN
LU-176	1.764E-02	FAIL ABUN
HF-181	3.053E+00	NOT IDENT.

TA-182	6.346E-01	FAIL ABUN
RE-183	1.631E+00	NOT IDENT.
RE-184	2.464E+01	NOT IDENT.
W-188	7.305E+01	FAIL ABUN
IR-192	3.741E-01	FAIL ABUN
HG-203	1.881E+00	NOT IDENT.
BI-207	3.593E-02	FAIL ABUN
PB-210	1.498E+00	NOT IDENT.
BI-211	3.568E-01	FAIL ABUN
PN-211	4.779E-01	NOT IDENT.
RN-219	2.737E-01	NOT IDENT.
RA-223	4.279E-01	FAIL ABUN
AC-227	1.937E-01	FAIL ABUN
TH-227	1.937E-01	FAIL ABUN
TH-229	3.409E-01	FAIL ABUN
TH-231	4.279E-01	FAIL ABUN
PA-233	3.876E-02	FAIL ABUN
PA-234	2.085E-01	FAIL ABUN
PA-234M	3.166E+00	NOT IDENT.
U-235	1.404E-01	FAIL ABUN
NP-237	3.876E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.881E-01	FAIL ABUN
PU-239	2.504E+02	NOT IDENT.
AM-241	7.483E-02	NOT IDENT.
CM-243	7.192E-02	FAIL ABUN
BK-247	5.099E-02	NOT IDENT.
CM-247	2.317E-02	NOT IDENT.
CF-249	2.600E-02	NOT IDENT.
CF-251	7.666E-02	NOT IDENT.


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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235046.CNF;1
* Acquisition date   : 3-OCT-2016 06:57:53 Sensitivity      : 3.000
* Detector ID        : GAM20 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:14.88 Half life ratio : *****
* Sample date       : 7-DEC-2015 10:02:00 Nuclide Library : SOLID
* Sample ID         : G405235046 Analyst initials: MXR1
* Batch Number      : 1596252 Sample Quantity : 1.5693E+02 GRAM
*                               Quantity Err(%) : 1.2745E-03 %
* Wet wt corr       : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 30-JUN-2016 06:52:39 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM20 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.269E+01	1.468E+00	1.468E+00
SC-46	4.696E-01	3.826E-01	3.826E-01
CD-109	3.068E+00	1.701E+00	1.701E+00
SN-126	1.952E-01	1.078E-01	1.078E-01
BA-137M	1.535E-01	6.187E-02	6.187E-02
CS-137	1.621E-01	6.536E-02	6.536E-02
TL-208	2.705E-01	8.274E-02	8.274E-02
BI-212	1.051E+00	6.503E-01	6.503E-01
PB-212	1.020E+00	1.269E-01	1.269E-01
BI-214	8.868E-01	1.534E-01	1.534E-01
PB-214	9.396E-01	1.581E-01	1.581E-01
RN-222	8.868E-01	1.534E-01	1.534E-01
RA-224	9.734E-01	1.126E+00	1.126E+00
RA-226	8.868E-01	1.534E-01	1.534E-01
AC-228	1.105E+00	2.759E-01	2.759E-01
RA-228	1.105E+00	2.759E-01	2.759E-01
TH-228	1.020E+00	1.269E-01	1.269E-01
TH-230	8.865E-01	1.534E-01	1.534E-01
PA-231	9.175E-01	8.814E-01	8.814E-01
TH-232	1.105E+00	2.759E-01	2.759E-01
TH-234	1.697E+00	1.852E+00	1.852E+00
U-234	8.865E-01	1.534E-01	1.534E-01
U-238	1.697E+00	1.852E+00	1.852E+00
AM-243	1.866E-01	9.155E-02	9.155E-02
ANH-511	5.052E-02	7.027E-02	7.027E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-5.115E+00	1.108E+01	1.131E+01	NOT IDENT.
NA-22	-1.917E-02	4.237E-02	4.324E-02	NOT IDENT.
NA-24	-1.000E+41	6.259E+41	0.000E+00	SHORT HLIF
AL-26	1.086E-02	2.591E-02	2.637E-02	NOT IDENT.
V-48	-5.929E+03	1.139E+04	1.170E+04	SHORT HLIF

CR-51	1.126E+02	3.656E+02	3.691E+02	SHORT HLIF
MN-54	-4.845E-02	5.464E-02	5.885E-02	NOT IDENT.
CO-56	1.518E-01	4.115E-01	4.172E-01	FAIL ABUN
MN-56	1.000E+41	2.735E+41	0.000E+00	SHORT HLIF
CO-57	-3.777E-02	3.930E-02	4.283E-02	NOT IDENT.
CO-58	5.550E-03	4.930E-01	4.930E-01	NOT IDENT.
FE-59	-1.985E+00	5.720E+00	5.790E+00	NOT IDENT.
CO-60	1.430E-02	3.034E-02	3.102E-02	FAIL ABUN
ZN-65	3.964E-02	1.497E-01	1.507E-01	NOT IDENT.
GE-68	-1.014E+00	1.792E+00	1.850E+00	NOT IDENT.
AS-73	1.646E+00	4.751E+00	4.809E+00	NOT IDENT.
AS-74	-1.713E+00	4.220E+03	4.220E+03	SHORT HLIF
SE-75	3.793E-03	1.565E-01	1.565E-01	NOT IDENT.
BR-77	2.488E+38	2.161E+39	0.000E+00	SHORT HLIF
SR-82	1.806E+02	6.009E+02	6.063E+02	SHORT HLIF
RB-83	3.339E-02	5.459E-01	5.461E-01	NOT IDENT.
KR-85	5.665E-01	7.039E+00	7.043E+00	NOT IDENT.
SR-85	5.953E-02	7.518E-01	7.523E-01	NOT IDENT.
RB-86	-1.386E+04	2.213E+04	2.299E+04	SHORT HLIF
Y-88	1.568E-02	1.021E-01	1.023E-01	NOT IDENT.
Y-91	-2.924E+02	5.227E+02	5.391E+02	NOT IDENT.
NB-94	2.041E-02	2.515E-02	2.678E-02	NOT IDENT.
NB-95	3.249E-02	9.390E-01	9.391E-01	NOT IDENT.
NB-95M	-6.130E-01	2.090E+00	2.108E+00	NOT IDENT.
ZR-95	1.472E-01	1.330E+00	1.331E+00	NOT IDENT.
NB-97	1.000E+41	3.004E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.268E+41	0.000E+00	SHORT HLIF
MO-99	7.318E+31	2.104E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	4.564E+41	0.000E+00	SHORT HLIF
RH-101	9.118E-03	3.066E-02	3.093E-02	NOT IDENT.
RH-102	1.775E-02	4.671E-02	4.739E-02	NOT IDENT.
RU-103	1.059E+00	4.673E+00	4.697E+00	FAIL ABUN
RH-106	-1.928E-01	4.258E-01	4.345E-01	NOT IDENT.
RU-106	-1.928E-01	4.258E-01	4.345E-01	NOT IDENT.
AG-108M	8.832E-03	2.139E-02	2.176E-02	NOT IDENT.
AG-110M	2.149E-03	8.411E-02	8.411E-02	NOT IDENT.
SN-113	-9.181E-02	1.834E-01	1.880E-01	NOT IDENT.
CD-115	3.850E+39	3.654E+39	0.000E+00	SHORT HLIF
SN-117M	-1.833E+04	9.643E+04	9.679E+04	SHORT HLIF
TE-123M	3.681E-02	1.211E-01	1.222E-01	NOT IDENT.
SB-124	-3.225E-01	1.841E+00	1.847E+00	NOT IDENT.
SB-125	-5.840E-03	8.387E-02	8.391E-02	NOT IDENT.
TE-125M	1.597E+02	2.289E+02	2.399E+02	NOT IDENT.
I-126	-5.194E+05	8.726E+05	9.035E+05	SHORT HLIF
SB-126	-2.742E+04	1.073E+06	1.073E+06	SHORT HLIF
SB-127	-1.038E+22	2.662E+22	0.000E+00	SHORT HLIF
I-131	-3.345E+08	4.461E+09	4.463E+09	SHORT HLIF
I-132	-1.000E+41	1.862E+42	0.000E+00	SHORT HLIF
TE-132	-6.031E+25	3.783E+26	0.000E+00	SHORT HLIF
BA-133	2.859E-03	3.448E-02	3.450E-02	NOT IDENT.
I-133	-1.000E+41	2.592E+41	0.000E+00	SHORT HLIF
CS-134	2.659E-02	4.812E-02	4.959E-02	NOT IDENT.
CS-135	-7.178E-02	1.211E-01	1.254E-01	NOT IDENT.
I-135	-1.000E+41	6.992E+41	0.000E+00	SHORT HLIF
CS-136	-2.112E+04	2.761E+05	2.763E+05	SHORT HLIF
CE-139	-5.926E-02	1.017E-01	1.051E-01	NOT IDENT.
BA-140	4.661E+05	8.621E+05	8.873E+05	SHORT HLIF
LA-140	-2.072E+05	4.161E+05	4.265E+05	SHORT HLIF
CE-141	3.271E+00	2.081E+01	2.086E+01	NOT IDENT.
CE-143	1.000E+41	8.011E+40	0.000E+00	SHORT HLIF
CE-144	-1.112E-01	3.246E-01	3.285E-01	NOT IDENT.
PM-144	-6.332E-03	4.154E-02	4.164E-02	NOT IDENT.
PR-144	-5.377E-01	3.612E+00	3.621E+00	NOT IDENT.
PM-146	8.016E-03	2.997E-02	3.019E-02	FAIL ABUN
ND-147	-1.122E+07	2.689E+07	2.736E+07	SHORT HLIF
PM-147	-2.573E+01	6.262E+02	6.263E+02	NOT IDENT.
PM-149	-4.003E+40	4.588E+40	0.000E+00	SHORT HLIF
EU-150	2.957E-02	2.442E-02	2.782E-02	FAIL ABUN
EU-152	-2.624E-02	7.327E-02	7.422E-02	FAIL ABUN
GD-153	-6.298E-02	1.606E-01	1.631E-01	NOT IDENT.
EU-154	-6.036E-02	1.047E-01	1.082E-01	NOT IDENT.
EU-155	3.293E-02	9.438E-02	9.554E-02	FAIL ABUN
TB-160	1.519E-01	1.752E+00	1.753E+00	FAIL ABUN
HO-166M	2.843E-02	4.402E-02	4.584E-02	FAIL ABUN
TM-171	-3.299E+00	1.154E+01	1.163E+01	NOT IDENT.
HF-172	-1.727E-01	2.253E-01	2.384E-01	FAIL ABUN
LU-172	-3.901E-04	7.317E-02	7.317E-02	FAIL ABUN
LU-176	4.360E-03	1.993E-02	2.003E-02	FAIL ABUN

HF-181	-1.825E+00	3.747E+00	3.836E+00	NOT IDENT.
TA-182	-7.189E-02	7.464E-01	7.471E-01	FAIL ABUN
RE-183	8.555E-02	1.801E+00	1.802E+00	NOT IDENT.
RE-184	1.310E+01	2.759E+01	2.822E+01	NOT IDENT.
W-188	-3.759E+01	9.503E+01	9.653E+01	FAIL ABUN
IR-192	1.964E-01	3.965E-01	4.062E-01	FAIL ABUN
HG-203	2.030E-01	2.051E+00	2.053E+00	NOT IDENT.
BI-207	1.858E-02	3.791E-02	3.882E-02	FAIL ABUN
PB-210	1.886E+00	1.487E+00	1.713E+00	NOT IDENT.
BI-211	2.588E+00	4.375E-01	1.246E+00	FAIL ABUN
PB-211	2.369E-01	5.109E-01	5.220E-01	NOT IDENT.
RN-219	-9.674E-03	3.102E-01	3.102E-01	NOT IDENT.
RA-223	2.368E-01	4.961E-01	5.074E-01	FAIL ABUN
AC-227	1.446E-01	2.013E-01	2.115E-01	FAIL ABUN
TH-227	1.446E-01	2.013E-01	2.115E-01	FAIL ABUN
TH-229	2.438E-02	3.644E-01	3.645E-01	FAIL ABUN
TH-231	2.368E-01	4.961E-01	5.074E-01	FAIL ABUN
PA-233	-6.129E-04	4.304E-02	4.304E-02	FAIL ABUN
PA-234	6.111E-02	2.366E-01	2.382E-01	FAIL ABUN
PA-234M	-3.214E-01	3.541E+00	3.544E+00	NOT IDENT.
U-235	-2.878E-02	1.651E-01	1.656E-01	FAIL ABUN
NP-237	-6.129E-04	4.304E-02	4.304E-02	FAIL ABUN
NP-238	4.781E+40	5.270E+41	0.000E+00	SHORT HLIF
NP-239	1.386E-01	2.052E-01	2.145E-01	FAIL ABUN
PU-239	1.953E+02	2.744E+02	2.882E+02	NOT IDENT.
AM-241	-6.961E-02	8.853E-02	9.393E-02	NOT IDENT.
CM-243	-3.105E-02	8.495E-02	8.609E-02	FAIL ABUN
BK-247	2.122E-02	5.399E-02	5.483E-02	NOT IDENT.
CM-247	-7.907E-03	2.719E-02	2.743E-02	NOT IDENT.
CF-249	-3.610E-03	2.972E-02	2.977E-02	NOT IDENT.
CF-251	-2.636E-02	9.364E-02	9.439E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	82.9146	87.09	128.9682	136.47	78.5592
45.60	91.8005	87.57	152.2725	140.51	0.0000
46.54	54.5410	88.03	152.3671	143.76	88.8718
49.72	0.0000	88.34	155.4788	144.24	73.0792
51.35	83.1043	88.47	155.5053	145.44	69.5070
51.87	95.0677	89.96	153.5216	152.43	72.4293
52.39	89.7516	1093.63	155.9520	153.25	0.0000
52.97	82.2692	91.11	0.0000	323.87	88.5366
53.44	74.7554	92.59	136.8048	156.02	0.0000
54.07	78.0941	93.35	136.9392	158.56	0.0000
57.36	0.0000	94.56	89.1293	159.00	72.8749
57.53	79.6633	94.65	89.1400	162.33	75.5742
57.98	87.3697	94.67	89.1423	162.66	0.0000
59.27	110.5481	94.87	89.1647	163.33	70.6829
59.32	110.5574	97.43	90.9961	165.86	84.5154
59.54	110.5986	98.43	79.9144	176.31	62.7151
60.96	96.5938	98.44	79.9155	176.60	0.0000
61.17	96.6277	99.53	80.0234	177.52	62.7808
62.93	133.2498	100.11	83.5626	181.07	0.0000
63.29	133.3285	102.03	65.1465	181.52	52.9153
63.58	133.3915	103.18	94.7497	184.41	56.8323
64.28	133.5432	103.37	92.0526	143.76	56.8948
66.73	125.5735	105.21	86.4173	193.51	64.4698
67.24	103.4961	105.31	86.4274	197.03	85.9195
125.81	109.4862	106.12	79.4966	198.01	66.4052
67.75	109.4982	106.47	86.5471	201.83	77.7079
69.67	125.7801	109.28	70.4057	203.43	66.6901
70.83	107.0471	111.00	96.4134	205.31	62.9353
72.81	137.1933	111.76	0.0000	210.85	74.8134
72.87	137.2054	114.06	100.2916	215.65	60.4147
74.66	127.8517	116.30	0.0000	222.11	66.7766
74.82	127.8821	116.74	71.0088	227.09	54.8353
74.97	127.9099	119.76	45.1233	227.38	54.8469
77.11	128.3109	121.12	61.8397	228.16	0.0000
78.74	114.3224	121.22	61.8464	228.18	55.7500
79.69	114.4770	121.78	78.5457	116.74	55.7500
80.12	108.5178	122.06	83.3311	235.69	64.3716
80.19	0.0000	122.92	51.2370	235.96	64.3835
80.57	81.4400	123.07	54.8208	238.63	57.0456
81.00	98.0891	265.00	50.0868	238.98	0.0000
81.07	107.1544	125.81	95.6219	240.99	57.1401
81.75	120.0967	127.23	73.4206	242.00	57.1805
83.79	118.1648	127.91	84.6545	244.70	46.2708
84.00	112.1374	129.30	79.1797	252.40	0.0000
85.43	130.5773	131.20	79.3368	252.80	53.1750
86.55	133.8163	133.02	75.4723	254.15	0.0000
86.79	133.8593	133.52	77.1182	256.23	52.4100
86.94	128.9424	136.00	70.0653	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	41.0913	355.39	0.0000	584.27	19.8396
264.80	41.0951	356.01	25.4592	595.83	0.0000
265.00	37.5267	364.49	0.0000	427.87	16.8092
268.22	64.4663	366.42	0.0000	602.52	0.0000
269.46	38.5322	372.51	33.2910	604.72	9.4695
270.03	36.7534	375.05	40.9546	607.14	15.7965
271.23	59.2096	377.52	33.3779	609.32	14.7554
273.65	0.0000	356.01	34.4429	610.33	14.7611
276.40	52.2061	388.16	32.6006	614.28	22.1732
277.37	53.1386	388.63	0.0000	618.01	23.2604
277.60	42.3375	391.69	34.5798	620.36	19.0481
278.00	38.7439	264.66	26.0508	621.93	24.3523
279.20	51.3976	401.81	32.8234	630.19	0.0000
279.54	54.1138	402.40	31.8674	631.29	15.9357
279.70	54.1199	404.85	25.1378	633.25	17.0098
280.46	49.6334	410.95	36.8496	634.78	0.0000
283.69	35.2660	413.71	29.1309	635.95	14.8978
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	41.6407	423.72	0.0000	645.85	17.0859
285.90	0.0000	427.09	27.3631	657.76	12.8682
287.50	32.6309	427.87	29.3280	657.90	0.0000
290.67	43.5938	433.94	22.5494	661.66	18.2541
293.27	0.0000	439.40	30.9610	664.57	0.0000
351.93	40.9827	453.88	17.8099	666.33	0.0000
295.96	41.0019	463.37	27.8228	666.50	0.0000
879.38	21.9023	468.07	29.8724	667.71	0.0000
299.98	39.7316	473.00	0.0000	677.62	23.7528
300.09	39.7343	475.06	28.9658	685.70	0.0000
300.13	39.7352	476.78	19.9915	695.00	0.0000
301.36	39.7644	477.60	33.9972	696.49	17.3848
302.85	39.7998	482.18	31.0593	696.51	17.3848
256.23	41.2134	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	9.7815
306.78	37.4174	497.08	22.1835	697.49	8.6953
308.46	41.3104	505.52	19.7329	702.65	14.1537
311.90	33.1157	507.63	0.0000	706.68	15.2629
316.51	39.6616	511.00	30.4279	711.68	13.1040
319.41	0.0000	514.00	33.5129	720.70	0.0000
320.08	0.0000	514.00	33.5129	721.93	0.0000
321.04	43.4649	520.40	23.4193	722.78	18.0831
323.87	31.9570	520.69	0.0000	722.91	18.0838
325.23	43.1056	522.65	0.0000	723.31	31.2403
328.76	0.0000	527.90	0.0000	724.19	24.6707
333.37	41.9073	528.26	15.3223	727.33	13.1709
333.97	22.3584	529.59	25.5513	733.00	8.7965
334.37	41.9312	529.87	0.0000	735.93	14.3081
338.28	52.2949	531.02	0.0000	333.97	14.3150
338.32	52.2961	537.26	0.0000	739.50	0.0000
311.90	36.4641	546.56	0.0000	747.24	16.5686
340.48	36.4641	552.55	17.5347	748.06	18.7826
340.55	0.0000	563.25	21.7520	752.31	17.7012
344.28	38.4141	569.33	24.9180	753.82	0.0000
345.93	31.5096	946.00	22.8424	756.73	19.9417
351.06	36.6760	569.70	22.8442	756.80	19.9424
351.93	36.6934	583.19	19.8311	884.68	26.6494

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:03:01.04

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235047.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM25.CNF;357
Background date    : Z-OCT-2016 11:01:25.
Sample date       : 7-DEC-2015 10:10:00. Acquisition date : 3-OCT-2016 07:00:30.
Sample ID        : G405235047 Sample quantity : 1.51349E+02 GRAM
Detector name     : GAM25 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.56 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1596252 Detector SN# :
Matrix Spike ID   : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.64*	68	221	1.04	92.79	88	10	1.88E-02	44.2	
2	0	53.35*	38	110	1.16	106.19	104	6	1.06E-02	47.4	
3	0	63.13*	55	241	0.72	125.75	122	8	1.54E-02	52.4	
4	2	74.85*	165	227	0.76	149.19	146	16	4.59E-02	14.8	4.09E+00
5	2	77.15*	430	177	0.79	153.79	146	16	1.20E-01	6.8	
6	0	83.83*	32	143	1.14	167.14	165	6	8.93E-03	62.3	
7	0	88.17	244	264	3.47	175.83	170	12	6.78E-02	14.9	
8	0	92.83*	126	159	1.39	185.15	182	8	3.51E-02	20.8	
9	0	129.09	23	138	0.78	257.66	254	8	6.33E-03	91.8	
10	0	186.02*	86	134	1.12	371.50	368	9	2.40E-02	27.7	
11	0	209.42	37	106	0.99	418.30	414	9	1.01E-02	53.4	
12	3	238.77*	449	80	1.03	477.00	470	17	1.25E-01	5.7	1.25E+00
13	3	241.67	110	104	1.54	482.79	470	17	3.07E-02	22.3	
14	0	270.41	44	83	0.79	540.29	535	10	1.22E-02	41.4	
15	4	276.52	17	12	0.83	552.49	551	9	4.79E-03	36.9	3.14E+00
16	4	277.89*	25	44	1.33	555.24	551	9	6.92E-03	53.1	
17	0	295.19*	169	64	1.19	589.83	583	12	4.69E-02	12.4	
18	0	300.34	43	53	0.90	600.13	596	9	1.20E-02	34.1	
19	0	328.32	41	58	2.39	656.11	651	10	1.13E-02	38.3	
20	0	338.88*	96	66	1.56	677.21	671	15	2.66E-02	21.6	
21	0	352.09*	268	74	1.08	703.63	698	11	7.45E-02	8.8	
22	0	447.74	22	11	2.19	894.95	892	7	5.97E-03	33.0	
23	0	464.79	14	49	0.90	929.06	922	11	3.80E-03	101.3	
24	0	482.67	19	23	1.77	964.83	962	8	5.14E-03	50.1	
25	0	511.26*	8	62	1.24	1022.01	1015	13	2.17E-03	241.1	
26	0	556.69	15	21	0.64	1112.89	1105	11	4.10E-03	66.5	
27	0	583.58*	108	42	1.32	1166.69	1162	13	3.00E-02	15.6	
28	0	588.90	8	19	1.25	1177.33	1174	7	2.36E-03	89.5	
29	0	609.55*	185	54	1.40	1218.63	1212	15	5.13E-02	11.4	
30	0	626.45	36	45	7.10	1252.45	1238	21	1.01E-02	50.1	
31	0	690.83	17	18	2.00	1381.24	1372	12	4.61E-03	56.8	
32	0	694.35	10	13	1.38	1388.28	1385	6	2.71E-03	67.5	
33	0	727.11	37	7	1.72	1453.82	1449	10	1.02E-02	21.6	
34	0	797.89	30	28	5.52	1595.43	1586	18	8.39E-03	46.8	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	877.76	4	17	1.25	1755.24	1749	8	1.17E-03	179.1	
36	0	911.59*	78	28	1.93	1822.94	1816	14	2.17E-02	18.5	
37	0	922.94	8	5	1.72	1845.64	1841	7	2.16E-03	60.6	
38	0	964.31	21	6	1.90	1928.42	1922	11	5.92E-03	30.5	
39	0	969.34*	61	0	2.33	1938.49	1933	13	1.69E-02	13.8	
40	0	1009.53	5	10	0.67	2018.92	2013	8	1.35E-03	128.3	
41	0	1120.86*	39	18	1.60	2241.72	2233	14	1.08E-02	28.2	
42	0	1154.11	9	19	0.42	2308.26	2297	13	2.51E-03	105.8	
43	0	1178.35	18	13	4.77	2356.78	2351	13	5.00E-03	47.5	
44	0	1258.31	16	18	1.86	2516.80	2509	17	4.57E-03	62.7	
45	0	1338.77	5	9	4.35	2677.86	2668	11	1.39E-03	133.0	
46	0	1460.65*	402	0	1.98	2921.82	2913	18	1.12E-01	5.0	
47	0	1764.66*	42	4	2.63	3530.46	3523	14	1.17E-02	18.5	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235047.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 7-DEC-2015 10:10:00   Acquisition date : 3-OCT-2016 07:00:30
Sample ID         : G405235047           Sample quantity  : 151.35 GRAM
Sample type       : SOLID                 Sample geometry   :
Detector name     : GAMMA25              Detector geometry: CAN
Elapsed live time : 0 01:00:00.00        Elapsed real time: 0 01:00:00.56    0.0%
Energy tolerance  : 1.50 keV             Half life ratio  : 10.00
Errors propagated: No                    Systematic Error : 0.00 %
Efficiency type   : Linear                Efficiencies at  : Peak Energy
Abundance limit   : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
TL-208	277.37	HG-203	279.20
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.131E+00	1.597E+01	1.597E+01	10.05	OK
AS-73	53.44	10.30*	9.638E+00	2.507E-01	3.366E+00	94.70	OK
CD-109	88.03	3.70*	9.265E+00	3.424E+00	5.381E+00	39.59	OK
SN-126	64.28	9.60	9.545E+00	3.905E-01	3.905E-01	104.75	OK
	86.94	8.90	9.265E+00	1.423E+00	1.423E+00	39.59	OK
	87.57	37.00*	9.265E+00	3.424E-01	3.424E-01	39.59	OK
HG-203	70.83	3.69	9.445E+00	-----	Line Not Found	-----	Absent
	72.87	6.19	9.424E+00	-----	Line Not Found	-----	Absent
	279.20	81.56*	4.801E+00	1.447E-02	1.272E+00	268.94	OK
TL-208	277.37	6.60	4.809E+00	-----	Line Not Found	-----	<<INT Reject
	583.19	85.00*	2.509E+00	2.673E-01	2.673E-01	31.22	OK
	860.56	12.50	1.810E+00	-----	Line Not Found	-----	Absent
PB-210	46.54	4.25*	9.157E+00	1.149E+00	1.179E+00	88.41	OK
PB-212	74.82	10.28	9.404E+00	4.478E-01	4.478E-01	80.06	OK
	77.11	17.10	9.382E+00	1.704E+00	1.704E+00	13.54	OK
	238.63	43.60*	5.476E+00	1.083E+00	1.083E+00	11.42	OK
	300.09	3.30	4.483E+00	1.645E+00	1.645E+00	68.26	OK
BI-214	609.32	45.49*	2.418E+00	8.813E-01	8.816E-01	22.84	OK
	1120.29	14.92	1.443E+00	8.896E-01	8.899E-01	56.43	OK
	1764.49	15.30	9.335E-01	1.386E+00	1.387E+00	37.02	OK
PB-214	74.82	5.80	9.405E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	9.382E+00	3.005E+00	3.006E+00	13.54	OK
	87.09	3.41	9.279E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	5.413E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	4.552E+00	1.135E+00	1.136E+00	24.72	OK
	351.93	35.60*	3.893E+00	1.074E+00	1.074E+00	17.57	OK
RN-222	609.32	45.49*	2.418E+00	8.813E-01	8.816E-01	22.84	OK
	1120.29	14.92	1.443E+00	8.896E-01	8.899E-01	56.43	OK
	1764.49	15.30	9.335E-01	1.386E+00	1.387E+00	37.02	OK
RA-224	240.99	4.10*	5.420E+00	8.483E-01	8.483E-01	161.11	OK
RA-226	609.32	45.49*	2.418E+00	8.813E-01	8.816E-01	22.84	OK
	1120.29	14.92	1.443E+00	8.896E-01	8.899E-01	56.43	OK
	1764.49	15.30	9.335E-01	1.386E+00	1.387E+00	37.02	OK
AC-228	105.21	1.10	8.977E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.027E+00	1.176E+00	1.176E+00	43.10	OK
	794.95	4.25	1.935E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.856E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.724E+00	8.859E-01	8.859E-01	37.10	OK
	968.97	15.80	1.637E+00	1.177E+00	1.177E+00	27.51	OK
RA-228	105.21	1.10	8.977E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.027E+00	1.176E+00	1.176E+00	43.10	OK
	794.95	4.25	1.935E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	1.856E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.724E+00	8.859E-01	8.859E-01	37.10	OK
	968.97	15.80	1.637E+00	1.177E+00	1.177E+00	27.51	OK
TH-228	74.82	10.28	9.404E+00	4.478E-01	4.478E-01	80.06	OK
	77.11	17.10	9.382E+00	1.704E+00	1.704E+00	13.54	OK
	238.63	43.60*	5.476E+00	1.083E+00	1.083E+00	11.42	OK
	300.09	3.30	4.483E+00	1.645E+00	1.645E+00	68.26	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	609.32	45.49*	2.418E+00	8.813E-01	8.813E-01	22.84	OK
	1120.29	14.92	1.443E+00	8.896E-01	8.896E-01	56.43	OK
	1764.49	15.30	9.335E-01	1.386E+00	1.386E+00	37.02	OK
PA-231	283.69	1.70	4.715E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	4.483E+00	1.014E+00	1.014E+00	68.26	OK
TH-232	105.21	1.10	8.977E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.027E+00	1.176E+00	1.176E+00	43.10	OK
	835.71	1.61	1.856E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.724E+00	8.859E-01	8.859E-01	37.10	OK
	968.97	15.80	1.637E+00	1.177E+00	1.177E+00	27.51	OK
TH-234	63.29	3.70*	9.545E+00	1.013E+00	1.013E+00	104.75	OK
	92.59	4.23	9.202E+00	2.029E+00	2.029E+00	41.59	OK
U-234	609.32	45.49*	2.418E+00	8.813E-01	8.813E-01	22.84	OK
	1120.29	14.92	1.443E+00	8.896E-01	8.896E-01	56.43	OK
	1764.49	15.30	9.335E-01	1.386E+00	1.386E+00	37.02	OK
U-238	63.29	3.70*	9.545E+00	1.013E+00	1.013E+00	104.75	OK
	92.59	4.23	9.202E+00	2.029E+00	2.029E+00	41.59	OK
AM-243	43.53	5.90	8.344E+00	----- Line	Not Found	-----	Absent
	74.66	67.20*	9.404E+00	6.851E-02	6.851E-02	80.06	OK
ANH-511	511.00	100.00*	2.809E+00	1.484E-02	1.484E-02	482.27	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235047.CNF;1
* Acquisition date   : 3-OCT-2016 07:00:30 Sensitivity      : 3.000
* Detector ID        : GAM25 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.56 Half life ratio : *****
* Sample date       : 7-DEC-2015 10:10:00 Analyst initials: MXR1
* Sample ID         : G405235047 Sample Quantity : 1.5135E+02 GRAM
* Batch Number      : 1596252 Wet Weight      : 0.00000
* Wet wt corr       : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 1-AUG-2016 08:41:33 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM25 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.597E+01	1.573E+00	4.293E-01
AS-73	3.366E+00	3.124E+00	2.878E+00
CD-109	5.381E+00	2.088E+00	1.045E+00
SN-126	3.424E-01	1.329E-01	6.644E-02
HG-203	1.272E+00	3.352E+00	3.925E+00
TL-208	2.673E-01	8.178E-02	6.899E-02
PB-210	1.179E+00	1.022E+00	6.320E-01
PB-212	1.083E+00	1.212E-01	9.189E-02
BI-214	8.816E-01	1.974E-01	1.195E-01
PB-214	1.074E+00	1.849E-01	1.203E-01
RN-222	8.816E-01	1.974E-01	1.195E-01
RA-224	8.483E-01	1.339E+00	9.866E-01
RA-226	8.816E-01	1.974E-01	1.195E-01
AC-228	8.859E-01	3.221E-01	2.472E-01
RA-228	8.859E-01	3.221E-01	2.472E-01
TH-228	1.083E+00	1.212E-01	9.189E-02
TH-230	8.813E-01	1.973E-01	1.194E-01
PA-231	1.014E+00	6.786E-01	6.694E-01
TH-232	8.859E-01	3.221E-01	2.472E-01
TH-234	1.013E+00	1.040E+00	7.514E-01
U-234	8.813E-01	1.973E-01	1.194E-01
U-238	1.013E+00	1.040E+00	7.514E-01
AM-243	6.851E-02	5.375E-02	4.420E-02
ANH-511	1.484E-02	7.016E-02	4.474E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.498E+00	1.024E+01	1.979E+01	NOT IDENT.
NA-22	1.892E-02	4.591E-02	9.629E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	1.641E-02	1.857E-02	5.896E-02	NOT IDENT.
SC-46	2.375E-01	3.539E-01	7.786E-01	FAIL ABUN
V-48	0.000E+00	1.554E+04	0.000E+00	SHORT HLIF

CR-51	0.000E+00	3.623E+02	0.000E+00	SHORT HLIF
MN-54	3.114E-02	6.194E-02	1.311E-01	NOT IDENT.
CO-56	1.064E-02	4.034E-01	8.232E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	1.562E-02	3.077E-02	6.282E-02	NOT IDENT.
CO-58	5.071E-01	5.222E-01	1.195E+00	NOT IDENT.
FE-59	3.160E-01	7.548E+00	1.493E+01	NOT IDENT.
CO-60	3.414E-02	4.531E-02	9.255E-02	NOT IDENT.
ZN-65	1.009E-01	2.076E-01	3.865E-01	NOT IDENT.
GE-68	1.277E+00	2.743E+00	5.617E+00	NOT IDENT.
AS-74	0.000E+00	5.628E+03	0.000E+00	SHORT HLIF
SE-75	1.437E-01	1.597E-01	3.281E-01	NOT IDENT.
BR-77	0.000E+00	2.953E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.800E+02	0.000E+00	SHORT HLIF
RB-83	3.605E-01	5.972E-01	1.248E+00	NOT IDENT.
KR-85	4.580E-01	6.606E+00	1.160E+01	NOT IDENT.
SR-85	4.702E-02	7.055E-01	1.238E+00	NOT IDENT.
RB-86	0.000E+00	3.500E+04	0.000E+00	SHORT HLIF
Y-88	6.973E-02	1.498E-01	4.127E-01	NOT IDENT.
Y-91	7.802E+01	6.323E+02	1.220E+03	NOT IDENT.
NB-94	-9.474E-03	3.525E-02	6.307E-02	NOT IDENT.
NB-95	1.140E-01	8.681E-01	1.646E+00	NOT IDENT.
NB-95M	3.327E-01	2.338E+00	4.011E+00	NOT IDENT.
ZR-95	9.346E-01	1.592E+00	3.205E+00	NOT IDENT.
NB-97	0.000E+00	1.808E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.920E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-1.326E-02	2.612E-02	4.489E-02	NOT IDENT.
RH-102	-3.004E-02	5.983E-02	9.153E-02	NOT IDENT.
RU-103	-5.389E-01	5.149E+00	9.684E+00	FAIL ABUN
RH-106	2.099E-01	4.636E-01	9.457E-01	NOT IDENT.
RU-106	2.099E-01	4.636E-01	9.457E-01	NOT IDENT.
AG-108M	8.297E-03	2.274E-02	4.695E-02	NOT IDENT.
AG-110M	-4.504E-02	9.872E-02	1.840E-01	NOT IDENT.
SN-113	9.424E-03	2.025E-01	4.016E-01	NOT IDENT.
CD-115	0.000E+00	4.158E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	7.316E+04	0.000E+00	SHORT HLIF
TE-123M	4.133E-02	9.566E-02	1.902E-01	NOT IDENT.
SB-124	-1.156E+00	1.636E+00	2.812E+00	NOT IDENT.
SB-125	-1.212E-03	8.542E-02	1.687E-01	FAIL ABUN
TE-125M	1.087E+02	1.724E+02	3.564E+02	NOT IDENT.
I-126	0.000E+00	8.372E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.319E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.848E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.385E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	4.264E+26	0.000E+00	SHORT HLIF
BA-133	4.513E-02	3.874E-02	7.902E-02	FAIL ABUN
I-133	0.000E+00	1.076E+41	0.000E+00	SHORT HLIF
CS-134	6.562E-02	5.098E-02	1.153E-01	NOT IDENT.
CS-135	9.733E-02	1.108E-01	2.139E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.344E+05	0.000E+00	SHORT HLIF
BA-137M	5.086E-02	3.696E-02	8.035E-02	NOT IDENT.
CS-137	5.372E-02	3.904E-02	8.488E-02	NOT IDENT.
CE-139	3.480E-02	9.004E-02	1.761E-01	NOT IDENT.
BA-140	0.000E+00	1.194E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.190E+05	0.000E+00	SHORT HLIF
CE-141	-1.922E+01	1.915E+01	3.371E+01	NOT IDENT.
CE-143	0.000E+00	1.696E+41	0.000E+00	SHORT HLIF
CE-144	-2.232E-02	2.469E-01	4.765E-01	NOT IDENT.
PM-144	-4.633E-02	6.018E-02	8.427E-02	NOT IDENT.
PR-144	-4.041E+00	5.229E+00	7.316E+00	NOT IDENT.
PM-146	1.016E-02	3.492E-02	7.165E-02	NOT IDENT.
ND-147	0.000E+00	3.219E+07	0.000E+00	SHORT HLIF
PM-147	3.208E+02	5.398E+02	1.108E+03	NOT IDENT.
PM-149	0.000E+00	4.846E+40	0.000E+00	SHORT HLIF
EU-150	8.107E-03	2.252E-02	4.244E-02	FAIL ABUN
EU-152	4.306E-03	8.512E-02	1.540E-01	FAIL ABUN
GD-153	-4.498E-02	9.529E-02	1.812E-01	NOT IDENT.
EU-154	4.277E-02	1.118E-01	2.336E-01	NOT IDENT.
EU-155	5.468E-02	7.004E-02	1.454E-01	NOT IDENT.
TB-160	1.515E-01	1.780E+00	3.262E+00	FAIL ABUN
HO-166M	2.706E-03	5.909E-02	1.113E-01	NOT IDENT.
TM-171	0.000E+00	6.866E+00	6.828E+00	FAIL ABUN
HF-172	1.406E-01	1.631E-01	3.198E-01	FAIL ABUN
LU-172	5.697E-02	8.025E-02	1.724E-01	FAIL ABUN

LU-176	-4.754E-03	2.189E-02	3.866E-02	FAIL ABUN
HF-181	5.741E+00	5.637E+00	8.816E+00	FAIL ABUN
TA-182	6.906E-02	1.102E+00	2.100E+00	FAIL ABUN
RE-183	-3.469E-02	6.934E-01	1.427E+00	NOT IDENT.
RE-184	1.807E+01	2.820E+01	6.177E+01	NOT IDENT.
W-188	-5.588E+01	1.114E+02	1.726E+02	FAIL ABUN
IR-192	1.113E-01	3.827E-01	7.877E-01	FAIL ABUN
BI-207	-1.804E-02	4.080E-02	7.525E-02	FAIL ABUN
BI-211	0.000E+00	5.094E-01	7.673E-01	FAIL ABUN
PB-211	4.898E-01	5.806E-01	1.240E+00	NOT IDENT.
BI-212	0.000E+00	5.759E-01	1.156E+00	FAIL ABUN
RN-219	6.834E-02	3.174E-01	6.423E-01	FAIL ABUN
RA-223	1.866E-02	5.773E-01	1.045E+00	FAIL ABUN
AC-227	1.689E-01	1.997E-01	3.983E-01	FAIL ABUN
TH-227	1.689E-01	1.997E-01	3.983E-01	FAIL ABUN
TH-229	2.414E-01	3.557E-01	7.116E-01	FAIL ABUN
TH-231	1.866E-02	5.773E-01	1.045E+00	FAIL ABUN
PA-233	6.112E-03	4.972E-02	1.007E-01	FAIL ABUN
PA-234	2.434E-01	2.739E-01	6.077E-01	NOT IDENT.
PA-234M	2.972E+00	4.197E+00	9.205E+00	NOT IDENT.
U-235	6.915E-02	1.391E-01	2.752E-01	FAIL ABUN
NP-237	6.112E-03	4.972E-02	1.007E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	1.134E-01	1.602E-01	3.308E-01	FAIL ABUN
PU-239	2.625E+02	4.723E+02	4.801E+02	FAIL ABUN
AM-241	-2.899E-02	3.793E-02	6.903E-02	NOT IDENT.
CM-243	-1.313E-03	5.876E-02	1.166E-01	FAIL ABUN
BK-247	4.518E-02	5.654E-02	1.144E-01	FAIL ABUN
CM-247	5.547E-03	3.083E-02	6.176E-02	FAIL ABUN
CF-249	8.787E-03	3.316E-02	6.707E-02	NOT IDENT.
CF-251	-4.824E-02	9.093E-02	1.641E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	388	10.66*	1.131E+00	1.597E+01	1.597E+01	10.05
AS-73	53.44	50	10.30*	9.638E+00	2.507E-01	3.366E+00	94.70
CD-109	88.03	309	3.70*	9.265E+00	4.470E+00	7.025E+00	29.77
SN-126	64.28	72	9.60	9.545E+00	3.905E-01	3.905E-01	104.75
	86.94	309	8.90	9.265E+00	1.858E+00	1.858E+00	29.77
	87.57	309	37.00*	9.265E+00	4.470E-01	4.470E-01	29.77
HG-203	70.83	-----	3.69	9.445E+00	-----	Line Not Found	-----
	72.87	-----	6.19	9.424E+00	-----	Line Not Found	-----
	279.20	28	81.56*	4.801E+00	3.609E-02	3.174E+00	106.15
TL-208	277.37	28	6.60	4.801E+00	4.460E-01	4.460E-01	106.15
	583.19	115	85.00*	2.509E+00	2.673E-01	2.673E-01	31.22
	860.56	-----	12.50	1.810E+00	-----	Line Not Found	-----
PB-210	46.54	90	4.25*	9.157E+00	1.149E+00	1.179E+00	88.41
BI-211	72.87	-----	1.23	9.424E+00	-----	Line Not Found	-----
	351.06	300	12.92*	3.893E+00	2.959E+00	2.959E+00	17.57
PB-212	74.82	212	10.28	9.404E+00	1.088E+00	1.088E+00	29.55
	77.11	551	17.10	9.382E+00	1.704E+00	1.704E+00	13.54
	238.63	521	43.60*	5.476E+00	1.083E+00	1.083E+00	11.42
	300.09	49	3.30	4.483E+00	1.645E+00	1.645E+00	68.26
BI-214	609.32	195	45.49*	2.418E+00	8.813E-01	8.816E-01	22.84
	1120.29	39	14.92	1.443E+00	8.896E-01	8.899E-01	56.43
	1764.49	40	15.30	9.335E-01	1.386E+00	1.387E+00	37.02
PB-214	74.82	212	5.80	9.404E+00	1.929E+00	1.930E+00	29.55
	77.11	551	9.70	9.382E+00	3.005E+00	3.006E+00	13.54
	87.09	309	3.41	9.265E+00	4.850E+00	4.852E+00	29.77
	242.00	128	7.25	5.420E+00	1.615E+00	1.616E+00	44.59
	295.22	192	18.42	4.552E+00	1.135E+00	1.136E+00	24.72
	351.93	300	35.60*	3.893E+00	1.074E+00	1.074E+00	17.57
RN-222	609.32	195	45.49*	2.418E+00	8.813E-01	8.816E-01	22.84
	1120.29	39	14.92	1.443E+00	8.896E-01	8.899E-01	56.43
	1764.49	40	15.30	9.335E-01	1.386E+00	1.387E+00	37.02
RA-224	240.99	128	4.10*	5.420E+00	2.856E+00	2.856E+00	44.59
RA-226	609.32	195	45.49*	2.418E+00	8.813E-01	8.816E-01	22.84
	1120.29	39	14.92	1.443E+00	8.896E-01	8.899E-01	56.43
	1764.49	40	15.30	9.335E-01	1.386E+00	1.387E+00	37.02
AC-228	105.21	-----	1.10	8.977E+00	-----	Line Not Found	-----
	338.32	108	11.27	4.027E+00	1.176E+00	1.176E+00	43.10
	794.95	-----	4.25	1.935E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.856E+00	-----	Line Not Found	-----
	911.20	79	25.80*	1.724E+00	8.859E-01	8.859E-01	37.10
	968.97	61	15.80	1.637E+00	1.177E+00	1.177E+00	27.51
RA-228	105.21	-----	1.10	8.977E+00	-----	Line Not Found	-----
	338.32	108	11.27	4.027E+00	1.176E+00	1.176E+00	43.10
	794.95	-----	4.25	1.935E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.856E+00	-----	Line Not Found	-----
	911.20	79	25.80*	1.724E+00	8.859E-01	8.859E-01	37.10
	968.97	61	15.80	1.637E+00	1.177E+00	1.177E+00	27.51

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	212	10.28	9.404E+00	1.088E+00	1.088E+00	29.55
	77.11	551	17.10	9.382E+00	1.704E+00	1.704E+00	13.54
	238.63	521	43.60*	5.476E+00	1.083E+00	1.083E+00	11.42
	300.09	49	3.30	4.483E+00	1.645E+00	1.645E+00	68.26
TH-230	609.32	195	45.49*	2.418E+00	8.813E-01	8.813E-01	22.84
	1120.29	39	14.92	1.443E+00	8.896E-01	8.896E-01	56.43
	1764.49	40	15.30	9.335E-01	1.386E+00	1.386E+00	37.02
PA-231	283.69	-----	1.70	4.715E+00	-----	Line Not Found	-----
	301.36	49	5.35*	4.483E+00	1.014E+00	1.014E+00	68.26
TH-232	105.21	-----	1.10	8.977E+00	-----	Line Not Found	-----
	338.32	108	11.27	4.027E+00	1.176E+00	1.176E+00	43.10
	835.71	-----	1.61	1.856E+00	-----	Line Not Found	-----
	911.20	79	25.80*	1.724E+00	8.859E-01	8.859E-01	37.10
	968.97	61	15.80	1.637E+00	1.177E+00	1.177E+00	27.51
TH-234	63.29	72	3.70*	9.545E+00	1.013E+00	1.013E+00	104.75
	92.59	159	4.23	9.202E+00	2.029E+00	2.029E+00	41.59
U-234	609.32	195	45.49*	2.418E+00	8.813E-01	8.813E-01	22.84
	1120.29	39	14.92	1.443E+00	8.896E-01	8.896E-01	56.43
	1764.49	40	15.30	9.335E-01	1.386E+00	1.386E+00	37.02
U-238	63.29	72	3.70*	9.545E+00	1.013E+00	1.013E+00	104.75
	92.59	159	4.23	9.202E+00	2.029E+00	2.029E+00	41.59
AM-243	43.53	-----	5.90	8.344E+00	-----	Line Not Found	-----
	74.66	212	67.20*	9.404E+00	1.665E-01	1.665E-01	29.55
ANH-511	511.00	8	100.00*	2.809E+00	1.484E-02	1.484E-02	482.27

Flag: "*" = Keyline

Total number of lines in spectrum 47
Number of unidentified lines 11
Number of lines tentatively identified by NID 36 76.60%

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	1.597E+01	1.597E+01	0.160E+01	10.05	
AS-73	80.30D	13.4	2.507E-01	3.366E+00	3.188E+00	94.70	
CD-109	461.40D	1.57	4.470E+00	7.025E+00	2.091E+00	29.77	
SN-126	2.30E+05Y	1.00	4.470E-01	4.470E-01	1.331E-01	29.77	
HG-203	46.59D	87.9	3.609E-02	3.174E+00	3.369E+00	106.15	
TL-208	1.41E+10Y	1.00	2.673E-01	2.673E-01	0.834E-01	31.22	
PB-210	22.20Y	1.03	1.149E+00	1.179E+00	1.043E+00	88.41	
BI-211	7.04E+08Y	1.00	2.959E+00	2.959E+00	0.520E+00	17.57	
PB-212	1.41E+10Y	1.00	1.083E+00	1.083E+00	0.124E+00	11.42	
BI-214	1600.00Y	1.00	8.813E-01	8.816E-01	2.014E-01	22.84	
PB-214	1600.00Y	1.00	1.074E+00	1.074E+00	0.189E+00	17.57	
RN-222	1600.00Y	1.00	8.813E-01	8.816E-01	2.014E-01	22.84	
RA-224	1.41E+10Y	1.00	2.856E+00	2.856E+00	1.273E+00	44.59	
RA-226	1600.00Y	1.00	8.813E-01	8.816E-01	2.014E-01	22.84	
AC-228	1.41E+10Y	1.00	8.859E-01	8.859E-01	3.286E-01	37.10	
RA-228	1.41E+10Y	1.00	8.859E-01	8.859E-01	3.286E-01	37.10	
TH-228	1.41E+10Y	1.00	1.083E+00	1.083E+00	0.124E+00	11.42	
TH-230	7.54E+04Y	1.00	8.813E-01	8.813E-01	2.013E-01	22.84	
PA-231	7.04E+08Y	1.00	1.014E+00	1.014E+00	0.692E+00	68.26	
TH-232	1.41E+10Y	1.00	8.859E-01	8.859E-01	3.286E-01	37.10	
TH-234	4.47E+09Y	1.00	1.013E+00	1.013E+00	1.061E+00	104.75	
U-234	2.45E+05Y	1.00	8.813E-01	8.813E-01	2.013E-01	22.84	
U-238	4.47E+09Y	1.00	1.013E+00	1.013E+00	1.061E+00	104.75	
AM-243	7370.00Y	1.00	1.665E-01	1.665E-01	0.492E-01	29.55	
ANH-511	1.00E+09Y	1.00	1.484E-02	1.484E-02	7.159E-02	482.27	

Total Activity : 4.193E+01 5.077E+01

Grand Total Activity : 4.193E+01 5.077E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	83.83	41	181	1.14	167.14	165	6	8.93E-03	****	9.32E+00	T
0	129.09	28	169	0.78	257.66	254	8	6.33E-03	****	8.36E+00	T
0	186.02	103	159	1.12	371.50	368	9	2.40E-02	55.3	6.69E+00	T
0	209.42	43	125	0.99	418.30	414	9	1.01E-02	****	6.10E+00	T
0	270.41	50	95	0.79	540.29	535	10	1.22E-02	82.9	4.92E+00	T
4	276.52	20	14	0.83	552.49	551	9	4.79E-03	73.7	4.82E+00	T
0	328.32	46	66	2.39	656.11	651	10	1.13E-02	76.5	4.14E+00	T
0	447.74	23	11	2.19	894.95	892	7	5.97E-03	66.0	3.15E+00	
0	464.79	15	54	0.90	929.06	922	11	3.80E-03	****	3.05E+00	T
0	482.67	20	25	1.77	964.83	962	8	5.14E-03	****	2.95E+00	T
0	556.69	16	23	0.64	1112.89	1105	11	4.10E-03	****	2.61E+00	
0	588.90	9	20	1.25	1177.33	1174	7	2.36E-03	****	2.49E+00	
0	626.45	38	47	7.10	1252.45	1238	21	1.01E-02	****	2.36E+00	
0	690.83	17	19	2.00	1381.24	1372	12	4.61E-03	****	2.18E+00	
0	694.35	10	14	1.38	1388.28	1385	6	2.71E-03	****	2.17E+00	T
0	727.11	38	8	1.72	1453.82	1449	10	1.02E-02	43.1	2.09E+00	T
0	797.89	31	29	5.52	1595.43	1586	18	8.39E-03	93.6	1.93E+00	
0	877.76	4	17	1.25	1755.24	1749	8	1.17E-03	****	1.78E+00	
0	922.94	8	5	1.72	1845.64	1841	7	2.16E-03	****	1.71E+00	T
0	964.31	22	6	1.90	1928.42	1922	11	5.92E-03	61.0	1.64E+00	T
0	1009.53	5	10	0.67	2018.92	2013	8	1.35E-03	****	1.58E+00	
0	1154.11	9	19	0.42	2308.26	2297	13	2.51E-03	****	1.41E+00	
0	1178.35	18	13	4.77	2356.78	2351	13	5.00E-03	95.1	1.38E+00	T
0	1258.31	16	17	1.86	2516.80	2509	17	4.57E-03	****	1.30E+00	
0	1338.77	5	9	4.35	2677.86	2668	11	1.39E-03	****	1.23E+00	

Flags: "T" = Tentatively associated

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*****
*
*                               GEL Laboratories LLC
*                               2040 Savage Road
*                               Charleston, SC 29407
*
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235047.CNF;1
* Acquisition date   : 3-OCT-2016 07:00:30 Sensitivity      : 3.000
* Detector ID        : GAM25 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.56 Half life ratio  : *****
* Sample date        : 7-DEC-2015 10:10:00 Nuclide Library : SOLID
* Sample ID          : G405235047 Analyst initials: MXR1
* Batch Number       : 1596252 Sample Quantity : 1.5135E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000
*                               Dry Weight      : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 1-AUG-2016 08:41:33 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF_GAM25_CAN.CNF;15
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NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Lc (pCi/GRAM)
K-40	1.586E-01
AS-73	1.341E+00
CD-109	4.897E-01
SN-126	3.112E-02
HG-203	1.804E+00
TL-208	3.126E-02
PB-210	2.967E-01
PB-212	4.300E-02
BI-214	5.348E-02
PB-214	5.512E-02
RN-222	5.348E-02
RA-224	4.618E-01
RA-226	5.348E-02
AC-228	1.083E-01
RA-228	1.083E-01
TH-228	4.300E-02
TH-230	5.346E-02
PA-231	3.054E-01
TH-232	1.083E-01
TH-234	3.552E-01
U-234	5.346E-02
U-238	3.552E-01
AM-243	2.096E-02
ANH-511	1.991E-02

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MN-54	5.836E-02	NOT IDENT.
CO-56	3.561E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	2.931E-02	NOT IDENT.
CO-58	5.290E-01	NOT IDENT.
FE-59	6.575E+00	NOT IDENT.
CO-60	4.017E-02	NOT IDENT.
ZN-65	1.715E-01	NOT IDENT.
GE-68	2.504E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.505E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.613E-01	NOT IDENT.
KR-85	5.199E+00	NOT IDENT.
SR-85	5.549E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.528E-01	NOT IDENT.
Y-91	5.420E+02	NOT IDENT.
NB-94	2.833E-02	NOT IDENT.
NB-95	7.335E-01	NOT IDENT.
NB-95M	1.873E+00	NOT IDENT.
ZR-95	1.440E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.096E-02	NOT IDENT.
RH-102	3.966E-02	NOT IDENT.
RU-103	4.306E+00	FAIL ABUN
RH-106	4.217E-01	NOT IDENT.
RU-106	4.217E-01	NOT IDENT.
AG-108M	2.110E-02	NOT IDENT.
AG-110M	7.976E-02	NOT IDENT.
SN-113	1.823E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	8.857E-02	NOT IDENT.
SB-124	9.427E-01	NOT IDENT.
SB-125	7.561E-02	FAIL ABUN
TE-125M	1.669E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.643E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	5.220E-02	NOT IDENT.
CS-135	9.808E-02	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.673E-02	NOT IDENT.
CS-137	3.880E-02	NOT IDENT.
CE-139	8.247E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.571E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.220E-01	NOT IDENT.
PM-144	3.646E-02	NOT IDENT.
PR-144	3.164E+00	NOT IDENT.
PM-146	3.202E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	5.177E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.941E-02	FAIL ABUN
EU-152	7.013E-02	FAIL ABUN
GD-153	8.412E-02	NOT IDENT.
EU-154	1.007E-01	NOT IDENT.
EU-155	6.846E-02	NOT IDENT.
TB-160	1.403E+00	FAIL ABUN
HO-166M	4.969E-02	NOT IDENT.
TM-171	3.197E+00	FAIL ABUN
HF-172	1.498E-01	FAIL ABUN
LU-172	7.630E-02	FAIL ABUN
LU-176	1.763E-02	FAIL ABUN

HF-181	4.009E+00	FAIL ABUN
TA-182	9.341E-01	FAIL ABUN
RE-183	6.703E-01	NOT IDENT.
RE-184	2.715E+01	NOT IDENT.
W-188	7.878E+01	FAIL ABUN
IR-192	3.605E-01	FAIL ABUN
BI-207	3.148E-02	FAIL ABUN
BI-211	3.700E-01	FAIL ABUN
PB-211	5.664E-01	NOT IDENT.
BI-212	5.288E-01	FAIL ABUN
RN-219	2.907E-01	FAIL ABUN
RA-223	4.807E-01	FAIL ABUN
AC-227	1.848E-01	FAIL ABUN
TH-227	1.848E-01	FAIL ABUN
TH-229	3.311E-01	FAIL ABUN
TH-231	4.807E-01	FAIL ABUN
PA-233	4.615E-02	FAIL ABUN
PA-234	2.699E-01	NOT IDENT.
PA-234M	4.094E+00	NOT IDENT.
U-235	1.294E-01	FAIL ABUN
NP-237	4.615E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.551E-01	FAIL ABUN
PU-239	2.265E+02	FAIL ABUN
AM-241	3.240E-02	NOT IDENT.
CM-243	5.442E-02	FAIL ABUN
BK-247	5.254E-02	FAIL ABUN
CM-247	2.809E-02	FAIL ABUN
CF-249	3.058E-02	NOT IDENT.
CF-251	7.613E-02	NOT IDENT.

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*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                          *
*                               Charleston, SC 29407                      *
*                               *****                                  *
*                               *                                         *
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235047.CNF;1 *
* Acquisition date   : 3-OCT-2016 07:00:30 Sensitivity      : 3.000        *
* Detector ID       : GAM25 Energy tolerance: 1.500        *
* Elapsed live time : 0 01:00:00.00 Abundance limit : 75.000    *
* Elapsed real time : 0 01:00:00.56 Half life ratio : *****    *
* Sample date       : 7-DEC-2015 10:10:00 Nuclide Library : SOLID    *
* Sample ID        : G405235047 Analyst initials: MXR1        *
* Batch Number     : 1596252 Sample Quantity : 1.5135E+02 GRAM  *
*                               Quantity Err(%) : 1.3214E-03 %    *
* Wet wt corr      : 1.00000 Wet Weight : 0.00000          *
*                               Dry Weight : 0.00000          *
*                               *****                                  *
*                               *                                         *
*                               CALIBRATION INFORMATION                   *
*                               *                                         *
* Eff. Cal. date    : 1-AUG-2016 08:41:33 Eff. Geometry   : CAN      *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM25 CAN.CNF;15    *
*                               *****                                  *

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.597E+01	1.780E+00	1.780E+00
AS-73	3.366E+00	3.200E+00	3.200E+00
CD-109	5.381E+00	2.143E+00	2.143E+00
SN-126	3.424E-01	1.352E-01	1.352E-01
HG-203	1.272E+00	3.359E+00	3.359E+00
TL-208	2.673E-01	8.256E-02	8.256E-02
PB-210	1.179E+00	1.026E+00	1.026E+00
PB-212	1.083E+00	1.341E-01	1.341E-01
BI-214	8.816E-01	2.010E-01	2.010E-01
PB-214	1.074E+00	1.902E-01	1.902E-01
RN-222	8.816E-01	2.010E-01	2.010E-01
RA-224	8.483E-01	1.347E+00	1.347E+00
RA-226	8.816E-01	2.010E-01	2.010E-01
AC-228	8.859E-01	3.252E-01	3.252E-01
RA-228	8.859E-01	3.252E-01	3.252E-01
TH-228	1.083E+00	1.341E-01	1.341E-01
TH-230	8.813E-01	2.009E-01	2.009E-01
PA-231	1.014E+00	7.123E-01	7.123E-01
TH-232	8.859E-01	3.252E-01	3.252E-01
TH-234	1.013E+00	1.064E+00	1.064E+00
U-234	8.813E-01	2.009E-01	2.009E-01
U-238	1.013E+00	1.064E+00	1.064E+00
AM-243	6.851E-02	5.532E-02	5.532E-02
ANH-511	1.484E-02	7.016E-02	7.016E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-1.498E+00	1.024E+01	1.026E+01	NOT IDENT.
NA-22	1.892E-02	4.592E-02	4.671E-02	NOT IDENT.
NA-24	-1.000E+41	2.491E+41	0.000E+00	SHORT HLIF
AL-26	1.641E-02	1.860E-02	2.001E-02	NOT IDENT.
SC-46	2.375E-01	3.540E-01	3.699E-01	FAIL ABUN
V-48	5.650E+03	1.554E+04	1.575E+04	SHORT HLIF

CR-51	-3.670E+02	3.627E+02	3.986E+02	SHORT HLIF
MN-54	3.114E-02	6.196E-02	6.353E-02	NOT IDENT.
CO-56	1.064E-02	4.034E-01	4.035E-01	NOT IDENT.
MN-56	1.000E+41	4.464E+42	0.000E+00	SHORT HLIF
CO-57	1.562E-02	3.077E-02	3.157E-02	NOT IDENT.
CO-58	5.071E-01	5.227E-01	5.705E-01	NOT IDENT.
FE-59	3.160E-01	7.548E+00	7.550E+00	NOT IDENT.
CO-60	3.414E-02	4.533E-02	4.787E-02	NOT IDENT.
ZN-65	1.009E-01	2.076E-01	2.126E-01	NOT IDENT.
GE-68	1.277E+00	2.743E+00	2.803E+00	NOT IDENT.
AS-74	1.744E+03	5.630E+03	5.684E+03	SHORT HLIF
SE-75	1.437E-01	1.598E-01	1.725E-01	NOT IDENT.
BR-77	2.638E+38	2.291E+39	0.000E+00	SHORT HLIF
SR-82	2.920E+02	6.801E+02	6.927E+02	SHORT HLIF
RB-83	3.605E-01	5.992E-01	6.209E-01	NOT IDENT.
KR-85	4.580E-01	6.606E+00	6.609E+00	NOT IDENT.
SR-85	4.702E-02	7.055E-01	7.058E-01	NOT IDENT.
RB-86	1.543E+04	3.501E+04	3.569E+04	SHORT HLIF
Y-88	6.973E-02	1.498E-01	1.531E-01	NOT IDENT.
Y-91	7.802E+01	6.323E+02	6.333E+02	NOT IDENT.
NB-94	-9.474E-03	3.525E-02	3.551E-02	NOT IDENT.
NB-95	1.140E-01	8.681E-01	8.696E-01	NOT IDENT.
NB-95M	3.327E-01	2.339E+00	2.343E+00	NOT IDENT.
ZR-95	9.346E-01	1.593E+00	1.648E+00	NOT IDENT.
NB-97	-1.000E+41	1.809E+41	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	2.320E+41	0.000E+00	SHORT HLIF
MO-99	1.127E+32	1.921E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	3.386E+41	0.000E+00	SHORT HLIF
RH-101	-1.326E-02	2.623E-02	2.691E-02	NOT IDENT.
RH-102	-3.004E-02	5.988E-02	6.139E-02	NOT IDENT.
RU-103	-5.389E-01	5.149E+00	5.155E+00	FAIL ABUN
RH-106	2.099E-01	4.638E-01	4.733E-01	NOT IDENT.
RU-106	2.099E-01	4.638E-01	4.733E-01	NOT IDENT.
AG-108M	8.297E-03	2.274E-02	2.305E-02	NOT IDENT.
AG-110M	-4.504E-02	9.874E-02	1.008E-01	NOT IDENT.
SN-113	9.424E-03	2.025E-01	2.025E-01	NOT IDENT.
CD-115	3.397E+37	4.158E+39	0.000E+00	SHORT HLIF
SN-117M	2.569E+04	7.323E+04	7.414E+04	SHORT HLIF
TE-123M	4.133E-02	9.568E-02	9.747E-02	NOT IDENT.
SB-124	-1.156E+00	1.637E+00	1.718E+00	NOT IDENT.
SB-125	-1.212E-03	8.542E-02	8.542E-02	FAIL ABUN
TE-125M	1.087E+02	1.725E+02	1.793E+02	NOT IDENT.
I-126	3.238E+05	8.383E+05	8.510E+05	SHORT HLIF
SB-126	-3.794E+04	1.319E+06	1.319E+06	SHORT HLIF
SB-127	-8.473E+21	3.079E+22	0.000E+00	SHORT HLIF
I-131	1.985E+09	4.386E+09	4.477E+09	SHORT HLIF
I-132	-1.000E+41	2.025E+42	0.000E+00	SHORT HLIF
TE-132	1.425E+26	4.303E+26	0.000E+00	SHORT HLIF
BA-133	4.513E-02	3.879E-02	4.380E-02	FAIL ABUN
I-133	1.000E+41	2.110E+41	0.000E+00	SHORT HLIF
CS-134	6.562E-02	5.105E-02	5.901E-02	NOT IDENT.
CS-135	9.733E-02	1.110E-01	1.194E-01	NOT IDENT.
I-135	1.000E+41	8.825E+41	0.000E+00	SHORT HLIF
CS-136	9.445E+04	3.345E+05	3.372E+05	SHORT HLIF
BA-137M	5.086E-02	3.702E-02	4.354E-02	NOT IDENT.
CS-137	5.372E-02	3.911E-02	4.600E-02	NOT IDENT.
CE-139	3.480E-02	9.031E-02	9.167E-02	NOT IDENT.
BA-140	-6.689E+04	1.194E+06	1.194E+06	SHORT HLIF
LA-140	-3.217E+05	4.193E+05	4.436E+05	SHORT HLIF
CE-141	-1.922E+01	1.917E+01	2.103E+01	NOT IDENT.
CE-143	1.000E+41	1.699E+41	0.000E+00	SHORT HLIF
CE-144	-2.232E-02	2.469E-01	2.471E-01	NOT IDENT.
PM-144	-4.633E-02	6.025E-02	6.377E-02	NOT IDENT.
PR-144	-4.041E+00	5.232E+00	5.540E+00	NOT IDENT.
PM-146	1.016E-02	3.493E-02	3.523E-02	NOT IDENT.
ND-147	-1.229E+06	3.219E+07	3.219E+07	SHORT HLIF
PM-147	3.208E+02	5.400E+02	5.590E+02	NOT IDENT.
PM-149	-1.762E+40	4.862E+40	0.000E+00	SHORT HLIF
EU-150	8.107E-03	2.253E-02	2.282E-02	FAIL ABUN
EU-152	4.306E-03	8.512E-02	8.514E-02	FAIL ABUN
GD-153	-4.498E-02	9.532E-02	9.746E-02	NOT IDENT.
EU-154	4.277E-02	1.118E-01	1.134E-01	NOT IDENT.
EU-155	5.468E-02	7.015E-02	7.435E-02	NOT IDENT.
TB-160	1.515E-01	1.780E+00	1.781E+00	FAIL ABUN
HO-166M	2.706E-03	5.909E-02	5.910E-02	NOT IDENT.
TM-171	7.398E+00	6.896E+00	7.660E+00	FAIL ABUN
HF-172	1.406E-01	1.647E-01	1.764E-01	FAIL ABUN
LU-172	5.697E-02	8.045E-02	8.445E-02	FAIL ABUN

LU-176	-4.754E-03	2.190E-02	2.200E-02	FAIL ABUN
HF-181	5.741E+00	5.643E+00	6.208E+00	FAIL ABUN
TA-182	6.906E-02	1.102E+00	1.102E+00	FAIL ABUN
RE-183	-3.469E-02	6.934E-01	6.936E-01	NOT IDENT.
RE-184	1.807E+01	2.853E+01	2.967E+01	NOT IDENT.
W-188	-5.588E+01	1.116E+02	1.144E+02	FAIL ABUN
IR-192	1.113E-01	3.827E-01	3.860E-01	FAIL ABUN
BI-207	-1.804E-02	4.081E-02	4.161E-02	FAIL ABUN
BI-211	2.959E+00	5.262E-01	1.434E+00	FAIL ABUN
PB-211	4.898E-01	5.811E-01	6.217E-01	NOT IDENT.
BI-212	1.362E+00	5.800E-01	8.448E-01	FAIL ABUN
RN-219	6.834E-02	3.175E-01	3.190E-01	FAIL ABUN
RA-223	1.866E-02	5.773E-01	5.774E-01	FAIL ABUN
AC-227	1.689E-01	2.010E-01	2.149E-01	FAIL ABUN
TH-227	1.689E-01	2.010E-01	2.149E-01	FAIL ABUN
TH-229	2.414E-01	3.559E-01	3.722E-01	FAIL ABUN
TH-231	1.866E-02	5.773E-01	5.774E-01	FAIL ABUN
PA-233	6.112E-03	4.973E-02	4.980E-02	FAIL ABUN
PA-234	2.434E-01	3.906E-01	4.057E-01	NOT IDENT.
PA-234M	2.972E+00	4.199E+00	4.407E+00	NOT IDENT.
U-235	6.915E-02	1.392E-01	1.426E-01	FAIL ABUN
NP-237	6.112E-03	4.973E-02	4.980E-02	FAIL ABUN
NP-238	-1.000E+41	2.115E+41	0.000E+00	SHORT HLIF
NP-239	1.134E-01	1.605E-01	1.684E-01	FAIL ABUN
PU-239	2.625E+02	4.724E+02	4.870E+02	FAIL ABUN
AM-241	-2.899E-02	3.799E-02	4.018E-02	NOT IDENT.
CM-243	-1.313E-03	5.876E-02	5.876E-02	FAIL ABUN
BK-247	4.518E-02	5.727E-02	6.078E-02	FAIL ABUN
CM-247	5.547E-03	3.085E-02	3.095E-02	FAIL ABUN
CF-249	8.787E-03	3.316E-02	3.340E-02	NOT IDENT.
CF-251	-4.824E-02	9.109E-02	9.365E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	80.6820	87.09	73.3472	136.47	50.2703
45.60	78.6121	87.57	73.4542	140.51	0.0000
46.54	78.9743	88.03	73.5565	143.76	60.8629
49.72	0.0000	88.34	73.6254	144.24	63.8713
51.35	58.3366	88.47	73.6543	145.44	76.8336
51.87	76.4654	89.96	73.9830	152.43	72.9209
52.39	74.1385	1093.63	60.3400	153.25	0.0000
52.97	61.7740	91.11	0.0000	323.87	71.1712
53.44	61.9020	92.59	69.3549	156.02	0.0000
54.07	62.0727	93.35	69.5074	158.56	0.0000
57.36	0.0000	94.56	68.5873	159.00	52.6070
57.53	80.6626	94.65	67.4419	162.33	53.9567
57.98	76.1945	94.67	67.4460	162.66	0.0000
59.27	93.8785	94.87	67.4844	163.33	63.2365
59.32	93.8974	97.43	62.4067	165.86	64.5573
59.54	93.9817	98.43	67.8691	176.31	54.2923
60.96	93.4804	98.44	67.8708	176.60	0.0000
61.17	93.5587	99.53	49.5093	177.52	66.9619
62.93	99.7037	100.11	61.0994	181.07	0.0000
63.29	99.8432	102.03	63.1992	181.52	66.3713
63.58	99.9551	103.18	66.0728	184.41	79.0491
64.28	113.6404	103.37	66.1067	143.76	67.9053
66.73	108.3242	105.21	67.3273	193.51	46.2137
67.24	101.3475	105.31	67.3450	197.03	59.4463
125.81	101.5122	106.12	69.2878	198.01	58.4561
67.75	99.1398	106.47	70.2519	201.83	55.5423
69.67	89.3703	109.28	58.9692	203.43	57.8652
70.83	112.3797	111.00	76.5396	205.31	58.3993
72.81	117.2373	111.76	0.0000	210.85	54.4777
72.87	130.2905	114.06	73.4540	215.65	55.6122
74.66	112.2532	116.30	0.0000	222.11	64.0015
74.82	112.3138	116.74	59.1504	227.09	47.4967
74.97	112.3713	119.76	68.8906	227.38	50.9106
77.11	113.1866	121.12	55.1032	228.16	0.0000
78.74	113.7991	121.22	55.1162	228.18	52.1010
79.69	114.1534	121.78	57.9949	116.74	52.1010
80.12	114.3133	122.06	54.2892	235.69	62.5702
80.19	0.0000	122.92	64.7154	235.96	62.5936
80.57	80.2192	123.07	65.6763	238.63	71.2504
81.00	87.0248	265.00	75.1648	238.98	0.0000
81.07	87.0446	125.81	52.8743	240.99	71.4794
81.75	87.2343	127.23	79.5671	242.00	71.5768
83.79	77.6685	127.91	70.8360	244.70	50.9811
84.00	77.7198	129.30	71.3745	252.40	0.0000
85.43	95.0375	131.20	67.5364	252.80	40.9889
86.55	73.2265	133.02	60.4506	254.15	0.0000
86.79	73.2796	133.52	64.3593	256.23	38.8184
86.94	73.3138	136.00	53.1168	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	26.1572	355.39	0.0000	584.27	31.4380
264.80	32.1078	356.01	26.2988	595.83	0.0000
265.00	28.5476	364.49	0.0000	427.87	25.4111
268.22	25.4772	366.42	0.0000	602.52	0.0000
269.46	26.3137	372.51	32.0618	604.72	19.1067
270.03	26.3325	375.05	34.8161	607.14	27.1083
271.23	26.3714	377.52	28.6328	609.32	24.4843
273.65	0.0000	356.01	39.6011	610.33	24.4993
276.40	36.9922	388.16	31.6248	614.28	24.0244
277.37	41.0609	388.63	0.0000	618.01	25.6846
277.60	41.0723	391.69	31.7259	620.36	17.6830
278.00	41.0920	264.66	25.5841	621.93	17.1634
279.20	43.5718	401.81	27.4396	630.19	0.0000
279.54	35.5173	402.40	31.1141	631.29	21.0361
279.70	35.5244	404.85	24.7615	633.25	24.8409
280.46	40.4053	410.95	31.3472	634.78	0.0000
283.69	31.6375	413.71	28.6494	635.95	24.8802
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	26.8246	423.72	0.0000	645.85	19.5850
285.90	0.0000	427.09	28.9761	657.76	27.3905
287.50	34.2241	427.87	25.2537	657.90	0.0000
290.67	47.4365	433.94	21.6210	661.66	17.5690
293.27	0.0000	439.40	25.4949	664.57	0.0000
351.93	36.1752	453.88	20.0618	666.33	0.0000
295.96	36.2057	463.37	15.3997	666.50	0.0000
879.38	19.8076	468.07	20.2861	667.71	0.0000
299.98	28.1051	473.00	0.0000	677.62	19.9446
300.09	28.1085	475.06	24.2803	685.70	0.0000
300.13	28.1099	476.78	17.5045	695.00	0.0000
301.36	36.4277	477.60	22.3809	696.49	25.1917
302.85	31.5128	482.18	20.5057	696.51	25.1926
256.23	23.2627	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	21.8431
306.78	39.9805	497.08	21.7216	697.49	21.8447
308.46	33.3789	505.52	23.8423	702.65	30.3322
311.90	38.5308	507.63	0.0000	706.68	21.3912
316.51	34.5145	511.00	21.9418	711.68	22.5781
319.41	0.0000	514.00	23.9873	720.70	0.0000
320.08	0.0000	514.00	23.9883	721.93	0.0000
321.04	39.7586	520.40	19.0765	722.78	20.4404
323.87	40.7266	520.69	0.0000	722.91	20.4419
325.23	43.3342	522.65	0.0000	723.31	15.3347
328.76	0.0000	527.90	0.0000	724.19	17.0465
333.37	29.5642	528.26	27.2593	727.33	19.3512
333.97	32.1548	529.59	17.1785	733.00	14.8424
334.37	28.3077	529.87	0.0000	735.93	14.8646
338.28	34.4507	531.02	0.0000	333.97	13.7324
338.32	34.4515	537.26	0.0000	739.50	0.0000
311.90	34.5272	546.56	0.0000	747.24	19.5525
340.48	34.5272	552.55	16.9364	748.06	16.1089
340.55	0.0000	563.25	16.5404	752.31	24.2163
344.28	33.7941	569.33	29.0618	753.82	0.0000
345.93	32.9817	946.00	30.1021	756.73	18.4922
351.06	40.1293	569.70	32.1832	756.80	18.4928
351.93	40.1639	583.19	31.4172	884.68	28.9998

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	20.8989	1274.44	13.5108	1620.50	4.7026
766.42	23.2284	1001.03	10.6358	1621.92	6.5861
766.84	20.9099	1002.74	17.6920	1678.03	0.0000
772.60	0.0000	1004.73	23.2390	1690.97	4.7864
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	1.9488
778.90	20.1594	1028.54	0.0000	1063.66	17.5641
783.70	0.0000	1037.84	12.7509	1771.35	1.9521
785.37	19.3447	1038.76	0.0000	1791.20	0.0000
792.07	15.5268	631.29	15.7461	1808.65	0.0000
794.95	14.1348	1048.07	0.0000	1810.72	0.0000
795.86	14.1411	1049.04	9.8505	1836.06	0.9908
810.06	14.2383	1050.41	10.8409		
810.29	12.4598	1063.66	12.8762		
344.28	12.4611	1077.00	0.0000		
810.76	9.7922	1077.34	16.9243		
815.77	0.0000	1085.87	9.9872		
1048.07	0.0000	1093.63	12.0183		
832.01	19.7817	1099.45	15.0549		
834.85	16.2065	1112.07	18.1494		
835.71	16.2131	1112.84	28.2393		
836.80	0.0000	1115.54	14.5371		
846.75	0.0000	1120.29	15.1685		
846.77	13.5800	1120.55	15.1703		
856.80	0.0000	1221.41	9.7113		
860.56	13.6661	1129.67	7.1025		
871.09	17.0876	1131.51	0.0000		
873.19	11.7281	1147.95	0.0000		
875.33	0.0000	1173.23	11.5384		
879.38	11.7605	1177.95	18.5735		
880.51	13.2372	1189.05	15.5365		
883.24	14.7261	1204.77	19.7839		
884.68	19.3401	1221.41	20.9412		
889.28	11.0739	1231.02	16.8066		
894.76	13.8757	1235.36	0.0000		
898.04	16.6750	1238.28	17.8996		
900.72	21.3316	1260.41	0.0000		
903.28	11.1420	1271.87	11.7083		
911.20	16.7701	1274.44	9.5872		
912.08	16.7767	1274.54	9.5878		
923.98	0.0000	1291.59	9.6394		
926.50	10.5034	1298.22	0.0000		
929.11	17.8380	1312.11	0.0000		
937.49	16.9590	1332.49	6.9422		
944.13	0.0000	1362.66	0.0000		
946.00	11.3463	1365.19	7.6686		
949.00	21.7738	1368.63	0.0000		
667.71	0.0000	1384.29	6.6105		
962.31	16.7535	1408.01	5.5472		
964.08	9.1450	1457.56	0.0000		
966.17	0.0000	1460.82	2.7032		
911.20	3.0544	1489.16	5.4492		
968.97	3.0544	1505.03	10.0343		
983.53	0.0000	1584.12	9.3169		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:03:55.47

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235048.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM28.CNF;265
Background date    : Z-OCT-2016 11:01:35.
Sample date       : 7-DEC-2015 13:28:00. Acquisition date : 3-OCT-2016 07:00:55.
Sample ID        : G405235048 Sample quantity : 1.31577E+02 GRAM
Detector name    : GAM28 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.46 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596252 Detector SN# :
Matrix Spike ID  : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.54*	30	134	1.88	127.16	124	7	8.42E-03	67.7	
2	2	75.02*	110	164	1.35	150.13	145	19	3.06E-02	22.6	1.09E+00
3	2	77.22	231	123	1.22	154.53	145	19	6.41E-02	10.8	
4	2	79.44	52	121	1.36	158.97	145	19	1.44E-02	47.1	
5	0	87.82	69	247	3.04	175.75	172	10	1.91E-02	44.3	
6	2	92.89*	58	171	1.25	185.90	181	13	1.62E-02	41.8	7.13E-01
7	2	95.17	25	122	1.12	190.46	181	13	6.89E-03	86.9	
8	0	105.77	18	100	1.24	211.67	208	6	5.13E-03	88.7	
9	0	115.15	30	139	0.65	230.46	227	10	8.20E-03	77.7	
10	0	128.10	15	128	1.28	256.36	254	8	4.25E-03	129.8	
11	0	140.47*	18	134	1.82	281.13	275	9	4.97E-03	120.5	
12	0	144.18*	18	86	1.36	288.55	286	6	5.03E-03	87.4	
13	0	185.94*	65	174	1.59	372.14	367	11	1.81E-02	42.4	
14	3	238.97*	416	83	1.39	478.27	474	17	1.15E-01	6.3	4.18E-01
15	3	241.98	118	66	1.57	484.30	474	17	3.28E-02	17.7	
16	0	271.68	35	97	2.26	543.75	536	12	9.61E-03	59.2	
17	0	295.65	148	110	1.50	591.71	586	11	4.12E-02	16.0	
18	0	338.88	84	78	0.97	678.25	672	10	2.34E-02	22.3	
19	0	352.49*	304	60	1.56	705.49	698	16	8.44E-02	8.3	
20	0	428.57	23	50	4.00	857.75	851	12	6.45E-03	64.7	
21	0	496.82	14	24	1.08	994.35	990	8	3.81E-03	69.2	
22	0	510.95*	71	59	1.78	1022.64	1014	16	1.98E-02	30.7	
23	0	583.58*	136	19	1.65	1168.00	1163	11	3.77E-02	10.8	
24	0	599.58	32	34	3.31	1200.03	1192	14	8.93E-03	42.7	
25	0	609.81*	187	39	1.98	1220.52	1215	12	5.21E-02	10.1	
26	0	653.27	17	9	1.37	1307.50	1303	8	4.59E-03	41.1	
27	0	662.11*	508	49	1.84	1325.18	1318	15	1.41E-01	5.4	
28	0	679.99*	16	17	0.80	1360.96	1357	8	4.47E-03	52.7	
29	0	727.75	28	16	2.07	1456.57	1452	10	7.85E-03	31.9	
30	0	783.28	13	22	1.73	1567.70	1562	10	3.58E-03	74.1	
31	0	795.70	35	9	3.72	1592.56	1587	12	9.81E-03	23.9	
32	0	861.65	12	18	0.58	1724.56	1721	9	3.32E-03	72.7	
33	0	912.02*	88	32	1.56	1825.38	1820	14	2.45E-02	17.4	
34	0	955.13	17	22	2.23	1911.65	1902	15	4.66E-03	66.2	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	969.93	49	23	2.70	1941.28	1936	11	1.37E-02	24.0	
36	0	1000.35*	23	0	2.62	2002.17	1996	12	6.37E-03	23.9	
37	0	1120.64*	64	15	2.10	2242.92	2235	15	1.78E-02	18.4	
38	0	1461.76*	397	3	2.14	2925.67	2919	13	1.10E-01	5.1	
39	0	1510.25	9	4	1.43	3022.72	3018	8	2.50E-03	50.9	
40	0	1517.03	5	5	0.72	3036.30	3030	10	1.39E-03	94.9	
41	0	1631.84	12	0	0.62	3266.08	3261	10	3.33E-03	28.9	
42	0	1766.05*	36	7	1.49	3534.71	3527	12	1.01E-02	22.3	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235048.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 7-DEC-2015 13:28:00   Acquisition date : 3-OCT-2016 07:00:55
Sample ID        : G405235048             Sample quantity  : 131.58 GRAM
Sample type      : SOLID                   Sample geometry   :
Detector name    : GAMMA28                 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00           Elapsed real time: 0 01:00:00.46   0.0%
Energy tolerance : 1.50 keV                Half life ratio  : 10.00
Errors propagated: No                       Systematic Error : 0.00 %
Efficiency type  : Linear                   Efficiencies at  : Peak Energy
Abundance limit  : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	87.09	EU-155	86.55
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	242.00	RA-224	240.99
U-235	143.76	CE-141	145.44
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.237E+00	1.636E+01	1.636E+01	10.27	OK
RU-103	497.08	91.00*	2.878E+00	3.079E-02	6.229E+00	138.39	OK
	610.33	5.76	2.455E+00	7.687E+00	1.555E+03	20.25	OK
CD-109	88.03	3.70*	5.460E+00	1.205E+00	1.893E+00	167.38	OK
SN-126	64.28	9.60	3.030E+00	7.008E-01	7.008E-01	135.48	OK
	86.94	8.90	5.460E+00	5.008E-01	5.008E-01	167.38	OK
	87.57	37.00*	5.460E+00	1.205E-01	1.205E-01	167.38	OK
BA-137M	661.66	89.90*	2.305E+00	1.413E+00	1.440E+00	10.79	OK
CS-137	661.66	85.10*	2.305E+00	1.493E+00	1.522E+00	10.79	OK
CE-141	145.44	48.29*	6.589E+00	9.228E-03	5.623E+00	733.36	OK
EU-155	86.55	30.70	5.460E+00	1.452E-01	1.637E-01	167.38	OK
	105.31	21.10*	6.332E+00	9.010E-02	1.016E-01	177.47	OK
TL-208	277.37	6.60	4.566E+00	----- Line Not Found	-----	-----	Absent
	583.19	85.00*	2.539E+00	3.661E-01	3.661E-01	21.63	OK
	860.56	12.50	1.886E+00	2.867E-01	2.867E-01	145.48	OK
BI-211	72.87	1.23	4.138E+00	----- Line Not Found	-----	-----	Absent
	351.06	12.92*	3.781E+00	6.364E-01	6.364E-01	184.21	OK
PB-212	74.82	10.28	4.364E+00	9.956E-01	9.956E-01	77.00	OK
	77.11	17.10	4.583E+00	1.957E+00	1.957E+00	21.68	OK
	238.63	43.60*	5.100E+00	1.156E+00	1.156E+00	12.51	OK
	300.09	3.30	4.295E+00	----- Line Not Found	-----	-----	Absent
BI-214	609.32	45.49*	2.455E+00	9.734E-01	9.737E-01	20.25	OK
	1120.29	14.92	1.539E+00	1.546E+00	1.546E+00	36.87	OK
	1764.49	15.30	1.045E+00	----- Line Not Found	-----	-----	Absent
PB-214	74.82	5.80	4.343E+00	----- Line Not Found	-----	-----	<<INT Reject
	77.11	9.70	4.583E+00	3.450E+00	3.451E+00	21.68	OK
	87.09	3.41	5.409E+00	----- Line Not Found	-----	-----	<<INT Reject
	242.00	7.25	5.054E+00	----- Line Not Found	-----	-----	<<INT Reject
	295.22	18.42	4.345E+00	1.128E+00	1.129E+00	31.95	OK
	351.93	35.60*	3.786E+00	----- Line Not Found	-----	-----	<<INT Reject
RN-222	609.32	45.49*	2.455E+00	9.734E-01	9.737E-01	20.25	OK
	1120.29	14.92	1.539E+00	1.546E+00	1.546E+00	36.87	OK
	1764.49	15.30	1.045E+00	----- Line Not Found	-----	-----	Absent
RA-224	240.99	4.10*	5.054E+00	1.526E+00	1.526E+00	91.57	OK
RA-226	609.32	45.49*	2.455E+00	9.734E-01	9.737E-01	20.25	OK
	1120.29	14.92	1.539E+00	1.546E+00	1.546E+00	36.87	OK
	1764.49	15.30	1.045E+00	----- Line Not Found	-----	-----	Absent
AC-228	105.21	1.10	6.332E+00	1.728E+00	1.728E+00	177.47	OK
	338.32	11.27	3.901E+00	1.159E+00	1.159E+00	44.69	OK
	794.95	4.25	2.004E+00	2.358E+00	2.358E+00	47.73	OK
	835.71	1.61	1.930E+00	----- Line Not Found	-----	-----	Absent
	911.20	25.80*	1.806E+00	1.067E+00	1.067E+00	34.78	OK
	968.97	15.80	1.723E+00	1.018E+00	1.018E+00	47.91	OK
RA-228	105.21	1.10	6.332E+00	1.728E+00	1.728E+00	177.47	OK
	338.32	11.27	3.901E+00	1.159E+00	1.159E+00	44.69	OK
	794.95	4.25	2.004E+00	2.358E+00	2.358E+00	47.73	OK
	835.71	1.61	1.930E+00	----- Line Not Found	-----	-----	Absent
	911.20	25.80*	1.806E+00	1.067E+00	1.067E+00	34.78	OK
	968.97	15.80	1.723E+00	1.018E+00	1.018E+00	47.91	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-228	74.82	10.28	4.364E+00	9.956E-01	9.956E-01	77.00	OK
	77.11	17.10	4.583E+00	1.957E+00	1.957E+00	21.68	OK
	238.63	43.60*	5.100E+00	1.156E+00	1.156E+00	12.51	OK
	300.09	3.30	4.295E+00	-----	Line Not Found	-----	Absent
TH-230	609.32	45.49*	2.455E+00	9.734E-01	9.734E-01	20.25	OK
	1120.29	14.92	1.539E+00	1.546E+00	1.546E+00	36.87	OK
	1764.49	15.30	1.045E+00	-----	Line Not Found	-----	Absent
TH-232	105.21	1.10	6.332E+00	1.728E+00	1.728E+00	177.47	OK
	338.32	11.27	3.901E+00	1.159E+00	1.159E+00	44.69	OK
	835.71	1.61	1.930E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.806E+00	1.067E+00	1.067E+00	34.78	OK
	968.97	15.80	1.723E+00	1.018E+00	1.018E+00	47.91	OK
TH-234	63.29	3.70*	3.030E+00	1.818E+00	1.818E+00	135.48	OK
	92.59	4.23	5.779E+00	1.570E+00	1.570E+00	83.57	OK
U-234	609.32	45.49*	2.455E+00	9.734E-01	9.734E-01	20.25	OK
	1120.29	14.92	1.539E+00	1.546E+00	1.546E+00	36.87	OK
	1764.49	15.30	1.045E+00	-----	Line Not Found	-----	Absent
U-235	89.96	3.47	5.602E+00	-----	Line Not Found	-----	Absent
	93.35	5.60	5.779E+00	1.186E+00	1.186E+00	83.57	OK
	143.76	10.96*	6.593E+00	-----	Line Not Found	-----	<<INT Reject
	163.33	5.08	6.352E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	5.981E+00	1.197E-01	1.197E-01	84.89	OK
	205.31	5.01	5.647E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	3.030E+00	1.818E+00	1.818E+00	135.48	OK
	92.59	4.23	5.779E+00	1.570E+00	1.570E+00	83.57	OK
AM-243	43.53	5.90	4.883E-01	-----	Line Not Found	-----	Absent
	74.66	67.20*	4.364E+00	1.523E-01	1.523E-01	77.00	OK
ANH-511	511.00	100.00*	2.816E+00	1.484E-01	1.484E-01	61.42	OK

Flag: "*" = Keyline

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.636E+01	1.647E+00	6.664E-01
RU-103	6.229E+00	8.448E+00	1.105E+01
CD-109	1.893E+00	3.105E+00	2.489E+00
SN-126	1.205E-01	1.976E-01	1.593E-01
BA-137M	1.440E+00	1.523E-01	6.579E-02
CS-137	1.522E+00	1.609E-01	6.950E-02
CE-141	5.623E+00	4.041E+01	5.007E+01
EU-155	1.016E-01	1.767E-01	2.334E-01
TL-208	3.661E-01	7.763E-02	7.269E-02
BI-211	6.364E-01	1.149E+00	3.563E-01
PB-212	1.156E+00	1.417E-01	1.140E-01
BI-214	9.737E-01	1.932E-01	1.386E-01
PB-214	1.360E+00	2.215E-01	3.598E-01
RN-222	9.737E-01	1.932E-01	1.386E-01
RA-224	1.526E+00	1.370E+00	1.222E+00
RA-226	9.737E-01	1.932E-01	1.386E-01
AC-228	1.067E+00	3.635E-01	2.743E-01
RA-228	1.067E+00	3.635E-01	2.743E-01
TH-228	1.156E+00	1.417E-01	1.140E-01
TH-230	9.734E-01	1.932E-01	1.385E-01
TH-232	1.067E+00	3.635E-01	2.743E-01
TH-234	1.818E+00	2.414E+00	2.644E+00
U-234	9.734E-01	1.932E-01	1.385E-01
U-235	1.603E-01	2.747E-01	4.061E-01
U-238	1.818E+00	2.414E+00	2.644E+00
AM-243	1.523E-01	1.149E-01	9.726E-02
ANH-511	1.484E-01	8.936E-02	5.887E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.122E+00	1.683E+01	3.086E+01	NOT IDENT.
NA-22	3.668E-02	4.882E-02	1.075E-01	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF

AL-26	6.615E-03	2.369E-02	6.016E-02	NOT IDENT.
SC-46	7.763E-02	4.141E-01	8.393E-01	FAIL ABUN
V-48	0.000E+00	1.755E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.886E+02	0.000E+00	SHORT HLIF
MN-54	2.311E-02	6.839E-02	1.404E-01	NOT IDENT.
CO-56	4.028E-01	5.151E-01	1.116E+00	NOT IDENT.
MN-56	0.000E+00	1.284E+41	0.000E+00	SHORT HLIF
CO-57	-4.445E-03	5.719E-02	1.011E-01	NOT IDENT.
CO-58	5.473E-02	5.371E-01	1.103E+00	NOT IDENT.
FE-59	-2.871E+00	6.836E+00	1.254E+01	NOT IDENT.
CO-60	1.241E-02	3.878E-02	8.247E-02	NOT IDENT.
ZN-65	7.111E-02	1.912E-01	3.588E-01	NOT IDENT.
GE-68	-2.365E+00	2.651E+00	4.572E+00	NOT IDENT.
AS-73	-3.549E+00	1.079E+01	1.932E+01	NOT IDENT.
AS-74	0.000E+00	8.245E+03	0.000E+00	SHORT HLIF
SE-75	-7.304E-02	2.172E-01	4.040E-01	NOT IDENT.
BR-77	0.000E+00	3.316E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	8.583E+02	0.000E+00	SHORT HLIF
RB-83	4.221E-01	7.417E-01	1.486E+00	NOT IDENT.
KR-85	8.618E+00	9.504E+00	1.757E+01	NOT IDENT.
SR-85	9.158E-01	1.013E+00	1.873E+00	NOT IDENT.
RB-86	0.000E+00	3.268E+04	0.000E+00	SHORT HLIF
Y-88	-2.699E-02	2.250E-01	4.790E-01	NOT IDENT.
Y-91	-2.762E+02	5.997E+02	1.072E+03	NOT IDENT.
NB-94	3.432E-02	3.332E-02	7.074E-02	NOT IDENT.
NB-95	-1.003E+00	1.043E+00	1.810E+00	NOT IDENT.
NB-95M	-3.520E-01	3.172E+00	5.348E+00	NOT IDENT.
ZR-95	5.605E-01	1.458E+00	3.059E+00	NOT IDENT.
NB-97	0.000E+00	1.195E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	8.485E+40	0.000E+00	SHORT HLIF
MO-99	0.000E+00	2.715E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	2.590E-02	6.588E-02	7.111E-02	FAIL ABUN
RH-102	4.350E-02	6.814E-02	1.372E-01	NOT IDENT.
RH-106	5.829E-01	4.841E-01	1.079E+00	NOT IDENT.
RU-106	5.829E-01	4.841E-01	1.079E+00	NOT IDENT.
AG-108M	5.930E-03	3.257E-02	5.977E-02	NOT IDENT.
AG-110M	-3.118E-02	1.085E-01	2.057E-01	NOT IDENT.
SN-113	6.313E-02	2.706E-01	5.199E-01	NOT IDENT.
CD-115	0.000E+00	4.428E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.246E+05	0.000E+00	SHORT HLIF
TE-123M	-3.515E-02	1.623E-01	2.787E-01	NOT IDENT.
SB-124	-2.351E+00	1.881E+00	9.527E-01	NOT IDENT.
SB-125	1.761E-01	2.234E-01	2.451E-01	FAIL ABUN
TE-125M	9.495E+01	3.277E+02	5.999E+02	NOT IDENT.
I-126	0.000E+00	1.031E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.348E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.857E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	6.345E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.781E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	4.963E+26	0.000E+00	SHORT HLIF
BA-133	-9.114E-03	4.620E-02	7.656E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.228E-02	1.316E-01	FAIL ABUN
CS-135	-3.619E-02	1.493E-01	2.500E-01	NOT IDENT.
I-135	0.000E+00	8.777E+40	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.365E+05	0.000E+00	SHORT HLIF
CE-139	-3.694E-03	1.241E-01	2.395E-01	NOT IDENT.
BA-140	0.000E+00	1.464E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.043E+05	0.000E+00	SHORT HLIF
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	5.094E-01	3.990E-01	7.839E-01	FAIL ABUN
PM-144	1.300E-02	6.183E-02	1.176E-01	NOT IDENT.
PR-144	1.113E+00	5.371E+00	1.021E+01	NOT IDENT.
PM-146	-1.524E-02	5.696E-02	1.027E-01	NOT IDENT.
ND-147	0.000E+00	3.747E+07	0.000E+00	SHORT HLIF
PM-147	-5.018E+02	9.528E+02	1.622E+03	NOT IDENT.
PM-149	0.000E+00	7.246E+40	0.000E+00	SHORT HLIF
EU-150	1.114E-04	3.134E-02	5.312E-02	FAIL ABUN
EU-152	1.540E-02	1.126E-01	2.141E-01	NOT IDENT.
GD-153	6.185E-02	2.184E-01	3.750E-01	NOT IDENT.
EU-154	8.987E-02	1.196E-01	2.634E-01	NOT IDENT.
TB-160	-1.076E+00	1.991E+00	3.630E+00	FAIL ABUN
HO-166M	1.626E-03	5.814E-02	1.091E-01	FAIL ABUN
TM-171	-9.139E+00	2.562E+01	4.581E+01	NOT IDENT.
HF-172	-3.073E-03	3.026E-01	4.930E-01	FAIL ABUN
LU-172	3.354E-02	8.580E-02	1.765E-01	FAIL ABUN
LU-176	-1.213E-02	2.829E-02	5.151E-02	FAIL ABUN

HF-181	-1.503E+00	5.321E+00	9.594E+00	NOT IDENT.
TA-182	8.899E-02	8.587E-01	1.722E+00	FAIL ABUN
RE-183	4.972E-01	3.302E+00	6.224E+00	NOT IDENT.
RE-184	1.600E+01	3.386E+01	7.076E+01	NOT IDENT.
W-188	-7.076E+01	1.374E+02	2.214E+02	FAIL ABUN
IR-192	3.741E-01	5.436E-01	1.087E+00	FAIL ABUN
HG-203	-1.814E-02	2.738E+00	5.194E+00	NOT IDENT.
BI-207	-1.596E-02	4.596E-02	8.598E-02	FAIL ABUN
PB-210	1.340E+00	4.413E+00	8.351E+00	NOT IDENT.
PB-211	8.252E-01	7.860E-01	1.619E+00	FAIL ABUN
BI-212	1.132E+00	7.082E-01	1.288E+00	FAIL ABUN
RN-219	3.568E-02	4.606E-01	8.673E-01	FAIL ABUN
RA-223	1.968E-01	6.763E-01	1.309E+00	FAIL ABUN
AC-227	-2.699E-02	2.495E-01	4.721E-01	FAIL ABUN
TH-227	-2.699E-02	2.495E-01	4.721E-01	FAIL ABUN
TH-229	9.613E-02	5.592E-01	1.081E+00	FAIL ABUN
PA-231	1.950E-01	5.331E-01	1.031E+00	NOT IDENT.
TH-231	1.968E-01	6.763E-01	1.309E+00	FAIL ABUN
PA-233	-3.749E-02	6.581E-02	1.183E-01	NOT IDENT.
PA-234	3.449E-02	2.443E-01	5.059E-01	FAIL ABUN
PA-234M	9.084E+00	4.260E+00	1.009E+01	FAIL ABUN
NP-237	-3.749E-02	6.581E-02	1.183E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	3.553E-02	2.635E-01	4.781E-01	FAIL ABUN
PU-239	2.347E+02	5.972E+02	6.686E+02	FAIL ABUN
AM-241	-5.943E-02	1.515E-01	2.721E-01	NOT IDENT.
CM-243	-7.438E-02	1.250E-01	1.942E-01	NOT IDENT.
BK-247	-3.949E-02	7.927E-02	1.377E-01	FAIL ABUN
CM-247	-1.111E-02	4.322E-02	7.862E-02	NOT IDENT.
CF-249	-4.551E-03	4.584E-02	8.491E-02	NOT IDENT.
CF-251	3.599E-02	1.250E-01	2.459E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	378	10.66*	1.237E+00	1.636E+01	1.636E+01	10.27
RU-103	497.08	14	91.00*	2.878E+00	3.079E-02	6.229E+00	138.39
	610.33	191	5.76	2.455E+00	7.687E+00	1.555E+03	20.25
CD-109	88.03	79	3.70*	5.460E+00	2.245E+00	3.527E+00	88.60
SN-126	64.28	36	9.60	3.030E+00	7.008E-01	7.008E-01	135.48
	86.94	79	8.90	5.460E+00	9.332E-01	9.332E-01	88.60
	87.57	79	37.00*	5.460E+00	2.245E-01	2.245E-01	88.60
BA-137M	661.66	513	89.90*	2.305E+00	1.413E+00	1.440E+00	10.79
CS-137	661.66	513	85.10*	2.305E+00	1.493E+00	1.522E+00	10.79
CE-141	145.44	20	48.29*	6.589E+00	3.639E-02	2.217E+01	174.83
EU-155	86.55	79	30.70	5.460E+00	2.705E-01	3.051E-01	88.60
	105.31	21	21.10*	6.332E+00	9.010E-02	1.016E-01	177.47
TL-208	277.37	-----	6.60	4.566E+00	-----	Line Not Found	-----
	583.19	139	85.00*	2.539E+00	3.661E-01	3.661E-01	21.63
	860.56	12	12.50	1.886E+00	2.867E-01	2.867E-01	145.48
BI-211	72.87	-----	1.23	4.138E+00	-----	Line Not Found	-----
	351.06	321	12.92*	3.781E+00	3.746E+00	3.746E+00	16.62
PB-212	74.82	128	10.28	4.364E+00	1.632E+00	1.632E+00	45.28
	77.11	269	17.10	4.583E+00	1.957E+00	1.957E+00	21.68
	238.63	450	43.60*	5.100E+00	1.156E+00	1.156E+00	12.51
	300.09	-----	3.30	4.295E+00	-----	Line Not Found	-----
BI-214	609.32	191	45.49*	2.455E+00	9.734E-01	9.737E-01	20.25
	1120.29	62	14.92	1.539E+00	1.546E+00	1.546E+00	36.87
	1764.49	-----	15.30	1.045E+00	-----	Line Not Found	-----
PB-214	74.82	128	5.80	4.364E+00	2.893E+00	2.894E+00	45.28
	77.11	269	9.70	4.583E+00	3.450E+00	3.451E+00	21.68
	87.09	79	3.41	5.460E+00	2.436E+00	2.436E+00	88.60
	242.00	128	7.25	5.054E+00	1.992E+00	1.992E+00	35.32
	295.22	158	18.42	4.345E+00	1.128E+00	1.129E+00	31.95
	351.93	321	35.60*	3.781E+00	1.359E+00	1.360E+00	16.62
RN-222	609.32	191	45.49*	2.455E+00	9.734E-01	9.737E-01	20.25
	1120.29	62	14.92	1.539E+00	1.546E+00	1.546E+00	36.87
	1764.49	-----	15.30	1.045E+00	-----	Line Not Found	-----
RA-224	240.99	128	4.10*	5.054E+00	3.522E+00	3.522E+00	35.32
RA-226	609.32	191	45.49*	2.455E+00	9.734E-01	9.737E-01	20.25
	1120.29	62	14.92	1.539E+00	1.546E+00	1.546E+00	36.87
	1764.49	-----	15.30	1.045E+00	-----	Line Not Found	-----
AC-228	105.21	21	1.10	6.332E+00	1.728E+00	1.728E+00	177.47
	338.32	89	11.27	3.901E+00	1.159E+00	1.159E+00	44.69
	794.95	35	4.25	2.004E+00	2.358E+00	2.358E+00	47.73
	835.71	-----	1.61	1.930E+00	-----	Line Not Found	-----
	911.20	87	25.80*	1.806E+00	1.067E+00	1.067E+00	34.78
	968.97	49	15.80	1.723E+00	1.018E+00	1.018E+00	47.91
RA-228	105.21	21	1.10	6.332E+00	1.728E+00	1.728E+00	177.47
	338.32	89	11.27	3.901E+00	1.159E+00	1.159E+00	44.69
	794.95	35	4.25	2.004E+00	2.358E+00	2.358E+00	47.73
	835.71	-----	1.61	1.930E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	87	25.80*	1.806E+00	1.067E+00	1.067E+00	34.78
	968.97	49	15.80	1.723E+00	1.018E+00	1.018E+00	47.91
	74.82	128	10.28	4.364E+00	1.632E+00	1.632E+00	45.28
	77.11	269	17.10	4.583E+00	1.957E+00	1.957E+00	21.68
	238.63	450	43.60*	5.100E+00	1.156E+00	1.156E+00	12.51
TH-230	300.09	-----	3.30	4.295E+00	Line Not Found		-----
	609.32	191	45.49*	2.455E+00	9.734E-01	9.734E-01	20.25
	1120.29	62	14.92	1.539E+00	1.546E+00	1.546E+00	36.87
	1764.49	-----	15.30	1.045E+00	Line Not Found		-----
TH-232	105.21	21	1.10	6.332E+00	1.728E+00	1.728E+00	177.47
	338.32	89	11.27	3.901E+00	1.159E+00	1.159E+00	44.69
	835.71	-----	1.61	1.930E+00	Line Not Found		-----
	911.20	87	25.80*	1.806E+00	1.067E+00	1.067E+00	34.78
TH-234	968.97	49	15.80	1.723E+00	1.018E+00	1.018E+00	47.91
	63.29	36	3.70*	3.030E+00	1.818E+00	1.818E+00	135.48
	92.59	67	4.23	5.779E+00	1.570E+00	1.570E+00	83.57
U-234	609.32	191	45.49*	2.455E+00	9.734E-01	9.734E-01	20.25
	1120.29	62	14.92	1.539E+00	1.546E+00	1.546E+00	36.87
	1764.49	-----	15.30	1.045E+00	Line Not Found		-----
U-235	89.96	-----	3.47	5.602E+00	Line Not Found		-----
	93.35	67	5.60	5.779E+00	1.186E+00	1.186E+00	83.57
	143.76	20	10.96*	6.589E+00	1.603E-01	1.603E-01	174.83
	163.33	-----	5.08	6.352E+00	Line Not Found		-----
	185.72	72	57.20	5.981E+00	1.197E-01	1.197E-01	84.89
U-238	205.31	-----	5.01	5.647E+00	Line Not Found		-----
	63.29	36	3.70*	3.030E+00	1.818E+00	1.818E+00	135.48
	92.59	67	4.23	5.779E+00	1.570E+00	1.570E+00	83.57
AM-243	43.53	-----	5.90	4.883E-01	Line Not Found		-----
ANH-511	74.66	128	67.20*	4.364E+00	2.497E-01	2.497E-01	45.28
	511.00	73	100.00*	2.816E+00	1.484E-01	1.484E-01	61.42

Flag: "*" = Keyline

Total number of lines in spectrum 42
Number of unidentified lines 6
Number of lines tentatively identified by NID 36 85.71%

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	1.636E+01	1.636E+01	0.168E+01	10.27	
RU-103	39.26D	202.	3.079E-02	6.229E+00	8.620E+00	138.39	
CD-109	461.40D	1.57	2.245E+00	3.527E+00	3.125E+00	88.60	
SN-126	2.30E+05Y	1.00	2.245E-01	2.245E-01	1.989E-01	88.60	
BA-137M	30.08Y	1.02	1.413E+00	1.440E+00	0.155E+00	10.79	
CS-137	30.08Y	1.02	1.493E+00	1.522E+00	0.164E+00	10.79	
CE-141	32.51D	609.	3.639E-02	2.217E+01	3.877E+01	174.83	
EU-155	4.75Y	1.13	9.010E-02	1.016E-01	1.803E-01	177.47	
TL-208	1.41E+10Y	1.00	3.661E-01	3.661E-01	0.792E-01	21.63	
BI-211	7.04E+08Y	1.00	3.746E+00	3.746E+00	0.622E+00	16.62	
PB-212	1.41E+10Y	1.00	1.156E+00	1.156E+00	0.145E+00	12.51	
BI-214	1600.00Y	1.00	9.734E-01	9.737E-01	1.972E-01	20.25	
PB-214	1600.00Y	1.00	1.359E+00	1.360E+00	0.226E+00	16.62	
RN-222	1600.00Y	1.00	9.734E-01	9.737E-01	1.972E-01	20.25	
RA-224	1.41E+10Y	1.00	3.522E+00	3.522E+00	1.244E+00	35.32	
RA-226	1600.00Y	1.00	9.734E-01	9.737E-01	1.972E-01	20.25	
AC-228	1.41E+10Y	1.00	1.067E+00	1.067E+00	0.371E+00	34.78	
RA-228	1.41E+10Y	1.00	1.067E+00	1.067E+00	0.371E+00	34.78	
TH-228	1.41E+10Y	1.00	1.156E+00	1.156E+00	0.145E+00	12.51	
TH-230	7.54E+04Y	1.00	9.734E-01	9.734E-01	1.971E-01	20.25	
TH-232	1.41E+10Y	1.00	1.067E+00	1.067E+00	0.371E+00	34.78	
TH-234	4.47E+09Y	1.00	1.818E+00	1.818E+00	2.464E+00	135.48	
U-234	2.45E+05Y	1.00	9.734E-01	9.734E-01	1.971E-01	20.25	
U-235	7.04E+08Y	1.00	1.603E-01	1.603E-01	2.803E-01	174.83	
U-238	4.47E+09Y	1.00	1.818E+00	1.818E+00	2.464E+00	135.48	
AM-243	7370.00Y	1.00	2.497E-01	2.497E-01	1.131E-01	45.28	
ANH-511	1.00E+09Y	1.00	1.484E-01	1.484E-01	0.912E-01	61.42	

Total Activity : 4.546E+01 7.515E+01

Grand Total Activity : 4.546E+01 7.515E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	79.44	60	141	1.36	158.97	145	19	1.44E-02	94.1	4.79E+00	T
2	95.17	29	140	1.12	190.46	181	13	6.89E-03	****	5.90E+00	T
0	115.15	34	158	0.65	230.46	227	10	8.20E-03	****	6.55E+00	T
0	128.10	17	144	1.28	256.36	254	8	4.25E-03	****	6.65E+00	T
0	140.47	20	150	1.82	281.13	275	9	4.97E-03	****	6.62E+00	T
0	271.68	37	105	2.26	543.75	536	12	9.61E-03	****	4.64E+00	T
0	428.57	24	52	4.00	857.75	851	12	6.45E-03	****	3.23E+00	T
0	599.58	33	34	3.31	1200.03	1192	14	8.93E-03	85.4	2.49E+00	T
0	653.27	17	10	1.37	1307.50	1303	8	4.59E-03	82.1	2.33E+00	
0	679.99	16	17	0.80	1360.96	1357	8	4.47E-03	****	2.26E+00	
0	727.75	28	16	2.07	1456.57	1452	10	7.85E-03	63.9	2.14E+00	T
0	783.28	13	22	1.73	1567.70	1562	10	3.58E-03	****	2.03E+00	T
0	955.13	16	22	2.23	1911.65	1902	15	4.66E-03	****	1.74E+00	T
0	1000.35	22	0	2.62	2002.17	1996	12	6.37E-03	47.8	1.68E+00	T
0	1510.25	9	4	1.43	3022.72	3018	8	2.50E-03	****	1.20E+00	
0	1517.03	5	5	0.72	3036.30	3030	10	1.39E-03	****	1.20E+00	
0	1631.84	11	0	0.62	3266.08	3261	10	3.33E-03	57.7	1.12E+00	
0	1766.05	34	7	1.49	3534.71	3527	12	1.01E-02	44.6	1.04E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235048.CNF;1
* Acquisition date   : 3-OCT-2016 07:00:55 Sensitivity      : 3.000
* Detector ID        : GAM28 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.46 Half life ratio : *****
* Sample date        : 7-DEC-2015 13:28:00 Nuclide Library : SOLID
* Sample ID          : G405235048 Analyst initials: MXR1
* Batch Number       : 1596252 Sample Quantity : 1.3158E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 1-AUG-2016 10:02:35 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM28 CAN.CNF;10
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.747E-01
RU-103	4.920E+00
CD-109	1.182E+00
SN-126	7.567E-02
BA-137M	2.905E-02
CS-137	3.069E-02
CE-141	2.351E+01
EU-155	1.099E-01
TL-208	3.272E-02
BI-211	1.621E-01
PB-212	5.344E-02
BI-214	6.229E-02
PB-214	1.741E-01
RN-222	6.229E-02
RA-224	5.728E-01
RA-226	6.229E-02
AC-228	1.205E-01
RA-228	1.205E-01
TH-228	5.344E-02
TH-230	6.226E-02
TH-232	1.205E-01
TH-234	1.249E+00
U-234	6.226E-02
U-235	1.920E-01
U-238	1.249E+00
AM-243	4.586E-02
ANH-511	2.665E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.416E+01	NOT IDENT.
NA-22	4.681E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.252E-02	NOT IDENT.

SC-46	3.688E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	6.235E-02	NOT IDENT.
CO-56	4.972E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.750E-02	NOT IDENT.
CO-58	4.766E-01	NOT IDENT.
FE-59	5.318E+00	NOT IDENT.
CO-60	3.480E-02	NOT IDENT.
ZN-65	1.561E-01	NOT IDENT.
GE-68	1.959E+00	NOT IDENT.
AS-73	9.032E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.858E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.726E-01	NOT IDENT.
KR-85	8.107E+00	NOT IDENT.
SR-85	8.641E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.850E-01	NOT IDENT.
Y-91	4.637E+02	NOT IDENT.
NB-94	3.182E-02	NOT IDENT.
NB-95	8.068E-01	NOT IDENT.
NB-95M	2.513E+00	NOT IDENT.
ZR-95	1.351E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.346E-02	FAIL ABUN
RH-102	6.183E-02	NOT IDENT.
RH-106	4.823E-01	NOT IDENT.
RU-106	4.823E-01	NOT IDENT.
AG-108M	2.717E-02	NOT IDENT.
AG-110M	8.952E-02	NOT IDENT.
SN-113	2.386E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.309E-01	NOT IDENT.
SB-124	0.000E+00	NOT IDENT.
SB-125	1.125E-01	FAIL ABUN
TE-125M	2.825E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.470E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.981E-02	FAIL ABUN
CS-135	1.144E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.126E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-143	0.000E+00	SHORT HLIF
CE-144	3.695E-01	FAIL ABUN
PM-144	5.250E-02	NOT IDENT.
PR-144	4.559E+00	NOT IDENT.
PM-146	4.702E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.581E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.444E-02	FAIL ABUN
EU-152	9.906E-02	NOT IDENT.
GD-153	1.765E-01	NOT IDENT.
EU-154	1.147E-01	NOT IDENT.
TB-160	1.566E+00	FAIL ABUN
HO-166M	4.791E-02	FAIL ABUN
TM-171	2.140E+01	NOT IDENT.
HF-172	2.321E-01	FAIL ABUN
LU-172	7.764E-02	FAIL ABUN
LU-176	2.376E-02	FAIL ABUN
HF-181	4.345E+00	NOT IDENT.

TA-182	7.377E-01	FAIL ABUN
RE-183	2.910E+00	NOT IDENT.
RE-184	3.133E+01	NOT IDENT.
W-188	1.018E+02	FAIL ABUN
IR-192	5.047E-01	FAIL ABUN
HG-203	2.410E+00	NOT IDENT.
BI-207	3.639E-02	FAIL ABUN
PB-210	3.932E+00	NOT IDENT.
PB-211	7.479E-01	FAIL ABUN
BI-212	5.897E-01	FAIL ABUN
RN-219	3.987E-01	FAIL ABUN
RA-223	6.059E-01	FAIL ABUN
AC-227	2.189E-01	FAIL ABUN
TH-227	2.189E-01	FAIL ABUN
TH-229	5.095E-01	FAIL ABUN
PA-231	4.813E-01	NOT IDENT.
TH-231	6.059E-01	FAIL ABUN
PA-233	5.421E-02	NOT IDENT.
PA-234	2.161E-01	FAIL ABUN
PA-234M	4.498E+00	FAIL ABUN
NP-237	5.421E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.237E-01	FAIL ABUN
PU-239	3.153E+02	FAIL ABUN
AM-241	1.270E-01	NOT IDENT.
CM-243	9.082E-02	NOT IDENT.
BK-247	6.325E-02	FAIL ABUN
CM-247	3.610E-02	NOT IDENT.
CF-249	3.905E-02	NOT IDENT.
CF-251	1.154E-01	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235048.CNF;1
* Acquisition date   : 3-OCT-2016 07:00:55 Sensitivity      : 3.000
* Detector ID        : GAM28 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.46 Half life ratio : *****
* Sample date        : 7-DEC-2015 13:28:00 Nuclide Library : SOLID
* Sample ID          : G405235048 Analyst initials: MXR1
* Batch Number       : 1596252 Sample Quantity : 1.3158E+02 GRAM
*                               Quantity Err(%) : 1.5200E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 1-AUG-2016 10:02:35 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM28 CAN.CNF;10
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.636E+01	1.857E+00	1.857E+00
RU-103	6.229E+00	8.453E+00	8.453E+00
CD-109	1.893E+00	3.115E+00	3.115E+00
SN-126	1.205E-01	1.982E-01	1.982E-01
BA-137M	1.440E+00	1.646E-01	1.646E-01
CS-137	1.522E+00	1.739E-01	1.739E-01
CE-141	5.623E+00	4.043E+01	4.043E+01
EU-155	1.016E-01	1.769E-01	1.769E-01
TL-208	3.661E-01	7.920E-02	7.920E-02
BI-211	6.364E-01	1.165E+00	1.165E+00
PB-212	1.156E+00	1.545E-01	1.545E-01
BI-214	9.737E-01	1.978E-01	1.978E-01
PB-214	1.360E+00	2.287E-01	2.287E-01
RN-222	9.737E-01	1.978E-01	1.978E-01
RA-224	1.526E+00	1.379E+00	1.379E+00
RA-226	9.737E-01	1.978E-01	1.978E-01
AC-228	1.067E+00	3.677E-01	3.677E-01
RA-228	1.067E+00	3.677E-01	3.677E-01
TH-228	1.156E+00	1.545E-01	1.545E-01
TH-230	9.734E-01	1.977E-01	1.977E-01
TH-232	1.067E+00	3.677E-01	3.677E-01
TH-234	1.818E+00	2.448E+00	2.448E+00
U-234	9.734E-01	1.977E-01	1.977E-01
U-235	1.603E-01	2.748E-01	2.748E-01
U-238	1.818E+00	2.448E+00	2.448E+00
AM-243	1.523E-01	1.160E-01	1.160E-01
ANH-511	1.484E-01	8.956E-02	8.956E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-1.122E+00	1.683E+01	1.684E+01	NOT IDENT.
NA-22	3.668E-02	4.884E-02	5.156E-02	NOT IDENT.
NA-24	-1.000E+41	4.768E+41	0.000E+00	SHORT HLIF

AL-26	6.615E-03	2.370E-02	2.389E-02	NOT IDENT.
SC-46	7.763E-02	4.141E-01	4.156E-01	FAIL ABUN
V-48	-4.998E+02	1.755E+04	1.755E+04	SHORT HLIF
CR-51	-5.934E+01	4.887E+02	4.894E+02	SHORT HLIF
MN-54	2.311E-02	6.840E-02	6.919E-02	NOT IDENT.
CO-56	4.028E-01	5.154E-01	5.464E-01	NOT IDENT.
MN-56	1.000E+41	1.284E+41	0.000E+00	SHORT HLIF
CO-57	-4.445E-03	5.719E-02	5.723E-02	NOT IDENT.
CO-58	5.473E-02	5.371E-01	5.377E-01	NOT IDENT.
FE-59	-2.871E+00	6.840E+00	6.961E+00	NOT IDENT.
CO-60	1.241E-02	3.878E-02	3.919E-02	NOT IDENT.
ZN-65	7.111E-02	1.912E-01	1.939E-01	NOT IDENT.
GE-68	-2.365E+00	2.652E+00	2.858E+00	NOT IDENT.
AS-73	-3.549E+00	1.081E+01	1.093E+01	NOT IDENT.
AS-74	-3.353E+03	8.250E+03	8.387E+03	SHORT HLIF
SE-75	-7.304E-02	2.173E-01	2.198E-01	NOT IDENT.
BR-77	2.705E+38	2.348E+39	0.000E+00	SHORT HLIF
SR-82	-4.613E+02	8.585E+02	8.834E+02	SHORT HLIF
RB-83	4.221E-01	7.440E-01	7.679E-01	NOT IDENT.
KR-85	8.618E+00	9.511E+00	1.027E+01	NOT IDENT.
SR-85	9.158E-01	1.014E+00	1.095E+00	NOT IDENT.
RB-86	-3.646E+04	3.272E+04	3.662E+04	SHORT HLIF
Y-88	-2.699E-02	2.250E-01	2.253E-01	NOT IDENT.
Y-91	-2.762E+02	5.998E+02	6.126E+02	NOT IDENT.
NB-94	3.432E-02	3.335E-02	3.676E-02	NOT IDENT.
NB-95	-1.003E+00	1.044E+00	1.138E+00	NOT IDENT.
NB-95M	-3.520E-01	3.172E+00	3.176E+00	NOT IDENT.
ZR-95	5.605E-01	1.459E+00	1.480E+00	NOT IDENT.
NB-97	1.000E+41	1.196E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	8.495E+40	0.000E+00	SHORT HLIF
MO-99	1.190E+31	2.715E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	2.364E+41	0.000E+00	SHORT HLIF
RH-101	2.590E-02	6.605E-02	6.707E-02	FAIL ABUN
RH-102	4.350E-02	6.824E-02	7.100E-02	NOT IDENT.
RH-106	5.829E-01	4.855E-01	5.520E-01	NOT IDENT.
RU-106	5.829E-01	4.855E-01	5.520E-01	NOT IDENT.
AG-108M	5.930E-03	3.257E-02	3.268E-02	NOT IDENT.
AG-110M	-3.118E-02	1.085E-01	1.094E-01	NOT IDENT.
SN-113	6.313E-02	2.706E-01	2.721E-01	NOT IDENT.
CD-115	-2.381E+39	4.449E+39	0.000E+00	SHORT HLIF
SN-117M	1.417E+04	1.246E+05	1.247E+05	SHORT HLIF
TE-123M	-3.515E-02	1.623E-01	1.631E-01	NOT IDENT.
SB-124	-2.351E+00	1.886E+00	2.163E+00	NOT IDENT.
SB-125	1.761E-01	2.235E-01	2.372E-01	FAIL ABUN
TE-125M	9.495E+01	3.278E+02	3.305E+02	NOT IDENT.
I-126	-7.382E+04	1.031E+06	1.032E+06	SHORT HLIF
SB-126	-7.545E+05	1.355E+06	1.397E+06	SHORT HLIF
SB-127	-4.602E+20	2.858E+22	0.000E+00	SHORT HLIF
I-131	1.481E+09	6.346E+09	6.381E+09	SHORT HLIF
I-132	-1.000E+41	1.862E+42	0.000E+00	SHORT HLIF
TE-132	-4.221E+26	5.253E+26	0.000E+00	SHORT HLIF
BA-133	-9.114E-03	4.620E-02	4.638E-02	NOT IDENT.
I-133	-1.000E+41	1.273E+42	0.000E+00	SHORT HLIF
CS-134	1.545E-01	7.259E-02	1.006E-01	FAIL ABUN
CS-135	-3.619E-02	1.493E-01	1.502E-01	NOT IDENT.
I-135	-1.000E+41	6.852E+41	0.000E+00	SHORT HLIF
CS-136	-3.752E+05	3.390E+05	3.788E+05	SHORT HLIF
CE-139	-3.694E-03	1.241E-01	1.241E-01	NOT IDENT.
BA-140	7.368E+04	1.464E+06	1.465E+06	SHORT HLIF
LA-140	-1.070E+05	4.044E+05	4.072E+05	SHORT HLIF
CE-143	1.000E+41	2.514E+41	0.000E+00	SHORT HLIF
CE-144	5.094E-01	4.000E-01	4.612E-01	FAIL ABUN
PM-144	1.300E-02	6.183E-02	6.211E-02	NOT IDENT.
PR-144	1.113E+00	5.371E+00	5.394E+00	NOT IDENT.
PM-146	-1.524E-02	5.697E-02	5.739E-02	NOT IDENT.
ND-147	-6.558E+06	3.747E+07	3.759E+07	SHORT HLIF
PM-147	-5.018E+02	9.531E+02	9.796E+02	NOT IDENT.
PM-149	3.943E+40	7.298E+40	0.000E+00	SHORT HLIF
EU-150	1.114E-04	3.134E-02	3.134E-02	FAIL ABUN
EU-152	1.540E-02	1.126E-01	1.129E-01	NOT IDENT.
GD-153	6.185E-02	2.184E-01	2.202E-01	NOT IDENT.
EU-154	8.987E-02	1.197E-01	1.263E-01	NOT IDENT.
TB-160	-1.076E+00	1.992E+00	2.050E+00	FAIL ABUN
HO-166M	1.626E-03	5.815E-02	5.815E-02	FAIL ABUN
TM-171	-9.139E+00	2.563E+01	2.596E+01	NOT IDENT.
HF-172	-3.073E-03	3.026E-01	3.026E-01	FAIL ABUN
LU-172	3.354E-02	8.587E-02	8.719E-02	FAIL ABUN
LU-176	-1.213E-02	2.830E-02	2.882E-02	FAIL ABUN

HF-181	-1.503E+00	5.322E+00	5.365E+00	NOT IDENT.
TA-182	8.899E-02	8.587E-01	8.597E-01	FAIL ABUN
RE-183	4.972E-01	3.303E+00	3.310E+00	NOT IDENT.
RE-184	1.600E+01	3.408E+01	3.483E+01	NOT IDENT.
W-188	-7.076E+01	1.377E+02	1.413E+02	FAIL ABUN
IR-192	3.741E-01	5.438E-01	5.694E-01	FAIL ABUN
HG-203	-1.814E-02	2.738E+00	2.738E+00	NOT IDENT.
BI-207	-1.596E-02	4.596E-02	4.652E-02	FAIL ABUN
PB-210	1.340E+00	4.414E+00	4.455E+00	NOT IDENT.
PB-211	8.252E-01	7.871E-01	8.706E-01	FAIL ABUN
BI-212	1.132E+00	7.106E-01	8.747E-01	FAIL ABUN
RN-219	3.568E-02	4.606E-01	4.609E-01	FAIL ABUN
RA-223	1.968E-01	6.764E-01	6.822E-01	FAIL ABUN
AC-227	-2.699E-02	2.495E-01	2.498E-01	FAIL ABUN
TH-227	-2.699E-02	2.495E-01	2.498E-01	FAIL ABUN
TH-229	9.613E-02	5.592E-01	5.609E-01	FAIL ABUN
PA-231	1.950E-01	5.347E-01	5.419E-01	NOT IDENT.
TH-231	1.968E-01	6.764E-01	6.822E-01	FAIL ABUN
PA-233	-3.749E-02	6.584E-02	6.797E-02	NOT IDENT.
PA-234	3.449E-02	2.474E-01	2.479E-01	FAIL ABUN
PA-234M	9.084E+00	4.278E+00	5.922E+00	FAIL ABUN
NP-237	-3.749E-02	6.584E-02	6.797E-02	FAIL ABUN
NP-238	-1.000E+41	2.414E+41	0.000E+00	SHORT HLIF
NP-239	3.553E-02	2.635E-01	2.640E-01	FAIL ABUN
PU-239	2.347E+02	5.973E+02	6.066E+02	FAIL ABUN
AM-241	-5.943E-02	1.515E-01	1.539E-01	NOT IDENT.
CM-243	-7.438E-02	1.252E-01	1.296E-01	NOT IDENT.
BK-247	-3.949E-02	7.967E-02	8.164E-02	FAIL ABUN
CM-247	-1.111E-02	4.326E-02	4.355E-02	NOT IDENT.
CF-249	-4.551E-03	4.584E-02	4.588E-02	NOT IDENT.
CF-251	3.599E-02	1.250E-01	1.261E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	59.3957	87.09	119.6387	136.47	76.2277
45.60	79.5984	87.57	119.7312	140.51	0.0000
46.54	74.5302	88.03	119.8196	143.76	83.4332
49.72	0.0000	88.34	119.8798	144.24	73.6588
51.35	60.5064	88.47	119.9047	145.44	78.6787
51.87	60.5771	89.96	109.5396	152.43	89.2211
52.39	72.3514	1093.63	109.6575	153.25	0.0000
52.97	72.4445	91.11	0.0000	323.87	79.4648
53.44	73.5862	92.59	117.6313	156.02	0.0000
54.07	74.7558	93.35	117.7700	158.56	0.0000
57.36	0.0000	94.56	117.9901	159.00	84.8776
57.53	74.2361	94.65	118.0057	162.33	78.5026
57.98	65.6907	94.67	118.0096	162.66	0.0000
59.27	78.8245	94.87	118.0457	163.33	82.7679
59.32	75.5929	97.43	73.8735	165.86	82.9904
59.54	75.6271	98.43	66.2777	176.31	83.8948
60.96	72.2348	98.44	66.2785	176.60	0.0000
61.17	72.2656	99.53	83.3692	177.52	72.1191
62.93	97.9036	100.11	78.8050	181.07	0.0000
63.29	97.9735	102.03	60.4329	181.52	66.4465
63.58	98.0296	103.18	79.1599	184.41	78.5974
64.28	103.2549	103.37	86.9451	143.76	78.6984
66.73	100.8236	105.21	87.5648	193.51	87.0507
67.24	92.1461	105.31	87.5771	197.03	84.7471
125.81	111.9858	106.12	85.7299	198.01	79.6315
67.75	111.9998	106.47	85.7730	201.83	80.7847
69.67	102.4879	109.28	79.8504	203.43	64.3751
70.83	86.8783	111.00	77.6872	205.31	97.6012
72.81	103.4505	111.76	0.0000	210.85	94.5901
72.87	96.0711	114.06	63.0416	215.65	72.1262
74.66	91.1915	116.30	0.0000	222.11	75.1895
74.82	91.2171	116.74	67.6192	227.09	71.0701
74.97	91.2415	119.76	63.5234	227.38	73.7539
77.11	91.5869	121.12	82.3302	228.16	0.0000
78.74	91.8465	121.22	82.3407	228.18	67.5793
79.69	91.9966	121.78	85.9839	116.74	67.5793
80.12	92.0642	122.06	83.6259	235.69	84.5630
80.19	0.0000	122.92	96.8747	235.96	65.7854
80.57	92.1349	123.07	83.7354	238.63	75.3500
81.00	97.4491	265.00	77.8153	238.98	0.0000
81.07	97.4610	125.81	86.4311	240.99	75.4961
81.75	91.5683	127.23	86.5863	242.00	75.5585
83.79	88.1154	127.91	81.8465	244.70	62.2028
84.00	94.9268	129.30	81.9889	252.40	0.0000
85.43	105.7228	131.20	101.5214	252.80	53.5342
86.55	128.6120	133.02	70.2556	254.15	0.0000
86.79	128.6621	133.52	58.1777	256.23	56.4086
86.94	119.6090	136.00	81.0465	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	50.3686	355.39	0.0000	584.27	27.4119
264.80	48.3592	356.01	35.1079	595.83	0.0000
265.00	52.7637	364.49	0.0000	427.87	23.1875
268.22	44.0771	366.42	0.0000	602.52	0.0000
269.46	56.9872	372.51	43.3447	604.72	13.2729
270.03	57.0112	375.05	45.3842	607.14	28.2330
271.23	57.0629	377.52	44.4635	609.32	26.5967
273.65	0.0000	356.01	39.6712	610.33	26.6084
276.40	60.9807	388.16	45.7370	614.28	23.3208
277.37	51.7788	388.63	0.0000	618.01	26.6934
277.60	48.0877	391.69	37.8608	620.36	23.3789
278.00	53.6528	264.66	49.0728	621.93	10.0261
279.20	55.5518	401.81	42.0897	630.19	0.0000
279.54	61.1230	402.40	47.1167	631.29	19.0109
279.70	61.1298	404.85	31.1198	633.25	27.9795
280.46	58.3845	410.95	34.2490	634.78	0.0000
283.69	57.5940	413.71	47.4169	635.95	25.7692
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	52.0853	423.72	0.0000	645.85	21.3727
285.90	0.0000	427.09	33.5391	657.76	11.3021
287.50	48.4379	427.87	33.5532	657.90	0.0000
290.67	50.4163	433.94	30.6030	661.66	19.2433
293.27	0.0000	439.40	33.7620	664.57	0.0000
351.93	59.0112	453.88	44.3298	666.33	0.0000
295.96	59.0420	463.37	44.5476	666.50	0.0000
879.38	70.4178	468.07	39.4627	667.71	0.0000
299.98	54.9806	473.00	0.0000	677.62	22.2104
300.09	54.9842	475.06	45.8557	685.70	0.0000
300.13	45.1162	476.78	43.8090	695.00	0.0000
301.36	57.3848	477.60	42.7834	696.49	20.6499
302.85	68.7449	482.18	35.5599	696.51	20.6499
256.23	49.9689	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	22.9517
306.78	55.7134	497.08	22.1254	697.49	20.6580
308.46	45.3789	505.52	25.3896	702.65	13.7988
311.90	51.1710	507.63	0.0000	706.68	23.0322
316.51	42.7771	511.00	30.7597	711.68	17.3065
319.41	0.0000	514.00	30.2720	720.70	0.0000
320.08	0.0000	514.00	30.2720	721.93	0.0000
321.04	41.0001	520.40	22.3732	722.78	10.4268
323.87	45.8545	520.69	0.0000	722.91	10.4271
325.23	45.8955	522.65	0.0000	723.31	6.9524
328.76	0.0000	527.90	0.0000	724.19	10.4319
333.37	50.4674	528.26	18.1787	727.33	18.5671
333.97	44.7177	529.59	19.2598	733.00	16.7449
334.37	50.5005	529.87	0.0000	735.93	18.6250
338.28	47.2534	531.02	0.0000	333.97	15.1413
338.32	47.2544	537.26	0.0000	739.50	0.0000
311.90	52.1488	546.56	0.0000	747.24	14.9025
340.48	52.1488	552.55	24.8689	748.06	14.9066
340.55	0.0000	563.25	21.7293	752.31	21.0769
344.28	48.4029	569.33	22.8765	753.82	0.0000
345.93	43.0270	946.00	19.6099	756.73	14.9528
351.06	34.0280	569.70	19.6121	756.80	14.9533
351.93	34.0465	583.19	27.3997	884.68	23.8096

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:04:44.51

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*                               GEL Laboratories, LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                             *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235049.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM33.CNF;235
Background date    : 2-OCT-2016 11:02:02.
Sample date       : 7-DEC-2015 13:33:00. Acquisition date : 3-OCT-2016 07:01:16.
Sample ID        : G405235049. Sample quantity : 1.47303E+02 GRAM
Detector name    : GAM33. Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.77 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596252 Detector SN# :
Matrix Spike ID  : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.19*	48	120	1.13	126.50	122	9	1.35E-02	44.7	
2	10	73.22	33	112	2.59	146.53	144	18	9.05E-03	57.1	2.73E+00
3	10	74.90*	93	169	1.47	149.88	144	18	2.58E-02	29.0	
4	10	77.17	205	153	1.40	154.41	144	18	5.71E-02	12.9	
5	0	87.63	86	227	4.11	175.31	171	11	2.38E-02	35.7	
6	0	92.73*	78	215	1.71	185.50	182	13	2.16E-02	42.7	
7	0	185.77*	31	162	1.16	371.33	367	10	8.61E-03	83.1	
8	0	207.99	32	157	0.62	415.73	410	13	8.90E-03	82.3	
9	3	238.66*	380	69	1.17	477.00	470	25	1.05E-01	6.4	1.83E+00
10	3	241.51	87	71	1.62	482.69	470	25	2.41E-02	26.6	
11	3	245.47	41	47	1.63	490.60	470	25	1.14E-02	37.3	
12	0	270.40	23	77	0.53	540.40	536	9	6.35E-03	72.1	
13	0	274.70	19	51	1.37	549.00	545	7	5.30E-03	66.7	
14	0	277.39	25	58	0.70	554.37	552	8	7.06E-03	55.0	
15	0	295.34	121	75	1.13	590.25	586	10	3.37E-02	16.0	
16	0	300.67	46	66	0.74	600.90	596	11	1.27E-02	38.3	
17	0	328.12*	23	72	1.58	655.74	647	12	6.29E-03	79.0	
18	0	338.02*	93	48	0.88	675.52	671	10	2.59E-02	17.6	
19	0	351.99*	202	62	1.39	703.44	698	9	5.61E-02	10.0	
20	0	432.80	20	32	1.01	864.90	861	8	5.47E-03	54.7	
21	0	471.21	30	139	11.76	941.67	921	28	8.35E-03	115.1	
22	0	511.13*	36	39	2.65	1021.45	1016	12	1.01E-02	47.2	
23	0	576.91	15	15	0.59	1152.93	1149	7	4.14E-03	50.9	
24	0	583.28*	119	34	1.14	1165.67	1161	12	3.31E-02	13.6	
25	0	609.36*	212	23	1.45	1217.81	1211	13	5.89E-02	8.4	
26	5	661.65	160	20	1.79	1322.34	1317	17	4.44E-02	9.6	1.53E+00
27	5	665.34	20	6	2.13	1329.71	1317	17	5.52E-03	42.2	
28	3	727.15	35	17	2.11	1453.29	1447	18	9.70E-03	30.6	8.28E-01
29	3	731.15	16	1	2.09	1461.28	1447	18	4.38E-03	33.1	
30	0	743.62	20	18	3.75	1486.23	1477	18	5.65E-03	53.6	
31	0	768.25	16	41	2.55	1535.47	1523	17	4.41E-03	97.0	
32	0	794.57	21	28	4.48	1588.09	1576	16	5.77E-03	61.0	
33	0	809.82	14	3	0.74	1618.59	1615	7	3.84E-03	34.8	
34	0	860.63	24	15	0.82	1720.19	1714	12	6.71E-03	37.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	911.23*	87	14	1.32	1821.40	1816	13	2.41E-02	14.1	
36	0	969.41*	51	37	1.57	1937.74	1929	15	1.42E-02	29.9	
37	0	1015.67	7	8	1.41	2030.29	2026	8	1.94E-03	79.5	
38	0	1021.36	10	2	1.90	2041.66	2039	6	2.86E-03	36.7	
39	0	1063.75*	10	12	0.74	2126.45	2119	12	2.82E-03	76.1	
40	0	1097.44	9	12	0.49	2193.86	2184	12	2.54E-03	82.6	
41	0	1121.55*	24	28	0.93	2242.10	2233	14	6.56E-03	52.3	
42	0	1216.62	14	11	2.12	2432.32	2427	9	3.86E-03	51.0	
43	0	1267.42	7	6	0.88	2533.97	2528	8	2.04E-03	68.1	
44	0	1290.36	10	13	0.61	2579.88	2571	14	2.73E-03	86.4	
45	0	1338.05	5	4	0.97	2675.30	2670	8	1.39E-03	82.5	
46	0	1367.85	6	5	1.10	2734.94	2731	7	1.55E-03	80.4	
47	0	1460.94*	322	4	1.71	2921.28	2915	15	8.94E-02	5.8	
48	0	1589.47	10	4	0.60	3178.58	3175	7	2.64E-03	46.0	
49	0	1764.74*	31	0	2.92	3529.56	3521	15	8.56E-03	19.1	

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


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235049.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 7-DEC-2015 13:33:00   Acquisition date : 3-OCT-2016 07:01:16
Sample ID        : G405235049             Sample quantity  : 147.30 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA33                Detector geometry: CAN
Elapsed live time: 0 01:00:00.00          Elapsed real time: 0 01:00:00.77   0.0%
Energy tolerance : 1.50 keV              Half life ratio  : 10.00
Errors propagated: No                    Systematic Error : 0.00 %
Efficiency type  : Linear                 Efficiencies at  : Peak Energy
Abundance limit  : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.133E+00	1.307E+01	1.307E+01	11.59	OK
CO-58	810.76	99.45*	1.810E+00	4.001E-02	7.582E-01	69.57	OK
CD-109	88.03	3.70*	4.931E+00	2.128E+00	3.343E+00	101.05	OK
SN-126	64.28	9.60	2.441E+00	1.346E+00	1.346E+00	89.42	OK
	86.94	8.90	4.931E+00	8.846E-01	8.846E-01	101.05	OK
	87.57	37.00*	4.931E+00	2.128E-01	2.128E-01	101.05	OK
BA-137M	661.66	89.90*	2.115E+00	4.469E-01	4.554E-01	19.25	OK
CS-137	661.66	85.10*	2.115E+00	4.721E-01	4.811E-01	19.25	OK
TL-208	277.37	6.60	4.258E+00	5.203E-01	5.203E-01	109.91	OK
	583.19	85.00*	2.334E+00	3.231E-01	3.231E-01	27.18	OK
	860.56	12.50	1.727E+00	5.793E-01	5.793E-01	75.89	OK
PB-212	74.82	10.28	3.808E+00	1.002E+00	1.002E+00	89.84	OK
	77.11	17.10	4.039E+00	1.906E+00	1.906E+00	25.78	OK
	238.63	43.60*	4.775E+00	1.064E+00	1.064E+00	12.85	OK
	300.09	3.30	3.993E+00	1.988E+00	1.988E+00	76.62	OK
BI-214	609.32	45.49*	2.255E+00	1.106E+00	1.106E+00	16.85	OK
	1120.29	14.92	1.406E+00	5.678E-01	5.680E-01	104.69	OK
	1764.49	15.30	9.591E-01	1.010E+00	1.011E+00	38.27	OK
PB-214	74.82	5.80	3.800E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	4.039E+00	3.359E+00	3.361E+00	25.78	OK
	87.09	3.41	4.892E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	4.727E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	4.051E+00	9.297E-01	9.300E-01	32.05	OK
	351.93	35.60*	3.512E+00	9.108E-01	9.111E-01	20.02	OK
RN-222	609.32	45.49*	2.255E+00	1.106E+00	1.106E+00	16.85	OK
	1120.29	14.92	1.406E+00	5.678E-01	5.680E-01	104.69	OK
	1764.49	15.30	9.591E-01	1.010E+00	1.011E+00	38.27	OK
RA-224	240.99	4.10*	4.734E+00	9.609E-01	9.609E-01	154.07	OK
RA-226	609.32	45.49*	2.255E+00	1.106E+00	1.106E+00	16.85	OK
	1120.29	14.92	1.406E+00	5.678E-01	5.680E-01	104.69	OK
	1764.49	15.30	9.591E-01	1.010E+00	1.011E+00	38.27	OK
AC-228	105.21	1.10	5.839E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.630E+00	1.288E+00	1.288E+00	35.17	OK
	794.95	4.25	1.836E+00	1.390E+00	1.390E+00	122.09	OK
	835.71	1.61	1.766E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.653E+00	1.047E+00	1.047E+00	28.16	OK
	968.97	15.80	1.576E+00	1.052E+00	1.052E+00	59.76	OK
RA-228	105.21	1.10	5.839E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.630E+00	1.288E+00	1.288E+00	35.17	OK
	794.95	4.25	1.836E+00	1.390E+00	1.390E+00	122.09	OK
	835.71	1.61	1.766E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.653E+00	1.047E+00	1.047E+00	28.16	OK
	968.97	15.80	1.576E+00	1.052E+00	1.052E+00	59.76	OK
TH-228	74.82	10.28	3.808E+00	1.002E+00	1.002E+00	89.84	OK
	77.11	17.10	4.039E+00	1.906E+00	1.906E+00	25.78	OK
	238.63	43.60*	4.775E+00	1.064E+00	1.064E+00	12.85	OK
	300.09	3.30	3.993E+00	1.988E+00	1.988E+00	76.62	OK
TH-230	609.32	45.49*	2.255E+00	1.106E+00	1.106E+00	16.85	OK
	1120.29	14.92	1.406E+00	5.678E-01	5.678E-01	104.69	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	1764.49	15.30	9.591E-01	1.010E+00	1.011E+00	38.27	OK
PA-231	283.69	1.70	4.183E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	3.993E+00	1.227E+00	1.227E+00	76.62	OK
TH-232	105.21	1.10	5.839E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.630E+00	1.288E+00	1.288E+00	35.17	OK
	835.71	1.61	1.766E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.653E+00	1.047E+00	1.047E+00	28.16	OK
	968.97	15.80	1.576E+00	1.052E+00	1.052E+00	59.76	OK
TH-234	63.29	3.70*	2.441E+00	3.492E+00	3.492E+00	89.42	OK
	92.59	4.23	5.266E+00	2.207E+00	2.207E+00	85.46	OK
U-234	609.32	45.49*	2.255E+00	1.106E+00	1.106E+00	16.85	OK
	1120.29	14.92	1.406E+00	5.678E-01	5.678E-01	104.69	OK
	1764.49	15.30	9.591E-01	1.010E+00	1.010E+00	38.27	OK
U-238	63.29	3.70*	2.441E+00	3.492E+00	3.492E+00	89.42	OK
	92.59	4.23	5.266E+00	2.207E+00	2.207E+00	85.46	OK
AM-243	43.53	5.90	2.461E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.808E+00	1.533E-01	1.533E-01	89.84	OK
ANH-511	511.00	100.00*	2.592E+00	7.630E-02	7.630E-02	94.30	OK

Flag: "*" = Keyline

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.307E+01	1.484E+00	5.034E-01
CO-58	7.582E-01	5.170E-01	7.993E-01
CD-109	3.343E+00	3.310E+00	2.225E+00
SN-126	2.128E-01	2.107E-01	1.425E-01
BA-137M	4.554E-01	8.590E-02	6.954E-02
CS-137	4.811E-01	9.075E-02	7.346E-02
TL-208	3.231E-01	8.606E-02	6.056E-02
PB-212	1.064E+00	1.340E-01	1.001E-01
BI-214	1.106E+00	1.826E-01	1.091E-01
PB-214	9.111E-01	1.788E-01	1.315E-01
RN-222	1.106E+00	1.826E-01	1.091E-01
RA-224	9.609E-01	1.451E+00	1.073E+00
RA-226	1.106E+00	1.826E-01	1.091E-01
AC-228	1.047E+00	2.889E-01	2.024E-01
RA-228	1.047E+00	2.889E-01	2.024E-01
TH-228	1.064E+00	1.340E-01	1.001E-01
TH-230	1.106E+00	1.826E-01	1.090E-01
PA-231	1.227E+00	9.209E-01	6.541E-01
TH-232	1.047E+00	2.889E-01	2.024E-01
TH-234	3.492E+00	3.061E+00	2.449E+00
U-234	1.106E+00	1.825E-01	1.090E-01
U-238	3.492E+00	3.061E+00	2.449E+00
AM-243	1.533E-01	1.350E-01	9.399E-02
ANH-511	7.630E-02	7.052E-02	5.863E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.221E+01	1.055E+01	1.738E+01	NOT IDENT.
NA-22	2.539E-02	4.514E-02	9.975E-02	NOT IDENT.
NA-24	0.000E+00	1.575E+41	0.000E+00	SHORT HLIF
AL-26	7.665E-03	2.004E-02	5.442E-02	NOT IDENT.
SC-46	-1.930E-01	3.950E-01	7.000E-01	FAIL ABUN
V-48	0.000E+00	1.631E+04	0.000E+00	SHORT HLIF

CR-51	0.000E+00	3.940E+02	0.000E+00	SHORT HLIF
MN-54	-4.259E-03	6.172E-02	1.173E-01	NOT IDENT.
CO-56	-3.144E-02	4.413E-01	8.455E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-7.400E-03	4.603E-02	8.555E-02	NOT IDENT.
FE-59	1.278E+00	5.854E+00	1.153E+01	FAIL ABUN
CO-60	6.073E-05	3.063E-02	5.900E-02	NOT IDENT.
ZN-65	-7.186E-02	1.911E-01	3.126E-01	NOT IDENT.
GE-68	-1.254E-01	2.033E+00	4.166E+00	NOT IDENT.
AS-73	2.037E+00	1.171E+01	2.348E+01	NOT IDENT.
AS-74	0.000E+00	6.171E+03	0.000E+00	SHORT HLIF
SE-75	-7.025E-02	2.272E-01	3.949E-01	NOT IDENT.
BR-77	0.000E+00	3.132E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	7.490E+02	0.000E+00	SHORT HLIF
RB-83	1.911E-01	6.309E-01	1.288E+00	NOT IDENT.
KR-85	5.945E+00	7.189E+00	1.421E+01	NOT IDENT.
SR-85	6.302E-01	7.663E-01	1.514E+00	NOT IDENT.
RB-86	0.000E+00	2.525E+04	0.000E+00	SHORT HLIF
Y-88	-1.244E-01	1.779E-01	2.891E-01	NOT IDENT.
Y-91	1.748E+02	5.545E+02	1.153E+03	NOT IDENT.
NB-94	-3.501E-02	3.117E-02	4.921E-02	NOT IDENT.
NB-95	5.625E-01	9.123E-01	1.882E+00	NOT IDENT.
NB-95M	1.092E-01	2.721E+00	4.528E+00	NOT IDENT.
ZR-95	3.557E-01	1.129E+00	2.392E+00	NOT IDENT.
NB-97	0.000E+00	1.601E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.929E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.782E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	1.786E-02	3.229E-02	6.345E-02	NOT IDENT.
RH-102	2.911E-04	5.074E-02	1.006E-01	FAIL ABUN
RU-103	2.516E+00	5.743E+00	1.184E+01	FAIL ABUN
RH-106	-2.765E-01	4.620E-01	8.209E-01	NOT IDENT.
RU-106	-2.765E-01	4.620E-01	8.209E-01	NOT IDENT.
AG-108M	4.062E-02	4.355E-02	6.170E-02	FAIL ABUN
AG-110M	2.267E-02	9.083E-02	1.856E-01	NOT IDENT.
SN-113	1.497E-01	2.129E-01	4.533E-01	NOT IDENT.
CD-115	0.000E+00	4.184E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.046E+05	0.000E+00	SHORT HLIF
TE-123M	3.333E-02	1.283E-01	2.434E-01	NOT IDENT.
SB-124	2.304E+00	1.989E+00	5.375E+00	NOT IDENT.
SB-125	1.073E-03	9.645E-02	1.834E-01	NOT IDENT.
TE-125M	1.209E+02	2.879E+02	5.587E+02	NOT IDENT.
I-126	0.000E+00	1.266E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.276E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.428E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	5.319E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	5.054E+26	0.000E+00	SHORT HLIF
BA-133	8.003E-03	4.236E-02	8.152E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	9.106E-02	1.090E-01	1.082E-01	FAIL ABUN
CS-135	-2.384E-03	1.586E-01	2.617E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.902E+05	0.000E+00	SHORT HLIF
CE-139	-2.357E-02	1.125E-01	2.036E-01	NOT IDENT.
BA-140	0.000E+00	1.265E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	2.844E+05	0.000E+00	SHORT HLIF
CE-141	-1.131E+01	2.447E+01	4.363E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	1.190E-01	3.591E-01	6.890E-01	NOT IDENT.
PM-144	1.731E-03	5.304E-02	1.031E-01	NOT IDENT.
PR-144	1.972E-01	4.617E+00	8.987E+00	NOT IDENT.
PM-146	-9.144E-03	4.275E-02	8.190E-02	NOT IDENT.
ND-147	0.000E+00	3.196E+07	0.000E+00	SHORT HLIF
PM-147	1.761E+02	7.686E+02	1.483E+03	NOT IDENT.
PM-149	0.000E+00	5.964E+40	0.000E+00	SHORT HLIF
EU-150	-7.554E-03	2.361E-02	4.062E-02	FAIL ABUN
EU-152	-1.926E-02	7.680E-02	1.499E-01	FAIL ABUN
GD-153	-5.941E-02	1.948E-01	3.301E-01	NOT IDENT.
EU-154	6.468E-02	1.111E-01	2.460E-01	NOT IDENT.
EU-155	-2.088E-02	1.098E-01	2.047E-01	FAIL ABUN
TB-160	1.574E+00	1.755E+00	3.931E+00	FAIL ABUN
HO-166M	-2.492E-02	5.337E-02	9.579E-02	FAIL ABUN
TM-171	-1.740E+01	2.827E+01	5.313E+01	NOT IDENT.
HF-172	-7.752E-02	2.060E-01	3.754E-01	FAIL ABUN
LU-172	-4.987E-02	8.386E-02	1.298E-01	FAIL ABUN
LU-176	1.997E-02	2.346E-02	4.998E-02	FAIL ABUN
HF-181	-9.543E-01	3.924E+00	7.531E+00	NOT IDENT.

TA-182	9.744E-03	9.093E-01	1.709E+00	FAIL ABUN
RE-183	-2.148E+00	3.507E+00	6.554E+00	NOT IDENT.
RE-184	1.519E+00	3.528E+01	6.697E+01	NOT IDENT.
W-188	3.457E+01	1.054E+02	2.084E+02	FAIL ABUN
IR-192	-3.428E-01	4.034E-01	7.359E-01	FAIL ABUN
HG-203	-4.527E-01	2.589E+00	4.554E+00	FAIL ABUN
BI-207	4.788E-02	7.142E-02	1.033E-01	FAIL ABUN
PB-210	2.201E+00	5.293E+00	1.093E+01	NOT IDENT.
BI-211	0.000E+00	4.925E-01	8.068E-01	FAIL ABUN
PB-211	-9.557E-02	6.164E-01	1.198E+00	NOT IDENT.
BI-212	0.000E+00	8.393E-01	1.354E+00	FAIL ABUN
RN-219	7.810E-02	3.837E-01	7.681E-01	FAIL ABUN
RA-223	-3.259E-02	5.823E-01	1.039E+00	FAIL ABUN
AC-227	6.674E-02	2.077E-01	3.940E-01	FAIL ABUN
TH-227	6.674E-02	2.077E-01	3.940E-01	FAIL ABUN
TH-229	-9.114E-03	4.860E-01	8.849E-01	FAIL ABUN
TH-231	-3.259E-02	5.823E-01	1.039E+00	FAIL ABUN
PA-233	-2.429E-02	4.963E-02	9.468E-02	FAIL ABUN
PA-234	1.804E-01	2.888E-01	6.058E-01	NOT IDENT.
PA-234M	-2.468E+00	4.834E+00	8.513E+00	NOT IDENT.
U-235	-8.013E-02	1.749E-01	3.193E-01	FAIL ABUN
NP-237	-2.429E-02	4.963E-02	9.468E-02	FAIL ABUN
NP-238	0.000E+00	1.228E+41	0.000E+00	SHORT HLIF
NP-239	-2.527E-01	2.467E-01	4.238E-01	FAIL ABUN
PU-239	8.011E+01	3.009E+02	5.759E+02	NOT IDENT.
AM-241	9.052E-02	1.635E-01	3.147E-01	NOT IDENT.
CM-243	-2.619E-03	9.952E-02	1.885E-01	FAIL ABUN
BK-247	-4.551E-02	7.741E-02	1.301E-01	NOT IDENT.
CM-247	1.137E-02	3.279E-02	6.713E-02	FAIL ABUN
CF-249	3.025E-02	3.318E-02	7.239E-02	NOT IDENT.
CF-251	7.615E-04	1.213E-01	2.223E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	310	10.66*	1.133E+00	1.307E+01	1.307E+01	11.59
CO-58	810.76	14	99.45*	1.810E+00	4.001E-02	7.582E-01	69.57
CD-109	88.03	107	3.70*	4.931E+00	2.985E+00	4.689E+00	71.45
SN-126	64.28	62	9.60	2.441E+00	1.346E+00	1.346E+00	89.42
	86.94	107	8.90	4.931E+00	1.241E+00	1.241E+00	71.45
	87.57	107	37.00*	4.931E+00	2.985E-01	2.985E-01	71.45
BA-137M	661.66	167	89.90*	2.115E+00	4.469E-01	4.554E-01	19.25
CS-137	661.66	167	85.10*	2.115E+00	4.721E-01	4.811E-01	19.25
TL-208	277.37	29	6.60	4.258E+00	5.203E-01	5.203E-01	109.91
	583.19	126	85.00*	2.334E+00	3.231E-01	3.231E-01	27.18
	860.56	25	12.50	1.727E+00	5.793E-01	5.793E-01	75.89
BI-211	72.87	41	1.23	3.629E+00	4.698E+00	4.698E+00	114.29
	351.06	223	12.92*	3.512E+00	2.510E+00	2.510E+00	20.02
PB-212	74.82	117	10.28	3.808E+00	1.527E+00	1.527E+00	57.94
	77.11	258	17.10	4.039E+00	1.906E+00	1.906E+00	25.78
	238.63	434	43.60*	4.775E+00	1.064E+00	1.064E+00	12.85
	300.09	51	3.30	3.993E+00	1.988E+00	1.988E+00	76.62
BI-214	609.32	223	45.49*	2.255E+00	1.106E+00	1.106E+00	16.85
	1120.29	23	14.92	1.406E+00	5.678E-01	5.680E-01	104.69
	1764.49	29	15.30	9.591E-01	1.010E+00	1.011E+00	38.27
PB-214	74.82	117	5.80	3.808E+00	2.706E+00	2.707E+00	57.94
	77.11	258	9.70	4.039E+00	3.359E+00	3.361E+00	25.78
	87.09	107	3.41	4.931E+00	3.238E+00	3.240E+00	71.45
	242.00	99	7.25	4.734E+00	1.473E+00	1.474E+00	53.11
	295.22	136	18.42	4.051E+00	9.297E-01	9.300E-01	32.05
	351.93	223	35.60*	3.512E+00	9.108E-01	9.111E-01	20.02
RN-222	609.32	223	45.49*	2.255E+00	1.106E+00	1.106E+00	16.85
	1120.29	23	14.92	1.406E+00	5.678E-01	5.680E-01	104.69
	1764.49	29	15.30	9.591E-01	1.010E+00	1.011E+00	38.27
RA-224	240.99	99	4.10*	4.734E+00	2.605E+00	2.605E+00	53.11
RA-226	609.32	223	45.49*	2.255E+00	1.106E+00	1.106E+00	16.85
	1120.29	23	14.92	1.406E+00	5.678E-01	5.680E-01	104.69
	1764.49	29	15.30	9.591E-01	1.010E+00	1.011E+00	38.27
AC-228	105.21	-----	1.10	5.839E+00	-----	Line Not Found	-----
	338.32	103	11.27	3.630E+00	1.288E+00	1.288E+00	35.17
	794.95	21	4.25	1.836E+00	1.390E+00	1.390E+00	122.09
	835.71	-----	1.61	1.766E+00	-----	Line Not Found	-----
	911.20	88	25.80*	1.653E+00	1.047E+00	1.047E+00	28.16
	968.97	51	15.80	1.576E+00	1.052E+00	1.052E+00	59.76
RA-228	105.21	-----	1.10	5.839E+00	-----	Line Not Found	-----
	338.32	103	11.27	3.630E+00	1.288E+00	1.288E+00	35.17
	794.95	21	4.25	1.836E+00	1.390E+00	1.390E+00	122.09
	835.71	-----	1.61	1.766E+00	-----	Line Not Found	-----
	911.20	88	25.80*	1.653E+00	1.047E+00	1.047E+00	28.16
	968.97	51	15.80	1.576E+00	1.052E+00	1.052E+00	59.76
TH-228	74.82	117	10.28	3.808E+00	1.527E+00	1.527E+00	57.94
	77.11	258	17.10	4.039E+00	1.906E+00	1.906E+00	25.78

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	238.63	434	43.60*	4.775E+00	1.064E+00	1.064E+00	12.85
	300.09	51	3.30	3.993E+00	1.988E+00	1.988E+00	76.62
TH-230	609.32	223	45.49*	2.255E+00	1.106E+00	1.106E+00	16.85
	1120.29	23	14.92	1.406E+00	5.678E-01	5.678E-01	104.69
	1764.49	29	15.30	9.591E-01	1.010E+00	1.011E+00	38.27
PA-231	283.69	-----	1.70	4.183E+00	-----	Line Not Found	-----
	301.36	51	5.35*	3.993E+00	1.227E+00	1.227E+00	76.62
TH-232	105.21	-----	1.10	5.839E+00	-----	Line Not Found	-----
	338.32	103	11.27	3.630E+00	1.288E+00	1.288E+00	35.17
	835.71	-----	1.61	1.766E+00	-----	Line Not Found	-----
	911.20	88	25.80*	1.653E+00	1.047E+00	1.047E+00	28.16
	968.97	51	15.80	1.576E+00	1.052E+00	1.052E+00	59.76
TH-234	63.29	62	3.70*	2.441E+00	3.492E+00	3.492E+00	89.42
	92.59	96	4.23	5.266E+00	2.207E+00	2.207E+00	85.46
U-234	609.32	223	45.49*	2.255E+00	1.106E+00	1.106E+00	16.85
	1120.29	23	14.92	1.406E+00	5.678E-01	5.678E-01	104.69
	1764.49	29	15.30	9.591E-01	1.010E+00	1.010E+00	38.27
U-238	63.29	62	3.70*	2.441E+00	3.492E+00	3.492E+00	89.42
	92.59	96	4.23	5.266E+00	2.207E+00	2.207E+00	85.46
AM-243	43.53	-----	5.90	2.461E-01	-----	Line Not Found	-----
	74.66	117	67.20*	3.808E+00	2.336E-01	2.336E-01	57.94
ANH-511	511.00	39	100.00*	2.592E+00	7.630E-02	7.630E-02	94.30

Flag: "*" = Keyline

Total number of lines in spectrum 49
Number of unidentified lines 11
Number of lines tentatively identified by NID 38 77.55%

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	1.307E+01	1.307E+01	0.151E+01	11.59	
CO-58	70.86D	19.0	4.001E-02	7.582E-01	5.275E-01	69.57	
CD-109	461.40D	1.57	2.985E+00	4.689E+00	3.350E+00	71.45	
SN-126	2.30E+05Y	1.00	2.985E-01	2.985E-01	2.132E-01	71.45	
BA-137M	30.08Y	1.02	4.469E-01	4.554E-01	0.877E-01	19.25	
CS-137	30.08Y	1.02	4.721E-01	4.811E-01	0.926E-01	19.25	
TL-208	1.41E+10Y	1.00	3.231E-01	3.231E-01	0.878E-01	27.18	
BI-211	7.04E+08Y	1.00	2.510E+00	2.510E+00	0.503E+00	20.02	
PB-212	1.41E+10Y	1.00	1.064E+00	1.064E+00	0.137E+00	12.85	
BI-214	1600.00Y	1.00	1.106E+00	1.106E+00	0.186E+00	16.85	
PB-214	1600.00Y	1.00	9.108E-01	9.111E-01	1.824E-01	20.02	
RN-222	1600.00Y	1.00	1.106E+00	1.106E+00	0.186E+00	16.85	
RA-224	1.41E+10Y	1.00	2.605E+00	2.605E+00	1.384E+00	53.11	
RA-226	1600.00Y	1.00	1.106E+00	1.106E+00	0.186E+00	16.85	
AC-228	1.41E+10Y	1.00	1.047E+00	1.047E+00	0.295E+00	28.16	
RA-228	1.41E+10Y	1.00	1.047E+00	1.047E+00	0.295E+00	28.16	
TH-228	1.41E+10Y	1.00	1.064E+00	1.064E+00	0.137E+00	12.85	
TH-230	7.54E+04Y	1.00	1.106E+00	1.106E+00	0.186E+00	16.85	
PA-231	7.04E+08Y	1.00	1.227E+00	1.227E+00	0.940E+00	76.62	
TH-232	1.41E+10Y	1.00	1.047E+00	1.047E+00	0.295E+00	28.16	
TH-234	4.47E+09Y	1.00	3.492E+00	3.492E+00	3.123E+00	89.42	
U-234	2.45E+05Y	1.00	1.106E+00	1.106E+00	0.186E+00	16.85	
U-238	4.47E+09Y	1.00	3.492E+00	3.492E+00	3.123E+00	89.42	
AM-243	7370.00Y	1.00	2.336E-01	2.336E-01	1.353E-01	57.94	
ANH-511	1.00E+09Y	1.00	7.630E-02	7.630E-02	7.196E-02	94.30	

Total Activity : 4.297E+01 4.542E+01

Grand Total Activity : 4.297E+01 4.542E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	185.77	36	189	1.16	371.33	367	10	8.61E-03	****	5.62E+00	T
0	207.99	37	182	0.62	415.73	410	13	8.90E-03	****	5.25E+00	
3	245.47	47	54	1.63	490.60	470	25	1.14E-02	74.5	4.68E+00	T
0	270.40	26	87	0.53	540.40	536	9	6.35E-03	****	4.34E+00	T
0	274.70	22	58	1.37	549.00	545	7	5.30E-03	****	4.29E+00	T
0	328.12	25	80	1.58	655.74	647	12	6.29E-03	****	3.72E+00	T
0	432.80	21	35	1.01	864.90	861	8	5.47E-03	****	2.96E+00	T
0	471.21	32	150	11.76	941.67	921	28	8.35E-03	****	2.77E+00	
0	576.91	16	16	0.59	1152.93	1149	7	4.14E-03	****	2.35E+00	
5	665.34	21	6	2.13	1329.71	1317	17	5.52E-03	84.4	2.11E+00	T
3	727.15	36	17	2.11	1453.29	1447	18	9.70E-03	61.1	1.97E+00	T
3	731.15	16	1	2.09	1461.28	1447	18	4.38E-03	66.3	1.96E+00	
0	743.62	21	18	3.75	1486.23	1477	18	5.65E-03	****	1.93E+00	
0	768.25	16	42	2.55	1535.47	1523	17	4.41E-03	****	1.88E+00	T
0	1015.67	7	8	1.41	2030.29	2026	8	1.94E-03	****	1.52E+00	
0	1021.36	10	2	1.90	2041.66	2039	6	2.86E-03	73.4	1.51E+00	T
0	1063.75	10	12	0.74	2126.45	2119	12	2.82E-03	****	1.47E+00	T
0	1097.44	9	12	0.49	2193.86	2184	12	2.54E-03	****	1.43E+00	
0	1216.62	14	11	2.12	2432.32	2427	9	3.86E-03	****	1.32E+00	
0	1267.42	7	6	0.88	2533.97	2528	8	2.04E-03	****	1.28E+00	
0	1290.36	10	13	0.61	2579.88	2571	14	2.73E-03	****	1.26E+00	T
0	1338.05	5	4	0.97	2675.30	2670	8	1.39E-03	****	1.22E+00	
0	1367.85	5	5	1.10	2734.94	2731	7	1.55E-03	****	1.20E+00	T
0	1589.47	9	3	0.60	3178.58	3175	7	2.64E-03	92.1	1.05E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235049.CNF;1    *
* Acquisition date   : 3-OCT-2016 07:01:16 Sensitivity      : 3.000              *
* Detector ID        : GAM33 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.77 Half life ratio : *****          *
* Sample date       : 7-DEC-2015 13:33:00 Nuclide Library : SOLID          *
* Sample ID         : G405235049 Analyst initials: MXR1          *
* Batch Number      : 1596252 Sample Quantity : 1.4730E+02 GRAM      *
* Wet wt corr       : 1.00000 Wet Weight : 0.00000          *
*                               Dry Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 10-JUN-2016 07:00:49 Eff. Geometry   : CAN          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM33 CAN.CNF;8          *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.943E-01
CO-58	3.255E-01
CD-109	1.050E+00
SN-126	6.725E-02
BA-137M	3.099E-02
CS-137	3.274E-02
TL-208	2.672E-02
PB-212	4.661E-02
BI-214	4.765E-02
PB-214	6.003E-02
RN-222	4.765E-02
RA-224	4.997E-01
RA-226	4.765E-02
AC-228	8.478E-02
RA-228	8.478E-02
TH-228	4.661E-02
TH-230	4.764E-02
PA-231	2.934E-01
TH-232	8.478E-02
TH-234	1.143E+00
U-234	4.764E-02
U-238	1.143E+00
AM-243	4.409E-02
ANH-511	2.658E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	7.438E+00	NOT IDENT.
NA-22	4.306E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.983E-02	NOT IDENT.
SC-46	2.999E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF

MN-54	5.093E-02	NOT IDENT.
CO-56	3.631E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	3.980E-02	NOT IDENT.
FE-59	4.828E+00	FAIL ABUN
CO-60	2.318E-02	NOT IDENT.
ZN-65	1.334E-01	NOT IDENT.
GE-68	1.761E+00	NOT IDENT.
AS-73	1.094E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.817E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.747E-01	NOT IDENT.
KR-85	6.435E+00	NOT IDENT.
SR-85	6.856E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	9.138E-02	NOT IDENT.
Y-91	5.053E+02	NOT IDENT.
NB-94	2.111E-02	NOT IDENT.
NB-95	8.443E-01	NOT IDENT.
NB-95M	2.108E+00	NOT IDENT.
ZR-95	1.020E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.968E-02	NOT IDENT.
RH-102	4.360E-02	FAIL ABUN
RU-103	5.325E+00	FAIL ABUN
RH-106	3.543E-01	NOT IDENT.
RU-106	3.543E-01	NOT IDENT.
AG-108M	2.819E-02	FAIL ABUN
AG-110M	7.966E-02	NOT IDENT.
SN-113	2.058E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.135E-01	NOT IDENT.
SB-124	2.223E+00	NOT IDENT.
SB-125	8.188E-02	NOT IDENT.
TE-125M	2.622E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.727E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	4.821E-02	FAIL ABUN
CS-135	1.206E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.485E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.033E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.226E-01	NOT IDENT.
PM-144	4.537E-02	NOT IDENT.
PR-144	3.956E+00	NOT IDENT.
PM-146	3.670E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	6.898E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.824E-02	FAIL ABUN
EU-152	6.713E-02	FAIL ABUN
GD-153	1.542E-01	NOT IDENT.
EU-154	1.063E-01	NOT IDENT.
EU-155	9.568E-02	FAIL ABUN
TB-160	1.721E+00	FAIL ABUN
HO-166M	4.138E-02	FAIL ABUN
TM-171	2.460E+01	NOT IDENT.
HF-172	1.736E-01	FAIL ABUN
LU-172	5.440E-02	FAIL ABUN
LU-176	2.305E-02	FAIL ABUN
HF-181	3.321E+00	NOT IDENT.
TA-182	7.333E-01	FAIL ABUN

RE-183	3.037E+00	NOT IDENT.
RE-184	2.950E+01	NOT IDENT.
W-188	9.555E+01	FAIL ABUN
IR-192	3.299E-01	FAIL ABUN
HG-203	2.095E+00	FAIL ABUN
BI-207	4.516E-02	FAIL ABUN
PB-210	5.083E+00	NOT IDENT.
BI-211	3.878E-01	FAIL ABUN
PB-211	5.388E-01	NOT IDENT.
BI-212	6.233E-01	FAIL ABUN
RN-219	3.498E-01	FAIL ABUN
RA-223	4.717E-01	FAIL ABUN
AC-227	1.803E-01	FAIL ABUN
TH-227	1.803E-01	FAIL ABUN
TH-229	4.126E-01	FAIL ABUN
TH-231	4.717E-01	FAIL ABUN
PA-233	4.254E-02	FAIL ABUN
PA-234	2.666E-01	NOT IDENT.
PA-234M	3.715E+00	NOT IDENT.
U-235	1.489E-01	FAIL ABUN
NP-237	4.254E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.968E-01	FAIL ABUN
PU-239	2.694E+02	NOT IDENT.
AM-241	1.469E-01	NOT IDENT.
CM-243	8.807E-02	FAIL ABUN
BK-247	5.962E-02	NOT IDENT.
CM-247	3.042E-02	FAIL ABUN
CF-249	3.286E-02	NOT IDENT.
CF-251	1.039E-01	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.307E+01	1.632E+00	1.632E+00
CO-58	7.582E-01	5.180E-01	5.180E-01
CD-109	3.343E+00	3.326E+00	3.326E+00
SN-126	2.128E-01	2.114E-01	2.114E-01
BA-137M	4.554E-01	8.810E-02	8.810E-02
CS-137	4.811E-01	9.306E-02	9.306E-02
TL-208	3.231E-01	8.714E-02	8.714E-02
PB-212	1.064E+00	1.452E-01	1.452E-01
BI-214	1.106E+00	1.887E-01	1.887E-01
PB-214	9.111E-01	1.827E-01	1.827E-01
RN-222	1.106E+00	1.887E-01	1.887E-01
RA-224	9.609E-01	1.456E+00	1.456E+00
RA-226	1.106E+00	1.887E-01	1.887E-01
AC-228	1.047E+00	2.938E-01	2.938E-01
RA-228	1.047E+00	2.938E-01	2.938E-01
TH-228	1.064E+00	1.452E-01	1.452E-01
TH-230	1.106E+00	1.886E-01	1.886E-01
PA-231	1.227E+00	9.574E-01	9.574E-01
TH-232	1.047E+00	2.938E-01	2.938E-01
TH-234	3.492E+00	3.157E+00	3.157E+00
U-234	1.106E+00	1.886E-01	1.886E-01
U-238	3.492E+00	3.157E+00	3.157E+00
AM-243	1.533E-01	1.357E-01	1.357E-01
ANH-511	7.630E-02	7.058E-02	7.058E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-1.221E+01	1.056E+01	1.191E+01	NOT IDENT.
NA-22	2.539E-02	4.515E-02	4.658E-02	NOT IDENT.
NA-24	1.000E+41	1.635E+41	0.000E+00	SHORT HLIF
AL-26	7.665E-03	2.004E-02	2.034E-02	NOT IDENT.
SC-46	-1.930E-01	3.950E-01	4.045E-01	FAIL ABUN
V-48	1.153E+04	1.632E+04	1.713E+04	SHORT HLIF

CR-51	2.755E+02	3.941E+02	4.133E+02	SHORT HLIF
MN-54	-4.259E-03	6.172E-02	6.175E-02	NOT IDENT.
CO-56	-3.144E-02	4.413E-01	4.415E-01	NOT IDENT.
MN-56	-1.000E+41	1.329E+42	0.000E+00	SHORT HLIF
CO-57	-7.400E-03	4.604E-02	4.616E-02	NOT IDENT.
FE-59	1.278E+00	5.854E+00	5.883E+00	FAIL ABUN
CO-60	6.073E-05	3.063E-02	3.063E-02	NOT IDENT.
ZN-65	-7.186E-02	1.911E-01	1.938E-01	NOT IDENT.
GE-68	-1.254E-01	2.033E+00	2.034E+00	NOT IDENT.
AS-73	2.037E+00	1.172E+01	1.176E+01	NOT IDENT.
AS-74	2.445E+03	6.174E+03	6.271E+03	SHORT HLIF
SE-75	-7.025E-02	2.273E-01	2.294E-01	NOT IDENT.
BR-77	2.487E+38	2.159E+39	0.000E+00	SHORT HLIF
SR-82	-8.216E+01	7.490E+02	7.499E+02	SHORT HLIF
RB-83	1.911E-01	6.315E-01	6.373E-01	NOT IDENT.
KR-85	5.945E+00	7.193E+00	7.676E+00	NOT IDENT.
SR-85	6.302E-01	7.667E-01	8.177E-01	NOT IDENT.
RB-86	-1.557E+03	2.525E+04	2.526E+04	SHORT HLIF
Y-88	-1.244E-01	1.781E-01	1.867E-01	NOT IDENT.
Y-91	1.748E+02	5.546E+02	5.601E+02	NOT IDENT.
NB-94	-3.501E-02	3.121E-02	3.497E-02	NOT IDENT.
NB-95	5.625E-01	9.126E-01	9.472E-01	NOT IDENT.
NB-95M	1.092E-01	2.721E+00	2.722E+00	NOT IDENT.
ZR-95	3.557E-01	1.129E+00	1.140E+00	NOT IDENT.
NB-97	1.000E+41	1.601E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.929E+41	0.000E+00	SHORT HLIF
MO-99	-1.303E+32	1.785E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.025E+42	0.000E+00	SHORT HLIF
RH-101	1.786E-02	3.245E-02	3.343E-02	NOT IDENT.
RH-102	2.911E-04	5.074E-02	5.074E-02	FAIL ABUN
RU-103	2.516E+00	5.744E+00	5.855E+00	FAIL ABUN
RH-106	-2.765E-01	4.623E-01	4.788E-01	NOT IDENT.
RU-106	-2.765E-01	4.623E-01	4.788E-01	NOT IDENT.
AG-108M	4.062E-02	4.358E-02	4.727E-02	FAIL ABUN
AG-110M	2.267E-02	9.083E-02	9.141E-02	NOT IDENT.
SN-113	1.497E-01	2.130E-01	2.234E-01	NOT IDENT.
CD-115	-1.335E+39	4.191E+39	0.000E+00	SHORT HLIF
SN-117M	-8.136E+04	1.050E+05	1.113E+05	SHORT HLIF
TE-123M	3.333E-02	1.283E-01	1.292E-01	NOT IDENT.
SB-124	2.304E+00	1.993E+00	2.247E+00	NOT IDENT.
SB-125	1.073E-03	9.645E-02	9.646E-02	NOT IDENT.
TE-125M	1.209E+02	2.880E+02	2.931E+02	NOT IDENT.
I-126	1.530E+06	1.283E+06	1.457E+06	SHORT HLIF
SB-126	-2.492E+05	1.277E+06	1.282E+06	SHORT HLIF
SB-127	8.943E+21	2.723E+22	0.000E+00	SHORT HLIF
I-131	-1.745E+09	5.320E+09	5.377E+09	SHORT HLIF
I-132	-1.000E+41	1.906E+42	0.000E+00	SHORT HLIF
TE-132	-3.481E+26	5.249E+26	0.000E+00	SHORT HLIF
BA-133	8.003E-03	4.237E-02	4.252E-02	FAIL ABUN
I-133	1.000E+41	5.820E+42	0.000E+00	SHORT HLIF
CS-134	9.106E-02	1.090E-01	1.165E-01	FAIL ABUN
CS-135	-2.384E-03	1.586E-01	1.586E-01	NOT IDENT.
I-135	-1.000E+41	7.400E+41	0.000E+00	SHORT HLIF
CS-136	1.383E+05	2.906E+05	2.972E+05	SHORT HLIF
CE-139	-2.357E-02	1.126E-01	1.131E-01	NOT IDENT.
BA-140	-1.282E+05	1.265E+06	1.267E+06	SHORT HLIF
LA-140	-5.470E+04	2.844E+05	2.855E+05	SHORT HLIF
CE-141	-1.131E+01	2.447E+01	2.500E+01	NOT IDENT.
CE-143	1.000E+41	1.787E+42	0.000E+00	SHORT HLIF
CE-144	1.190E-01	3.591E-01	3.631E-01	NOT IDENT.
PM-144	1.731E-03	5.304E-02	5.305E-02	NOT IDENT.
PR-144	1.972E-01	4.617E+00	4.618E+00	NOT IDENT.
PM-146	-9.144E-03	4.276E-02	4.296E-02	NOT IDENT.
ND-147	9.035E+06	3.196E+07	3.222E+07	SHORT HLIF
PM-147	1.761E+02	7.686E+02	7.727E+02	NOT IDENT.
PM-149	8.219E+39	5.966E+40	0.000E+00	SHORT HLIF
EU-150	-7.554E-03	2.361E-02	2.386E-02	FAIL ABUN
EU-152	-1.926E-02	7.680E-02	7.729E-02	FAIL ABUN
GD-153	-5.941E-02	1.948E-01	1.967E-01	NOT IDENT.
EU-154	6.468E-02	1.112E-01	1.149E-01	NOT IDENT.
EU-155	-2.088E-02	1.098E-01	1.102E-01	FAIL ABUN
TB-160	1.574E+00	1.757E+00	1.895E+00	FAIL ABUN
HO-166M	-2.492E-02	5.338E-02	5.455E-02	FAIL ABUN
TM-171	-1.740E+01	2.831E+01	2.938E+01	NOT IDENT.
HF-172	-7.752E-02	2.063E-01	2.093E-01	FAIL ABUN
LU-172	-4.987E-02	8.401E-02	8.697E-02	FAIL ABUN
LU-176	1.997E-02	2.348E-02	2.515E-02	FAIL ABUN
HF-181	-9.543E-01	3.925E+00	3.948E+00	NOT IDENT.

TA-182	9.744E-03	9.093E-01	9.093E-01	FAIL ABUN
RE-183	-2.148E+00	3.523E+00	3.654E+00	NOT IDENT.
RE-184	1.519E+00	3.528E+01	3.529E+01	NOT IDENT.
W-188	3.457E+01	1.055E+02	1.067E+02	FAIL ABUN
IR-192	-3.428E-01	4.036E-01	4.322E-01	FAIL ABUN
HG-203	-4.527E-01	2.589E+00	2.597E+00	FAIL ABUN
BI-207	4.788E-02	7.144E-02	7.463E-02	FAIL ABUN
PB-210	2.201E+00	5.297E+00	5.389E+00	NOT IDENT.
BI-211	2.510E+00	5.050E-01	1.239E+00	FAIL ABUN
PB-211	-9.557E-02	6.164E-01	6.180E-01	NOT IDENT.
BI-212	1.401E+00	8.423E-01	1.053E+00	FAIL ABUN
RN-219	7.810E-02	3.838E-01	3.855E-01	FAIL ABUN
RA-223	-3.259E-02	5.823E-01	5.825E-01	FAIL ABUN
AC-227	6.674E-02	2.079E-01	2.101E-01	FAIL ABUN
TH-227	6.674E-02	2.079E-01	2.101E-01	FAIL ABUN
TH-229	-9.114E-03	4.860E-01	4.860E-01	FAIL ABUN
TH-231	-3.259E-02	5.823E-01	5.825E-01	FAIL ABUN
PA-233	-2.429E-02	4.965E-02	5.084E-02	FAIL ABUN
PA-234	1.804E-01	3.549E-01	3.641E-01	NOT IDENT.
PA-234M	-2.468E+00	4.836E+00	4.962E+00	NOT IDENT.
U-235	-8.013E-02	1.750E-01	1.787E-01	FAIL ABUN
NP-237	-2.429E-02	4.965E-02	5.084E-02	FAIL ABUN
NP-238	1.000E+41	1.229E+41	0.000E+00	SHORT HLIF
NP-239	-2.527E-01	2.476E-01	2.726E-01	FAIL ABUN
PU-239	8.011E+01	3.009E+02	3.031E+02	NOT IDENT.
AM-241	9.052E-02	1.637E-01	1.687E-01	NOT IDENT.
CM-243	-2.619E-03	9.952E-02	9.953E-02	FAIL ABUN
BK-247	-4.551E-02	7.795E-02	8.061E-02	NOT IDENT.
CM-247	1.137E-02	3.284E-02	3.324E-02	FAIL ABUN
CF-249	3.025E-02	3.327E-02	3.596E-02	NOT IDENT.
CF-251	7.615E-04	1.213E-01	1.213E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	52.3810	87.09	92.6644	136.47	71.2733
45.60	55.4770	87.57	92.7384	140.51	0.0000
46.54	50.8940	88.03	92.8090	143.76	59.7382
49.72	0.0000	88.34	92.8563	144.24	70.8418
51.35	61.0164	88.47	92.8761	145.44	73.1593
51.87	58.2263	89.96	82.1497	152.43	68.1708
52.39	64.9855	1093.63	82.2400	153.25	0.0000
52.97	56.4592	91.11	0.0000	323.87	71.6689
53.44	58.4355	92.59	82.4988	156.02	0.0000
54.07	59.4776	93.35	82.5983	158.56	0.0000
57.36	0.0000	94.56	82.7570	159.00	57.4209
57.53	69.5998	94.65	82.7686	162.33	77.9745
57.98	66.7643	94.67	82.7710	162.66	0.0000
59.27	53.0413	94.87	82.7972	163.33	46.3834
59.32	53.0470	97.43	72.0443	165.86	66.9314
59.54	53.0716	98.43	63.8298	176.31	65.3844
60.96	63.6164	98.44	63.8307	176.60	0.0000
61.17	66.2421	99.53	80.2692	177.52	67.7632
62.93	65.5051	100.11	78.2530	181.07	0.0000
63.29	65.5533	102.03	79.5266	181.52	70.7332
63.58	65.5919	103.18	79.6628	184.41	78.6520
64.28	66.6651	103.37	68.1520	143.76	66.0158
66.73	73.5592	105.21	59.9271	193.51	64.1930
67.24	71.0030	105.31	72.5539	197.03	60.8986
125.81	71.0640	106.12	68.4290	198.01	72.6790
67.75	74.0353	106.47	68.4639	201.83	72.9438
69.67	83.2284	109.28	63.4547	203.43	56.5583
70.83	75.4683	111.00	72.0918	205.31	64.5280
72.81	76.7462	111.76	0.0000	210.85	49.0404
72.87	76.7550	114.06	69.2083	215.65	50.0506
74.66	77.0088	116.30	0.0000	222.11	70.7170
74.82	77.0317	116.74	81.2214	227.09	56.5813
74.97	77.0529	119.76	57.9473	227.38	63.8206
77.11	77.3525	121.12	61.2787	228.16	0.0000
78.74	77.5775	121.22	54.8357	228.18	63.8651
79.69	77.7079	121.78	60.2567	116.74	63.8651
80.12	76.7567	122.06	63.5085	235.69	59.8326
80.19	0.0000	122.92	45.2611	235.96	59.8465
80.57	76.8170	123.07	45.2700	238.63	60.7925
81.00	66.0850	265.00	48.5427	238.98	0.0000
81.07	66.0930	125.81	58.4149	240.99	60.9131
81.75	95.8808	127.23	57.4388	242.00	60.9650
83.79	81.3104	127.91	60.7435	244.70	61.1015
84.00	81.3391	129.30	64.1117	252.40	0.0000
85.43	97.8435	131.20	72.9827	252.80	33.2148
86.55	92.5814	133.02	68.7832	254.15	0.0000
86.79	92.6180	133.52	64.4565	256.23	33.3067
86.94	92.6416	136.00	70.1357	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	50.9159	355.39	0.0000	584.27	18.9026
264.80	52.1642	356.01	34.9602	595.83	0.0000
265.00	52.1719	364.49	0.0000	427.87	19.0379
268.22	46.4912	366.42	0.0000	602.52	0.0000
269.46	44.8748	372.51	33.8948	604.72	15.0562
270.03	44.8945	375.05	27.6939	607.14	19.5936
271.23	44.9363	377.52	32.2090	609.32	16.0918
273.65	0.0000	356.01	30.5365	610.33	16.0983
276.40	30.0762	388.16	19.8099	614.28	22.6767
277.37	41.3849	388.63	0.0000	618.01	18.1699
277.60	41.3920	391.69	22.5586	620.36	22.2292
278.00	41.4051	264.66	29.0273	621.93	20.2222
279.20	47.7215	401.81	31.7693	630.19	0.0000
279.54	47.7343	402.40	26.3326	631.29	14.2108
279.70	42.7148	404.85	29.0977	633.25	16.2539
280.46	45.2527	410.95	31.0249	634.78	0.0000
283.69	42.8424	413.71	39.2986	635.95	19.3232
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	44.5797	423.72	0.0000	645.85	10.2112
285.90	0.0000	427.09	18.4163	657.76	16.9297
287.50	41.2790	427.87	23.2148	657.90	0.0000
290.67	35.4648	433.94	19.4106	661.66	22.6087
293.27	0.0000	439.40	27.8119	664.57	0.0000
351.93	44.4785	453.88	28.0292	666.33	0.0000
295.96	44.5020	463.37	27.2306	666.50	0.0000
879.38	45.8602	468.07	27.2972	667.71	0.0000
299.98	25.5035	473.00	0.0000	677.62	18.6152
300.09	25.5060	475.06	11.3362	685.70	0.0000
300.13	25.5066	476.78	25.5289	695.00	0.0000
301.36	25.5292	477.60	25.5399	696.49	17.7104
302.85	37.0562	482.18	21.8068	696.51	17.7104
256.23	39.6582	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	13.5475
306.78	32.4614	497.08	21.0153	697.49	14.5907
308.46	37.6317	505.52	26.4747	702.65	26.1058
311.90	33.4355	507.63	0.0000	706.68	16.7337
316.51	37.8429	511.00	31.7391	711.68	18.8606
319.41	0.0000	514.00	18.7819	720.70	0.0000
320.08	0.0000	514.00	18.7819	721.93	0.0000
321.04	37.2709	520.40	19.3229	722.78	17.3614
323.87	33.7124	520.69	0.0000	722.91	12.6270
325.23	35.4738	522.65	0.0000	723.31	12.6289
328.76	0.0000	527.90	0.0000	724.19	15.7916
333.37	28.7085	528.26	24.2452	727.33	13.7019
333.97	31.3308	529.59	21.3492	733.00	11.0900
334.37	32.6447	529.87	0.0000	735.93	6.3440
338.28	24.4379	531.02	0.0000	333.97	12.6953
338.32	24.4385	537.26	0.0000	739.50	0.0000
311.90	31.4656	546.56	0.0000	747.24	12.7407
340.48	31.4656	552.55	16.6742	748.06	7.9654
340.55	0.0000	563.25	17.7407	752.31	13.8278
344.28	28.0391	569.33	13.8365	753.82	0.0000
345.93	35.0863	946.00	13.8376	756.73	8.5231
351.06	36.9619	569.70	14.8273	756.80	8.5234
351.93	36.9824	583.19	18.8941	884.68	16.0223

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	16.0333	1274.44	18.4173	1620.50	4.0042
766.42	16.0364	1001.03	18.4427	1621.92	5.0064
766.84	16.0388	1002.74	16.1453	1678.03	0.0000
772.60	0.0000	1004.73	9.2311	1690.97	1.0148
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	5.1437
778.90	12.8862	1028.54	0.0000	1063.66	8.2388
783.70	0.0000	1037.84	6.9893	1771.35	4.1201
785.37	14.2071	1038.76	0.0000	1791.20	0.0000
792.07	19.4187	631.29	10.5095	1808.65	1.0370
794.95	17.8179	1048.07	0.0000	1810.72	0.0000
795.86	9.7222	1049.04	9.6404	1836.06	4.1685
810.06	11.3981	1050.41	14.9041		
810.29	13.0273	1063.66	7.9195		
344.28	13.0278	1077.00	0.0000		
810.76	6.5146	1077.34	10.5989		
815.77	0.0000	1085.87	9.7385		
1048.07	0.0000	1093.63	15.6138		
832.01	15.3108	1099.45	7.1084		
834.85	15.3250	1112.07	9.8069		
835.71	10.9497	1112.84	11.5924		
836.80	0.0000	1115.54	15.7062		
846.75	0.0000	1120.29	12.5089		
846.77	13.1880	1120.55	12.5098		
856.80	0.0000	1221.41	12.5123		
860.56	6.6239	1129.67	2.6873		
871.09	12.1852	1131.51	0.0000		
873.19	7.7596	1147.95	0.0000		
875.33	0.0000	1173.23	17.2118		
879.38	7.7750	1177.95	18.1396		
880.51	12.2224	1189.05	20.0100		
883.24	13.3452	1204.77	13.6972		
884.68	10.0133	1221.41	12.2257		
889.28	15.5996	1231.02	11.0295		
894.76	13.3940	1235.36	0.0000		
898.04	10.0562	1238.28	16.5740		
900.72	10.0646	1260.41	0.0000		
903.28	17.9069	1271.87	12.7307		
911.20	8.9756	1274.44	8.3595		
912.08	8.9782	1274.54	8.3595		
923.98	0.0000	1291.59	11.9375		
926.50	18.0365	1298.22	0.0000		
929.11	16.9232	1312.11	0.0000		
937.49	20.3599	1332.49	4.5196		
944.13	0.0000	1362.66	0.0000		
946.00	11.3403	1365.19	7.5889		
949.00	19.2959	1368.63	0.0000		
667.71	0.0000	1384.29	6.6689		
962.31	13.6753	1408.01	6.7043		
964.08	20.5239	1457.56	0.0000		
966.17	22.2477	1460.82	3.8752		
911.20	23.9788	1489.16	2.9238		
968.97	23.9788	1505.03	6.8453		
983.53	0.0000	1584.12	5.3005		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:05:34.85

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235050.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM36.CNF;52
Background date    : 2-OCT-2016 11:02:08.
Sample date       : 7-DEC-2015 13:42:00. Acquisition date : 3-OCT-2016 07:01:40.
Sample ID        : G405235050 Sample quantity : 1.71604E+02 GRAM
Detector name    : GAM36 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.33 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596252 Detector SN# :
Matrix Spike ID  : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.21*	18	81	1.02	92.38	90	8	4.90E-03	93.3	
2	0	63.24*	37	126	1.19	126.44	122	9	1.03E-02	57.9	
3	2	74.87*	100	73	0.87	149.72	144	21	2.79E-02	16.4	1.39E+00
4	2	77.13*	135	66	0.92	154.22	144	21	3.74E-02	12.8	
5	2	80.83	18	69	1.05	161.63	144	21	4.90E-03	84.7	
6	0	87.28	79	98	1.29	174.52	171	7	2.19E-02	23.7	
7	2	89.70	36	25	0.97	179.37	178	14	1.01E-02	19.8	2.77E+00
8	2	92.70*	61	83	1.08	185.37	178	14	1.68E-02	28.7	
9	0	186.15*	63	71	1.24	372.29	368	10	1.75E-02	29.5	
10	0	227.19	25	51	1.71	454.36	451	8	7.05E-03	52.8	
11	0	238.61*	226	101	1.06	477.20	471	10	6.27E-02	10.9	
12	0	262.50	28	99	6.92	524.99	513	19	7.87E-03	86.6	
13	0	270.55	23	30	1.43	541.09	538	6	6.30E-03	43.7	
14	0	295.36*	59	54	0.97	590.71	586	10	1.64E-02	26.8	
15	0	303.06	39	99	7.57	606.11	596	20	1.08E-02	66.2	
16	0	327.54*	33	35	0.88	655.06	650	10	9.10E-03	38.7	
17	0	338.76	34	40	0.84	677.51	673	10	9.51E-03	37.8	
18	9	350.03	10	6	1.76	700.05	699	12	2.73E-03	47.6	7.59E+00
19	9	351.88*	158	28	1.35	703.75	699	12	4.39E-02	9.9	
20	0	426.49	25	24	6.53	852.94	845	16	6.94E-03	48.2	
21	0	511.05*	20	27	2.74	1022.06	1016	11	5.45E-03	69.2	
22	2	583.18*	61	14	1.72	1166.29	1158	22	1.68E-02	19.1	9.52E-01
23	2	587.54	12	17	1.43	1175.00	1158	22	3.41E-03	62.2	
24	0	601.50	12	27	4.23	1202.92	1192	17	3.25E-03	110.0	
25	0	609.43*	98	14	1.40	1218.78	1212	14	2.73E-02	13.4	
26	0	635.18	5	13	0.51	1270.27	1265	8	1.45E-03	124.1	
27	0	662.20	16	14	1.29	1324.30	1320	9	4.55E-03	47.5	
28	0	700.74	8	14	0.96	1401.36	1395	10	2.17E-03	98.7	
29	0	727.85	18	8	1.27	1455.57	1451	9	4.89E-03	38.6	
30	0	763.74	9	14	4.41	1527.33	1519	14	2.50E-03	94.3	
31	0	768.42	15	3	1.48	1536.69	1533	7	4.09E-03	33.4	
32	0	794.70	31	7	0.66	1589.24	1581	15	8.51E-03	26.5	
33	0	897.43	7	8	0.68	1794.64	1789	9	1.86E-03	88.6	
34	0	910.82*	60	7	2.02	1821.41	1813	14	1.66E-02	16.5	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	955.36	13	0	1.50	1910.46	1905	10	3.61E-03	27.7	
36	0	965.48	13	8	1.11	1930.69	1925	10	3.47E-03	49.8	
37	0	969.05	35	2	1.95	1937.84	1934	9	9.76E-03	18.5	
38	0	1019.06	16	0	4.53	2037.81	2031	13	4.44E-03	25.0	
39	0	1120.22*	16	10	0.83	2240.05	2235	10	4.58E-03	44.4	
40	0	1239.25	8	11	1.27	2478.00	2471	11	2.22E-03	87.7	
41	0	1305.01	8	5	0.96	2609.47	2605	9	2.08E-03	62.7	
42	0	1461.06*	205	0	2.09	2921.39	2915	13	5.69E-02	7.1	
43	0	1764.65*	9	5	0.71	3528.17	3522	11	2.43E-03	66.3	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235050.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 7-DEC-2015 13:42:00 Acquisition date : 3-OCT-2016 07:01:40
 Sample ID : G405235050 Sample quantity : 171.60 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA36 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.33 0.0%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	6.546E-01	1.255E+01	1.255E+01	14.12	OK
CD-109	88.03	3.70*	4.297E+00	2.459E+00	3.863E+00	59.22	OK
SB-125	176.31	6.89	4.460E+00	----- Line	Not Found	-----	Absent
	321.04	0.42	2.640E+00	----- Line	Not Found	-----	Absent
	427.87	29.80*	2.005E+00	2.114E-01	2.599E-01	96.33	OK
	463.37	10.56	1.852E+00	----- Line	Not Found	-----	Absent
	600.60	17.77	1.455E+00	2.187E-01	2.689E-01	220.01	OK
	635.95	11.29	1.385E+00	1.604E-01	1.972E-01	248.20	OK
SN-126	64.28	9.60	2.468E+00	9.790E-01	9.790E-01	115.79	OK
	86.94	8.90	4.297E+00	1.022E+00	1.022E+00	59.22	OK
	87.57	37.00*	4.297E+00	2.459E-01	2.459E-01	59.22	OK
BA-137M	661.66	89.90*	1.334E+00	6.517E-02	6.642E-02	94.95	OK
CS-137	661.66	85.10*	1.334E+00	6.884E-02	7.016E-02	94.95	OK
TL-208	277.37	6.60	3.041E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	1.496E+00	2.315E-01	2.315E-01	38.11	OK
	860.56	12.50	1.058E+00	----- Line	Not Found	-----	Absent
PB-210	46.54	4.25*	8.252E-01	3.242E+00	3.326E+00	186.69	OK
BI-211	72.87	1.23	3.327E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	2.415E+00	9.855E-01	9.855E-01	103.12	OK
PB-212	74.82	10.28	3.486E+00	1.385E+00	1.385E+00	42.80	OK
	77.11	17.10	3.657E+00	1.319E+00	1.319E+00	25.66	OK
	238.63	43.60*	3.500E+00	8.007E-01	8.007E-01	21.88	OK
	300.09	3.30	2.819E+00	----- Line	Not Found	-----	Absent
BI-214	609.32	45.49*	1.437E+00	7.244E-01	7.246E-01	26.85	OK
	1120.29	14.92	8.373E-01	5.866E-01	5.868E-01	88.76	OK
	1764.49	15.30	5.418E-01	4.384E-01	4.386E-01	132.56	OK
PB-214	74.82	5.80	3.482E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.657E+00	2.325E+00	2.326E+00	25.66	OK
	87.09	3.41	4.287E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	3.455E+00	----- Line	Not Found	-----	Absent
	295.22	18.42	2.863E+00	5.924E-01	5.926E-01	53.64	OK
	351.93	35.60*	2.414E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	1.437E+00	7.244E-01	7.246E-01	26.85	OK
	1120.29	14.92	8.373E-01	5.866E-01	5.868E-01	88.76	OK
	1764.49	15.30	5.418E-01	4.384E-01	4.386E-01	132.56	OK
RA-226	609.32	45.49*	1.437E+00	7.244E-01	7.246E-01	26.85	OK
	1120.29	14.92	8.373E-01	5.866E-01	5.868E-01	88.76	OK
	1764.49	15.30	5.418E-01	4.384E-01	4.386E-01	132.56	OK
AC-228	105.21	1.10	4.933E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	2.506E+00	6.299E-01	6.299E-01	75.66	OK
	794.95	4.25	1.134E+00	2.961E+00	2.961E+00	53.09	OK
	835.71	1.61	1.085E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.006E+00	1.053E+00	1.053E+00	32.94	OK
	968.97	15.80	9.525E-01	1.059E+00	1.059E+00	36.92	OK
RA-228	105.21	1.10	4.933E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	2.506E+00	6.299E-01	6.299E-01	75.66	OK
	794.95	4.25	1.134E+00	2.961E+00	2.961E+00	53.09	OK
	835.71	1.61	1.085E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.006E+00	1.053E+00	1.053E+00	32.94	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-228	968.97	15.80	9.525E-01	1.059E+00	1.059E+00	36.92	OK
	74.82	10.28	3.486E+00	1.385E+00	1.385E+00	42.80	OK
	77.11	17.10	3.657E+00	1.319E+00	1.319E+00	25.66	OK
	238.63	43.60*	3.500E+00	8.007E-01	8.007E-01	21.88	OK
TH-230	300.09	3.30	2.819E+00	-----	Line Not Found	-----	Absent
	609.32	45.49*	1.437E+00	7.244E-01	7.244E-01	26.85	OK
	1120.29	14.92	8.373E-01	5.866E-01	5.866E-01	88.76	OK
	1764.49	15.30	5.418E-01	4.384E-01	4.384E-01	132.56	OK
TH-232	105.21	1.10	4.933E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	2.506E+00	6.299E-01	6.299E-01	75.66	OK
	835.71	1.61	1.085E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.006E+00	1.053E+00	1.053E+00	32.94	OK
TH-234	968.97	15.80	9.525E-01	1.059E+00	1.059E+00	36.92	OK
	63.29	3.70*	2.468E+00	2.540E+00	2.540E+00	115.79	OK
	92.59	4.23	4.552E+00	1.892E+00	1.892E+00	57.46	OK
	609.32	45.49*	1.437E+00	7.244E-01	7.244E-01	26.85	OK
U-234	1120.29	14.92	8.373E-01	5.866E-01	5.866E-01	88.76	OK
	1764.49	15.30	5.418E-01	4.384E-01	4.384E-01	132.56	OK
	89.96	3.47	4.418E+00	1.428E+00	1.428E+00	39.64	OK
	93.35	5.60	4.552E+00	1.429E+00	1.429E+00	57.46	OK
U-235	143.76	10.96*	4.954E+00	-----	Line Not Found	-----	Absent
	163.33	5.08	4.674E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	4.296E+00	1.429E-01	1.429E-01	59.00	OK
	205.31	5.01	3.984E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	2.468E+00	2.540E+00	2.540E+00	115.79	OK
	92.59	4.23	4.552E+00	1.892E+00	1.892E+00	57.46	OK
	43.53	5.90	5.957E-01	-----	Line Not Found	-----	Absent
	74.66	67.20*	3.486E+00	2.119E-01	2.120E-01	42.80	OK
ANH-511	511.00	100.00*	1.690E+00	5.738E-02	5.738E-02	138.38	OK

Flag: "*" = Keyline


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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235050.CNF;1  *
* Acquisition date   : 3-OCT-2016 07:01:40 Sensitivity      : 3.000           *
* Detector ID        : GAM36 Energy tolerance: 1.500       *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000       *
* Elapsed real time  : 0 01:00:00.33 Half life ratio : *****       *
* Sample date        : 7-DEC-2015 13:42:00 Analyst initials: MXR1       *
* Sample ID          : G405235050 Sample Quantity : 1.7160E+02 GRAM      *
* Batch Number       : 1596252 Wet Weight      : 0.00000       *
* Wet wt corr        : 1.00000 Dry Weight      : 0.00000       *
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                       *
*
* Eff. Cal. date     : 1-JUN-2016 09:39:12 Eff. Geometry   : CAN         *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM36 CAN.CNF;7         *
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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.255E+01	1.737E+00	8.223E-01
CD-109	3.863E+00	2.242E+00	1.569E+00
SB-125	2.599E-01	2.454E-01	2.009E-01
SN-126	2.459E-01	1.427E-01	1.124E-01
BA-137M	6.642E-02	6.180E-02	8.421E-02
CS-137	7.016E-02	6.529E-02	8.896E-02
TL-208	2.315E-01	8.647E-02	6.129E-02
PB-210	3.326E+00	6.086E+00	4.500E+00
BI-211	9.855E-01	9.959E-01	3.467E-01
PB-212	8.007E-01	1.717E-01	1.140E-01
BI-214	7.246E-01	1.907E-01	1.197E-01
PB-214	9.503E-01	1.835E-01	3.357E-01
RN-222	7.246E-01	1.907E-01	1.197E-01
RA-226	7.246E-01	1.907E-01	1.197E-01
AC-228	1.053E+00	3.398E-01	2.708E-01
RA-228	1.053E+00	3.398E-01	2.708E-01
TH-228	8.007E-01	1.717E-01	1.140E-01
TH-230	7.244E-01	1.906E-01	1.197E-01
TH-232	1.053E+00	3.398E-01	2.708E-01
TH-234	2.540E+00	2.882E+00	1.919E+00
U-234	7.244E-01	1.906E-01	1.197E-01
U-235	7.049E-02	1.766E-01	3.540E-01
U-238	2.540E+00	2.882E+00	1.919E+00
AM-243	2.120E-01	8.891E-02	7.184E-02
ANH-511	5.738E-02	7.781E-02	6.892E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	5.186E-01	1.085E+01	2.321E+01	NOT IDENT.
NA-22	8.759E-04	5.428E-02	1.152E-01	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	-2.649E-02	3.778E-02	6.149E-02	NOT IDENT.
SC-46	-1.420E-01	3.637E-01	6.838E-01	FAIL ABUN

V-48	0.000E+00	1.680E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.971E+02	0.000E+00	SHORT HLIF
MN-54	-2.864E-02	7.340E-02	1.361E-01	NOT IDENT.
CO-56	-5.145E-02	5.192E-01	1.033E+00	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-6.166E-03	3.951E-02	7.917E-02	NOT IDENT.
CO-58	1.804E-01	4.878E-01	1.136E+00	NOT IDENT.
FE-59	6.390E-01	7.582E+00	1.642E+01	NOT IDENT.
CO-60	-1.833E-02	3.382E-02	6.445E-02	NOT IDENT.
ZN-65	4.087E-02	1.851E-01	3.782E-01	NOT IDENT.
GE-68	-3.244E-01	2.487E+00	4.885E+00	NOT IDENT.
AS-73	-4.126E+00	6.353E+00	1.300E+01	NOT IDENT.
AS-74	0.000E+00	7.176E+03	0.000E+00	SHORT HLIF
SE-75	-6.605E-03	2.268E-01	4.012E-01	NOT IDENT.
BR-77	0.000E+00	4.008E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	8.294E+02	0.000E+00	SHORT HLIF
RB-83	1.325E-01	5.587E-01	1.250E+00	NOT IDENT.
KR-85	3.824E+00	7.365E+00	1.505E+01	NOT IDENT.
SR-85	4.066E-01	7.853E-01	1.605E+00	NOT IDENT.
RB-86	0.000E+00	3.046E+04	0.000E+00	SHORT HLIF
Y-88	-6.631E-02	2.108E-01	4.436E-01	FAIL ABUN
Y-91	1.459E+02	6.492E+02	1.399E+03	NOT IDENT.
NB-94	5.731E-03	3.353E-02	6.457E-02	NOT IDENT.
NB-95	5.050E-01	1.053E+00	1.852E+00	NOT IDENT.
NB-95M	-1.150E-01	2.496E+00	4.409E+00	NOT IDENT.
ZR-95	3.079E-01	1.687E+00	3.393E+00	NOT IDENT.
NB-97	0.000E+00	1.816E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	2.077E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-2.673E-02	2.826E-02	5.204E-02	NOT IDENT.
RH-102	-2.757E-02	6.786E-02	1.131E-01	NOT IDENT.
RU-103	3.330E+00	4.878E+00	1.155E+01	FAIL ABUN
RH-106	-1.784E-02	5.749E-01	1.172E+00	NOT IDENT.
RU-106	-1.784E-02	5.749E-01	1.172E+00	NOT IDENT.
AG-108M	-1.800E-02	2.331E-02	4.351E-02	NOT IDENT.
AG-110M	5.908E-03	1.134E-01	2.321E-01	FAIL ABUN
SN-113	-1.267E-01	2.203E-01	4.284E-01	NOT IDENT.
CD-115	0.000E+00	4.117E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	8.980E+04	0.000E+00	SHORT HLIF
TE-123M	-8.092E-02	1.130E-01	2.087E-01	NOT IDENT.
SB-124	-1.059E+00	1.467E+00	1.416E+00	NOT IDENT.
TE-125M	2.075E+02	2.485E+02	5.384E+02	NOT IDENT.
I-126	0.000E+00	1.167E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.261E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	3.050E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	5.900E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.911E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	8.708E+26	0.000E+00	SHORT HLIF
BA-133	-1.023E-02	4.627E-02	7.735E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	0.000E+00	1.009E-01	1.519E-01	FAIL ABUN
CS-135	-3.451E-02	1.415E-01	2.420E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.636E+05	0.000E+00	SHORT HLIF
CE-139	-5.049E-02	8.923E-02	1.673E-01	NOT IDENT.
BA-140	0.000E+00	1.290E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.995E+05	0.000E+00	SHORT HLIF
CE-141	-1.165E+01	2.362E+01	4.384E+01	NOT IDENT.
CE-143	0.000E+00	1.669E+41	0.000E+00	SHORT HLIF
CE-144	-1.069E-01	3.257E-01	6.342E-01	FAIL ABUN
PM-144	-9.170E-04	5.191E-02	9.768E-02	NOT IDENT.
PR-144	-5.838E-02	4.516E+00	8.508E+00	NOT IDENT.
PM-146	-2.352E-02	4.604E-02	8.884E-02	NOT IDENT.
ND-147	0.000E+00	3.648E+07	0.000E+00	SHORT HLIF
PM-147	4.273E+02	6.682E+02	1.441E+03	NOT IDENT.
PM-149	0.000E+00	6.313E+40	0.000E+00	SHORT HLIF
EU-150	1.233E-02	2.643E-02	5.344E-02	FAIL ABUN
EU-152	-1.903E-02	9.506E-02	1.756E-01	FAIL ABUN
GD-153	-2.205E-01	1.651E-01	2.727E-01	NOT IDENT.
EU-154	-1.454E-03	1.321E-01	2.790E-01	NOT IDENT.
EU-155	1.191E-01	9.630E-02	2.150E-01	FAIL ABUN
TB-160	-1.134E+00	2.083E+00	3.713E+00	FAIL ABUN
HO-166M	1.215E-02	6.496E-02	1.352E-01	FAIL ABUN
TM-171	3.224E+00	1.481E+01	3.277E+01	NOT IDENT.
HF-172	3.257E-02	1.921E-01	3.950E-01	FAIL ABUN
LU-172	-1.693E-03	7.624E-02	1.555E-01	FAIL ABUN
LU-176	-1.761E-03	2.815E-02	4.885E-02	FAIL ABUN

HF-181	-8.911E-01	4.476E+00	9.045E+00	NOT IDENT.
TA-182	2.495E-01	8.907E-01	2.025E+00	FAIL ABUN
RE-183	1.068E+00	2.222E+00	4.968E+00	NOT IDENT.
RE-184	2.926E+01	2.914E+01	7.270E+01	NOT IDENT.
W-188	1.966E+01	1.146E+02	2.096E+02	FAIL ABUN
IR-192	-1.459E-01	3.695E-01	6.746E-01	FAIL ABUN
HG-203	-4.548E-01	2.344E+00	4.397E+00	NOT IDENT.
BI-207	-4.601E-03	6.561E-02	1.258E-01	FAIL ABUN
PB-211	8.667E-02	6.513E-01	1.387E+00	FAIL ABUN
BI-212	1.016E+00	7.686E-01	1.418E+00	FAIL ABUN
RN-219	-1.212E-01	3.718E-01	7.451E-01	FAIL ABUN
RA-223	6.744E-02	6.119E-01	1.103E+00	FAIL ABUN
RA-224	5.292E-01	7.537E-01	1.408E+00	NOT IDENT.
AC-227	-1.323E-01	2.415E-01	3.925E-01	FAIL ABUN
TH-227	-1.323E-01	2.415E-01	3.925E-01	FAIL ABUN
TH-229	-8.710E-03	4.030E-01	7.918E-01	FAIL ABUN
PA-231	2.909E-01	5.052E-01	9.602E-01	NOT IDENT.
TH-231	6.744E-02	6.119E-01	1.103E+00	FAIL ABUN
PA-233	-4.939E-02	5.971E-02	9.985E-02	NOT IDENT.
PA-234	4.934E-02	3.090E-01	6.449E-01	NOT IDENT.
PA-234M	1.565E+00	4.278E+00	9.702E+00	NOT IDENT.
NP-237	-4.939E-02	5.971E-02	9.985E-02	NOT IDENT.
NP-238	0.000E+00	1.454E+41	0.000E+00	SHORT HLIF
NP-239	-9.777E-02	2.083E-01	4.058E-01	FAIL ABUN
PU-239	2.082E+02	2.717E+02	5.808E+02	NOT IDENT.
AM-241	-4.695E-02	1.066E-01	2.036E-01	NOT IDENT.
CM-243	-3.837E-02	8.216E-02	1.618E-01	FAIL ABUN
BK-247	9.963E-04	7.866E-02	1.399E-01	NOT IDENT.
CM-247	-1.347E-02	3.376E-02	6.705E-02	NOT IDENT.
CF-249	1.280E-02	3.812E-02	8.234E-02	NOT IDENT.
CF-251	2.427E-02	1.020E-01	2.063E-01	FAIL ABUN

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	200	10.66*	6.546E-01	1.255E+01	1.255E+01	14.12
CD-109	88.03	109	3.70*	4.297E+00	3.005E+00	4.721E+00	47.47
SB-125	176.31	-----	6.89	4.460E+00	-----	Line Not Found	-----
	321.04	-----	0.42	2.640E+00	-----	Line Not Found	-----
	427.87	29	29.80*	2.005E+00	2.114E-01	2.599E-01	96.33
	463.37	-----	10.56	1.852E+00	-----	Line Not Found	-----
	600.60	13	17.77	1.455E+00	2.187E-01	2.689E-01	220.01
	635.95	6	11.29	1.385E+00	1.604E-01	1.972E-01	248.20
SN-126	64.28	53	9.60	2.468E+00	9.790E-01	9.790E-01	115.79
	86.94	109	8.90	4.297E+00	1.249E+00	1.249E+00	47.47
	87.57	109	37.00*	4.297E+00	3.005E-01	3.005E-01	47.47
BA-137M	661.66	18	89.90*	1.334E+00	6.517E-02	6.642E-02	94.95
CS-137	661.66	18	85.10*	1.334E+00	6.884E-02	7.016E-02	94.95
TL-208	277.37	-----	6.60	3.041E+00	-----	Line Not Found	-----
	583.19	67	85.00*	1.496E+00	2.315E-01	2.315E-01	38.11
	860.56	-----	12.50	1.058E+00	-----	Line Not Found	-----
PB-210	46.54	26	4.25*	8.252E-01	3.242E+00	3.326E+00	186.69
BI-211	72.87	-----	1.23	3.327E+00	-----	Line Not Found	-----
	351.06	187	12.92*	2.415E+00	2.618E+00	2.618E+00	19.71
PB-212	74.82	141	10.28	3.486E+00	1.720E+00	1.720E+00	32.87
	77.11	189	17.10	3.657E+00	1.319E+00	1.319E+00	25.66
	238.63	279	43.60*	3.500E+00	8.007E-01	8.007E-01	21.88
	300.09	-----	3.30	2.819E+00	-----	Line Not Found	-----
BI-214	609.32	108	45.49*	1.437E+00	7.244E-01	7.246E-01	26.85
	1120.29	17	14.92	8.373E-01	5.866E-01	5.868E-01	88.76
	1764.49	8	15.30	5.418E-01	4.384E-01	4.386E-01	132.56
PB-214	74.82	141	5.80	3.486E+00	3.048E+00	3.049E+00	32.87
	77.11	189	9.70	3.657E+00	2.325E+00	2.326E+00	25.66
	87.09	109	3.41	4.297E+00	3.260E+00	3.262E+00	47.47
	242.00	-----	7.25	3.455E+00	-----	Line Not Found	-----
	295.22	71	18.42	2.863E+00	5.924E-01	5.926E-01	53.64
	351.93	187	35.60*	2.415E+00	9.500E-01	9.503E-01	19.71
RN-222	609.32	108	45.49*	1.437E+00	7.244E-01	7.246E-01	26.85
	1120.29	17	14.92	8.373E-01	5.866E-01	5.868E-01	88.76
	1764.49	8	15.30	5.418E-01	4.384E-01	4.386E-01	132.56
RA-226	609.32	108	45.49*	1.437E+00	7.244E-01	7.246E-01	26.85
	1120.29	17	14.92	8.373E-01	5.866E-01	5.868E-01	88.76
	1764.49	8	15.30	5.418E-01	4.384E-01	4.386E-01	132.56
AC-228	105.21	-----	1.10	4.933E+00	-----	Line Not Found	-----
	338.32	41	11.27	2.506E+00	6.299E-01	6.299E-01	75.66
	794.95	33	4.25	1.134E+00	2.961E+00	2.961E+00	53.09
	835.71	-----	1.61	1.085E+00	-----	Line Not Found	-----
	911.20	62	25.80*	1.006E+00	1.053E+00	1.053E+00	32.94
	968.97	36	15.80	9.525E-01	1.059E+00	1.059E+00	36.92
RA-228	105.21	-----	1.10	4.933E+00	-----	Line Not Found	-----
	338.32	41	11.27	2.506E+00	6.299E-01	6.299E-01	75.66
	794.95	33	4.25	1.134E+00	2.961E+00	2.961E+00	53.09

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	835.71	-----	1.61	1.085E+00	-----	Line Not Found	-----
	911.20	62	25.80*	1.006E+00	1.053E+00	1.053E+00	32.94
	968.97	36	15.80	9.525E-01	1.059E+00	1.059E+00	36.92
TH-228	74.82	141	10.28	3.486E+00	1.720E+00	1.720E+00	32.87
	77.11	189	17.10	3.657E+00	1.319E+00	1.319E+00	25.66
	238.63	279	43.60*	3.500E+00	8.007E-01	8.007E-01	21.88
	300.09	-----	3.30	2.819E+00	-----	Line Not Found	-----
TH-230	609.32	108	45.49*	1.437E+00	7.244E-01	7.244E-01	26.85
	1120.29	17	14.92	8.373E-01	5.866E-01	5.866E-01	88.76
	1764.49	8	15.30	5.418E-01	4.384E-01	4.384E-01	132.56
TH-232	105.21	-----	1.10	4.933E+00	-----	Line Not Found	-----
	338.32	41	11.27	2.506E+00	6.299E-01	6.299E-01	75.66
	835.71	-----	1.61	1.085E+00	-----	Line Not Found	-----
	911.20	62	25.80*	1.006E+00	1.053E+00	1.053E+00	32.94
	968.97	36	15.80	9.525E-01	1.059E+00	1.059E+00	36.92
TH-234	63.29	53	3.70*	2.468E+00	2.540E+00	2.540E+00	115.79
	92.59	83	4.23	4.552E+00	1.892E+00	1.892E+00	57.46
U-234	609.32	108	45.49*	1.437E+00	7.244E-01	7.244E-01	26.85
	1120.29	17	14.92	8.373E-01	5.866E-01	5.866E-01	88.76
	1764.49	8	15.30	5.418E-01	4.384E-01	4.384E-01	132.56
U-235	89.96	50	3.47	4.418E+00	1.428E+00	1.428E+00	39.64
	93.35	83	5.60	4.552E+00	1.429E+00	1.429E+00	57.46
	143.76	-----	10.96*	4.954E+00	-----	Line Not Found	-----
	163.33	-----	5.08	4.674E+00	-----	Line Not Found	-----
	185.72	80	57.20	4.296E+00	1.429E-01	1.429E-01	59.00
	205.31	-----	5.01	3.984E+00	-----	Line Not Found	-----
U-238	63.29	53	3.70*	2.468E+00	2.540E+00	2.540E+00	115.79
	92.59	83	4.23	4.552E+00	1.892E+00	1.892E+00	57.46
AM-243	43.53	-----	5.90	5.957E-01	-----	Line Not Found	-----
	74.66	141	67.20*	3.486E+00	2.631E-01	2.631E-01	32.87
ANH-511	511.00	22	100.00*	1.690E+00	5.738E-02	5.738E-02	138.38

Flag: "*" = Keyline

Total number of lines in spectrum 43
Number of unidentified lines 7
Number of lines tentatively identified by NID 36 83.72%

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	1.255E+01	1.255E+01	0.177E+01	14.12	
CD-109	461.40D	1.57	3.005E+00	4.721E+00	2.241E+00	47.47	
SB-125	2.76Y	1.23	2.114E-01	2.599E-01	2.504E-01	96.33	
SN-126	2.30E+05Y	1.00	3.005E-01	3.005E-01	1.427E-01	47.47	
BA-137M	30.08Y	1.02	6.517E-02	6.642E-02	6.306E-02	94.95	
CS-137	30.08Y	1.02	6.884E-02	7.016E-02	6.662E-02	94.95	
TL-208	1.41E+10Y	1.00	2.315E-01	2.315E-01	0.882E-01	38.11	
PB-210	22.20Y	1.03	3.242E+00	3.326E+00	6.210E+00	186.69	
BI-211	7.04E+08Y	1.00	2.618E+00	2.618E+00	0.516E+00	19.71	
PB-212	1.41E+10Y	1.00	8.007E-01	8.007E-01	1.752E-01	21.88	
BI-214	1600.00Y	1.00	7.244E-01	7.246E-01	1.945E-01	26.85	
PB-214	1600.00Y	1.00	9.500E-01	9.503E-01	1.873E-01	19.71	
RN-222	1600.00Y	1.00	7.244E-01	7.246E-01	1.945E-01	26.85	
RA-226	1600.00Y	1.00	7.244E-01	7.246E-01	1.945E-01	26.85	
AC-228	1.41E+10Y	1.00	1.053E+00	1.053E+00	0.347E+00	32.94	
RA-228	1.41E+10Y	1.00	1.053E+00	1.053E+00	0.347E+00	32.94	
TH-228	1.41E+10Y	1.00	8.007E-01	8.007E-01	1.752E-01	21.88	
TH-230	7.54E+04Y	1.00	7.244E-01	7.244E-01	1.945E-01	26.85	
TH-232	1.41E+10Y	1.00	1.053E+00	1.053E+00	0.347E+00	32.94	
TH-234	4.47E+09Y	1.00	2.540E+00	2.540E+00	2.941E+00	115.79	
U-234	2.45E+05Y	1.00	7.244E-01	7.244E-01	1.945E-01	26.85	
U-235	7.04E+08Y	1.00	1.429E-01	1.429E-01	0.843E-01	59.00	K
U-238	4.47E+09Y	1.00	2.540E+00	2.540E+00	2.941E+00	115.79	
AM-243	7370.00Y	1.00	2.631E-01	2.631E-01	0.865E-01	32.87	
ANH-511	1.00E+09Y	1.00	5.738E-02	5.738E-02	7.940E-02	138.38	
Total Activity :			3.717E+01	3.902E+01			

Grand Total Activity : 3.717E+01 3.902E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	80.83	25	96	1.05	161.63	144	21	4.90E-03	****	3.91E+00	T
0	227.19	32	63	1.71	454.36	451	8	7.05E-03	****	3.66E+00	T
0	262.50	35	121	6.92	524.99	513	19	7.87E-03	****	3.20E+00	
0	270.55	28	37	1.43	541.09	538	6	6.30E-03	87.3	3.11E+00	T
0	303.06	47	119	7.57	606.11	596	20	1.08E-02	****	2.79E+00	T
0	327.54	39	42	0.88	655.06	650	10	9.10E-03	77.3	2.59E+00	T
9	350.03	12	8	1.76	700.05	699	12	2.73E-03	95.1	2.43E+00	
2	587.54	14	19	1.43	1175.00	1158	22	3.41E-03	****	1.49E+00	
0	700.74	8	15	0.96	1401.36	1395	10	2.17E-03	****	1.27E+00	
0	727.85	19	9	1.27	1455.57	1451	9	4.89E-03	77.2	1.23E+00	T
0	763.74	10	15	4.41	1527.33	1519	14	2.50E-03	****	1.17E+00	T
0	768.42	16	4	1.48	1536.69	1533	7	4.09E-03	66.7	1.17E+00	
0	897.43	7	9	0.68	1794.64	1789	9	1.86E-03	****	1.02E+00	T
0	955.36	14	0	1.50	1910.46	1905	10	3.61E-03	55.5	9.65E-01	T
0	965.48	13	8	1.11	1930.69	1925	10	3.47E-03	99.6	9.56E-01	T
0	1019.06	16	0	4.53	2037.81	2031	13	4.44E-03	50.0	9.11E-01	
0	1239.25	8	11	1.27	2478.00	2471	11	2.22E-03	****	7.64E-01	T
0	1305.01	7	4	0.96	2609.47	2605	9	2.08E-03	****	7.28E-01	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235050.CNF;1
* Acquisition date   : 3-OCT-2016 07:01:40 Sensitivity      : 3.000
* Detector ID        : GAM36 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.33 Half life ratio : *****
* Sample date       : 7-DEC-2015 13:42:00 Nuclide Library : SOLID
* Sample ID         : G405235050 Analyst initials: MXR1
* Batch Number      : 1596252 Sample Quantity : 1.7160E+02 GRAM
* Wet wt corr       : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 1-JUN-2016 09:39:12 Eff. Geometry : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM36 CAN.CNF;7
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	3.252E-01
CD-109	7.204E-01
SB-125	8.759E-02
SN-126	5.210E-02
BA-137M	3.688E-02
CS-137	3.896E-02
TL-208	2.578E-02
PB-210	2.062E+00
BI-211	1.533E-01
PB-212	5.285E-02
BI-214	5.042E-02
PB-214	1.606E-01
RN-222	5.042E-02
RA-226	5.042E-02
AC-228	1.119E-01
RA-228	1.119E-01
TH-228	5.285E-02
TH-230	5.041E-02
TH-232	1.119E-01
TH-234	8.876E-01
U-234	5.041E-02
U-235	1.651E-01
U-238	8.876E-01
AM-243	3.311E-02
ANH-511	3.079E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	9.944E+00	NOT IDENT.
NA-22	4.750E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.943E-02	NOT IDENT.
SC-46	2.704E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF

CR-51	0.000E+00	SHORT HLIF
MN-54	5.707E-02	NOT IDENT.
CO-56	4.319E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	3.639E-02	NOT IDENT.
CO-58	4.634E-01	NOT IDENT.
FE-59	6.849E+00	NOT IDENT.
CO-60	2.283E-02	NOT IDENT.
ZN-65	1.557E-01	NOT IDENT.
GE-68	1.974E+00	NOT IDENT.
AS-73	5.925E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.813E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.320E-01	NOT IDENT.
KR-85	6.629E+00	NOT IDENT.
SR-85	7.066E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.402E-01	FAIL ABUN
Y-91	5.951E+02	NOT IDENT.
NB-94	2.742E-02	NOT IDENT.
NB-95	7.901E-01	NOT IDENT.
NB-95M	2.017E+00	NOT IDENT.
ZR-95	1.450E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.380E-02	NOT IDENT.
RH-102	4.735E-02	NOT IDENT.
RU-103	4.978E+00	FAIL ABUN
RH-106	5.088E-01	NOT IDENT.
RU-106	5.088E-01	NOT IDENT.
AG-108M	1.825E-02	NOT IDENT.
AG-110M	9.733E-02	FAIL ABUN
SN-113	1.871E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	9.507E-02	NOT IDENT.
SB-124	0.000E+00	NOT IDENT.
TE-125M	2.511E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.421E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	6.764E-02	FAIL ABUN
CS-135	1.084E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	7.575E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.028E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.932E-01	FAIL ABUN
PM-144	4.023E-02	NOT IDENT.
PR-144	3.506E+00	NOT IDENT.
PM-146	3.880E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	6.649E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.411E-02	FAIL ABUN
EU-152	7.780E-02	FAIL ABUN
GD-153	1.251E-01	NOT IDENT.
EU-154	1.148E-01	NOT IDENT.
EU-155	1.005E-01	FAIL ABUN
TB-160	1.508E+00	FAIL ABUN
HO-166M	5.851E-02	FAIL ABUN
TM-171	1.504E+01	NOT IDENT.
HF-172	1.823E-01	FAIL ABUN
LU-172	6.250E-02	FAIL ABUN
LU-176	2.199E-02	FAIL ABUN
HF-181	3.931E+00	NOT IDENT.

TA-182	8.341E-01	FAIL ABUN
RE-183	2.291E+00	NOT IDENT.
RE-184	3.066E+01	NOT IDENT.
W-188	9.408E+01	FAIL ABUN
IR-192	2.894E-01	FAIL ABUN
HG-203	1.974E+00	NOT IDENT.
BI-207	5.349E-02	FAIL ABUN
PB-211	6.151E-01	FAIL ABUN
BI-212	6.340E-01	FAIL ABUN
RN-219	3.280E-01	FAIL ABUN
RA-223	4.915E-01	FAIL ABUN
RA-224	6.596E-01	NOT IDENT.
AC-227	1.759E-01	FAIL ABUN
TH-227	1.759E-01	FAIL ABUN
TH-229	3.612E-01	FAIL ABUN
PA-231	4.382E-01	NOT IDENT.
TH-231	4.915E-01	FAIL ABUN
PA-233	4.390E-02	NOT IDENT.
PA-234	2.703E-01	NOT IDENT.
PA-234M	4.070E+00	NOT IDENT.
NP-237	4.390E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
NP-239	1.868E-01	FAIL ABUN
PU-239	2.703E+02	NOT IDENT.
AM-241	9.303E-02	NOT IDENT.
CM-243	7.444E-02	FAIL ABUN
BK-247	6.333E-02	NOT IDENT.
CM-247	2.943E-02	NOT IDENT.
CF-249	3.684E-02	NOT IDENT.
CF-251	9.480E-02	FAIL ABUN

```

*****
*                                     GEL Laboratories LLC*
*                                     2040 Savage Road*
*                                     Charleston, SC 29407*
*****
*                                     DETECTOR AND SAMPLE DATA*
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235050.CNF;1*
* Acquisition date   : 3-OCT-2016 07:01:40 Sensitivity      : 3.000*
* Detector ID        : GAM36 Energy tolerance: 1.500*
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000*
* Elapsed real time  : 0 01:00:00.33 Half life ratio : *****
* Sample date       : 7-DEC-2015 13:42:00 Nuclide Library : SOLID*
* Sample ID         : G405235050 Analyst initials: MXR1*
* Batch Number      : 1596252 Sample Quantity : 1.7160E+02 GRAM*
*                                     Quantity Err(%) : 1.1655E-03 %*
* Wet wt corr       : 1.00000 Wet Weight : 0.00000*
*                                     Dry Weight : 0.00000*
*****
*                                     CALIBRATION INFORMATION*
*
* Eff. Cal. date    : 1-JUN-2016 09:39:12 Eff. Geometry   : CAN*
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM36 CAN.CNF;7*
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.255E+01	1.856E+00	1.856E+00
CD-109	3.863E+00	2.267E+00	2.267E+00
SB-125	2.599E-01	2.456E-01	2.456E-01
SN-126	2.459E-01	1.437E-01	1.437E-01
BA-137M	6.642E-02	6.187E-02	6.187E-02
CS-137	7.016E-02	6.536E-02	6.536E-02
TL-208	2.315E-01	8.703E-02	8.703E-02
PB-210	3.326E+00	6.093E+00	6.093E+00
BI-211	9.855E-01	1.002E+00	1.002E+00
PB-212	8.007E-01	1.768E-01	1.768E-01
BI-214	7.246E-01	1.932E-01	1.932E-01
PB-214	9.503E-01	1.877E-01	1.877E-01
RN-222	7.246E-01	1.932E-01	1.932E-01
RA-226	7.246E-01	1.932E-01	1.932E-01
AC-228	1.053E+00	3.441E-01	3.441E-01
RA-228	1.053E+00	3.441E-01	3.441E-01
TH-228	8.007E-01	1.768E-01	1.768E-01
TH-230	7.244E-01	1.931E-01	1.931E-01
TH-232	1.053E+00	3.441E-01	3.441E-01
TH-234	2.540E+00	2.937E+00	2.937E+00
U-234	7.244E-01	1.931E-01	1.931E-01
U-235	7.049E-02	1.766E-01	1.766E-01
U-238	2.540E+00	2.937E+00	2.937E+00
AM-243	2.120E-01	9.009E-02	9.009E-02
ANH-511	5.738E-02	7.785E-02	7.785E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	5.186E-01	1.085E+01	1.085E+01	NOT IDENT.
NA-22	8.759E-04	5.428E-02	5.428E-02	NOT IDENT.
NA-24	1.000E+41	6.064E+41	0.000E+00	SHORT HLIF
AL-26	-2.649E-02	3.782E-02	3.966E-02	NOT IDENT.
SC-46	-1.420E-01	3.637E-01	3.693E-01	FAIL ABUN

V-48	2.724E+03	1.680E+04	1.685E+04	SHORT HLIF
CR-51	2.742E+02	3.973E+02	4.161E+02	SHORT HLIF
MN-54	-2.864E-02	7.341E-02	7.454E-02	NOT IDENT.
CO-56	-5.145E-02	5.192E-01	5.198E-01	FAIL ABUN
MN-56	-1.000E+41	1.060E+42	0.000E+00	SHORT HLIF
CO-57	-6.166E-03	3.951E-02	3.961E-02	NOT IDENT.
CO-58	1.804E-01	4.879E-01	4.946E-01	NOT IDENT.
FE-59	6.390E-01	7.582E+00	7.588E+00	NOT IDENT.
CO-60	-1.833E-02	3.383E-02	3.482E-02	NOT IDENT.
ZN-65	4.087E-02	1.851E-01	1.860E-01	NOT IDENT.
GE-68	-3.244E-01	2.487E+00	2.491E+00	NOT IDENT.
AS-73	-4.126E+00	6.409E+00	6.673E+00	NOT IDENT.
AS-74	-5.756E+02	7.176E+03	7.181E+03	SHORT HLIF
SE-75	-6.605E-03	2.268E-01	2.268E-01	NOT IDENT.
BR-77	1.869E+38	1.623E+39	0.000E+00	SHORT HLIF
SR-82	-6.093E+01	8.295E+02	8.299E+02	SHORT HLIF
RB-83	1.325E-01	5.590E-01	5.622E-01	NOT IDENT.
KR-85	3.824E+00	7.366E+00	7.565E+00	NOT IDENT.
SR-85	4.066E-01	7.855E-01	8.066E-01	NOT IDENT.
RB-86	-5.591E+03	3.046E+04	3.057E+04	SHORT HLIF
Y-88	-6.631E-02	2.108E-01	2.129E-01	FAIL ABUN
Y-91	1.459E+02	6.492E+02	6.525E+02	NOT IDENT.
NB-94	5.731E-03	3.353E-02	3.363E-02	NOT IDENT.
NB-95	5.050E-01	1.053E+00	1.078E+00	NOT IDENT.
NB-95M	-1.150E-01	2.496E+00	2.496E+00	NOT IDENT.
ZR-95	3.079E-01	1.687E+00	1.693E+00	NOT IDENT.
NB-97	1.000E+41	1.816E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	3.256E+42	0.000E+00	SHORT HLIF
MO-99	2.561E+32	2.085E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	2.569E+41	0.000E+00	SHORT HLIF
RH-101	-2.673E-02	2.867E-02	3.110E-02	NOT IDENT.
RH-102	-2.757E-02	6.789E-02	6.902E-02	NOT IDENT.
RU-103	3.330E+00	4.881E+00	5.107E+00	FAIL ABUN
RH-106	-1.784E-02	5.749E-01	5.750E-01	NOT IDENT.
RU-106	-1.784E-02	5.749E-01	5.750E-01	NOT IDENT.
AG-108M	-1.800E-02	2.332E-02	2.469E-02	NOT IDENT.
AG-110M	5.908E-03	1.134E-01	1.134E-01	FAIL ABUN
SN-113	-1.267E-01	2.204E-01	2.277E-01	NOT IDENT.
CD-115	-9.636E+38	4.121E+39	0.000E+00	SHORT HLIF
SN-117M	-3.114E+04	8.987E+04	9.096E+04	SHORT HLIF
TE-123M	-8.092E-02	1.130E-01	1.188E-01	NOT IDENT.
SB-124	-1.059E+00	1.468E+00	1.544E+00	NOT IDENT.
TE-125M	2.075E+02	2.488E+02	2.658E+02	NOT IDENT.
I-126	1.293E+06	1.180E+06	1.316E+06	SHORT HLIF
SB-126	-5.115E+05	1.264E+06	1.285E+06	SHORT HLIF
SB-127	-2.163E+22	4.266E+22	0.000E+00	SHORT HLIF
I-131	1.759E+09	5.900E+09	5.953E+09	SHORT HLIF
I-132	-1.000E+41	1.863E+42	0.000E+00	SHORT HLIF
TE-132	8.409E+26	9.358E+26	0.000E+00	SHORT HLIF
BA-133	-1.023E-02	4.627E-02	4.650E-02	FAIL ABUN
I-133	1.000E+41	2.748E+41	0.000E+00	SHORT HLIF
CS-134	1.940E-01	1.013E-01	1.338E-01	FAIL ABUN
CS-135	-3.451E-02	1.415E-01	1.424E-01	NOT IDENT.
I-135	-1.000E+41	7.670E+41	0.000E+00	SHORT HLIF
CS-136	-1.827E+05	3.641E+05	3.733E+05	SHORT HLIF
CE-139	-5.049E-02	8.980E-02	9.264E-02	NOT IDENT.
BA-140	-6.535E+05	1.290E+06	1.324E+06	SHORT HLIF
LA-140	-2.890E+05	4.997E+05	5.164E+05	SHORT HLIF
CE-141	-1.165E+01	2.362E+01	2.420E+01	NOT IDENT.
CE-143	1.000E+41	1.673E+41	0.000E+00	SHORT HLIF
CE-144	-1.069E-01	3.258E-01	3.293E-01	FAIL ABUN
PM-144	-9.170E-04	5.191E-02	5.191E-02	NOT IDENT.
PR-144	-5.838E-02	4.516E+00	4.516E+00	NOT IDENT.
PM-146	-2.352E-02	4.607E-02	4.727E-02	NOT IDENT.
ND-147	1.322E+07	3.649E+07	3.697E+07	SHORT HLIF
PM-147	4.273E+02	6.685E+02	6.957E+02	NOT IDENT.
PM-149	-2.438E+40	6.335E+40	0.000E+00	SHORT HLIF
EU-150	1.233E-02	2.643E-02	2.701E-02	FAIL ABUN
EU-152	-1.903E-02	9.507E-02	9.545E-02	FAIL ABUN
GD-153	-2.205E-01	1.656E-01	1.931E-01	NOT IDENT.
EU-154	-1.454E-03	1.321E-01	1.321E-01	NOT IDENT.
EU-155	1.191E-01	9.667E-02	1.106E-01	FAIL ABUN
TB-160	-1.134E+00	2.084E+00	2.146E+00	FAIL ABUN
HO-166M	1.215E-02	6.496E-02	6.519E-02	FAIL ABUN
TM-171	3.224E+00	1.481E+01	1.488E+01	NOT IDENT.
HF-172	3.257E-02	1.922E-01	1.928E-01	FAIL ABUN
LU-172	-1.693E-03	7.624E-02	7.624E-02	FAIL ABUN
LU-176	-1.761E-03	2.815E-02	2.816E-02	FAIL ABUN

HF-181	-8.911E-01	4.477E+00	4.495E+00	NOT IDENT.
TA-182	2.495E-01	8.908E-01	8.979E-01	FAIL ABUN
RE-183	1.068E+00	2.228E+00	2.279E+00	NOT IDENT.
RE-184	2.926E+01	2.997E+01	3.275E+01	NOT IDENT.
W-188	1.966E+01	1.146E+02	1.150E+02	FAIL ABUN
IR-192	-1.459E-01	3.696E-01	3.754E-01	FAIL ABUN
HG-203	-4.548E-01	2.344E+00	2.353E+00	NOT IDENT.
BI-207	-4.601E-03	6.561E-02	6.565E-02	FAIL ABUN
PB-211	8.667E-02	6.513E-01	6.525E-01	FAIL ABUN
BI-212	1.016E+00	7.703E-01	8.961E-01	FAIL ABUN
RN-219	-1.212E-01	3.721E-01	3.761E-01	FAIL ABUN
RA-223	6.744E-02	6.119E-01	6.126E-01	FAIL ABUN
RA-224	5.292E-01	7.542E-01	7.910E-01	NOT IDENT.
AC-227	-1.323E-01	2.421E-01	2.493E-01	FAIL ABUN
TH-227	-1.323E-01	2.421E-01	2.493E-01	FAIL ABUN
TH-229	-8.710E-03	4.030E-01	4.030E-01	FAIL ABUN
PA-231	2.909E-01	5.090E-01	5.257E-01	NOT IDENT.
TH-231	6.744E-02	6.119E-01	6.126E-01	FAIL ABUN
PA-233	-4.939E-02	5.976E-02	6.377E-02	NOT IDENT.
PA-234	4.934E-02	3.141E-01	3.149E-01	NOT IDENT.
PA-234M	1.565E+00	4.279E+00	4.336E+00	NOT IDENT.
NP-237	-4.939E-02	5.976E-02	6.377E-02	NOT IDENT.
NP-238	1.000E+41	1.455E+41	0.000E+00	SHORT HLIF
NP-239	-9.777E-02	2.085E-01	2.131E-01	FAIL ABUN
PU-239	2.082E+02	2.719E+02	2.876E+02	NOT IDENT.
AM-241	-4.695E-02	1.067E-01	1.087E-01	NOT IDENT.
CM-243	-3.837E-02	8.224E-02	8.404E-02	FAIL ABUN
BK-247	9.963E-04	7.866E-02	7.866E-02	NOT IDENT.
CM-247	-1.347E-02	3.384E-02	3.438E-02	NOT IDENT.
CF-249	1.280E-02	3.813E-02	3.857E-02	NOT IDENT.
CF-251	2.427E-02	1.021E-01	1.026E-01	FAIL ABUN

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	6.2529	87.09	54.0667	136.47	43.5320
45.60	40.1511	87.57	54.1243	140.51	0.0000
46.54	40.2801	88.03	42.4010	143.76	54.8029
49.72	0.0000	88.34	42.4299	144.24	52.8852
51.35	32.8973	88.47	42.4420	145.44	59.8523
51.87	38.5774	89.96	49.6772	152.43	58.5067
52.39	37.8354	1093.63	49.7505	153.25	0.0000
52.97	43.5493	91.11	0.0000	323.87	47.7246
53.44	46.8436	92.59	49.9587	156.02	0.0000
54.07	41.2700	93.35	50.0395	158.56	0.0000
57.36	0.0000	94.56	50.1672	159.00	48.0608
57.53	40.0665	94.65	50.1766	162.33	46.2787
57.98	38.4817	94.67	50.1788	162.66	0.0000
59.27	58.0766	94.87	49.0045	163.33	44.3297
59.32	58.0849	97.43	61.2810	165.86	40.4437
59.54	46.0588	98.43	46.9580	176.31	46.1563
60.96	48.4482	98.44	46.9592	176.60	0.0000
61.17	46.2735	99.53	41.6328	177.52	39.0396
62.93	50.6541	100.11	41.6815	181.07	0.0000
63.29	50.7045	102.03	48.2092	181.52	38.2138
63.58	50.7451	103.18	59.2593	184.41	41.4685
64.28	50.8427	103.37	52.8975	143.76	34.2694
66.73	58.1720	105.21	43.0197	193.51	36.7085
67.24	57.1306	105.31	43.0284	197.03	45.2964
125.81	51.3091	106.12	53.1820	198.01	33.7500
67.75	51.3184	106.47	69.7343	201.83	50.8616
69.67	56.6504	109.28	47.0475	203.43	39.2820
70.83	56.5364	111.00	60.1569	205.31	46.8192
72.81	46.0252	111.76	0.0000	210.85	55.6967
72.87	46.0322	114.06	55.8458	215.65	29.0814
74.66	46.2377	116.30	0.0000	222.11	37.9774
74.82	46.2559	116.74	54.2484	227.09	34.9165
74.97	46.2732	119.76	43.2580	227.38	34.9277
77.11	46.5150	121.12	43.3622	228.16	0.0000
78.74	46.6971	121.22	36.7702	228.18	30.5891
79.69	46.8026	121.78	42.4687	116.74	30.5891
80.12	46.8500	122.06	46.2665	235.69	39.6530
80.19	0.0000	122.92	51.0642	235.96	36.7264
80.57	46.8994	123.07	51.0774	238.63	54.1433
81.00	46.9468	265.00	55.8662	238.98	0.0000
81.07	46.9542	125.81	44.6672	240.99	56.1256
81.75	55.7378	127.23	56.2071	242.00	45.8359
83.79	61.2500	127.91	47.6885	244.70	33.3627
84.00	42.0201	129.30	44.9324	252.40	0.0000
85.43	81.9707	131.20	46.9940	252.80	25.7939
86.55	54.0017	133.02	50.0211	254.15	0.0000
86.79	54.0303	133.52	56.8015	256.23	34.5122
86.94	54.0485	136.00	43.4990	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	30.2653	355.39	0.0000	584.27	9.4914
264.80	30.2694	356.01	22.9585	595.83	0.0000
265.00	30.2751	364.49	0.0000	427.87	9.5732
268.22	28.8525	366.42	0.0000	602.52	0.0000
269.46	27.3677	372.51	21.1774	604.72	8.6342
270.03	30.8051	375.05	23.7146	607.14	5.7632
271.23	41.1218	377.52	12.5046	609.32	9.6163
273.65	0.0000	356.01	21.7772	610.33	9.6212
276.40	30.9955	388.16	20.1660	614.28	5.7844
277.37	32.1733	388.63	0.0000	618.01	20.2839
277.60	31.0309	391.69	22.7455	620.36	12.5715
278.00	26.4442	264.66	21.1980	621.93	13.5494
279.20	28.7766	401.81	22.0645	630.19	0.0000
279.54	32.2400	402.40	22.0734	631.29	13.1270
279.70	28.7903	404.85	17.0093	633.25	8.7598
280.46	26.5060	410.95	14.5205	634.78	0.0000
283.69	15.0273	413.71	14.5485	635.95	11.6953
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	28.9452	423.72	0.0000	645.85	7.8350
285.90	0.0000	427.09	15.5475	657.76	8.8656
287.50	20.8812	427.87	15.5559	657.90	0.0000
290.67	23.2697	433.94	16.4878	661.66	16.7773
293.27	0.0000	439.40	21.7738	664.57	0.0000
351.93	29.5978	453.88	21.9823	666.33	0.0000
295.96	29.6171	463.37	19.4631	666.50	0.0000
879.38	32.8125	468.07	12.4229	667.71	0.0000
299.98	26.5964	473.00	0.0000	677.62	11.9331
300.09	26.5992	475.06	11.5866	685.70	0.0000
300.13	26.5999	476.78	11.5990	695.00	0.0000
301.36	26.6289	477.60	11.6048	696.49	7.5241
302.85	26.6649	482.18	17.0092	696.51	7.5241
256.23	26.7036	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	7.5269
306.78	28.3323	497.08	7.2274	697.49	9.0330
308.46	31.5267	505.52	19.0684	702.65	9.0542
311.90	29.6455	507.63	0.0000	706.68	12.0947
316.51	16.6677	511.00	23.6855	711.68	12.1221
319.41	0.0000	514.00	12.3201	720.70	0.0000
320.08	0.0000	514.00	12.3201	721.93	0.0000
321.04	25.0990	520.40	7.3281	722.78	9.7461
323.87	20.7669	520.69	0.0000	722.91	13.7060
325.23	23.9893	522.65	0.0000	723.31	12.1855
328.76	0.0000	527.90	0.0000	724.19	7.6190
333.37	21.7375	528.26	13.8031	727.33	8.1383
333.97	21.7485	529.59	11.0508	733.00	6.1189
334.37	25.7845	529.87	0.0000	735.93	15.3174
338.28	20.6134	531.02	0.0000	333.97	8.1748
338.32	20.6140	537.26	0.0000	739.50	0.0000
311.90	30.7729	546.56	0.0000	747.24	9.2358
340.48	30.7729	552.55	15.8600	748.06	11.2923
340.55	0.0000	563.25	15.0150	752.31	14.3982
344.28	23.1510	569.33	6.5910	753.82	0.0000
345.93	19.5215	946.00	5.6499	756.73	9.8922
351.06	19.6021	569.70	5.6504	756.80	7.7283
351.93	19.6157	583.19	9.4861	884.68	10.8529

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:06:24.63

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235051.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM41.CNF;119
Background date    : 2-OCT-2016 11:02:18.
Sample date       : 7-DEC-2015 13:02:00. Acquisition date : 3-OCT-2016 07:04:39.
Sample ID        : G405235051 Sample quantity : 1.53012E+02 GRAM
Detector name    : GAM41 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:05.93 0.2%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596252 Detector SN# :
Matrix Spike ID  : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.53*	22	188	1.04	93.36	88	10	6.24E-03	121.4	
2	0	63.22*	50	256	0.73	126.73	122	10	1.39E-02	64.6	
3	6	74.93*	232	180	1.26	150.14	145	14	6.46E-02	11.9	1.87E+00
4	6	77.27*	289	113	0.78	154.82	145	14	8.03E-02	8.2	
5	2	84.44*	58	115	1.51	169.16	166	26	1.61E-02	33.6	1.75E+00
6	2	87.37	128	124	1.32	175.00	166	26	3.56E-02	17.3	
7	2	89.91	76	103	1.16	180.08	166	26	2.11E-02	25.0	
8	2	92.78*	107	95	1.19	185.83	166	26	2.97E-02	21.6	
9	0	156.62	39	94	4.03	313.48	307	11	1.07E-02	51.7	
10	0	186.12*	65	118	1.02	372.45	368	10	1.80E-02	35.8	
11	0	238.79*	304	100	0.89	477.78	473	9	8.43E-02	8.4	
12	0	241.96	76	65	1.22	484.10	482	7	2.12E-02	21.5	
13	0	260.11	19	50	0.86	520.41	515	9	5.14E-03	72.4	
14	0	271.39	65	64	3.61	542.96	535	15	1.80E-02	30.7	
15	5	277.18	48	15	2.39	554.54	550	19	1.33E-02	21.2	1.41E+00
16	5	280.70	19	31	1.98	561.57	550	19	5.40E-03	66.1	
17	0	295.61	109	58	1.44	591.39	587	10	3.03E-02	16.1	
18	0	300.46	19	41	0.90	601.08	597	8	5.29E-03	63.0	
19	0	328.52*	24	65	2.29	657.20	651	12	6.74E-03	71.0	
20	0	338.49	61	54	1.19	677.12	672	12	1.70E-02	26.8	
21	0	352.28*	198	38	1.06	704.71	700	10	5.51E-02	9.3	
22	0	458.10	10	19	1.05	916.32	910	8	2.76E-03	85.9	
23	0	494.31	14	20	1.18	988.71	982	10	3.89E-03	65.5	
24	0	512.04*	24	55	2.31	1024.17	1015	22	6.73E-03	91.7	
25	0	543.77	11	12	1.00	1087.64	1081	9	3.02E-03	67.2	
26	0	548.25	12	30	0.60	1096.59	1090	16	3.31E-03	104.1	
27	0	583.75*	112	13	1.33	1167.58	1163	13	3.10E-02	11.8	
28	0	609.86*	142	42	1.34	1219.80	1214	14	3.96E-02	12.9	
29	0	662.29*	41	27	1.49	1324.66	1318	13	1.14E-02	30.6	
30	0	728.27*	39	16	1.54	1456.62	1450	14	1.08E-02	28.0	
31	0	735.71	27	12	3.28	1471.51	1464	16	7.46E-03	34.7	
32	0	786.96	10	10	0.70	1574.02	1570	7	2.81E-03	61.3	
33	0	853.65	13	12	0.97	1707.39	1698	12	3.61E-03	60.1	
34	0	860.64	33	3	3.12	1721.38	1715	13	9.09E-03	20.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	900.96	10	18	3.43	1802.03	1794	13	2.65E-03	100.2	
36	0	911.87*	61	23	1.48	1823.85	1817	15	1.70E-02	21.5	
37	0	970.76*	23	43	1.28	1941.66	1931	15	6.27E-03	68.4	
38	0	1028.71	13	4	0.99	2057.58	2054	8	3.61E-03	38.5	
39	0	1048.47	8	11	1.45	2097.10	2090	9	2.35E-03	78.6	
40	0	1121.13	38	11	1.56	2242.45	2234	16	1.05E-02	26.0	
41	0	1134.76	9	14	4.57	2269.70	2259	18	2.54E-03	100.0	
42	0	1205.40	7	12	1.52	2411.03	2405	11	2.00E-03	97.7	
43	0	1238.36	28	7	3.28	2476.97	2471	13	7.82E-03	26.6	
44	0	1342.79	10	2	1.34	2685.89	2680	10	2.65E-03	44.8	
45	0	1461.79*	261	8	1.95	2923.97	2916	15	7.25E-02	6.7	
46	0	1765.78	31	0	2.15	3532.26	3525	13	8.61E-03	18.0	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235051.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 7-DEC-2015 13:02:00 Acquisition date : 3-OCT-2016 07:04:39
 Sample ID : G405235051 Sample quantity : 153.01 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA41 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:05.93 0.2%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Empirical Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	87.09	TH-229	88.47
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	8.926E-01	1.300E+01	1.300E+01	13.33	OK
Y-91	1204.77	0.26*	1.057E+00	1.267E+01	4.470E+02	195.37	OK
CD-109	88.03	3.70*	7.448E+00	2.086E+00	3.278E+00	49.90	OK
SN-126	64.28	9.60	7.794E+00	4.293E-01	4.293E-01	129.22	OK
	86.94	8.90	7.448E+00	8.674E-01	8.674E-01	49.90	OK
	87.57	37.00*	7.448E+00	2.086E-01	2.086E-01	49.90	OK
BA-137M	661.66	89.90*	1.826E+00	1.288E-01	1.313E-01	61.28	OK
CS-137	661.66	85.10*	1.826E+00	1.361E-01	1.387E-01	61.28	OK
TL-208	277.37	6.60	3.909E+00	1.048E+00	1.048E+00	42.35	OK
	583.19	85.00*	2.050E+00	3.357E-01	3.357E-01	23.63	OK
	860.56	12.50	1.434E+00	9.175E-01	9.175E-01	41.72	OK
PB-210	46.54	4.25*	7.553E+00	4.626E-01	4.746E-01	242.82	OK
BI-211	72.87	1.23	7.711E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	3.211E+00	1.678E-01	1.678E-01	557.00	OK
PB-212	74.82	10.28	7.682E+00	1.364E+00	1.364E+00	34.74	OK
	77.11	17.10	7.644E+00	1.400E+00	1.400E+00	16.44	OK
	238.63	43.60*	4.384E+00	9.086E-01	9.086E-01	16.78	OK
	300.09	3.30	3.665E+00	8.817E-01	8.817E-01	125.98	OK
BI-214	609.32	45.49*	1.969E+00	8.289E-01	8.292E-01	25.86	OK
	1120.29	14.92	1.127E+00	1.101E+00	1.102E+00	51.95	OK
	1764.49	15.30	7.616E-01	1.234E+00	1.235E+00	35.92	OK
PB-214	74.82	5.80	7.683E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	7.644E+00	2.469E+00	2.470E+00	16.44	OK
	87.09	3.41	7.454E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.340E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	3.713E+00	8.949E-01	8.952E-01	32.29	OK
	351.93	35.60*	3.214E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	1.969E+00	8.289E-01	8.292E-01	25.86	OK
	1120.29	14.92	1.127E+00	1.101E+00	1.102E+00	51.95	OK
	1764.49	15.30	7.616E-01	1.234E+00	1.235E+00	35.92	OK
RA-224	240.99	4.10*	4.341E+00	8.710E-01	8.710E-01	134.52	OK
RA-226	609.32	45.49*	1.969E+00	8.289E-01	8.292E-01	25.86	OK
	1120.29	14.92	1.127E+00	1.101E+00	1.102E+00	51.95	OK
	1764.49	15.30	7.616E-01	1.234E+00	1.235E+00	35.92	OK
TH-228	74.82	10.28	7.682E+00	1.364E+00	1.364E+00	34.74	OK
	77.11	17.10	7.644E+00	1.400E+00	1.400E+00	16.44	OK
	238.63	43.60*	4.384E+00	9.086E-01	9.086E-01	16.78	OK
	300.09	3.30	3.665E+00	8.817E-01	8.817E-01	125.98	OK
TH-229	85.43	14.70	7.510E+00	3.303E-01	3.303E-01	67.29	OK
	88.47	24.00	7.448E+00	3.217E-01	3.217E-01	49.90	OK
	193.51	4.41*	5.088E+00	----- Line	Not Found	-----	Absent
	210.85	2.80	4.797E+00	----- Line	Not Found	-----	Absent
TH-230	609.32	45.49*	1.969E+00	8.289E-01	8.289E-01	25.86	OK
	1120.29	14.92	1.127E+00	1.101E+00	1.101E+00	51.95	OK
	1764.49	15.30	7.616E-01	1.234E+00	1.234E+00	35.92	OK
PA-231	283.69	1.70	3.838E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	3.665E+00	5.438E-01	5.438E-01	125.98	OK
TH-234	63.29	3.70*	7.794E+00	1.114E+00	1.114E+00	129.22	OK
	92.59	4.23	7.327E+00	2.152E+00	2.152E+00	43.13	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
U-234	609.32	45.49*	1.969E+00	8.289E-01	8.289E-01	25.86	OK
	1120.29	14.92	1.127E+00	1.101E+00	1.101E+00	51.95	OK
	1764.49	15.30	7.616E-01	1.234E+00	1.234E+00	35.92	OK
U-235	89.96	3.47	7.392E+00	1.853E+00	1.853E+00	50.01	OK
	93.35	5.60	7.327E+00	1.626E+00	1.626E+00	43.13	OK
	143.76	10.96*	6.093E+00	-----	Line Not Found	-----	Absent
	163.33	5.08	5.667E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	5.221E+00	1.270E-01	1.270E-01	71.51	OK
	205.31	5.01	4.887E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	7.794E+00	1.114E+00	1.114E+00	129.22	OK
	92.59	4.23	7.327E+00	2.152E+00	2.152E+00	43.13	OK
AM-243	43.53	5.90	7.421E+00	-----	Line Not Found	-----	Absent
	74.66	67.20*	7.682E+00	2.087E-01	2.087E-01	34.74	OK
ANH-511	511.00	100.00*	2.310E+00	5.569E-02	5.569E-02	183.43	OK

Flag: "*" = Keyline

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.300E+01	1.698E+00	5.762E-01
Y-91	4.470E+02	8.558E+02	1.170E+03
CD-109	3.278E+00	1.603E+00	1.471E+00
SN-126	2.086E-01	1.020E-01	9.347E-02
BA-137M	1.313E-01	7.883E-02	7.425E-02
CS-137	1.387E-01	8.328E-02	7.844E-02
TL-208	3.357E-01	7.773E-02	6.576E-02
PB-210	4.746E-01	1.130E+00	7.877E-01
BI-211	1.678E-01	9.159E-01	3.364E-01
PB-212	9.086E-01	1.494E-01	1.177E-01
BI-214	8.292E-01	2.101E-01	1.538E-01
PB-214	9.561E-01	1.742E-01	3.267E-01
RN-222	8.292E-01	2.101E-01	1.538E-01
RA-224	8.710E-01	1.148E+00	1.294E+00
RA-226	8.292E-01	2.101E-01	1.538E-01
TH-228	9.086E-01	1.494E-01	1.177E-01
TH-229	-2.973E-01	4.543E-01	8.385E-01
TH-230	8.289E-01	2.101E-01	1.537E-01
PA-231	5.438E-01	6.714E-01	8.080E-01
TH-234	1.114E+00	1.411E+00	9.795E-01
U-234	8.289E-01	2.101E-01	1.537E-01
U-235	4.726E-02	1.889E-01	3.814E-01
U-238	1.114E+00	1.411E+00	9.795E-01
AM-243	2.087E-01	7.104E-02	5.273E-02
ANH-511	5.569E-02	1.001E-01	4.910E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-9.905E+00	1.264E+01	2.128E+01	NOT IDENT.
NA-22	-3.849E-02	6.037E-02	1.040E-01	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	1.664E-03	1.836E-02	5.113E-02	NOT IDENT.
SC-46	2.488E-01	4.412E-01	9.554E-01	FAIL ABUN

V-48	0.000E+00	1.406E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.986E+02	0.000E+00	SHORT HLIF
MN-54	3.448E-03	6.698E-02	1.359E-01	NOT IDENT.
CO-56	-1.502E-01	5.118E-01	8.557E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	1.592E-02	4.512E-02	9.149E-02	NOT IDENT.
CO-58	-4.077E-01	5.687E-01	1.016E+00	NOT IDENT.
FE-59	4.668E-01	8.611E+00	1.706E+01	NOT IDENT.
CO-60	1.536E-02	4.084E-02	9.061E-02	NOT IDENT.
ZN-65	6.570E-02	1.945E-01	3.750E-01	NOT IDENT.
GE-68	4.490E-01	2.176E+00	4.672E+00	NOT IDENT.
AS-73	2.039E+00	2.404E+00	4.729E+00	NOT IDENT.
AS-74	0.000E+00	6.889E+03	0.000E+00	SHORT HLIF
SE-75	-1.930E-01	2.066E-01	3.385E-01	FAIL ABUN
BR-77	0.000E+00	3.519E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	8.857E+02	0.000E+00	SHORT HLIF
RB-83	3.740E-01	7.598E-01	1.413E+00	NOT IDENT.
KR-85	6.826E+00	7.254E+00	1.537E+01	NOT IDENT.
SR-85	7.262E-01	7.737E-01	1.639E+00	NOT IDENT.
RB-86	0.000E+00	2.824E+04	0.000E+00	SHORT HLIF
Y-88	7.026E-02	1.131E-01	3.972E-01	NOT IDENT.
NB-94	-1.570E-02	3.316E-02	6.234E-02	NOT IDENT.
NB-95	1.098E-01	9.230E-01	1.873E+00	NOT IDENT.
NB-95M	-3.960E-01	2.489E+00	4.241E+00	NOT IDENT.
ZR-95	1.370E-01	1.662E+00	3.362E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	2.544E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.241E+41	0.000E+00	SHORT HLIF
RH-101	-1.179E-02	3.198E-02	6.172E-02	NOT IDENT.
RH-102	2.537E-02	6.707E-02	1.406E-01	NOT IDENT.
RU-103	-2.731E+00	7.010E+00	1.096E+01	FAIL ABUN
RH-106	4.272E-02	5.094E-01	9.857E-01	NOT IDENT.
RU-106	4.272E-02	5.094E-01	9.857E-01	NOT IDENT.
AG-108M	5.362E-03	3.040E-02	5.904E-02	NOT IDENT.
AG-110M	-5.692E-02	1.085E-01	2.067E-01	NOT IDENT.
SN-113	-8.789E-03	2.399E-01	4.566E-01	NOT IDENT.
CD-115	0.000E+00	4.233E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.069E+05	0.000E+00	SHORT HLIF
TE-123M	-2.612E-02	1.380E-01	2.396E-01	NOT IDENT.
SB-124	-5.218E-01	1.617E+00	3.487E+00	NOT IDENT.
SB-125	-2.784E-02	1.162E-01	2.139E-01	NOT IDENT.
TE-125M	-1.675E+01	2.421E+02	4.789E+02	NOT IDENT.
I-126	0.000E+00	1.258E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.222E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.780E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	6.007E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.214E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	4.475E+26	0.000E+00	SHORT HLIF
BA-133	-6.117E-03	4.514E-02	7.584E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	4.308E-02	4.045E-02	9.921E-02	NOT IDENT.
CS-135	5.576E-02	1.594E-01	2.868E-01	NOT IDENT.
I-135	0.000E+00	8.234E+40	0.000E+00	SHORT HLIF
CS-136	0.000E+00	5.085E+05	0.000E+00	SHORT HLIF
CE-139	1.499E-03	1.113E-01	2.182E-01	NOT IDENT.
BA-140	0.000E+00	1.592E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	6.103E+05	0.000E+00	SHORT HLIF
CE-141	-5.610E+00	2.576E+01	4.975E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	-2.612E-01	3.344E-01	6.250E-01	NOT IDENT.
PM-144	-1.271E-02	5.816E-02	1.136E-01	NOT IDENT.
PR-144	-1.122E+00	5.052E+00	9.862E+00	NOT IDENT.
PM-146	1.233E-02	4.551E-02	8.241E-02	FAIL ABUN
ND-147	0.000E+00	3.647E+07	0.000E+00	SHORT HLIF
PM-147	5.635E+02	7.602E+02	1.583E+03	NOT IDENT.
PM-149	0.000E+00	6.451E+40	0.000E+00	SHORT HLIF
EU-150	2.322E-02	2.665E-02	4.924E-02	FAIL ABUN
EU-152	-4.215E-02	1.073E-01	1.855E-01	NOT IDENT.
GD-153	-5.847E-03	1.593E-01	2.862E-01	NOT IDENT.
EU-154	-6.285E-02	1.416E-01	2.551E-01	NOT IDENT.
EU-155	7.073E-02	8.831E-02	1.856E-01	FAIL ABUN
TB-160	3.949E-01	1.749E+00	3.755E+00	FAIL ABUN
HO-166M	2.629E-03	6.136E-02	1.240E-01	FAIL ABUN
TM-171	-4.548E+00	5.503E+00	9.567E+00	NOT IDENT.
HF-172	7.144E-05	2.174E-01	4.284E-01	FAIL ABUN
LU-172	4.815E-02	9.393E-02	1.999E-01	FAIL ABUN
LU-176	3.198E-03	2.297E-02	4.520E-02	FAIL ABUN

HF-181	3.504E-02	3.953E+00	7.685E+00	NOT IDENT.
TA-182	3.794E-01	1.170E+00	2.381E+00	FAIL ABUN
RE-183	4.452E-01	1.069E+00	2.036E+00	NOT IDENT.
RE-184	-2.397E+00	4.090E+01	7.080E+01	NOT IDENT.
W-188	3.965E+01	1.145E+02	2.194E+02	FAIL ABUN
IR-192	1.141E-01	4.360E-01	8.704E-01	FAIL ABUN
HG-203	2.914E+00	2.444E+00	4.930E+00	NOT IDENT.
BI-207	-3.388E-02	6.251E-02	1.118E-01	FAIL ABUN
PB-211	1.721E-01	7.210E-01	1.408E+00	NOT IDENT.
BI-212	0.000E+00	9.842E-01	1.501E+00	FAIL ABUN
RN-219	2.931E-01	3.618E-01	7.664E-01	FAIL ABUN
RA-223	1.282E-01	6.579E-01	1.162E+00	FAIL ABUN
AC-227	1.819E-03	2.360E-01	4.121E-01	FAIL ABUN
TH-227	1.819E-03	2.360E-01	4.121E-01	FAIL ABUN
AC-228	0.000E+00	3.673E-01	5.974E-01	FAIL ABUN
RA-228	0.000E+00	3.673E-01	5.974E-01	FAIL ABUN
TH-231	1.282E-01	6.579E-01	1.162E+00	FAIL ABUN
TH-232	0.000E+00	3.673E-01	5.974E-01	FAIL ABUN
PA-233	5.092E-02	6.010E-02	1.256E-01	FAIL ABUN
PA-234	2.470E-02	2.577E-01	5.399E-01	NOT IDENT.
PA-234M	1.659E-01	5.139E+00	1.011E+01	NOT IDENT.
NP-237	5.092E-02	6.010E-02	1.256E-01	FAIL ABUN
NP-238	0.000E+00	1.144E+41	0.000E+00	SHORT HLIF
NP-239	2.606E-02	2.200E-01	4.407E-01	FAIL ABUN
PU-239	-9.135E+01	2.876E+02	5.568E+02	NOT IDENT.
AM-241	3.959E-02	5.594E-02	1.010E-01	NOT IDENT.
CM-243	-1.313E-02	8.149E-02	1.613E-01	FAIL ABUN
BK-247	-6.742E-02	7.765E-02	1.180E-01	FAIL ABUN
CM-247	-3.867E-04	3.580E-02	6.831E-02	FAIL ABUN
CF-249	4.362E-03	3.545E-02	6.945E-02	NOT IDENT.
CF-251	-7.098E-02	1.159E-01	2.158E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	252	10.66*	8.926E-01	1.300E+01	1.300E+01	13.33
Y-91	1204.77	7	0.26*	1.057E+00	1.267E+01	4.470E+02	195.37
CD-109	88.03	164	3.70*	7.448E+00	2.911E+00	4.574E+00	34.58
SN-126	64.28	65	9.60	7.794E+00	4.293E-01	4.293E-01	129.22
	86.94	164	8.90	7.448E+00	1.210E+00	1.210E+00	34.58
	87.57	164	37.00*	7.448E+00	2.911E-01	2.911E-01	34.58
BA-137M	661.66	43	89.90*	1.826E+00	1.288E-01	1.313E-01	61.28
CS-137	661.66	43	85.10*	1.826E+00	1.361E-01	1.387E-01	61.28
TL-208	277.37	55	6.60	3.909E+00	1.048E+00	1.048E+00	42.35
	583.19	119	85.00*	2.050E+00	3.357E-01	3.357E-01	23.63
	860.56	34	12.50	1.434E+00	9.175E-01	9.175E-01	41.72
PB-210	46.54	30	4.25*	7.553E+00	4.626E-01	4.746E-01	242.82
BI-211	72.87	-----	1.23	7.711E+00	-----	Line Not Found	-----
	351.06	223	12.92*	3.211E+00	2.633E+00	2.633E+00	18.59
PB-212	74.82	301	10.28	7.682E+00	1.869E+00	1.869E+00	23.80
	77.11	373	17.10	7.644E+00	1.400E+00	1.400E+00	16.44
	238.63	354	43.60*	4.384E+00	9.086E-01	9.086E-01	16.78
	300.09	22	3.30	3.665E+00	8.817E-01	8.817E-01	125.98
BI-214	609.32	151	45.49*	1.969E+00	8.289E-01	8.292E-01	25.86
	1120.29	38	14.92	1.127E+00	1.101E+00	1.102E+00	51.95
	1764.49	29	15.30	7.616E-01	1.234E+00	1.235E+00	35.92
PB-214	74.82	301	5.80	7.682E+00	3.312E+00	3.314E+00	23.80
	77.11	373	9.70	7.644E+00	2.469E+00	2.470E+00	16.44
	87.09	164	3.41	7.448E+00	3.159E+00	3.160E+00	34.58
	242.00	89	7.25	4.341E+00	1.387E+00	1.388E+00	42.98
	295.22	125	18.42	3.713E+00	8.949E-01	8.952E-01	32.29
	351.93	223	35.60*	3.211E+00	9.557E-01	9.561E-01	18.59
RN-222	609.32	151	45.49*	1.969E+00	8.289E-01	8.292E-01	25.86
	1120.29	38	14.92	1.127E+00	1.101E+00	1.102E+00	51.95
	1764.49	29	15.30	7.616E-01	1.234E+00	1.235E+00	35.92
RA-224	240.99	89	4.10*	4.341E+00	2.453E+00	2.453E+00	42.98
RA-226	609.32	151	45.49*	1.969E+00	8.289E-01	8.292E-01	25.86
	1120.29	38	14.92	1.127E+00	1.101E+00	1.102E+00	51.95
	1764.49	29	15.30	7.616E-01	1.234E+00	1.235E+00	35.92
TH-228	74.82	301	10.28	7.682E+00	1.869E+00	1.869E+00	23.80
	77.11	373	17.10	7.644E+00	1.400E+00	1.400E+00	16.44
	238.63	354	43.60*	4.384E+00	9.086E-01	9.086E-01	16.78
	300.09	22	3.30	3.665E+00	8.817E-01	8.817E-01	125.98
TH-229	85.43	74	14.70	7.510E+00	3.303E-01	3.303E-01	67.29
	88.47	164	24.00	7.448E+00	4.488E-01	4.488E-01	34.58
	193.51	-----	4.41*	5.088E+00	-----	Line Not Found	-----
	210.85	-----	2.80	4.797E+00	-----	Line Not Found	-----
TH-230	609.32	151	45.49*	1.969E+00	8.289E-01	8.289E-01	25.86
	1120.29	38	14.92	1.127E+00	1.101E+00	1.101E+00	51.95
	1764.49	29	15.30	7.616E-01	1.234E+00	1.234E+00	35.92
PA-231	283.69	-----	1.70	3.838E+00	-----	Line Not Found	-----
	301.36	22	5.35*	3.665E+00	5.438E-01	5.438E-01	125.98

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-234	63.29	65	3.70*	7.794E+00	1.114E+00	1.114E+00	129.22
	92.59	136	4.23	7.327E+00	2.152E+00	2.152E+00	43.13
U-234	609.32	151	45.49*	1.969E+00	8.289E-01	8.289E-01	25.86
	1120.29	38	14.92	1.127E+00	1.101E+00	1.101E+00	51.95
	1764.49	29	15.30	7.616E-01	1.234E+00	1.234E+00	35.92
U-235	89.96	97	3.47	7.392E+00	1.853E+00	1.853E+00	50.01
	93.35	136	5.60	7.327E+00	1.626E+00	1.626E+00	43.13
	143.76	-----	10.96*	6.093E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.667E+00	-----	Line Not Found	-----
	185.72	77	57.20	5.221E+00	1.270E-01	1.270E-01	71.51
	205.31	-----	5.01	4.887E+00	-----	Line Not Found	-----
U-238	63.29	65	3.70*	7.794E+00	1.114E+00	1.114E+00	129.22
	92.59	136	4.23	7.327E+00	2.152E+00	2.152E+00	43.13
AM-243	43.53	-----	5.90	7.421E+00	-----	Line Not Found	-----
	74.66	301	67.20*	7.682E+00	2.859E-01	2.859E-01	23.80
ANH-511	511.00	26	100.00*	2.310E+00	5.569E-02	5.569E-02	183.43

Flag: "*" = Keyline

Total number of lines in spectrum 46
Number of unidentified lines 9
Number of lines tentatively identified by NID 37 80.43%

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	1.300E+01	1.300E+01	0.173E+01	13.33	
Y-91	58.51D	35.3	1.267E+01	4.470E+02	8.732E+02	195.37	
CD-109	461.40D	1.57	2.911E+00	4.574E+00	1.582E+00	34.58	
SN-126	2.30E+05Y	1.00	2.911E-01	2.911E-01	1.007E-01	34.58	
BA-137M	30.08Y	1.02	1.288E-01	1.313E-01	0.804E-01	61.28	
CS-137	30.08Y	1.02	1.361E-01	1.387E-01	0.850E-01	61.28	
TL-208	1.41E+10Y	1.00	3.357E-01	3.357E-01	0.793E-01	23.63	
PB-210	22.20Y	1.03	4.626E-01	4.746E-01	11.53E-01	242.82	
BI-211	7.04E+08Y	1.00	2.633E+00	2.633E+00	0.489E+00	18.59	
PB-212	1.41E+10Y	1.00	9.086E-01	9.086E-01	1.525E-01	16.78	
BI-214	1600.00Y	1.00	8.289E-01	8.292E-01	2.144E-01	25.86	
PB-214	1600.00Y	1.00	9.557E-01	9.561E-01	1.777E-01	18.59	
RN-222	1600.00Y	1.00	8.289E-01	8.292E-01	2.144E-01	25.86	
RA-224	1.41E+10Y	1.00	2.453E+00	2.453E+00	1.054E+00	42.98	
RA-226	1600.00Y	1.00	8.289E-01	8.292E-01	2.144E-01	25.86	
TH-228	1.41E+10Y	1.00	9.086E-01	9.086E-01	1.525E-01	16.78	
TH-229	7340.00Y	1.00	4.488E-01	4.488E-01	1.552E-01	34.58	K
TH-230	7.54E+04Y	1.00	8.289E-01	8.289E-01	2.144E-01	25.86	
PA-231	7.04E+08Y	1.00	5.438E-01	5.438E-01	6.851E-01	125.98	
TH-234	4.47E+09Y	1.00	1.114E+00	1.114E+00	1.439E+00	129.22	
U-234	2.45E+05Y	1.00	8.289E-01	8.289E-01	2.144E-01	25.86	
U-235	7.04E+08Y	1.00	1.270E-01	1.270E-01	0.908E-01	71.51	K
U-238	4.47E+09Y	1.00	1.114E+00	1.114E+00	1.439E+00	129.22	
AM-243	7370.00Y	1.00	2.859E-01	2.859E-01	0.681E-01	23.80	
ANH-511	1.00E+09Y	1.00	5.569E-02	5.569E-02	10.21E-02	183.43	

Total Activity : 4.563E+01 4.816E+02

Grand Total Activity : 4.563E+01 4.816E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	156.62	47	114	4.03	313.48	307	11	1.07E-02	****	5.81E+00	T
0	260.11	21	57	0.86	520.41	515	9	5.14E-03	****	4.11E+00	T
0	271.39	75	74	3.61	542.96	535	15	1.80E-02	61.5	3.97E+00	T
5	280.70	22	36	1.98	561.57	550	19	5.40E-03	****	3.87E+00	T
0	328.52	27	74	2.29	657.20	651	12	6.74E-03	****	3.41E+00	T
0	338.49	69	61	1.19	677.12	672	12	1.70E-02	53.5	3.32E+00	T
0	458.10	11	21	1.05	916.32	910	8	2.76E-03	****	2.55E+00	
0	494.31	15	22	1.18	988.71	982	10	3.89E-03	****	2.38E+00	
0	543.77	12	13	1.00	1087.64	1081	9	3.02E-03	****	2.19E+00	
0	548.25	13	32	0.60	1096.59	1090	16	3.31E-03	****	2.17E+00	
0	728.27	41	17	1.54	1456.62	1450	14	1.08E-02	56.1	1.67E+00	T
0	735.71	28	13	3.28	1471.51	1464	16	7.46E-03	69.4	1.66E+00	T
0	786.96	10	10	0.70	1574.02	1570	7	2.81E-03	****	1.56E+00	
0	853.65	13	12	0.97	1707.39	1698	12	3.61E-03	****	1.44E+00	
0	900.96	10	19	3.43	1802.03	1794	13	2.65E-03	****	1.37E+00	T
0	911.87	62	23	1.48	1823.85	1817	15	1.70E-02	43.0	1.36E+00	T
0	970.76	23	44	1.28	1941.66	1931	15	6.27E-03	****	1.28E+00	
0	1028.71	13	4	0.99	2057.58	2054	8	3.61E-03	76.9	1.22E+00	T
0	1048.47	8	11	1.45	2097.10	2090	9	2.35E-03	****	1.20E+00	T
0	1134.76	9	14	4.57	2269.70	2259	18	2.54E-03	****	1.12E+00	
0	1238.36	28	7	3.28	2476.97	2471	13	7.82E-03	53.2	1.03E+00	T
0	1342.79	9	2	1.34	2685.89	2680	10	2.65E-03	89.5	9.61E-01	

Flags: "T" = Tentatively associated

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*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                         *
*                               Charleston, SC 29407                     *
*                               *                                     *
*****
*                               DETECTOR AND SAMPLE DATA                *
*                               *                                     *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235051.CNF;1 *
* Acquisition date   : 3-OCT-2016 07:04:39 Sensitivity      : 3.000      *
* Detector ID        : GAM41 Energy tolerance: 1.500      *
* Elapsed live time  : 0 01:00:00.00 Abundance limit: 75.000 *
* Elapsed real time  : 0 01:00:05.93 Half life ratio : ***** *
* Sample date       : 7-DEC-2015 13:02:00 Nuclide Library : SOLID      *
* Sample ID         : G405235051 Analyst initials: MXR1      *
* Batch Number      : 1596252 Sample Quantity : 1.5301E+02 GRAM *
* Wet wt corr       : 1.00000 Wet Weight      : 0.00000      *
*                   : Dry Weight      : 0.00000      *
*****
*                               CALIBRATION INFORMATION                  *
*                               *                                     *
* Eff. Cal. date    : 26-JAN-2016 06:01:47 Eff. Geometry   : CAN      *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM41 CAN.CNF;3 *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.179E-01
Y-91	4.991E+02
CD-109	6.947E-01
SN-126	4.415E-02
BA-137M	3.290E-02
CS-137	3.476E-02
TL-208	2.896E-02
PB-210	3.707E-01
BI-211	1.516E-01
PB-212	5.519E-02
BI-214	6.928E-02
PB-214	1.574E-01
RN-222	6.928E-02
RA-224	6.081E-01
RA-226	6.928E-02
TH-228	5.519E-02
TH-229	3.880E-01
TH-230	6.926E-02
PA-231	3.685E-01
TH-234	4.649E-01
U-234	6.926E-02
U-235	1.801E-01
U-238	4.649E-01
AM-243	2.498E-02
ANH-511	2.159E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	9.296E+00	NOT IDENT.
NA-22	4.368E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.664E-02	NOT IDENT.
SC-46	4.192E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF

CR-51	0.000E+00	SHORT HLIF
MN-54	5.897E-02	NOT IDENT.
CO-56	3.586E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	4.305E-02	NOT IDENT.
CO-58	4.228E-01	NOT IDENT.
FE-59	7.405E+00	NOT IDENT.
CO-60	3.759E-02	NOT IDENT.
ZN-65	1.599E-01	NOT IDENT.
GE-68	1.949E+00	NOT IDENT.
AS-73	2.243E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.526E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.315E-01	NOT IDENT.
KR-85	6.960E+00	NOT IDENT.
SR-85	7.421E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.344E-01	NOT IDENT.
NB-94	2.723E-02	NOT IDENT.
NB-95	8.259E-01	NOT IDENT.
NB-95M	1.956E+00	NOT IDENT.
ZR-95	1.481E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.896E-02	NOT IDENT.
RH-102	6.285E-02	NOT IDENT.
RU-103	4.837E+00	FAIL ABUN
RH-106	4.306E-01	NOT IDENT.
RU-106	4.306E-01	NOT IDENT.
AG-108M	2.668E-02	NOT IDENT.
AG-110M	8.801E-02	NOT IDENT.
SN-113	2.061E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.114E-01	NOT IDENT.
SB-124	1.177E+00	NOT IDENT.
SB-125	9.649E-02	NOT IDENT.
TE-125M	2.251E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.422E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	4.282E-02	NOT IDENT.
CS-135	1.325E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.020E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.341E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.916E-01	NOT IDENT.
PM-144	4.983E-02	NOT IDENT.
PR-144	4.325E+00	NOT IDENT.
PM-146	3.665E-02	FAIL ABUN
ND-147	0.000E+00	SHORT HLIF
PM-147	7.448E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.244E-02	FAIL ABUN
EU-152	8.445E-02	NOT IDENT.
GD-153	1.350E-01	NOT IDENT.
EU-154	1.072E-01	NOT IDENT.
EU-155	8.742E-02	FAIL ABUN
TB-160	1.592E+00	FAIL ABUN
HO-166M	5.461E-02	FAIL ABUN
TM-171	4.516E+00	NOT IDENT.
HF-172	2.012E-01	FAIL ABUN
LU-172	8.739E-02	FAIL ABUN
LU-176	2.054E-02	FAIL ABUN
HF-181	3.364E+00	NOT IDENT.

TA-182	1.043E+00	FAIL ABUN
RE-183	9.650E-01	NOT IDENT.
RE-184	3.073E+01	NOT IDENT.
W-188	1.006E+02	FAIL ABUN
IR-192	3.950E-01	FAIL ABUN
HG-203	2.273E+00	NOT IDENT.
BI-207	4.812E-02	FAIL ABUN
PB-211	6.399E-01	NOT IDENT.
BI-212	6.899E-01	FAIL ABUN
RN-219	3.468E-01	FAIL ABUN
RA-223	5.307E-01	FAIL ABUN
AC-227	1.884E-01	FAIL ABUN
TH-227	1.884E-01	FAIL ABUN
AC-228	2.795E-01	FAIL ABUN
RA-228	2.795E-01	FAIL ABUN
TH-231	5.307E-01	FAIL ABUN
TH-232	2.795E-01	FAIL ABUN
PA-233	5.773E-02	FAIL ABUN
PA-234	2.271E-01	NOT IDENT.
PA-234M	4.410E+00	NOT IDENT.
NP-237	5.773E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.071E-01	FAIL ABUN
PU-239	2.610E+02	NOT IDENT.
AM-241	4.792E-02	NOT IDENT.
CM-243	7.576E-02	FAIL ABUN
BK-247	5.329E-02	FAIL ABUN
CM-247	3.081E-02	FAIL ABUN
CF-249	3.118E-02	NOT IDENT.
CF-251	1.004E-01	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.300E+01	2.028E+00	2.028E+00
Y-91	4.470E+02	8.566E+02	8.566E+02
CD-109	3.278E+00	1.650E+00	1.650E+00
SN-126	2.086E-01	1.044E-01	1.044E-01
BA-137M	1.313E-01	7.956E-02	7.956E-02
CS-137	1.387E-01	8.405E-02	8.405E-02
TL-208	3.357E-01	8.285E-02	8.285E-02
PB-210	4.746E-01	1.131E+00	1.131E+00
BI-211	1.678E-01	9.645E-01	9.645E-01
PB-212	9.086E-01	1.725E-01	1.725E-01
BI-214	8.292E-01	2.215E-01	2.215E-01
PB-214	9.561E-01	1.923E-01	1.923E-01
RN-222	8.292E-01	2.215E-01	2.215E-01
RA-224	8.710E-01	1.169E+00	1.169E+00
RA-226	8.292E-01	2.215E-01	2.215E-01
TH-228	9.086E-01	1.725E-01	1.725E-01
TH-229	-2.973E-01	4.551E-01	4.551E-01
TH-230	8.289E-01	2.215E-01	2.215E-01
PA-231	5.438E-01	6.826E-01	6.826E-01
TH-234	1.114E+00	1.437E+00	1.437E+00
U-234	8.289E-01	2.215E-01	2.215E-01
U-235	4.726E-02	1.890E-01	1.890E-01
U-238	1.114E+00	1.437E+00	1.437E+00
AM-243	2.087E-01	7.567E-02	7.567E-02
ANH-511	5.569E-02	1.002E-01	1.002E-01

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V-48	-1.673E+04	1.425E+04	1.612E+04	SHORT HLIF
CR-51	-4.343E+02	4.004E+02	4.457E+02	SHORT HLIF
MN-54	3.448E-03	6.698E-02	6.700E-02	NOT IDENT.
CO-56	-1.502E-01	5.120E-01	5.165E-01	FAIL ABUN
MN-56	-1.000E+41	3.409E+41	0.000E+00	SHORT HLIF
CO-57	1.592E-02	4.516E-02	4.573E-02	NOT IDENT.
CO-58	-4.077E-01	5.701E-01	5.990E-01	NOT IDENT.
FE-59	4.668E-01	8.611E+00	8.614E+00	NOT IDENT.
CO-60	1.536E-02	4.086E-02	4.144E-02	NOT IDENT.
ZN-65	6.570E-02	1.948E-01	1.970E-01	NOT IDENT.
GE-68	4.490E-01	2.178E+00	2.187E+00	NOT IDENT.
AS-73	2.039E+00	2.449E+00	2.616E+00	NOT IDENT.
AS-74	-1.552E+03	6.891E+03	6.927E+03	SHORT HLIF
SE-75	-1.930E-01	2.073E-01	2.248E-01	FAIL ABUN
BR-77	2.139E+38	1.858E+39	0.000E+00	SHORT HLIF
SR-82	7.499E+02	8.887E+02	9.508E+02	SHORT HLIF
RB-83	3.740E-01	7.620E-01	7.805E-01	NOT IDENT.
KR-85	6.826E+00	7.278E+00	7.901E+00	NOT IDENT.
SR-85	7.262E-01	7.762E-01	8.424E-01	NOT IDENT.
RB-86	1.049E+04	2.829E+04	2.869E+04	SHORT HLIF
Y-88	7.026E-02	1.132E-01	1.175E-01	NOT IDENT.
NB-94	-1.570E-02	3.319E-02	3.394E-02	NOT IDENT.
NB-95	1.098E-01	9.231E-01	9.244E-01	NOT IDENT.
NB-95M	-3.960E-01	2.490E+00	2.496E+00	NOT IDENT.
ZR-95	1.370E-01	1.662E+00	1.663E+00	NOT IDENT.
NB-97	-1.000E+41	3.611E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	4.071E+41	0.000E+00	SHORT HLIF
MO-99	5.418E+31	2.545E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.249E+41	0.000E+00	SHORT HLIF
RH-101	-1.179E-02	3.208E-02	3.252E-02	NOT IDENT.
RH-102	2.537E-02	6.712E-02	6.809E-02	NOT IDENT.
RU-103	-2.731E+00	7.015E+00	7.122E+00	FAIL ABUN
RH-106	4.272E-02	5.094E-01	5.097E-01	NOT IDENT.
RU-106	4.272E-02	5.094E-01	5.097E-01	NOT IDENT.
AG-108M	5.362E-03	3.041E-02	3.050E-02	NOT IDENT.
AG-110M	-5.692E-02	1.087E-01	1.117E-01	NOT IDENT.
SN-113	-8.789E-03	2.399E-01	2.399E-01	NOT IDENT.
CD-115	6.370E+38	4.235E+39	0.000E+00	SHORT HLIF
SN-117M	-9.312E+04	1.077E+05	1.156E+05	SHORT HLIF
TE-123M	-2.612E-02	1.380E-01	1.385E-01	NOT IDENT.
SB-124	-5.218E-01	1.617E+00	1.634E+00	NOT IDENT.
SB-125	-2.784E-02	1.163E-01	1.169E-01	NOT IDENT.
TE-125M	-1.675E+01	2.421E+02	2.422E+02	NOT IDENT.
I-126	-1.208E+05	1.258E+06	1.259E+06	SHORT HLIF
SB-126	9.679E+05	1.238E+06	1.313E+06	SHORT HLIF
SB-127	-2.878E+21	2.808E+22	0.000E+00	SHORT HLIF
I-131	1.067E+09	6.007E+09	6.027E+09	SHORT HLIF
I-132	1.000E+41	1.858E+42	0.000E+00	SHORT HLIF
TE-132	2.030E+26	4.553E+26	0.000E+00	SHORT HLIF
BA-133	-6.117E-03	4.514E-02	4.523E-02	FAIL ABUN
I-133	1.000E+41	1.213E+42	0.000E+00	SHORT HLIF
CS-134	4.308E-02	4.068E-02	4.507E-02	NOT IDENT.
CS-135	5.576E-02	1.595E-01	1.615E-01	NOT IDENT.
I-135	1.000E+41	6.846E+41	0.000E+00	SHORT HLIF
CS-136	3.302E+05	5.122E+05	5.334E+05	SHORT HLIF
CE-139	1.499E-03	1.113E-01	1.113E-01	NOT IDENT.
BA-140	2.603E+05	1.592E+06	1.596E+06	SHORT HLIF
LA-140	-2.351E+05	6.106E+05	6.197E+05	SHORT HLIF
CE-141	-5.610E+00	2.577E+01	2.589E+01	NOT IDENT.
CE-143	-1.000E+41	2.461E+41	0.000E+00	SHORT HLIF
CE-144	-2.612E-01	3.358E-01	3.558E-01	NOT IDENT.
PM-144	-1.271E-02	5.818E-02	5.846E-02	NOT IDENT.
PR-144	-1.122E+00	5.053E+00	5.078E+00	NOT IDENT.
PM-146	1.233E-02	4.553E-02	4.587E-02	FAIL ABUN
ND-147	1.143E+07	3.648E+07	3.685E+07	SHORT HLIF
PM-147	5.635E+02	7.631E+02	8.042E+02	NOT IDENT.
PM-149	-2.023E+40	6.468E+40	0.000E+00	SHORT HLIF
EU-150	2.322E-02	2.673E-02	2.870E-02	FAIL ABUN
EU-152	-4.215E-02	1.073E-01	1.090E-01	NOT IDENT.
GD-153	-5.847E-03	1.593E-01	1.593E-01	NOT IDENT.
EU-154	-6.285E-02	1.417E-01	1.445E-01	NOT IDENT.
EU-155	7.073E-02	8.866E-02	9.422E-02	FAIL ABUN
TB-160	3.949E-01	1.749E+00	1.758E+00	FAIL ABUN
HO-166M	2.629E-03	6.136E-02	6.137E-02	FAIL ABUN
TM-171	-4.548E+00	5.537E+00	5.905E+00	NOT IDENT.
HF-172	7.144E-05	2.174E-01	2.174E-01	FAIL ABUN
LU-172	4.815E-02	9.440E-02	9.686E-02	FAIL ABUN
LU-176	3.198E-03	2.298E-02	2.302E-02	FAIL ABUN

HF-181	3.504E-02	3.953E+00	3.953E+00	NOT IDENT.
TA-182	3.794E-01	1.171E+00	1.183E+00	FAIL ABUN
RE-183	4.452E-01	1.072E+00	1.091E+00	NOT IDENT.
RE-184	-2.397E+00	4.091E+01	4.092E+01	NOT IDENT.
W-188	3.965E+01	1.146E+02	1.160E+02	FAIL ABUN
IR-192	1.141E-01	4.361E-01	4.391E-01	FAIL ABUN
HG-203	2.914E+00	2.457E+00	2.786E+00	NOT IDENT.
BI-207	-3.388E-02	6.275E-02	6.458E-02	FAIL ABUN
PB-211	1.721E-01	7.212E-01	7.253E-01	NOT IDENT.
BI-212	1.791E+00	9.983E-01	1.284E+00	FAIL ABUN
RN-219	2.931E-01	3.642E-01	3.875E-01	FAIL ABUN
RA-223	1.282E-01	6.580E-01	6.605E-01	FAIL ABUN
AC-227	1.819E-03	2.360E-01	2.360E-01	FAIL ABUN
TH-227	1.819E-03	2.360E-01	2.360E-01	FAIL ABUN
AC-228	8.719E-01	3.817E-01	5.479E-01	FAIL ABUN
RA-228	8.719E-01	3.817E-01	5.479E-01	FAIL ABUN
TH-231	1.282E-01	6.580E-01	6.605E-01	FAIL ABUN
TH-232	8.719E-01	3.817E-01	5.479E-01	FAIL ABUN
PA-233	5.092E-02	6.027E-02	6.449E-02	FAIL ABUN
PA-234	2.470E-02	2.592E-01	2.595E-01	NOT IDENT.
PA-234M	1.659E-01	5.139E+00	5.140E+00	NOT IDENT.
NP-237	5.092E-02	6.027E-02	6.449E-02	FAIL ABUN
NP-238	-1.000E+41	1.152E+41	0.000E+00	SHORT HLIF
NP-239	2.606E-02	2.200E-01	2.203E-01	FAIL ABUN
PU-239	-9.135E+01	2.878E+02	2.907E+02	NOT IDENT.
AM-241	3.959E-02	5.620E-02	5.896E-02	NOT IDENT.
CM-243	-1.313E-02	8.150E-02	8.172E-02	FAIL ABUN
BK-247	-6.742E-02	7.900E-02	8.464E-02	FAIL ABUN
CM-247	-3.867E-04	3.580E-02	3.580E-02	FAIL ABUN
CF-249	4.362E-03	3.546E-02	3.551E-02	NOT IDENT.
CF-251	-7.098E-02	1.164E-01	1.207E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	79.2546	87.09	96.8336	136.47	82.2510
45.60	85.4408	87.57	96.8968	140.51	0.0000
46.54	85.6012	88.03	96.9570	143.76	74.8373
49.72	0.0000	88.34	96.9977	144.24	73.9818
51.35	104.1492	88.47	97.0142	145.44	90.1319
51.87	130.3128	89.96	97.2077	152.43	67.3836
52.39	113.8370	1093.63	97.2956	153.25	0.0000
52.97	87.8431	91.11	0.0000	323.87	66.1473
53.44	83.1661	92.59	97.5452	156.02	0.0000
54.07	88.0192	93.35	97.6414	158.56	0.0000
57.36	0.0000	94.56	69.5523	159.00	63.7328
57.53	113.6957	94.65	69.5603	162.33	68.0092
57.98	98.2136	94.67	69.5620	162.66	0.0000
59.27	99.2329	94.87	83.4960	163.33	78.0547
59.32	105.6440	97.43	93.9227	165.86	68.2274
59.54	92.8738	98.43	76.2497	176.31	58.7611
60.96	107.5443	98.44	76.2506	176.60	0.0000
61.17	107.5821	99.53	79.7481	177.52	72.6087
62.93	115.9506	100.11	83.2019	181.07	0.0000
63.29	116.0193	102.03	98.7181	181.52	58.1018
63.58	116.0750	103.18	88.6302	184.41	55.4706
64.28	116.2081	103.37	83.5364	143.76	62.0103
66.73	140.9741	105.21	68.3451	193.51	65.2049
67.24	129.7371	105.31	68.3537	197.03	59.7865
125.81	116.8447	106.12	76.1172	198.01	71.0521
67.75	116.8572	106.47	90.6948	201.83	65.6428
69.67	122.0940	109.28	78.9792	203.43	58.2146
70.83	122.3129	111.00	89.4607	205.31	55.4793
72.81	135.7691	111.76	0.0000	210.85	62.3295
72.87	117.7866	114.06	77.6921	215.65	62.5585
74.66	108.2618	116.30	0.0000	222.11	45.7188
74.82	108.2873	116.74	78.7951	227.09	44.9312
74.97	108.3115	119.76	84.2751	227.38	50.6779
77.11	108.6539	121.12	67.8695	228.16	0.0000
78.74	117.1618	121.22	67.8771	228.18	41.1401
79.69	127.2367	121.78	74.8852	116.74	41.1401
80.12	119.0479	122.06	76.6500	235.69	50.5026
80.19	0.0000	122.92	82.8254	235.96	50.5122
80.57	96.7883	123.07	78.4790	238.63	76.6355
81.00	99.3311	265.00	79.4038	238.98	0.0000
81.07	99.3408	125.81	76.0887	240.99	81.1084
81.75	102.7506	127.23	85.8392	242.00	52.1785
83.79	118.0025	127.91	84.1492	244.70	49.3730
84.00	91.0217	129.30	82.5168	252.40	0.0000
85.43	91.2010	131.20	70.3687	252.80	45.7555
86.55	96.7628	133.02	89.0089	254.15	0.0000
86.79	96.7941	133.52	82.8830	256.23	38.0558
86.94	96.8142	136.00	74.2554	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	44.7474	355.39	0.0000	584.27	18.3724
264.80	45.6353	356.01	31.0870	595.83	0.0000
265.00	45.6410	364.49	0.0000	427.87	20.7964
268.22	42.7867	366.42	0.0000	602.52	0.0000
269.46	36.9156	372.51	38.6787	604.72	13.8857
270.03	36.9293	375.05	30.3558	607.14	20.8469
271.23	36.9583	377.52	36.6833	609.32	27.8184
273.65	0.0000	356.01	23.1337	610.33	27.8291
276.40	25.2157	388.16	24.2382	614.28	12.1927
277.37	25.2313	388.63	0.0000	618.01	27.9072
277.60	25.2349	391.69	29.5603	620.36	10.4744
278.00	25.2416	264.66	24.3912	621.93	15.1381
279.20	25.2608	401.81	19.0997	630.19	0.0000
279.54	25.2665	402.40	28.6578	631.29	19.2789
279.70	25.2691	404.85	29.7557	633.25	24.5538
280.46	25.2811	410.95	33.0422	634.78	0.0000
283.69	22.3526	413.71	24.5484	635.95	11.4111
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	26.8522	423.72	0.0000	645.85	11.4516
285.90	0.0000	427.09	32.2266	657.76	18.3993
287.50	33.8582	427.87	32.2382	657.90	0.0000
290.67	34.7235	433.94	26.9424	661.66	20.3728
293.27	0.0000	439.40	28.0921	664.57	0.0000
351.93	31.5192	453.88	17.9472	666.33	0.0000
295.96	31.5333	463.37	27.3097	666.50	0.0000
879.38	36.0959	468.07	19.7043	667.71	0.0000
299.98	28.6003	473.00	0.0000	677.62	20.4851
300.09	28.6021	475.06	18.6674	685.70	0.0000
300.13	28.6032	476.78	15.3848	695.00	0.0000
301.36	36.1567	477.60	26.3833	696.49	19.7200
302.85	24.1265	482.18	16.5228	696.51	19.7200
256.23	37.7350	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	20.6219
306.78	31.2371	497.08	24.9442	697.49	17.9333
308.46	34.2947	505.52	18.3581	702.65	21.5574
311.90	29.3109	507.63	0.0000	706.68	18.8877
316.51	28.3771	511.00	17.8428	711.68	18.0182
319.41	0.0000	514.00	17.8652	720.70	0.0000
320.08	0.0000	514.00	17.8652	721.93	0.0000
321.04	29.4685	520.40	16.7932	722.78	17.3602
323.87	33.5881	520.69	0.0000	722.91	17.3613
325.23	42.7819	522.65	0.0000	723.31	20.2576
328.76	0.0000	527.90	0.0000	724.19	17.3684
333.37	27.6306	528.26	16.8475	727.33	13.0395
333.97	20.4740	529.59	19.1042	733.00	3.6288
334.37	33.7896	529.87	0.0000	735.93	11.6230
338.28	31.8117	531.02	0.0000	333.97	11.6289
338.32	31.8123	537.26	0.0000	739.50	0.0000
311.90	32.3645	546.56	0.0000	747.24	17.3156
340.48	32.3645	552.55	23.8190	748.06	18.2312
340.55	0.0000	563.25	14.8070	752.31	19.1690
344.28	42.0078	569.33	20.5503	753.82	0.0000
345.93	36.0695	946.00	23.9771	756.73	17.3678
351.06	27.9031	569.70	23.9788	756.80	17.3678
351.93	24.8145	583.19	18.3646	884.68	17.4066

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	17.4171	1274.44	12.7183	1620.50	3.3481
766.42	16.5037	1001.03	13.7133	1621.92	4.4653
766.84	16.5059	1002.74	11.7594	1678.03	0.0000
772.60	0.0000	1004.73	9.8044	1690.97	2.7114
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	4.5752
778.90	19.3286	1028.54	0.0000	1063.66	3.0529
783.70	0.0000	1037.84	10.8751	1771.35	10.0767
785.37	17.7070	1038.76	0.0000	1791.20	0.0000
792.07	15.7103	631.29	12.6820	1808.65	0.9216
794.95	9.2496	1048.07	0.0000	1810.72	0.0000
795.86	4.6260	1049.04	12.6898	1836.06	0.0000
810.06	19.5125	1050.41	12.6945		
810.29	19.5138	1063.66	18.9049		
344.28	17.6565	1077.00	0.0000		
810.76	14.8701	1077.34	6.9880		
815.77	0.0000	1085.87	12.0037		
1048.07	0.0000	1093.63	11.0242		
832.01	18.7048	1099.45	14.0504		
834.85	14.0405	1112.07	7.0461		
835.71	14.9800	1112.84	9.2048		
836.80	0.0000	1115.54	8.0596		
846.75	0.0000	1120.29	8.0684		
846.77	12.0227	1120.55	8.0688		
856.80	0.0000	1221.41	8.0703		
860.56	7.5442	1129.67	8.0859		
871.09	17.9714	1131.51	0.0000		
873.19	15.1426	1147.95	0.0000		
875.33	0.0000	1173.23	13.2722		
879.38	8.5328	1177.95	15.3305		
880.51	16.1222	1189.05	6.1476		
883.24	8.5419	1204.77	11.3102		
884.68	13.2929	1221.41	13.4158		
889.28	11.4086	1231.02	11.3753		
894.76	7.6174	1235.36	0.0000		
898.04	16.7734	1238.28	8.2861		
900.72	15.2598	1260.41	0.0000		
903.28	15.2705	1271.87	4.1731		
911.20	13.3912	1274.44	13.5697		
912.08	13.3942	1274.54	15.6583		
923.98	0.0000	1291.59	8.3813		
926.50	9.6051	1298.22	0.0000		
929.11	20.1848	1312.11	0.0000		
937.49	18.3036	1332.49	5.2829		
944.13	0.0000	1362.66	0.0000		
946.00	8.6899	1365.19	2.1273		
949.00	11.5957	1368.63	0.0000		
667.71	0.0000	1384.29	4.2710		
962.31	15.5156	1408.01	5.3638		
964.08	13.9707	1457.56	0.0000		
966.17	23.2969	1460.82	3.2514		
911.20	21.3716	1489.16	6.5380		
968.97	21.3716	1505.03	6.5574		
983.53	0.0000	1584.12	3.3265		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:07:20.79

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235052.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM44.CNF;111
Background date    : Z-OCT-2016 11:02:28.
Sample date       : 7-DEC-2015 13:11:00. Acquisition date : 3-OCT-2016 07:04:59.
Sample ID        : G405235052 Sample quantity : 1.65245E+02 GRAM
Detector name    : GAM44 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.77 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596252 Detector SN# :
Matrix Spike ID : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	74.84	80	118	0.93	150.13	143	18	2.23E-02	23.8	8.91E-01
2	1	77.17*	136	109	1.06	154.81	143	18	3.78E-02	15.2	
3	0	87.28	49	140	1.47	175.02	172	7	1.35E-02	43.0	
4	2	89.95	44	78	1.04	180.38	178	15	1.22E-02	30.6	1.63E+00
5	2	92.79*	63	116	1.21	186.05	178	15	1.76E-02	33.0	
6	0	143.99	28	88	1.00	288.49	285	7	7.76E-03	59.1	
7	6	183.84*	13	47	1.51	368.22	366	17	3.67E-03	85.7	1.34E+00
8	6	185.83*	38	74	1.39	372.21	366	17	1.06E-02	47.0	
9	0	227.79	17	78	1.51	456.15	451	8	4.68E-03	94.9	
10	5	238.68*	329	79	1.20	477.95	473	28	9.14E-02	7.1	9.25E-01
11	5	241.86	87	80	1.54	484.31	473	28	2.42E-02	22.9	
12	0	255.61	10	66	1.29	511.82	507	8	2.87E-03	139.5	
13	0	270.60	32	40	1.30	541.82	539	6	8.93E-03	35.8	
14	0	295.22	125	55	1.20	591.09	585	11	3.47E-02	14.6	
15	0	300.90	17	42	0.98	602.44	599	7	4.81E-03	68.8	
16	0	328.45	48	51	1.10	657.58	653	11	1.34E-02	32.3	
17	0	339.15	88	84	1.24	678.98	673	13	2.45E-02	24.5	
18	0	351.95*	231	97	1.33	704.59	697	16	6.41E-02	11.7	
19	0	372.61	25	49	4.02	745.94	739	14	6.94E-03	62.7	
20	0	511.08*	38	43	2.59	1023.01	1015	16	1.06E-02	47.9	
21	0	517.16	24	22	1.39	1035.19	1030	9	6.55E-03	41.7	
22	0	583.31*	74	51	1.26	1167.56	1162	13	2.04E-02	23.3	
23	0	609.48*	134	40	1.82	1219.93	1214	11	3.72E-02	12.2	
24	0	661.81	50	19	1.00	1324.65	1321	8	1.38E-02	21.1	
25	0	676.17	10	25	0.53	1353.40	1346	13	2.75E-03	110.4	
26	0	728.23	15	39	0.67	1457.57	1449	12	4.26E-03	85.3	
27	0	755.54	16	13	0.86	1512.22	1505	11	4.36E-03	52.1	
28	0	760.26	15	9	0.52	1521.68	1516	12	4.09E-03	48.6	
29	0	768.70	22	6	2.08	1538.58	1535	8	6.03E-03	29.1	
30	0	873.29	17	21	4.16	1747.89	1737	18	4.71E-03	69.6	
31	0	911.29*	71	18	1.68	1823.94	1819	10	1.97E-02	16.5	
32	4	964.88	27	8	2.64	1931.20	1925	19	7.36E-03	31.6	6.84E-01
33	4	969.04*	36	11	1.77	1939.53	1925	19	9.96E-03	23.4	
34	0	1033.95	9	14	0.82	2069.46	2062	11	2.57E-03	84.4	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1120.27	57	8	1.45	2242.23	2235	15	1.57E-02	17.0	
36	0	1238.15	40	0	0.82	2478.18	2471	16	1.11E-02	15.8	
37	0	1277.10	11	1	0.84	2556.16	2553	6	2.93E-03	35.8	
38	0	1308.72	11	4	1.33	2619.44	2614	9	2.96E-03	47.0	
39	0	1343.50	13	0	1.00	2689.08	2683	12	3.61E-03	27.7	
40	0	1460.79*	351	7	2.14	2923.88	2917	14	9.76E-02	5.6	
41	0	1765.23	19	7	0.91	3533.38	3525	12	5.31E-03	34.7	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235052.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 7-DEC-2015 13:11:00 Acquisition date : 3-OCT-2016 07:04:59
 Sample ID : G405235052 Sample quantity : 165.24 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA44 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.77 0.0%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
U-235	143.76	CE-141	145.44
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.030E+00	1.416E+01	1.416E+01	11.24	OK
CD-109	88.03	3.70*	4.461E+00	9.321E-01	1.465E+00	168.44	OK
SN-126	64.28	9.60	2.161E+00	----- Line	Not Found	-----	Absent
	86.94	8.90	4.461E+00	3.875E-01	3.875E-01	168.44	OK
	87.57	37.00*	4.461E+00	9.321E-02	9.321E-02	168.44	OK
BA-137M	661.66	89.90*	1.965E+00	1.373E-01	1.399E-01	42.18	OK
CS-137	661.66	85.10*	1.965E+00	1.450E-01	1.478E-01	42.18	OK
CE-141	145.44	48.29*	5.917E+00	3.792E-02	2.311E+01	181.44	OK
TL-208	277.37	6.60	4.074E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.178E+00	1.978E-01	1.978E-01	46.53	OK
	860.56	12.50	1.592E+00	----- Line	Not Found	-----	Absent
BI-211	72.87	1.23	3.135E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	3.336E+00	2.268E-01	2.268E-01	442.79	OK
PB-212	74.82	10.28	3.342E+00	9.186E-01	9.186E-01	77.05	OK
	77.11	17.10	3.578E+00	1.376E+00	1.376E+00	30.45	OK
	238.63	43.60*	4.585E+00	9.072E-01	9.072E-01	14.24	OK
	300.09	3.30	3.810E+00	7.400E-01	7.400E-01	137.50	OK
BI-214	609.32	45.49*	2.101E+00	6.925E-01	6.928E-01	24.32	OK
	1120.29	14.92	1.288E+00	1.348E+00	1.348E+00	33.98	OK
	1764.49	15.30	8.670E-01	6.211E-01	6.214E-01	69.40	OK
PB-214	74.82	5.80	3.340E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.578E+00	2.426E+00	2.427E+00	30.45	OK
	87.09	3.41	4.447E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.538E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	3.870E+00	9.441E-01	9.444E-01	29.12	OK
	351.93	35.60*	3.336E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	2.101E+00	6.925E-01	6.928E-01	24.32	OK
	1120.29	14.92	1.288E+00	1.348E+00	1.348E+00	33.98	OK
	1764.49	15.30	8.670E-01	6.211E-01	6.214E-01	69.40	OK
RA-224	240.99	4.10*	4.540E+00	9.091E-01	9.091E-01	140.33	OK
RA-226	609.32	45.49*	2.101E+00	6.925E-01	6.928E-01	24.32	OK
	1120.29	14.92	1.288E+00	1.348E+00	1.348E+00	33.98	OK
	1764.49	15.30	8.670E-01	6.211E-01	6.214E-01	69.40	OK
AC-228	105.21	1.10	5.460E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.443E+00	1.207E+00	1.207E+00	48.95	OK
	794.95	4.25	1.696E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.630E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.521E+00	8.518E-01	8.518E-01	33.07	OK
	968.97	15.80	1.448E+00	7.324E-01	7.324E-01	46.79	OK
RA-228	105.21	1.10	5.460E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.443E+00	1.207E+00	1.207E+00	48.95	OK
	794.95	4.25	1.696E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.630E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.521E+00	8.518E-01	8.518E-01	33.07	OK
	968.97	15.80	1.448E+00	7.324E-01	7.324E-01	46.79	OK
TH-228	74.82	10.28	3.342E+00	9.186E-01	9.186E-01	77.05	OK
	77.11	17.10	3.578E+00	1.376E+00	1.376E+00	30.45	OK
	238.63	43.60*	4.585E+00	9.072E-01	9.072E-01	14.24	OK
	300.09	3.30	3.810E+00	7.400E-01	7.400E-01	137.50	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	609.32	45.49*	2.101E+00	6.925E-01	6.925E-01	24.32	OK
	1120.29	14.92	1.288E+00	1.348E+00	1.348E+00	33.98	OK
	1764.49	15.30	8.670E-01	6.211E-01	6.211E-01	69.40	OK
PA-231	283.69	1.70	4.000E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	3.810E+00	4.565E-01	4.565E-01	137.50	OK
TH-232	105.21	1.10	5.460E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.443E+00	1.207E+00	1.207E+00	48.95	OK
	835.71	1.61	1.630E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.521E+00	8.518E-01	8.518E-01	33.07	OK
	968.97	15.80	1.448E+00	7.324E-01	7.324E-01	46.79	OK
U-234	609.32	45.49*	2.101E+00	6.925E-01	6.925E-01	24.32	OK
	1120.29	14.92	1.288E+00	1.348E+00	1.348E+00	33.98	OK
	1764.49	15.30	8.670E-01	6.211E-01	6.211E-01	69.40	OK
U-235	89.96	3.47	4.655E+00	1.664E+00	1.664E+00	61.21	OK
	93.35	5.60	4.842E+00	1.422E+00	1.422E+00	66.02	OK
	143.76	10.96*	5.918E+00	----- Line	Not Found	-----	<<INT Reject
	163.33	5.08	5.731E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	5.405E+00	7.020E-02	7.020E-02	94.05	OK
	205.31	5.01	5.095E+00	----- Line	Not Found	-----	Absent
AM-243	43.53	5.90	1.573E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.342E+00	1.405E-01	1.405E-01	77.05	OK
ANH-511	511.00	100.00*	2.430E+00	7.973E-02	7.973E-02	95.89	OK

Flag: "*" = Keyline

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235052.CNF;1
* Acquisition date   : 3-OCT-2016 07:04:59 Sensitivity      : 3.000
* Detector ID        : GAM44 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.77 Half life ratio : *****
* Sample date        : 7-DEC-2015 13:11:00 Analyst initials: MXR1
* Sample ID          : G405235052 Sample Quantity : 1.6524E+02 GRAM
* Batch Number       : 1596252 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 6-SEP-2016 04:59:25 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM44 CAN.CNF;3
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.416E+01	1.560E+00	5.992E-01
CD-109	1.465E+00	2.418E+00	1.864E+00
SN-126	9.321E-02	1.539E-01	1.417E-01
BA-137M	1.399E-01	5.784E-02	5.965E-02
CS-137	1.478E-01	6.110E-02	6.301E-02
CE-141	2.311E+01	4.110E+01	4.062E+01
TL-208	1.978E-01	9.018E-02	6.347E-02
BI-211	2.268E-01	9.842E-01	3.315E-01
PB-212	9.072E-01	1.266E-01	8.443E-02
BI-214	6.928E-01	1.651E-01	1.308E-01
PB-214	1.027E+00	2.346E-01	3.187E-01
RN-222	6.928E-01	1.651E-01	1.308E-01
RA-224	9.091E-01	1.250E+00	9.052E-01
RA-226	6.928E-01	1.651E-01	1.308E-01
AC-228	8.518E-01	2.761E-01	2.468E-01
RA-228	8.518E-01	2.761E-01	2.468E-01
TH-228	9.072E-01	1.266E-01	8.443E-02
TH-230	6.925E-01	1.651E-01	1.307E-01
PA-231	4.565E-01	6.151E-01	6.774E-01
TH-232	8.518E-01	2.761E-01	2.468E-01
U-234	6.925E-01	1.651E-01	1.307E-01
U-235	2.505E-01	2.900E-01	3.374E-01
AM-243	1.405E-01	1.061E-01	9.419E-02
ANH-511	7.973E-02	7.492E-02	4.675E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	5.078E+00	1.179E+01	2.446E+01	NOT IDENT.
NA-22	-4.709E-04	4.743E-02	8.435E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	2.565E-03	3.326E-02	7.052E-02	NOT IDENT.
SC-46	-1.242E-01	3.861E-01	7.500E-01	FAIL ABUN
V-48	0.000E+00	1.297E+04	0.000E+00	SHORT HLIF

CR-51	0.000E+00	3.780E+02	0.000E+00	SHORT HLIF
MN-54	-1.868E-02	6.175E-02	1.118E-01	NOT IDENT.
CO-56	-2.089E-01	4.671E-01	8.216E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	2.319E-02	4.537E-02	9.129E-02	NOT IDENT.
CO-58	-6.565E-02	6.036E-01	1.133E+00	NOT IDENT.
FE-59	-1.102E+00	6.391E+00	1.258E+01	NOT IDENT.
CO-60	6.926E-03	3.033E-02	6.734E-02	NOT IDENT.
ZN-65	-1.140E-01	1.891E-01	2.862E-01	NOT IDENT.
GE-68	-1.309E-02	2.177E+00	4.422E+00	NOT IDENT.
AS-73	-1.359E+00	1.371E+01	2.782E+01	NOT IDENT.
AS-74	0.000E+00	5.435E+03	0.000E+00	SHORT HLIF
SE-75	-2.272E-02	1.935E-01	3.516E-01	NOT IDENT.
BR-77	0.000E+00	2.976E+37	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.557E+02	0.000E+00	SHORT HLIF
RB-83	-5.029E-01	6.740E-01	1.019E+00	NOT IDENT.
KR-85	8.711E+00	5.855E+00	1.240E+01	NOT IDENT.
SR-85	9.287E-01	6.245E-01	1.323E+00	NOT IDENT.
RB-86	0.000E+00	2.684E+04	0.000E+00	SHORT HLIF
Y-88	3.866E-03	1.022E-01	2.863E-01	NOT IDENT.
Y-91	-2.922E+01	5.285E+02	1.040E+03	NOT IDENT.
NB-94	9.007E-03	3.567E-02	6.959E-02	NOT IDENT.
NB-95	7.526E-01	6.721E-01	1.424E+00	NOT IDENT.
NB-95M	-5.399E-01	2.510E+00	4.127E+00	NOT IDENT.
ZR-95	2.042E+00	2.086E+00	2.693E+00	FAIL ABUN
NB-97	0.000E+00	1.736E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	2.173E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-2.063E-02	3.034E-02	5.514E-02	NOT IDENT.
RH-102	-6.334E-03	4.881E-02	9.485E-02	NOT IDENT.
RU-103	2.050E+00	5.283E+00	1.098E+01	FAIL ABUN
RH-106	-2.491E-01	4.662E-01	8.376E-01	NOT IDENT.
RU-106	-2.491E-01	4.662E-01	8.376E-01	NOT IDENT.
AG-108M	1.034E-05	2.625E-02	5.205E-02	NOT IDENT.
AG-110M	-7.645E-02	9.590E-02	1.727E-01	FAIL ABUN
SN-113	2.238E-01	2.040E-01	4.546E-01	NOT IDENT.
CD-115	0.000E+00	3.639E+39	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	9.785E+04	0.000E+00	SHORT HLIF
TE-123M	-4.514E-02	1.313E-01	2.409E-01	NOT IDENT.
SB-124	-6.261E-02	1.386E+00	3.156E+00	NOT IDENT.
SB-125	-3.326E-02	9.688E-02	1.847E-01	NOT IDENT.
TE-125M	2.643E+01	2.573E+02	5.068E+02	NOT IDENT.
I-126	0.000E+00	9.732E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.238E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.248E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.380E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	8.165E+26	0.000E+00	SHORT HLIF
BA-133	1.889E-02	3.694E-02	7.206E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	6.979E-03	4.658E-02	9.184E-02	NOT IDENT.
CS-135	8.429E-03	1.271E-01	2.356E-01	NOT IDENT.
I-135	0.000E+00	1.494E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.098E+05	0.000E+00	SHORT HLIF
CE-139	-3.729E-03	1.039E-01	1.957E-01	NOT IDENT.
BA-140	0.000E+00	1.322E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	3.814E+05	0.000E+00	SHORT HLIF
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	-8.229E-02	3.166E-01	5.963E-01	NOT IDENT.
PM-144	-2.043E-02	5.660E-02	1.027E-01	NOT IDENT.
PR-144	-1.746E+00	4.924E+00	8.941E+00	NOT IDENT.
PM-146	-9.611E-03	3.967E-02	7.647E-02	NOT IDENT.
ND-147	0.000E+00	3.374E+07	0.000E+00	SHORT HLIF
PM-147	3.370E+02	7.818E+02	1.566E+03	NOT IDENT.
PM-149	0.000E+00	5.844E+40	0.000E+00	SHORT HLIF
EU-150	-1.239E-02	2.869E-02	4.416E-02	FAIL ABUN
EU-152	-2.530E-02	8.774E-02	1.527E-01	FAIL ABUN
GD-153	5.218E-02	1.667E-01	3.151E-01	NOT IDENT.
EU-154	-3.556E-03	1.157E-01	2.048E-01	FAIL ABUN
EU-155	5.619E-02	1.017E-01	2.077E-01	FAIL ABUN
TB-160	6.498E-01	2.117E+00	4.179E+00	FAIL ABUN
HO-166M	-2.757E-03	5.332E-02	1.024E-01	FAIL ABUN
TM-171	-2.908E+00	3.255E+01	6.632E+01	NOT IDENT.
HF-172	1.615E-01	2.086E-01	4.286E-01	NOT IDENT.
LU-172	-3.505E-02	6.371E-02	1.177E-01	FAIL ABUN
LU-176	1.238E-02	2.034E-02	4.360E-02	FAIL ABUN
HF-181	-5.949E-01	3.582E+00	7.025E+00	NOT IDENT.

TA-182	-9.336E-01	1.067E+00	1.808E+00	FAIL ABUN
RE-183	-9.267E-01	3.633E+00	7.315E+00	NOT IDENT.
RE-184	1.339E+01	3.005E+01	6.483E+01	NOT IDENT.
W-188	-1.392E+02	1.004E+02	1.479E+02	FAIL ABUN
IR-192	-1.763E-01	3.991E-01	7.722E-01	FAIL ABUN
HG-203	4.008E-01	2.127E+00	4.375E+00	NOT IDENT.
BI-207	-4.335E-02	4.505E-02	7.599E-02	FAIL ABUN
PB-210	1.292E+00	6.720E+00	1.422E+01	NOT IDENT.
PB-211	-4.806E-01	6.684E-01	1.221E+00	NOT IDENT.
BI-212	6.115E-01	1.023E+00	1.225E+00	FAIL ABUN
RN-219	2.462E-01	3.367E-01	7.241E-01	FAIL ABUN
RA-223	-5.160E-02	5.894E-01	1.054E+00	FAIL ABUN
AC-227	1.368E-01	3.743E-01	3.983E-01	FAIL ABUN
TH-227	1.368E-01	3.743E-01	3.983E-01	FAIL ABUN
TH-229	1.215E-01	3.985E-01	7.721E-01	FAIL ABUN
TH-231	-5.160E-02	5.894E-01	1.054E+00	FAIL ABUN
PA-233	2.694E-02	5.046E-02	1.073E-01	FAIL ABUN
PA-234	-1.333E-01	2.619E-01	4.925E-01	NOT IDENT.
PA-234M	2.979E+00	3.777E+00	8.571E+00	NOT IDENT.
TH-234	2.685E-01	1.471E+00	3.000E+00	FAIL ABUN
NP-237	2.694E-02	5.046E-02	1.073E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
U-238	2.685E-01	1.471E+00	3.000E+00	FAIL ABUN
NP-239	-1.431E-02	2.103E-01	4.082E-01	FAIL ABUN
PU-239	2.114E+02	2.728E+02	5.600E+02	NOT IDENT.
AM-241	6.150E-02	1.657E-01	3.488E-01	NOT IDENT.
CM-243	-4.899E-02	9.466E-02	1.777E-01	FAIL ABUN
BK-247	-3.478E-02	6.913E-02	1.195E-01	NOT IDENT.
CM-247	1.793E-02	3.227E-02	6.780E-02	NOT IDENT.
CF-249	-6.726E-03	3.109E-02	6.101E-02	NOT IDENT.
CF-251	-1.197E-02	1.045E-01	1.949E-01	FAIL ABUN

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	342	10.66*	1.030E+00	1.416E+01	1.416E+01	11.24
CD-109	88.03	65	3.70*	4.461E+00	1.802E+00	2.832E+00	85.98
SN-126	64.28	-----	9.60	2.161E+00	-----	Line Not Found	-----
	86.94	65	8.90	4.461E+00	7.492E-01	7.492E-01	85.98
	87.57	65	37.00*	4.461E+00	1.802E-01	1.802E-01	85.98
BA-137M	661.66	53	89.90*	1.965E+00	1.373E-01	1.399E-01	42.18
CS-137	661.66	53	85.10*	1.965E+00	1.450E-01	1.478E-01	42.18
CE-141	145.44	36	48.29*	5.917E+00	5.686E-02	3.466E+01	118.12
TL-208	277.37	-----	6.60	4.074E+00	-----	Line Not Found	-----
	583.19	81	85.00*	2.178E+00	1.978E-01	1.978E-01	46.53
	860.56	-----	12.50	1.592E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.135E+00	-----	Line Not Found	-----
	351.06	268	12.92*	3.336E+00	2.828E+00	2.828E+00	23.31
PB-212	74.82	110	10.28	3.342E+00	1.451E+00	1.451E+00	47.59
	77.11	185	17.10	3.578E+00	1.376E+00	1.376E+00	30.45
	238.63	399	43.60*	4.585E+00	9.072E-01	9.072E-01	14.24
	300.09	20	3.30	3.810E+00	7.400E-01	7.400E-01	137.50
BI-214	609.32	146	45.49*	2.101E+00	6.925E-01	6.928E-01	24.32
	1120.29	57	14.92	1.288E+00	1.348E+00	1.348E+00	33.98
	1764.49	18	15.30	8.670E-01	6.211E-01	6.214E-01	69.40
PB-214	74.82	110	5.80	3.342E+00	2.572E+00	2.573E+00	47.59
	77.11	185	9.70	3.578E+00	2.426E+00	2.427E+00	30.45
	87.09	65	3.41	4.461E+00	1.956E+00	1.956E+00	85.98
	242.00	106	7.25	4.540E+00	1.458E+00	1.459E+00	45.74
	295.22	148	18.42	3.870E+00	9.441E-01	9.444E-01	29.12
	351.93	268	35.60*	3.336E+00	1.026E+00	1.027E+00	23.31
RN-222	609.32	146	45.49*	2.101E+00	6.925E-01	6.928E-01	24.32
	1120.29	57	14.92	1.288E+00	1.348E+00	1.348E+00	33.98
	1764.49	18	15.30	8.670E-01	6.211E-01	6.214E-01	69.40
RA-224	240.99	106	4.10*	4.540E+00	2.579E+00	2.579E+00	45.74
RA-226	609.32	146	45.49*	2.101E+00	6.925E-01	6.928E-01	24.32
	1120.29	57	14.92	1.288E+00	1.348E+00	1.348E+00	33.98
	1764.49	18	15.30	8.670E-01	6.211E-01	6.214E-01	69.40
AC-228	105.21	-----	1.10	5.460E+00	-----	Line Not Found	-----
	338.32	103	11.27	3.443E+00	1.207E+00	1.207E+00	48.95
	794.95	-----	4.25	1.696E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.630E+00	-----	Line Not Found	-----
	911.20	74	25.80*	1.521E+00	8.518E-01	8.518E-01	33.07
	968.97	37	15.80	1.448E+00	7.324E-01	7.324E-01	46.79
RA-228	105.21	-----	1.10	5.460E+00	-----	Line Not Found	-----
	338.32	103	11.27	3.443E+00	1.207E+00	1.207E+00	48.95
	794.95	-----	4.25	1.696E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.630E+00	-----	Line Not Found	-----
	911.20	74	25.80*	1.521E+00	8.518E-01	8.518E-01	33.07
	968.97	37	15.80	1.448E+00	7.324E-01	7.324E-01	46.79
TH-228	74.82	110	10.28	3.342E+00	1.451E+00	1.451E+00	47.59
	77.11	185	17.10	3.578E+00	1.376E+00	1.376E+00	30.45

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-230	238.63	399	43.60*	4.585E+00	9.072E-01	9.072E-01	14.24
	300.09	20	3.30	3.810E+00	7.400E-01	7.400E-01	137.50
	609.32	146	45.49*	2.101E+00	6.925E-01	6.925E-01	24.32
	1120.29	57	14.92	1.288E+00	1.348E+00	1.348E+00	33.98
PA-231	1764.49	18	15.30	8.670E-01	6.211E-01	6.211E-01	69.40
	283.69	-----	1.70	4.000E+00	-----	Line Not Found	-----
TH-232	301.36	20	5.35*	3.810E+00	4.565E-01	4.565E-01	137.50
	105.21	-----	1.10	5.460E+00	-----	Line Not Found	-----
	338.32	103	11.27	3.443E+00	1.207E+00	1.207E+00	48.95
	835.71	-----	1.61	1.630E+00	-----	Line Not Found	-----
U-234	911.20	74	25.80*	1.521E+00	8.518E-01	8.518E-01	33.07
	968.97	37	15.80	1.448E+00	7.324E-01	7.324E-01	46.79
	609.32	146	45.49*	2.101E+00	6.925E-01	6.925E-01	24.32
	1120.29	57	14.92	1.288E+00	1.348E+00	1.348E+00	33.98
U-235	1764.49	18	15.30	8.670E-01	6.211E-01	6.211E-01	69.40
	89.96	59	3.47	4.655E+00	1.664E+00	1.664E+00	61.21
	93.35	85	5.60	4.842E+00	1.422E+00	1.422E+00	66.02
	143.76	36	10.96*	5.917E+00	2.505E-01	2.505E-01	118.12
AM-243	163.33	-----	5.08	5.731E+00	-----	Line Not Found	-----
	185.72	48	57.20	5.405E+00	7.020E-02	7.020E-02	94.05
	205.31	-----	5.01	5.095E+00	-----	Line Not Found	-----
	43.53	-----	5.90	1.573E-01	-----	Line Not Found	-----
ANH-511	74.66	110	67.20*	3.342E+00	2.220E-01	2.220E-01	47.59
	511.00	43	100.00*	2.430E+00	7.973E-02	7.973E-02	95.89

Flag: "*" = Keyline

Total number of lines in spectrum 41
Number of unidentified lines 7
Number of lines tentatively identified by NID 34 82.93%

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	1.416E+01	1.416E+01	0.159E+01	11.24	
CD-109	461.40D	1.57	1.802E+00	2.832E+00	2.435E+00	85.98	
SN-126	2.30E+05Y	1.00	1.802E-01	1.802E-01	1.550E-01	85.98	
BA-137M	30.08Y	1.02	1.373E-01	1.399E-01	0.590E-01	42.18	
CS-137	30.08Y	1.02	1.450E-01	1.478E-01	0.623E-01	42.18	
CE-141	32.51D	610.	5.686E-02	3.466E+01	4.094E+01	118.12	
TL-208	1.41E+10Y	1.00	1.978E-01	1.978E-01	0.920E-01	46.53	
BI-211	7.04E+08Y	1.00	2.828E+00	2.828E+00	0.659E+00	23.31	
PB-212	1.41E+10Y	1.00	9.072E-01	9.072E-01	1.292E-01	14.24	
BI-214	1600.00Y	1.00	6.925E-01	6.928E-01	1.685E-01	24.32	
PB-214	1600.00Y	1.00	1.026E+00	1.027E+00	0.239E+00	23.31	
RN-222	1600.00Y	1.00	6.925E-01	6.928E-01	1.685E-01	24.32	
RA-224	1.41E+10Y	1.00	2.579E+00	2.579E+00	1.179E+00	45.74	
RA-226	1600.00Y	1.00	6.925E-01	6.928E-01	1.685E-01	24.32	
AC-228	1.41E+10Y	1.00	8.518E-01	8.518E-01	2.817E-01	33.07	
RA-228	1.41E+10Y	1.00	8.518E-01	8.518E-01	2.817E-01	33.07	
TH-228	1.41E+10Y	1.00	9.072E-01	9.072E-01	1.292E-01	14.24	
TH-230	7.54E+04Y	1.00	6.925E-01	6.925E-01	1.684E-01	24.32	
PA-231	7.04E+08Y	1.00	4.565E-01	4.565E-01	6.276E-01	137.50	
TH-232	1.41E+10Y	1.00	8.518E-01	8.518E-01	2.817E-01	33.07	
U-234	2.45E+05Y	1.00	6.925E-01	6.925E-01	1.684E-01	24.32	
U-235	7.04E+08Y	1.00	2.505E-01	2.505E-01	2.959E-01	118.12	
AM-243	7370.00Y	1.00	2.220E-01	2.220E-01	1.057E-01	47.59	
ANH-511	1.00E+09Y	1.00	7.973E-02	7.973E-02	7.645E-02	95.89	

Total Activity : 3.195E+01 6.759E+01

Grand Total Activity : 3.195E+01 6.759E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
6	183.84	17	59	1.51	368.22	366	17	3.67E-03	****	5.44E+00	T
0	227.79	21	95	1.51	456.15	451	8	4.68E-03	****	4.75E+00	T
0	255.61	12	79	1.29	511.82	507	8	2.87E-03	****	4.35E+00	T
0	270.60	38	48	1.30	541.82	539	6	8.93E-03	71.7	4.16E+00	T
0	328.45	56	59	1.10	657.58	653	11	1.34E-02	64.6	3.54E+00	T
0	372.61	29	57	4.02	745.94	739	14	6.94E-03	****	3.18E+00	T
0	517.16	26	25	1.39	1035.19	1030	9	6.55E-03	83.4	2.41E+00	
0	676.17	11	27	0.53	1353.40	1346	13	2.75E-03	****	1.93E+00	T
0	728.23	16	41	0.67	1457.57	1449	12	4.26E-03	****	1.82E+00	T
0	755.54	17	14	0.86	1512.22	1505	11	4.36E-03	****	1.77E+00	T
0	760.26	16	10	0.52	1521.68	1516	12	4.09E-03	97.1	1.76E+00	
0	768.70	23	7	2.08	1538.58	1535	8	6.03E-03	58.3	1.74E+00	
0	873.29	18	22	4.16	1747.89	1737	18	4.71E-03	****	1.57E+00	T
4	964.88	27	9	2.64	1931.20	1925	19	7.36E-03	63.1	1.45E+00	T
0	1033.95	9	14	0.82	2069.46	2062	11	2.57E-03	****	1.37E+00	
0	1238.15	40	0	0.82	2478.18	2471	16	1.11E-02	31.6	1.19E+00	T
0	1277.10	10	1	0.84	2556.16	2553	6	2.93E-03	71.6	1.16E+00	
0	1308.72	11	4	1.33	2619.44	2614	9	2.96E-03	94.0	1.13E+00	
0	1343.50	13	0	1.00	2689.08	2683	12	3.61E-03	55.5	1.11E+00	

Flags: "T" = Tentatively associated


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*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                          *
*                               Charleston, SC 29407                     *
*                               *****                                *
*                               *                                     *
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                     *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235052.CNF;1 *
* Acquisition date   : 3-OCT-2016 07:04:59 Sensitivity      : 3.000      *
* Detector ID        : GAM44 Energy tolerance: 1.500      *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.77 Half life ratio : *****      *
* Sample date       : 7-DEC-2015 13:11:00 Nuclide Library : SOLID      *
* Sample ID         : G405235052 Analyst initials: MXR1      *
* Batch Number      : 1596252 Sample Quantity : 1.6524E+02 GRAM      *
* Wet wt corr       : 1.00000 Wet Weight : 0.00000      *
*                               Dry Weight : 0.00000      *
*                               *****                                *
*                               *                                     *
*                               CALIBRATION INFORMATION                 *
*                               *                                     *
* Eff. Cal. date    : 6-SEP-2016 04:59:25 Eff. Geometry : CAN      *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM44 CAN.CNF;3      *
*                               *****                                *

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.430E-01
CD-109	8.690E-01
SN-126	6.680E-02
BA-137M	2.616E-02
CS-137	2.763E-02
CE-141	1.890E+01
TL-208	2.829E-02
BI-211	1.508E-01
PB-212	3.894E-02
BI-214	5.873E-02
PB-214	1.540E-01
RN-222	5.873E-02
RA-224	4.176E-01
RA-226	5.873E-02
AC-228	1.074E-01
RA-228	1.074E-01
TH-228	3.894E-02
TH-230	5.871E-02
PA-231	3.068E-01
TH-232	1.074E-01
U-234	5.871E-02
U-235	1.585E-01
AM-243	4.408E-02
ANH-511	2.074E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.103E+01	NOT IDENT.
NA-22	3.546E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.796E-02	NOT IDENT.
SC-46	3.261E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF

MN-54	4.837E-02	NOT IDENT.
CO-56	3.526E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	4.279E-02	NOT IDENT.
CO-58	4.946E-01	NOT IDENT.
FE-59	5.373E+00	NOT IDENT.
CO-60	2.744E-02	NOT IDENT.
ZN-65	1.206E-01	NOT IDENT.
GE-68	1.895E+00	NOT IDENT.
AS-73	1.295E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.609E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.426E-01	NOT IDENT.
KR-85	5.558E+00	NOT IDENT.
SR-85	5.928E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	9.051E-02	NOT IDENT.
Y-91	4.502E+02	NOT IDENT.
NB-94	3.140E-02	NOT IDENT.
NB-95	6.180E-01	NOT IDENT.
NB-95M	1.916E+00	NOT IDENT.
ZR-95	1.175E+00	FAIL ABUN
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.561E-02	NOT IDENT.
RH-102	4.093E-02	NOT IDENT.
RU-103	4.916E+00	FAIL ABUN
RH-106	3.644E-01	NOT IDENT.
RU-106	3.644E-01	NOT IDENT.
AG-108M	2.347E-02	NOT IDENT.
AG-110M	7.350E-02	FAIL ABUN
SN-113	2.074E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.126E-01	NOT IDENT.
SB-124	1.118E+00	NOT IDENT.
SB-125	8.296E-02	NOT IDENT.
TE-125M	2.367E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.270E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	4.017E-02	NOT IDENT.
CS-135	1.081E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.125E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-143	0.000E+00	SHORT HLIF
CE-144	2.772E-01	NOT IDENT.
PM-144	4.534E-02	NOT IDENT.
PR-144	3.948E+00	NOT IDENT.
PM-146	3.415E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.332E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.011E-02	FAIL ABUN
EU-152	6.889E-02	FAIL ABUN
GD-153	1.468E-01	NOT IDENT.
EU-154	8.597E-02	FAIL ABUN
EU-155	9.729E-02	FAIL ABUN
TB-160	1.850E+00	FAIL ABUN
HO-166M	4.485E-02	FAIL ABUN
TM-171	3.077E+01	NOT IDENT.
HF-172	2.008E-01	NOT IDENT.
LU-172	4.856E-02	FAIL ABUN
LU-176	1.995E-02	FAIL ABUN
HF-181	3.085E+00	NOT IDENT.
TA-182	7.851E-01	FAIL ABUN

RE-183	3.384E+00	NOT IDENT.
RE-184	2.852E+01	NOT IDENT.
W-188	6.577E+01	FAIL ABUN
IR-192	3.499E-01	FAIL ABUN
HG-203	2.015E+00	NOT IDENT.
BI-207	3.162E-02	FAIL ABUN
PB-210	6.601E+00	NOT IDENT.
PB-211	5.528E-01	NOT IDENT.
BI-212	5.603E-01	FAIL ABUN
RN-219	3.293E-01	FAIL ABUN
RA-223	4.819E-01	FAIL ABUN
AC-227	1.833E-01	FAIL ABUN
TH-227	1.833E-01	FAIL ABUN
TH-229	3.578E-01	FAIL ABUN
TH-231	4.819E-01	FAIL ABUN
PA-233	4.908E-02	FAIL ABUN
PA-234	2.107E-01	NOT IDENT.
PA-234M	3.756E+00	NOT IDENT.
TH-234	1.411E+00	FAIL ABUN
NP-237	4.908E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	1.411E+00	FAIL ABUN
NP-239	1.895E-01	FAIL ABUN
PU-239	2.622E+02	NOT IDENT.
AM-241	1.626E-01	NOT IDENT.
CM-243	8.278E-02	FAIL ABUN
BK-247	5.460E-02	NOT IDENT.
CM-247	3.089E-02	NOT IDENT.
CF-249	2.731E-02	NOT IDENT.
CF-251	9.055E-02	FAIL ABUN

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*                                     *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235052.CNF;1 *
* Acquisition date   : 3-OCT-2016 07:04:59 Sensitivity      : 3.000          *
* Detector ID        : GAM44 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.77 Half life ratio : *****      *
* Sample date        : 7-DEC-2015 13:11:00 Nuclide Library : SOLID      *
* Sample ID          : G405235052 Analyst initials: MXR1         *
* Batch Number       : 1596252 Sample Quantity : 1.6524E+02 GRAM      *
*                                     Quantity Err(%) : 1.2103E-03 %      *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000            *
*                                     Dry Weight : 0.00000          *
*****
*                                     CALIBRATION INFORMATION                  *
*                                     *                                       *
* Eff. Cal. date     : 6-SEP-2016 04:59:25 Eff. Geometry   : CAN        *
* Eff. File           : DKA100:[CANBERRA.GAMMA]EFF GAM44 CAN.CNF;3      *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.416E+01	1.726E+00	1.726E+00
CD-109	1.465E+00	2.426E+00	2.426E+00
SN-126	9.321E-02	1.544E-01	1.544E-01
BA-137M	1.399E-01	5.815E-02	5.815E-02
CS-137	1.478E-01	6.143E-02	6.143E-02
CE-141	2.313E+01	4.111E+01	4.111E+01
TL-208	1.978E-01	9.057E-02	9.057E-02
BI-211	2.268E-01	9.970E-01	9.970E-01
PB-212	9.072E-01	1.354E-01	1.354E-01
BI-214	6.928E-01	1.678E-01	1.678E-01
PB-214	1.027E+00	2.384E-01	2.384E-01
RN-222	6.928E-01	1.678E-01	1.678E-01
RA-224	9.091E-01	1.256E+00	1.256E+00
RA-226	6.928E-01	1.678E-01	1.678E-01
AC-228	8.518E-01	2.795E-01	2.795E-01
RA-228	8.518E-01	2.795E-01	2.795E-01
TH-228	9.072E-01	1.354E-01	1.354E-01
TH-230	6.925E-01	1.677E-01	1.677E-01
PA-231	4.565E-01	6.228E-01	6.228E-01
TH-232	8.518E-01	2.795E-01	2.795E-01
U-234	6.925E-01	1.677E-01	1.677E-01
U-235	2.505E-01	2.903E-01	2.903E-01
AM-243	1.405E-01	1.070E-01	1.070E-01
ANH-511	7.973E-02	7.499E-02	7.499E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	5.078E+00	1.179E+01	1.201E+01	NOT IDENT.
NA-22	-4.709E-04	4.743E-02	4.743E-02	NOT IDENT.
NA-24	1.000E+41	7.082E+41	0.000E+00	SHORT HLIF
AL-26	2.565E-03	3.326E-02	3.328E-02	NOT IDENT.
SC-46	-1.242E-01	3.861E-01	3.901E-01	FAIL ABUN
V-48	-6.508E+03	1.297E+04	1.330E+04	SHORT HLIF

CR-51	1.591E+02	3.780E+02	3.848E+02	SHORT HLIF
MN-54	-1.868E-02	6.175E-02	6.232E-02	NOT IDENT.
CO-56	-2.089E-01	4.672E-01	4.766E-01	FAIL ABUN
MN-56	-1.000E+41	2.199E+41	0.000E+00	SHORT HLIF
CO-57	2.319E-02	4.538E-02	4.657E-02	NOT IDENT.
CO-58	-6.565E-02	6.036E-01	6.044E-01	NOT IDENT.
FE-59	-1.102E+00	6.391E+00	6.411E+00	NOT IDENT.
CO-60	6.926E-03	3.033E-02	3.049E-02	NOT IDENT.
ZN-65	-1.140E-01	1.892E-01	1.960E-01	NOT IDENT.
GE-68	-1.309E-02	2.177E+00	2.177E+00	NOT IDENT.
AS-73	-1.359E+00	1.372E+01	1.373E+01	NOT IDENT.
AS-74	1.111E+03	5.436E+03	5.459E+03	SHORT HLIF
SE-75	-2.272E-02	1.935E-01	1.938E-01	NOT IDENT.
BR-77	2.132E+38	1.851E+39	0.000E+00	SHORT HLIF
SR-82	4.813E+02	6.561E+02	6.911E+02	SHORT HLIF
RB-83	-5.029E-01	6.775E-01	7.145E-01	NOT IDENT.
KR-85	8.711E+00	5.865E+00	7.058E+00	NOT IDENT.
SR-85	9.287E-01	6.257E-01	7.528E-01	NOT IDENT.
RB-86	-1.209E+03	2.684E+04	2.684E+04	SHORT HLIF
Y-88	3.866E-03	1.022E-01	1.022E-01	NOT IDENT.
Y-91	-2.922E+01	5.285E+02	5.286E+02	NOT IDENT.
NB-94	9.007E-03	3.567E-02	3.590E-02	NOT IDENT.
NB-95	7.526E-01	6.729E-01	7.536E-01	NOT IDENT.
NB-95M	-5.399E-01	2.510E+00	2.522E+00	NOT IDENT.
ZR-95	2.042E+00	2.087E+00	2.281E+00	FAIL ABUN
NB-97	1.000E+41	1.736E+41	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	3.070E+41	0.000E+00	SHORT HLIF
MO-99	4.542E+31	2.173E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	6.857E+41	0.000E+00	SHORT HLIF
RH-101	-2.063E-02	3.057E-02	3.195E-02	NOT IDENT.
RH-102	-6.334E-03	4.881E-02	4.890E-02	NOT IDENT.
RU-103	2.050E+00	5.284E+00	5.364E+00	FAIL ABUN
RH-106	-2.491E-01	4.665E-01	4.798E-01	NOT IDENT.
RU-106	-2.491E-01	4.665E-01	4.798E-01	NOT IDENT.
AG-108M	1.034E-05	2.625E-02	2.625E-02	NOT IDENT.
AG-110M	-7.645E-02	9.598E-02	1.020E-01	FAIL ABUN
SN-113	2.238E-01	2.042E-01	2.278E-01	NOT IDENT.
CD-115	9.063E+35	3.639E+39	0.000E+00	SHORT HLIF
SN-117M	-3.524E+03	9.785E+04	9.786E+04	SHORT HLIF
TE-123M	-4.514E-02	1.313E-01	1.329E-01	NOT IDENT.
SB-124	-6.261E-02	1.386E+00	1.387E+00	NOT IDENT.
SB-125	-3.326E-02	9.689E-02	9.805E-02	NOT IDENT.
TE-125M	2.643E+01	2.573E+02	2.576E+02	NOT IDENT.
I-126	4.940E+05	9.756E+05	1.001E+06	SHORT HLIF
SB-126	4.295E+05	1.241E+06	1.256E+06	SHORT HLIF
SB-127	-5.030E+21	2.353E+22	0.000E+00	SHORT HLIF
I-131	-1.318E+09	4.381E+09	4.421E+09	SHORT HLIF
I-132	1.000E+41	1.875E+42	0.000E+00	SHORT HLIF
TE-132	4.391E+26	8.359E+26	0.000E+00	SHORT HLIF
BA-133	1.889E-02	3.694E-02	3.791E-02	NOT IDENT.
I-133	1.000E+41	6.820E+41	0.000E+00	SHORT HLIF
CS-134	6.979E-03	4.658E-02	4.669E-02	NOT IDENT.
CS-135	8.429E-03	1.271E-01	1.271E-01	NOT IDENT.
I-135	1.000E+41	6.958E+41	0.000E+00	SHORT HLIF
CS-136	-4.572E+03	3.098E+05	3.098E+05	SHORT HLIF
CE-139	-3.729E-03	1.039E-01	1.039E-01	NOT IDENT.
BA-140	-7.780E+05	1.322E+06	1.368E+06	SHORT HLIF
LA-140	-1.006E+05	3.814E+05	3.841E+05	SHORT HLIF
CE-143	1.000E+41	1.074E+42	0.000E+00	SHORT HLIF
CE-144	-8.229E-02	3.167E-01	3.188E-01	NOT IDENT.
PM-144	-2.043E-02	5.662E-02	5.736E-02	NOT IDENT.
PR-144	-1.746E+00	4.924E+00	4.987E+00	NOT IDENT.
PM-146	-9.611E-03	3.968E-02	3.992E-02	NOT IDENT.
ND-147	4.848E+06	3.374E+07	3.381E+07	SHORT HLIF
PM-147	3.370E+02	7.819E+02	7.965E+02	NOT IDENT.
PM-149	1.357E+40	5.851E+40	0.000E+00	SHORT HLIF
EU-150	-1.239E-02	2.869E-02	2.923E-02	FAIL ABUN
EU-152	-2.530E-02	8.775E-02	8.849E-02	FAIL ABUN
GD-153	5.218E-02	1.667E-01	1.683E-01	NOT IDENT.
EU-154	-3.556E-03	1.157E-01	1.157E-01	FAIL ABUN
EU-155	5.619E-02	1.018E-01	1.049E-01	FAIL ABUN
TB-160	6.498E-01	2.117E+00	2.138E+00	FAIL ABUN
HO-166M	-2.757E-03	5.332E-02	5.334E-02	FAIL ABUN
TM-171	-2.908E+00	3.255E+01	3.257E+01	NOT IDENT.
HF-172	1.615E-01	2.102E-01	2.225E-01	NOT IDENT.
LU-172	-3.505E-02	6.381E-02	6.574E-02	FAIL ABUN
LU-176	1.238E-02	2.034E-02	2.110E-02	FAIL ABUN
HF-181	-5.949E-01	3.582E+00	3.592E+00	NOT IDENT.

TA-182	-9.336E-01	1.068E+00	1.148E+00	FAIL ABUN
RE-183	-9.267E-01	3.636E+00	3.660E+00	NOT IDENT.
RE-184	1.339E+01	3.022E+01	3.082E+01	NOT IDENT.
W-188	-1.392E+02	1.016E+02	1.194E+02	FAIL ABUN
IR-192	-1.763E-01	3.992E-01	4.070E-01	FAIL ABUN
HG-203	4.008E-01	2.127E+00	2.135E+00	NOT IDENT.
BI-207	-4.335E-02	4.508E-02	4.914E-02	FAIL ABUN
PB-210	1.292E+00	6.721E+00	6.746E+00	NOT IDENT.
PB-211	-4.806E-01	6.688E-01	7.030E-01	NOT IDENT.
BI-212	6.115E-01	1.023E+00	1.060E+00	FAIL ABUN
RN-219	2.462E-01	3.381E-01	3.559E-01	FAIL ABUN
RA-223	-5.160E-02	5.894E-01	5.898E-01	FAIL ABUN
AC-227	1.368E-01	3.747E-01	3.797E-01	FAIL ABUN
TH-227	1.368E-01	3.747E-01	3.797E-01	FAIL ABUN
TH-229	1.215E-01	3.985E-01	4.023E-01	FAIL ABUN
TH-231	-5.160E-02	5.894E-01	5.898E-01	FAIL ABUN
PA-233	2.694E-02	5.048E-02	5.192E-02	FAIL ABUN
PA-234	-1.333E-01	3.030E-01	3.089E-01	NOT IDENT.
PA-234M	2.979E+00	3.779E+00	4.011E+00	NOT IDENT.
TH-234	2.685E-01	1.472E+00	1.477E+00	FAIL ABUN
NP-237	2.694E-02	5.048E-02	5.192E-02	FAIL ABUN
NP-238	-1.000E+41	3.151E+41	0.000E+00	SHORT HLIF
U-238	2.685E-01	1.472E+00	1.477E+00	FAIL ABUN
NP-239	-1.431E-02	2.103E-01	2.104E-01	FAIL ABUN
PU-239	2.114E+02	2.730E+02	2.892E+02	NOT IDENT.
AM-241	6.150E-02	1.658E-01	1.681E-01	NOT IDENT.
CM-243	-4.899E-02	9.477E-02	9.731E-02	FAIL ABUN
BK-247	-3.478E-02	6.948E-02	7.123E-02	NOT IDENT.
CM-247	1.793E-02	3.241E-02	3.340E-02	NOT IDENT.
CF-249	-6.726E-03	3.109E-02	3.124E-02	NOT IDENT.
CF-251	-1.197E-02	1.045E-01	1.047E-01	FAIL ABUN

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	56.4509	87.09	90.6453	136.47	56.9215
45.60	50.6102	87.57	90.7352	140.51	0.0000
46.54	52.5403	88.03	63.1792	143.76	59.7089
49.72	0.0000	88.34	63.2192	144.24	59.7509
51.35	60.5342	88.47	63.2358	145.44	59.4914
51.87	68.7695	89.96	72.6759	152.43	62.6473
52.39	54.3732	1093.63	72.7750	153.25	0.0000
52.97	50.8329	91.11	0.0000	323.87	82.6332
53.44	59.9905	92.59	73.0569	156.02	0.0000
54.07	52.8130	93.35	73.1660	158.56	0.0000
57.36	0.0000	94.56	73.3389	159.00	77.6306
57.53	59.7555	94.65	73.3518	162.33	64.6101
57.98	56.1462	94.67	73.3546	162.66	0.0000
59.27	53.5694	94.87	73.3831	163.33	82.5432
59.32	53.5765	97.43	54.9732	165.86	64.9119
59.54	55.4562	98.43	62.4659	176.31	45.3699
60.96	65.8683	98.44	62.4671	176.60	0.0000
61.17	76.1149	99.53	72.6916	177.52	60.2065
62.93	65.2716	100.11	66.7060	181.07	0.0000
63.29	71.8644	102.03	64.9155	181.52	56.3190
63.58	73.7854	103.18	74.2002	184.41	51.5533
64.28	77.6586	103.37	74.2264	143.76	51.6357
66.73	71.5434	105.21	61.2122	193.51	47.4832
67.24	91.4259	105.31	61.2231	197.03	61.6330
125.81	91.5244	106.12	76.6405	198.01	58.2100
67.75	91.5392	106.47	76.6886	201.83	58.4656
69.67	77.1107	109.28	64.7400	203.43	58.5716
70.83	93.8015	111.00	70.0887	205.31	58.6952
72.81	70.6775	111.76	0.0000	210.85	62.6011
72.87	70.6876	114.06	67.3501	215.65	51.0566
74.66	70.9784	116.30	0.0000	222.11	41.8461
74.82	71.0044	116.74	58.2888	227.09	46.8731
74.97	71.0286	119.76	70.0895	227.38	46.8874
77.11	71.3713	121.12	62.9068	228.16	0.0000
78.74	71.6293	121.22	62.9173	228.18	43.3169
79.69	72.4250	121.78	70.3216	116.74	43.3169
80.12	71.1983	122.06	63.0034	235.69	61.4361
80.19	0.0000	122.92	75.7095	235.96	61.4524
80.57	63.4930	123.07	83.0907	238.63	47.4301
81.00	68.7403	265.00	77.9086	238.98	0.0000
81.07	64.8590	125.81	55.9902	240.99	47.5420
81.75	72.7480	127.23	71.9979	242.00	47.5902
83.79	84.8067	127.91	68.8959	244.70	47.7175
84.00	77.0126	129.30	55.2365	252.40	0.0000
85.43	86.4075	131.20	68.1855	252.80	36.1743
86.55	90.5450	133.02	63.0341	254.15	0.0000
86.79	90.5892	133.52	64.1519	256.23	46.1916
86.94	90.6180	136.00	56.8810	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	41.1553	355.39	0.0000	584.27	22.6678
264.80	47.3979	356.01	24.2150	595.83	0.0000
265.00	47.4061	364.49	0.0000	427.87	24.9307
268.22	40.0400	366.42	0.0000	602.52	0.0000
269.46	41.3386	372.51	30.8630	604.72	12.4907
270.03	45.1198	375.05	28.6462	607.14	21.8844
271.23	45.1703	377.52	24.5967	609.32	26.0813
273.65	0.0000	356.01	33.8579	610.33	31.3123
276.40	44.5419	388.16	27.5354	614.28	20.3926
277.37	43.7396	388.63	0.0000	618.01	9.4288
277.60	43.7480	391.69	20.2419	620.36	10.4883
278.00	43.7639	264.66	34.2532	621.93	19.9432
279.20	42.1265	401.81	23.1618	630.19	0.0000
279.54	48.0381	402.40	26.8789	631.29	14.7611
279.70	52.2595	404.85	42.7057	633.25	14.7747
280.46	47.2340	410.95	31.6945	634.78	0.0000
283.69	38.0649	413.71	25.2153	635.95	12.6802
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	42.3584	423.72	0.0000	645.85	15.9241
285.90	0.0000	427.09	31.0899	657.76	14.4108
287.50	37.3443	427.87	31.1053	657.90	0.0000
290.67	45.9580	433.94	28.3881	661.66	17.1100
293.27	0.0000	439.40	30.3854	664.57	0.0000
351.93	37.5941	453.88	26.8288	666.33	0.0000
295.96	37.6182	463.37	25.0574	666.50	0.0000
879.38	48.8417	468.07	25.1288	667.71	0.0000
299.98	49.7576	473.00	0.0000	677.62	17.7729
300.09	49.7623	475.06	29.1162	685.70	0.0000
300.13	49.7635	476.78	24.2884	695.00	0.0000
301.36	30.9199	477.60	22.3561	696.49	23.8960
302.85	29.6688	482.18	19.4930	696.51	23.8969
256.23	24.5432	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	17.3854
306.78	29.3357	497.08	19.6623	697.49	16.3000
308.46	34.5605	505.52	16.2996	702.65	25.0496
311.90	30.3266	507.63	0.0000	706.68	22.9115
316.51	38.2690	511.00	20.8094	711.68	17.4941
319.41	0.0000	514.00	5.9556	720.70	0.0000
320.08	0.0000	514.00	5.9556	721.93	0.0000
321.04	37.5358	520.40	25.4014	722.78	18.1274
323.87	39.3713	520.69	0.0000	722.91	19.7761
325.23	31.5315	522.65	0.0000	723.31	19.7798
328.76	0.0000	527.90	0.0000	724.19	23.0850
333.37	35.2604	528.26	18.0081	727.33	20.9142
333.97	44.0959	529.59	25.0295	733.00	20.9645
334.37	38.3758	529.87	0.0000	735.93	17.6758
338.28	36.2804	531.02	0.0000	333.97	23.2148
338.32	36.2812	537.26	0.0000	739.50	0.0000
311.90	36.3421	546.56	0.0000	747.24	13.3198
340.48	36.3421	552.55	13.1767	748.06	14.4346
340.55	0.0000	563.25	21.4050	752.31	18.3530
344.28	33.3366	569.33	24.5400	753.82	0.0000
345.93	28.0380	946.00	24.5420	756.73	3.3430
351.06	33.9551	569.70	24.5449	756.80	3.3431
351.93	33.9767	583.19	22.6553	884.68	8.9411

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	3.3555	1274.44	17.3336	1620.50	7.5345
766.42	8.3905	1001.03	9.1373	1621.92	8.6138
766.84	8.3920	1002.74	15.5417	1678.03	0.0000
772.60	0.0000	1004.73	15.5520	1690.97	2.1854
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	1.1094
778.90	13.4927	1028.54	0.0000	1063.66	3.3322
783.70	0.0000	1037.84	7.3970	1771.35	1.1110
785.37	7.8912	1038.76	0.0000	1791.20	0.0000
792.07	14.6943	631.29	10.1984	1808.65	4.4771
794.95	12.4475	1048.07	0.0000	1810.72	0.0000
795.86	14.7160	1049.04	7.4229	1836.06	0.9002
810.06	18.2129	1050.41	13.9243		
810.29	18.2148	1063.66	17.7104		
344.28	17.0770	1077.00	0.0000		
810.76	17.0795	1077.34	12.1685		
815.77	0.0000	1085.87	8.4463		
1048.07	0.0000	1093.63	12.2296		
832.01	12.6274	1099.45	13.1934		
834.85	17.2375	1112.07	12.2978		
835.71	13.7949	1112.84	14.0573		
836.80	0.0000	1115.54	16.6665		
846.75	0.0000	1120.29	7.5864		
846.77	17.3157	1120.55	7.5869		
856.80	0.0000	1221.41	7.5884		
860.56	4.6413	1129.67	2.8528		
871.09	15.1423	1131.51	0.0000		
873.19	15.1540	1147.95	0.0000		
875.33	0.0000	1173.23	13.4830		
879.38	16.3567	1177.95	17.3584		
880.51	9.6428	1189.05	14.5111		
883.24	19.3044	1204.77	14.5752		
884.68	19.3145	1221.41	25.3811		
889.28	18.4673	1231.02	16.9652		
894.76	16.7415	1235.36	0.0000		
898.04	14.9964	1238.28	7.8457		
900.72	15.0109	1260.41	0.0000		
903.28	13.2568	1271.87	9.2371		
911.20	15.0670	1274.44	9.5074		
912.08	15.6036	1274.54	9.5074		
923.98	0.0000	1291.59	8.9539		
926.50	14.2568	1298.22	0.0000		
929.11	16.0532	1312.11	0.0000		
937.49	18.7832	1332.49	5.0278		
944.13	0.0000	1362.66	0.0000		
946.00	17.0442	1365.19	8.1113		
949.00	14.3677	1368.63	0.0000		
667.71	0.0000	1384.29	7.1316		
962.31	12.9894	1408.01	4.0991		
964.08	12.6362	1457.56	0.0000		
966.17	12.6452	1460.82	6.2278		
911.20	12.6572	1489.16	4.1797		
968.97	12.6572	1505.03	9.4389		
983.53	0.0000	1584.12	5.3391		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:08:16.27

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235053.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM31.CNF;306
Background date    : Z-OCT-2016 11:01:52.
Sample date       : 1-DEC-2015 14:24:00. Acquisition date : 3-OCT-2016 07:06:55.
Sample ID        : G405235053 Sample quantity : 1.13628E+02 GRAM
Detector name    : GAM31 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:06.45 0.2%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596252 Detector SN# :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	34.92	33	156	0.67	69.51	68	6	9.25E-03	61.1	
2	0	46.45*	48	257	1.31	92.54	88	8	1.34E-02	61.2	
3	0	52.85*	10	207	1.27	105.34	104	6	2.77E-03	235.6	
4	0	63.32*	33	247	0.92	126.25	123	7	9.07E-03	87.3	
5	3	74.89	160	203	1.09	149.38	146	12	4.43E-02	16.1	1.26E+00
6	3	77.09*	250	111	0.87	153.78	146	12	6.95E-02	9.4	
7	3	87.25*	84	82	0.91	174.08	170	21	2.33E-02	19.7	1.59E+00
8	3	89.89	77	123	1.28	179.36	170	21	2.15E-02	27.7	
9	3	92.79*	104	115	1.29	185.16	170	21	2.89E-02	22.5	
10	0	129.83	63	54	2.25	259.17	255	8	1.76E-02	23.8	
11	0	186.17*	90	77	1.30	371.79	366	11	2.50E-02	22.7	
12	0	192.13	19	37	0.95	383.69	381	5	5.14E-03	54.1	
13	0	209.30	29	38	0.92	418.00	415	6	8.05E-03	38.6	
14	0	213.16	6	61	0.75	425.72	422	7	1.61E-03	225.0	
15	6	237.07*	9	15	1.45	473.50	472	17	2.58E-03	76.1	4.83E+00
16	6	238.66*	323	45	1.29	476.68	472	17	8.96E-02	6.8	
17	6	241.75*	93	81	2.13	482.85	472	17	2.58E-02	28.7	
18	0	253.16	24	27	1.27	505.66	503	7	6.63E-03	41.2	
19	0	295.61*	90	75	1.21	590.50	585	12	2.50E-02	22.5	
20	0	301.10	19	51	1.74	601.48	596	9	5.25E-03	72.3	
21	0	317.48	11	20	1.17	634.21	631	6	3.15E-03	72.1	
22	0	338.66*	60	59	1.19	676.54	672	12	1.67E-02	28.8	
23	0	352.12*	203	57	1.20	703.44	698	12	5.64E-02	10.5	
24	0	393.88	15	14	1.55	786.91	784	6	4.26E-03	45.7	
25	0	417.46	32	41	0.77	834.03	827	14	8.89E-03	46.4	
26	0	463.71	19	55	1.02	926.48	920	12	5.39E-03	79.2	
27	0	583.40*	63	32	1.73	1165.69	1159	15	1.76E-02	23.4	
28	0	609.81*	137	33	1.29	1218.48	1214	10	3.82E-02	12.0	
29	0	662.11	45	32	1.47	1323.01	1316	12	1.25E-02	29.6	
30	0	679.68	18	31	3.97	1358.14	1347	18	5.12E-03	74.9	
31	0	706.37	9	21	3.43	1411.47	1404	12	2.41E-03	111.3	
32	0	727.99	31	12	4.14	1454.68	1448	13	8.49E-03	30.2	
33	0	771.11	28	17	5.25	1540.88	1534	14	7.83E-03	38.6	
34	4	785.68	12	14	1.70	1570.00	1566	12	3.30E-03	56.4	1.63E+00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	4	788.17	13	4	1.43	1574.97	1566	12	3.49E-03	40.1	
36	0	795.74	13	7	1.73	1590.11	1585	10	3.56E-03	48.5	
37	0	804.59*	17	19	4.07	1607.78	1601	15	4.71E-03	62.0	
38	0	842.05	18	8	1.27	1682.66	1676	10	5.06E-03	36.7	
39	0	861.42	11	20	0.85	1721.38	1712	13	2.92E-03	92.0	
40	0	866.61	16	2	2.09	1731.76	1727	9	4.38E-03	30.4	
41	0	873.71	15	3	1.95	1745.95	1740	10	4.24E-03	32.2	
42	0	911.70*	57	8	1.63	1821.88	1817	10	1.59E-02	16.6	
43	0	935.55	5	17	2.41	1869.56	1860	11	1.25E-03	181.0	
44	0	964.65	24	8	1.57	1927.71	1921	11	6.68E-03	30.8	
45	0	969.69	20	19	0.69	1937.80	1933	10	5.55E-03	47.2	
46	0	1093.35	11	2	1.54	2184.98	2181	8	3.11E-03	36.8	
47	0	1121.84	18	21	1.49	2241.92	2235	11	4.88E-03	56.8	
48	0	1151.31	6	12	0.61	2300.83	2290	12	1.67E-03	122.5	
49	0	1174.94	14	11	1.53	2348.06	2342	12	3.86E-03	60.2	
50	0	1239.26	47	4	0.68	2476.62	2468	18	1.30E-02	18.0	
51	0	1305.66	10	2	0.90	2609.36	2605	9	2.79E-03	41.1	
52	0	1461.40*	222	3	2.11	2920.68	2913	14	6.16E-02	7.0	
53	0	1580.37	8	0	0.83	3158.50	3155	8	2.22E-03	35.4	
54	0	1765.49*	21	0	1.97	3528.57	3523	10	5.81E-03	23.4	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235053.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 1-DEC-2015 14:24:00 Acquisition date : 3-OCT-2016 07:06:55
Sample ID : G405235053 Sample quantity : 113.63 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA31 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:06.45 0.2%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	6.945E-01	1.865E+01	1.865E+01	14.10	OK
AS-73	53.44	10.30*	5.707E+00	1.204E-01	1.699E+00	471.25	OK
NB-95M	235.69	24.80*	3.221E+00	7.798E-02	2.158E+00	152.26	OK
CD-109	88.03	3.70*	5.391E+00	1.807E+00	2.865E+00	69.72	OK
SN-126	64.28	9.60	5.587E+00	4.291E-01	4.291E-01	174.69	OK
	86.94	8.90	5.391E+00	7.513E-01	7.513E-01	69.72	OK
	87.57	37.00*	5.391E+00	1.807E-01	1.807E-01	69.72	OK
BA-137M	661.66	89.90*	1.340E+00	2.395E-01	2.442E-01	59.17	OK
CS-137	661.66	85.10*	1.340E+00	2.530E-01	2.580E-01	59.17	OK
TL-208	277.37	6.60	2.816E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	1.486E+00	3.237E-01	3.237E-01	46.76	OK
	860.56	12.50	1.083E+00	4.936E-01	4.936E-01	184.06	OK
PB-210	46.54	4.25*	5.476E+00	1.482E+00	1.521E+00	122.39	OK
BI-211	72.87	1.23	5.491E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	2.285E+00	1.179E+00	1.179E+00	151.34	OK
BI-212	727.33	6.67*	1.241E+00	2.367E+00	2.367E+00	60.41	OK
	785.37	1.10	1.167E+00	5.920E+00	5.920E+00	112.83	OK
	1620.50	1.47	6.312E-01	----- Line	Not Found	-----	Absent
PB-212	74.82	10.28	5.476E+00	1.299E+00	1.299E+00	54.73	OK
	77.11	17.10	5.460E+00	1.877E+00	1.877E+00	18.80	OK
	238.63	43.60*	3.203E+00	1.549E+00	1.549E+00	13.65	OK
	300.09	3.30	2.621E+00	1.451E+00	1.451E+00	144.54	OK
BI-214	609.32	45.49*	1.433E+00	1.361E+00	1.361E+00	23.96	OK
	1120.29	14.92	8.740E-01	----- Line	Not Found	-----	Absent
	1764.49	15.30	5.810E-01	1.453E+00	1.453E+00	46.87	OK
PB-214	74.82	5.80	5.476E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	5.460E+00	3.308E+00	3.309E+00	18.80	OK
	87.09	3.41	5.392E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	3.165E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	2.664E+00	1.218E+00	1.219E+00	44.95	OK
	351.93	35.60*	2.286E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	1.433E+00	1.361E+00	1.361E+00	23.96	OK
	1120.29	14.92	8.740E-01	----- Line	Not Found	-----	Absent
	1764.49	15.30	5.810E-01	1.453E+00	1.453E+00	46.87	OK
RA-224	240.99	4.10*	3.168E+00	2.630E+00	2.630E+00	110.71	OK
RA-226	609.32	45.49*	1.433E+00	1.361E+00	1.361E+00	23.96	OK
	1120.29	14.92	8.740E-01	----- Line	Not Found	-----	Absent
	1764.49	15.30	5.810E-01	1.453E+00	1.453E+00	46.87	OK
AC-228	105.21	1.10	5.215E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	2.364E+00	1.495E+00	1.495E+00	57.51	OK
	794.95	4.25	1.155E+00	1.669E+00	1.669E+00	97.08	OK
	835.71	1.61	1.110E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.035E+00	1.359E+00	1.359E+00	33.22	OK
	968.97	15.80	9.842E-01	8.136E-01	8.136E-01	94.46	OK
RA-228	105.21	1.10	5.215E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	2.364E+00	1.495E+00	1.495E+00	57.51	OK
	794.95	4.25	1.155E+00	1.669E+00	1.669E+00	97.08	OK
	835.71	1.61	1.110E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.035E+00	1.359E+00	1.359E+00	33.22	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-228	968.97	15.80	9.842E-01	8.136E-01	8.136E-01	94.46	OK
	74.82	10.28	5.476E+00	1.299E+00	1.299E+00	54.73	OK
	77.11	17.10	5.460E+00	1.877E+00	1.877E+00	18.80	OK
	238.63	43.60*	3.203E+00	1.549E+00	1.549E+00	13.65	OK
TH-230	300.09	3.30	2.621E+00	1.451E+00	1.451E+00	144.54	OK
	609.32	45.49*	1.433E+00	1.361E+00	1.361E+00	23.96	OK
	1120.29	14.92	8.740E-01	----- Line	Not Found	-----	Absent
	1764.49	15.30	5.810E-01	1.453E+00	1.453E+00	46.87	OK
PA-231	283.69	1.70	2.761E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	2.621E+00	8.948E-01	8.948E-01	144.54	OK
TH-232	105.21	1.10	5.215E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	2.364E+00	1.495E+00	1.495E+00	57.51	OK
	835.71	1.61	1.110E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.035E+00	1.359E+00	1.359E+00	33.22	OK
TH-234	968.97	15.80	9.842E-01	8.136E-01	8.136E-01	94.46	OK
	63.29	3.70*	5.587E+00	1.113E+00	1.113E+00	174.69	OK
	92.59	4.23	5.346E+00	3.199E+00	3.199E+00	45.04	OK
	609.32	45.49*	1.433E+00	1.361E+00	1.361E+00	23.96	OK
U-234	1120.29	14.92	8.740E-01	----- Line	Not Found	-----	Absent
	1764.49	15.30	5.810E-01	1.453E+00	1.453E+00	46.87	OK
U-235	89.96	3.47	5.370E+00	2.885E+00	2.885E+00	55.41	OK
	93.35	5.60	5.346E+00	2.416E+00	2.416E+00	45.04	OK
	143.76	10.96*	4.611E+00	----- Line	Not Found	-----	Absent
	163.33	5.08	4.273E+00	----- Line	Not Found	-----	Absent
U-238	185.72	57.20	3.902E+00	2.725E-01	2.725E-01	45.34	OK
	205.31	5.01	3.621E+00	----- Line	Not Found	-----	Absent
	63.29	3.70*	5.587E+00	1.113E+00	1.113E+00	174.69	OK
	92.59	4.23	5.346E+00	3.199E+00	3.199E+00	45.04	OK
AM-243	43.53	5.90	5.049E+00	----- Line	Not Found	-----	Absent
	74.66	67.20*	5.476E+00	1.987E-01	1.987E-01	54.73	OK

Flag: "*" = Keyline

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235053.CNF;1
* Acquisition date   : 3-OCT-2016 07:06:55 Sensitivity      : 3.000
* Detector ID        : GAM31 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:06.45 Half life ratio : *****
* Sample date       : 1-DEC-2015 14:24:00 Analyst initials: MXR1
* Sample ID         : G405235053 Sample Quantity : 1.1363E+02 GRAM
* Batch Number      : 1596252 Wet Weight      : 0.00000
* Wet wt corr       : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 15-JUN-2016 06:54:07 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM31 CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.865E+01	2.577E+00	9.734E-01
AS-73	1.699E+00	7.848E+00	9.571E+00
NB-95M	2.158E+00	3.220E+00	7.112E+00
CD-109	2.865E+00	1.957E+00	2.331E+00
SN-126	1.807E-01	1.235E-01	1.469E-01
BA-137M	2.442E-01	1.416E-01	1.196E-01
CS-137	2.580E-01	1.496E-01	1.263E-01
TL-208	3.237E-01	1.483E-01	1.132E-01
PB-210	1.521E+00	1.825E+00	1.575E+00
BI-211	1.179E+00	1.749E+00	6.353E-01
BI-212	2.367E+00	1.401E+00	1.623E+00
PB-212	1.549E+00	2.072E-01	1.508E-01
BI-214	1.361E+00	3.196E-01	2.487E-01
PB-214	1.647E+00	3.387E-01	6.060E-01
RN-222	1.361E+00	3.196E-01	2.487E-01
RA-224	2.630E+00	2.853E+00	1.619E+00
RA-226	1.361E+00	3.196E-01	2.487E-01
AC-228	1.359E+00	4.425E-01	4.269E-01
RA-228	1.359E+00	4.425E-01	4.269E-01
TH-228	1.549E+00	2.072E-01	1.508E-01
TH-230	1.361E+00	3.195E-01	2.486E-01
PA-231	8.948E-01	1.268E+00	1.247E+00
TH-232	1.359E+00	4.425E-01	4.269E-01
TH-234	1.113E+00	1.906E+00	1.934E+00
U-234	1.361E+00	3.195E-01	2.486E-01
U-235	1.112E-01	2.856E-01	5.214E-01
U-238	1.113E+00	1.906E+00	1.934E+00
AM-243	1.987E-01	1.066E-01	9.914E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.162E+01	2.455E+01	4.373E+01	NOT IDENT.
NA-22	-4.217E-02	9.695E-02	1.752E-01	NOT IDENT.

NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	-8.769E-03	5.684E-02	1.230E-01	NOT IDENT.
SC-46	8.840E-02	6.221E-01	1.323E+00	FAIL ABUN
V-48	0.000E+00	3.685E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	8.926E+02	0.000E+00	SHORT HLIF
MN-54	-2.729E-02	1.379E-01	2.479E-01	NOT IDENT.
CO-56	6.006E-01	1.077E+00	2.176E+00	FAIL ABUN
MN-56	0.000E+00	1.814E+41	0.000E+00	SHORT HLIF
CO-57	3.881E-02	6.601E-02	1.278E-01	NOT IDENT.
CO-58	6.132E-02	1.226E+00	2.113E+00	NOT IDENT.
FE-59	3.195E+00	1.567E+01	3.178E+01	NOT IDENT.
CO-60	-4.484E-03	8.580E-02	1.676E-01	NOT IDENT.
ZN-65	1.647E-01	3.409E-01	6.743E-01	NOT IDENT.
GE-68	-2.607E-01	3.669E+00	7.472E+00	NOT IDENT.
AS-74	0.000E+00	1.473E+04	0.000E+00	SHORT HLIF
SE-75	-1.205E-01	4.214E-01	7.135E-01	NOT IDENT.
BR-77	0.000E+00	2.762E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	1.813E+03	0.000E+00	SHORT HLIF
RB-83	1.675E+00	1.272E+00	2.846E+00	NOT IDENT.
KR-85	-3.053E+01	1.857E+01	2.840E+01	NOT IDENT.
SR-85	-3.468E+00	2.109E+00	3.225E+00	NOT IDENT.
RB-86	0.000E+00	5.854E+04	0.000E+00	SHORT HLIF
Y-88	1.564E-01	3.224E-01	9.000E-01	NOT IDENT.
Y-91	1.363E+02	1.088E+03	2.191E+03	NOT IDENT.
NB-94	-7.107E-03	6.854E-02	1.112E-01	NOT IDENT.
NB-95	3.041E-03	2.217E+00	3.635E+00	NOT IDENT.
ZR-95	2.419E-01	3.079E+00	5.864E+00	NOT IDENT.
NB-97	0.000E+00	1.929E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.549E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	2.084E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.143E+41	0.000E+00	SHORT HLIF
RH-101	-1.496E-02	5.119E-02	8.373E-02	NOT IDENT.
RH-102	-9.265E-04	9.445E-02	1.834E-01	NOT IDENT.
RU-103	-1.245E+00	9.576E+00	1.845E+01	FAIL ABUN
RH-106	2.162E-01	8.727E-01	1.746E+00	NOT IDENT.
RU-106	2.162E-01	8.727E-01	1.746E+00	NOT IDENT.
AG-108M	7.238E-03	5.566E-02	1.074E-01	NOT IDENT.
AG-110M	2.637E-03	1.349E-01	2.888E-01	FAIL ABUN
SN-113	-1.369E-01	4.188E-01	6.919E-01	NOT IDENT.
CD-115	0.000E+00	4.224E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	2.118E+05	0.000E+00	SHORT HLIF
TE-123M	-2.899E-02	2.079E-01	3.712E-01	NOT IDENT.
SB-124	-1.536E-01	5.196E+00	1.048E+01	NOT IDENT.
SB-125	3.211E-02	1.991E-01	3.874E-01	FAIL ABUN
TE-125M	3.297E+01	4.267E+02	7.870E+02	NOT IDENT.
I-126	0.000E+00	2.091E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	2.884E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.488E+23	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.572E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.806E+27	0.000E+00	SHORT HLIF
BA-133	6.087E-03	8.316E-02	1.453E-01	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	1.099E-01	1.046E-01	1.998E-01	FAIL ABUN
CS-135	1.598E-02	2.682E-01	4.724E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	7.328E+05	0.000E+00	SHORT HLIF
CE-139	1.094E-01	1.869E-01	3.541E-01	NOT IDENT.
BA-140	0.000E+00	3.403E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	1.283E+06	0.000E+00	SHORT HLIF
CE-141	-1.163E+01	4.342E+01	7.463E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	3.845E-01	5.588E-01	1.016E+00	NOT IDENT.
PM-144	-4.117E-03	9.409E-02	1.787E-01	NOT IDENT.
PR-144	-2.133E+00	8.554E+00	1.556E+01	NOT IDENT.
PM-146	6.430E-02	7.829E-02	1.655E-01	NOT IDENT.
ND-147	0.000E+00	6.963E+07	0.000E+00	SHORT HLIF
PM-147	-1.987E+02	1.102E+03	1.995E+03	NOT IDENT.
PM-149	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
EU-150	3.877E-03	4.925E-02	8.644E-02	FAIL ABUN
EU-152	8.353E-02	1.595E-01	3.032E-01	FAIL ABUN
GD-153	-2.851E-02	2.426E-01	4.105E-01	NOT IDENT.
EU-154	-1.030E-01	2.368E-01	4.280E-01	FAIL ABUN
EU-155	-4.819E-02	1.468E-01	2.627E-01	FAIL ABUN
TB-160	-3.728E-01	3.322E+00	6.676E+00	FAIL ABUN
HO-166M	-5.595E-02	1.134E-01	1.843E-01	NOT IDENT.
TM-171	3.572E+00	1.649E+01	1.971E+01	FAIL ABUN
HF-172	1.564E-01	3.590E-01	6.356E-01	FAIL ABUN

LU-172	1.714E-01	1.238E-01	3.016E-01	FAIL ABUN
LU-176	-2.145E-02	3.821E-02	7.012E-02	FAIL ABUN
HF-181	4.405E-03	8.388E+00	1.619E+01	NOT IDENT.
TA-182	6.625E-01	1.889E+00	3.902E+00	FAIL ABUN
RE-183	-4.310E-01	2.217E+00	4.075E+00	NOT IDENT.
RE-184	-3.087E+01	6.468E+01	1.200E+02	NOT IDENT.
W-188	-5.636E+01	2.052E+02	3.482E+02	FAIL ABUN
IR-192	6.475E-01	9.149E-01	1.773E+00	FAIL ABUN
HG-203	-3.671E+00	5.096E+00	8.102E+00	NOT IDENT.
BI-207	-7.355E-02	9.382E-02	1.605E-01	FAIL ABUN
PB-211	-4.319E-01	1.037E+00	1.910E+00	NOT IDENT.
RN-219	-2.174E-01	6.073E-01	1.126E+00	NOT IDENT.
RA-223	2.570E-01	1.012E+00	2.007E+00	FAIL ABUN
AC-227	1.942E-01	3.963E-01	6.999E-01	FAIL ABUN
TH-227	1.942E-01	3.963E-01	6.999E-01	FAIL ABUN
TH-229	7.441E-01	7.895E-01	1.383E+00	FAIL ABUN
TH-231	2.570E-01	1.012E+00	2.007E+00	FAIL ABUN
PA-233	2.688E-02	1.023E-01	2.033E-01	FAIL ABUN
PA-234	1.555E-01	5.005E-01	1.059E+00	FAIL ABUN
PA-234M	4.413E-01	7.927E+00	1.580E+01	NOT IDENT.
NP-237	2.688E-02	1.023E-01	2.033E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	1.391E-01	3.487E-01	6.601E-01	NOT IDENT.
PU-239	0.000E+00	6.651E+02	9.589E+02	FAIL ABUN
AM-241	-1.079E-02	1.060E-01	1.953E-01	NOT IDENT.
CM-243	1.828E-02	1.318E-01	2.457E-01	NOT IDENT.
BK-247	1.855E-02	1.380E-01	2.460E-01	NOT IDENT.
CM-247	-1.538E-02	5.768E-02	1.080E-01	NOT IDENT.
CF-249	-8.217E-03	5.797E-02	1.112E-01	FAIL ABUN
CF-251	-7.304E-02	2.008E-01	3.460E-01	NOT IDENT.
ANH-511	-8.832E-02	9.035E-02	1.794E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	209	10.66*	6.945E-01	1.865E+01	1.865E+01	14.10
AS-73	53.44	11	10.30*	5.707E+00	1.204E-01	1.699E+00	471.25
NB-95M	235.69	9	24.80*	3.221E+00	7.798E-02	2.158E+00	152.26
CD-109	88.03	88	3.70*	5.391E+00	2.930E+00	4.645E+00	39.40
SN-126	64.28	35	9.60	5.587E+00	4.291E-01	4.291E-01	174.69
	86.94	88	8.90	5.391E+00	1.218E+00	1.218E+00	39.40
	87.57	88	37.00*	5.391E+00	2.930E-01	2.930E-01	39.40
BA-137M	661.66	44	89.90*	1.340E+00	2.395E-01	2.442E-01	59.17
CS-137	661.66	44	85.10*	1.340E+00	2.530E-01	2.580E-01	59.17
TL-208	277.37	-----	6.60	2.816E+00	-----	Line Not Found	-----
	583.19	62	85.00*	1.486E+00	3.237E-01	3.237E-01	46.76
	860.56	10	12.50	1.083E+00	4.936E-01	4.936E-01	184.06
PB-210	46.54	52	4.25*	5.476E+00	1.482E+00	1.521E+00	122.39
BI-211	72.87	-----	1.23	5.491E+00	-----	Line Not Found	-----
	351.06	203	12.92*	2.285E+00	4.536E+00	4.536E+00	20.99
BI-212	727.33	30	6.67*	1.241E+00	2.367E+00	2.367E+00	60.41
	785.37	11	1.10	1.167E+00	5.920E+00	5.920E+00	112.83
	1620.50	-----	1.47	6.312E-01	-----	Line Not Found	-----
PB-212	74.82	169	10.28	5.476E+00	1.986E+00	1.986E+00	32.23
	77.11	265	17.10	5.460E+00	1.877E+00	1.877E+00	18.80
	238.63	327	43.60*	3.203E+00	1.549E+00	1.549E+00	13.65
	300.09	19	3.30	2.621E+00	1.451E+00	1.451E+00	144.54
BI-214	609.32	134	45.49*	1.433E+00	1.361E+00	1.361E+00	23.96
	1120.29	-----	14.92	8.740E-01	-----	Line Not Found	-----
	1764.49	20	15.30	5.810E-01	1.453E+00	1.453E+00	46.87
PB-214	74.82	169	5.80	5.476E+00	3.521E+00	3.522E+00	32.23
	77.11	265	9.70	5.460E+00	3.308E+00	3.309E+00	18.80
	87.09	88	3.41	5.391E+00	3.179E+00	3.180E+00	39.40
	242.00	94	7.25	3.168E+00	2.705E+00	2.706E+00	57.39
	295.22	90	18.42	2.664E+00	1.218E+00	1.219E+00	44.95
	351.93	203	35.60*	2.285E+00	1.646E+00	1.647E+00	20.99
RN-222	609.32	134	45.49*	1.433E+00	1.361E+00	1.361E+00	23.96
	1120.29	-----	14.92	8.740E-01	-----	Line Not Found	-----
	1764.49	20	15.30	5.810E-01	1.453E+00	1.453E+00	46.87
RA-224	240.99	94	4.10*	3.168E+00	4.784E+00	4.784E+00	57.39
RA-226	609.32	134	45.49*	1.433E+00	1.361E+00	1.361E+00	23.96
	1120.29	-----	14.92	8.740E-01	-----	Line Not Found	-----
	1764.49	20	15.30	5.810E-01	1.453E+00	1.453E+00	46.87
AC-228	105.21	-----	1.10	5.215E+00	-----	Line Not Found	-----
	338.32	60	11.27	2.364E+00	1.495E+00	1.495E+00	57.51
	794.95	12	4.25	1.155E+00	1.669E+00	1.669E+00	97.08
	835.71	-----	1.61	1.110E+00	-----	Line Not Found	-----
	911.20	55	25.80*	1.035E+00	1.359E+00	1.359E+00	33.22
	968.97	19	15.80	9.842E-01	8.136E-01	8.136E-01	94.46
RA-228	105.21	-----	1.10	5.215E+00	-----	Line Not Found	-----
	338.32	60	11.27	2.364E+00	1.495E+00	1.495E+00	57.51
	794.95	12	4.25	1.155E+00	1.669E+00	1.669E+00	97.08

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	835.71	-----	1.61	1.110E+00	-----	Line Not Found	-----
	911.20	55	25.80*	1.035E+00	1.359E+00	1.359E+00	33.22
	968.97	19	15.80	9.842E-01	8.136E-01	8.136E-01	94.46
TH-228	74.82	169	10.28	5.476E+00	1.986E+00	1.986E+00	32.23
	77.11	265	17.10	5.460E+00	1.877E+00	1.877E+00	18.80
	238.63	327	43.60*	3.203E+00	1.549E+00	1.549E+00	13.65
	300.09	19	3.30	2.621E+00	1.451E+00	1.451E+00	144.54
TH-230	609.32	134	45.49*	1.433E+00	1.361E+00	1.361E+00	23.96
	1120.29	-----	14.92	8.740E-01	-----	Line Not Found	-----
	1764.49	20	15.30	5.810E-01	1.453E+00	1.453E+00	46.87
PA-231	283.69	-----	1.70	2.761E+00	-----	Line Not Found	-----
	301.36	19	5.35*	2.621E+00	8.948E-01	8.948E-01	144.54
TH-232	105.21	-----	1.10	5.215E+00	-----	Line Not Found	-----
	338.32	60	11.27	2.364E+00	1.495E+00	1.495E+00	57.51
	835.71	-----	1.61	1.110E+00	-----	Line Not Found	-----
	911.20	55	25.80*	1.035E+00	1.359E+00	1.359E+00	33.22
	968.97	19	15.80	9.842E-01	8.136E-01	8.136E-01	94.46
TH-234	63.29	35	3.70*	5.587E+00	1.113E+00	1.113E+00	174.69
	92.59	109	4.23	5.346E+00	3.199E+00	3.199E+00	45.04
U-234	609.32	134	45.49*	1.433E+00	1.361E+00	1.361E+00	23.96
	1120.29	-----	14.92	8.740E-01	-----	Line Not Found	-----
	1764.49	20	15.30	5.810E-01	1.453E+00	1.453E+00	46.87
U-235	89.96	81	3.47	5.370E+00	2.885E+00	2.885E+00	55.41
	93.35	109	5.60	5.346E+00	2.416E+00	2.416E+00	45.04
	143.76	-----	10.96*	4.611E+00	-----	Line Not Found	-----
	163.33	-----	5.08	4.273E+00	-----	Line Not Found	-----
	185.72	92	57.20	3.902E+00	2.725E-01	2.725E-01	45.34
	205.31	-----	5.01	3.621E+00	-----	Line Not Found	-----
U-238	63.29	35	3.70*	5.587E+00	1.113E+00	1.113E+00	174.69
	92.59	109	4.23	5.346E+00	3.199E+00	3.199E+00	45.04
AM-243	43.53	-----	5.90	5.049E+00	-----	Line Not Found	-----
	74.66	169	67.20*	5.476E+00	3.039E-01	3.039E-01	32.23

Flag: "*" = Keyline

Total number of lines in spectrum 54
Number of unidentified lines 15
Number of lines tentatively identified by NID 39 72.22%

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	1.865E+01	1.865E+01	0.263E+01	14.10	
AS-73	80.30D	14.1	1.204E-01	1.699E+00	8.008E+00	471.25	
NB-95M	64.03D	27.7	7.798E-02	2.158E+00	3.285E+00	152.26	
CD-109	461.40D	1.59	2.930E+00	4.645E+00	1.830E+00	39.40	
SN-126	2.30E+05Y	1.00	2.930E-01	2.930E-01	1.154E-01	39.40	
BA-137M	30.08Y	1.02	2.395E-01	2.442E-01	1.445E-01	59.17	
CS-137	30.08Y	1.02	2.530E-01	2.580E-01	1.526E-01	59.17	
TL-208	1.41E+10Y	1.00	3.237E-01	3.237E-01	1.513E-01	46.76	
PB-210	22.20Y	1.03	1.482E+00	1.521E+00	1.862E+00	122.39	
BI-211	7.04E+08Y	1.00	4.536E+00	4.536E+00	0.952E+00	20.99	
BI-212	1.41E+10Y	1.00	2.367E+00	2.367E+00	1.430E+00	60.41	
PB-212	1.41E+10Y	1.00	1.549E+00	1.549E+00	0.211E+00	13.65	
BI-214	1600.00Y	1.00	1.361E+00	1.361E+00	0.326E+00	23.96	
PB-214	1600.00Y	1.00	1.646E+00	1.647E+00	0.346E+00	20.99	
RN-222	1600.00Y	1.00	1.361E+00	1.361E+00	0.326E+00	23.96	
RA-224	1.41E+10Y	1.00	4.784E+00	4.784E+00	2.745E+00	57.39	
RA-226	1600.00Y	1.00	1.361E+00	1.361E+00	0.326E+00	23.96	
AC-228	1.41E+10Y	1.00	1.359E+00	1.359E+00	0.451E+00	33.22	
RA-228	1.41E+10Y	1.00	1.359E+00	1.359E+00	0.451E+00	33.22	
TH-228	1.41E+10Y	1.00	1.549E+00	1.549E+00	0.211E+00	13.65	
TH-230	7.54E+04Y	1.00	1.361E+00	1.361E+00	0.326E+00	23.96	
PA-231	7.04E+08Y	1.00	8.948E-01	8.948E-01	12.93E-01	144.54	
TH-232	1.41E+10Y	1.00	1.359E+00	1.359E+00	0.451E+00	33.22	
TH-234	4.47E+09Y	1.00	1.113E+00	1.113E+00	1.945E+00	174.69	
U-234	2.45E+05Y	1.00	1.361E+00	1.361E+00	0.326E+00	23.96	
U-235	7.04E+08Y	1.00	2.725E-01	2.725E-01	1.236E-01	45.34	K
U-238	4.47E+09Y	1.00	1.113E+00	1.113E+00	1.945E+00	174.69	
AM-243	7370.00Y	1.00	3.039E-01	3.039E-01	0.980E-01	32.23	
Total Activity :			5.538E+01	6.081E+01			

Grand Total Activity : 5.538E+01 6.081E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	34.92	36	170	0.67	69.51	68	6	9.25E-03	****	1.44E+00	
0	129.83	66	56	2.25	259.17	255	8	1.76E-02	47.7	4.85E+00	T
0	192.13	19	37	0.95	383.69	381	5	5.14E-03	****	3.81E+00	T
0	209.30	30	39	0.92	418.00	415	6	8.05E-03	77.3	3.57E+00	
0	213.16	6	62	0.75	425.72	422	7	1.61E-03	****	3.51E+00	
0	253.16	24	27	1.27	505.66	503	7	6.63E-03	82.5	3.05E+00	T
0	317.48	11	20	1.17	634.21	631	6	3.15E-03	****	2.50E+00	T
0	393.88	15	14	1.55	786.91	784	6	4.26E-03	91.5	2.07E+00	
0	417.46	32	41	0.77	834.03	827	14	8.89E-03	92.7	1.97E+00	
0	463.71	19	54	1.02	926.48	920	12	5.39E-03	****	1.80E+00	T
0	679.68	18	30	3.97	1358.14	1347	18	5.12E-03	****	1.31E+00	
0	706.37	8	21	3.43	1411.47	1404	12	2.41E-03	****	1.27E+00	T
0	771.11	27	16	5.25	1540.88	1534	14	7.83E-03	77.2	1.18E+00	T
4	788.17	12	4	1.43	1574.97	1566	12	3.49E-03	80.2	1.16E+00	
0	804.59	16	19	4.07	1607.78	1601	15	4.71E-03	****	1.14E+00	
0	842.05	18	8	1.27	1682.66	1676	10	5.06E-03	73.5	1.10E+00	
0	866.61	15	2	2.09	1731.76	1727	9	4.38E-03	60.9	1.08E+00	
0	873.71	15	3	1.95	1745.95	1740	10	4.24E-03	64.5	1.07E+00	T
0	935.55	4	16	2.41	1869.56	1860	11	1.25E-03	****	1.01E+00	
0	964.65	23	8	1.57	1927.71	1921	11	6.68E-03	61.5	9.88E-01	T
0	1093.35	11	2	1.54	2184.98	2181	8	3.11E-03	73.7	8.92E-01	T
0	1121.84	17	20	1.49	2241.92	2235	11	4.88E-03	****	8.73E-01	T
0	1151.31	6	11	0.61	2300.83	2290	12	1.67E-03	****	8.54E-01	
0	1174.94	13	11	1.53	2348.06	2342	12	3.86E-03	****	8.40E-01	
0	1239.26	44	4	0.68	2476.62	2468	18	1.30E-02	36.0	8.03E-01	T
0	1305.66	10	2	0.90	2609.36	2605	9	2.79E-03	82.3	7.67E-01	
0	1580.37	8	0	0.83	3158.50	3155	8	2.22E-03	70.7	6.46E-01	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235053.CNF;1  *
* Acquisition date   : 3-OCT-2016 07:06:55 Sensitivity      : 3.000          *
* Detector ID        : GAM31 Energy tolerance: 1.500       *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:06.45 Half life ratio : *****      *
* Sample date       : 1-DEC-2015 14:24:00 Nuclide Library : SOLID      *
* Sample ID         : G405235053 Analyst initials: MXR1         *
* Batch Number      : 1596252 Sample Quantity : 1.1363E+02 GRAM    *
* Wet wt corr       : 1.00000 Wet Weight      : 0.00000         *
*                               Dry Weight      : 0.00000         *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 15-JUN-2016 06:54:07 Eff. Geometry   : CAN      *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM31 CAN.CNF;7      *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	3.666E-01
AS-73	4.568E+00
NB-95M	3.246E+00
CD-109	1.093E+00
SN-126	6.890E-02
BA-137M	5.222E-02
CS-137	5.517E-02
TL-208	4.953E-02
PB-210	7.476E-01
BI-211	2.873E-01
BI-212	7.039E-01
PB-212	6.897E-02
BI-214	1.107E-01
PB-214	2.921E-01
RN-222	1.107E-01
RA-224	7.404E-01
RA-226	1.107E-01
AC-228	1.801E-01
RA-228	1.801E-01
TH-228	6.897E-02
TH-230	1.106E-01
PA-231	5.592E-01
TH-232	1.801E-01
TH-234	9.232E-01
U-234	1.106E-01
U-235	2.428E-01
U-238	9.232E-01
AM-243	4.711E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.921E+01	NOT IDENT.
NA-22	7.339E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF

AL-26	4.579E-02	NOT IDENT.
SC-46	5.544E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	1.081E-01	NOT IDENT.
CO-56	9.605E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	5.928E-02	NOT IDENT.
CO-58	8.979E-01	NOT IDENT.
FE-59	1.378E+01	NOT IDENT.
CO-60	7.065E-02	NOT IDENT.
ZN-65	2.892E-01	NOT IDENT.
GE-68	3.064E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	3.261E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	1.280E+00	NOT IDENT.
KR-85	1.288E+01	NOT IDENT.
SR-85	1.463E+00	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	3.324E-01	NOT IDENT.
Y-91	9.379E+02	NOT IDENT.
NB-94	4.860E-02	NOT IDENT.
NB-95	1.610E+00	NOT IDENT.
ZR-95	2.554E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.862E-02	NOT IDENT.
RH-102	7.831E-02	NOT IDENT.
RU-103	7.920E+00	FAIL ABUN
RH-106	7.599E-01	NOT IDENT.
RU-106	7.599E-01	NOT IDENT.
AG-108M	4.850E-02	NOT IDENT.
AG-110M	1.173E-01	FAIL ABUN
SN-113	3.038E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.709E-01	NOT IDENT.
SB-124	4.185E+00	NOT IDENT.
SB-125	1.744E-01	FAIL ABUN
TE-125M	3.671E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	6.588E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	8.793E-02	FAIL ABUN
CS-135	2.168E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.646E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	3.449E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	4.722E-01	NOT IDENT.
PM-144	7.678E-02	NOT IDENT.
PR-144	6.688E+00	NOT IDENT.
PM-146	7.439E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	9.180E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	3.925E-02	FAIL ABUN
EU-152	1.365E-01	FAIL ABUN
GD-153	1.910E-01	NOT IDENT.
EU-154	1.793E-01	FAIL ABUN
EU-155	1.220E-01	FAIL ABUN
TB-160	2.811E+00	FAIL ABUN
HO-166M	7.909E-02	NOT IDENT.
TM-171	9.400E+00	FAIL ABUN
HF-172	2.956E-01	FAIL ABUN
LU-172	1.292E-01	FAIL ABUN

LU-176	3.133E-02	FAIL ABUN
HF-181	7.132E+00	NOT IDENT.
TA-182	1.691E+00	FAIL ABUN
RE-183	1.940E+00	NOT IDENT.
RE-184	5.091E+01	NOT IDENT.
W-188	1.567E+02	FAIL ABUN
IR-192	8.093E-01	FAIL ABUN
HG-203	3.673E+00	NOT IDENT.
BI-207	6.693E-02	FAIL ABUN
PB-211	8.376E-01	NOT IDENT.
RN-219	4.964E-01	NOT IDENT.
RA-223	9.119E-01	FAIL ABUN
AC-227	3.185E-01	FAIL ABUN
TH-227	3.185E-01	FAIL ABUN
TH-229	6.377E-01	FAIL ABUN
TH-231	9.119E-01	FAIL ABUN
PA-233	9.245E-02	FAIL ABUN
PA-234	4.553E-01	FAIL ABUN
PA-234M	6.794E+00	NOT IDENT.
NP-237	9.245E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	3.075E-01	NOT IDENT.
PU-239	4.500E+02	FAIL ABUN
AM-241	9.318E-02	NOT IDENT.
CM-243	1.144E-01	NOT IDENT.
BK-247	1.128E-01	NOT IDENT.
CM-247	4.788E-02	NOT IDENT.
CF-249	4.911E-02	FAIL ABUN
CF-251	1.601E-01	NOT IDENT.
ANH-511	8.431E-02	NOT IDENT.


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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235053.CNF;1
* Acquisition date   : 3-OCT-2016 07:06:55 Sensitivity      : 3.000
* Detector ID        : GAM31 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:06.45 Half life ratio : *****
* Sample date       : 1-DEC-2015 14:24:00 Nuclide Library : SOLID
* Sample ID         : G405235053 Analyst initials: MXR1
* Batch Number      : 1596252 Sample Quantity : 1.1363E+02 GRAM
*                               Quantity Err(%) : 1.7601E-03 %
* Wet wt corr       : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 15-JUN-2016 06:54:07 Eff. Geometry : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM31 CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
              (pCi/GRAM )   (1.96-sigma)  (1.96-sigma)
K-40         1.865E+01      2.755E+00      2.755E+00
AS-73        1.699E+00      7.856E+00      7.856E+00
NB-95M       2.158E+00      3.224E+00      3.224E+00
CD-109       2.865E+00      1.984E+00      1.984E+00
SN-126       1.807E-01      1.248E-01      1.248E-01
BA-137M      2.442E-01      1.420E-01      1.420E-01
CS-137       2.580E-01      1.500E-01      1.500E-01
TL-208       3.237E-01      1.489E-01      1.489E-01
PB-210       1.521E+00      1.830E+00      1.830E+00
BI-211       1.179E+00      1.761E+00      1.761E+00
BI-212       2.367E+00      1.407E+00      1.407E+00
PB-212       1.549E+00      2.228E-01      2.228E-01
BI-214       1.361E+00      3.249E-01      3.249E-01
PB-214       1.647E+00      3.456E-01      3.456E-01
RN-222       1.361E+00      3.249E-01      3.249E-01
RA-224       2.630E+00      2.860E+00      2.860E+00
RA-226       1.361E+00      3.249E-01      3.249E-01
AC-228       1.359E+00      4.479E-01      4.479E-01
RA-228       1.359E+00      4.479E-01      4.479E-01
TH-228       1.549E+00      2.228E-01      2.228E-01
TH-230       1.361E+00      3.248E-01      3.248E-01
PA-231       8.948E-01      1.282E+00      1.282E+00
TH-232       1.359E+00      4.479E-01      4.479E-01
TH-234       1.113E+00      1.922E+00      1.922E+00
U-234        1.361E+00      3.248E-01      3.248E-01
U-235        1.112E-01      2.857E-01      2.857E-01
U-238        1.113E+00      1.922E+00      1.922E+00
AM-243       1.987E-01      1.081E-01      1.081E-01

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

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Nuclide      Key-Line Activity      K.L Act error      TPU
              (pCi/GRAM )   (1.96-sigma)  (1.96-sigma)
BE-7         -1.162E+01      2.455E+01      2.510E+01 NOT IDENT.
NA-22        -4.217E-02      9.697E-02      9.881E-02 NOT IDENT.

```

NA-24	-1.000E+41	2.992E+41	0.000E+00	SHORT HLIF
AL-26	-8.769E-03	5.685E-02	5.698E-02	NOT IDENT.
SC-46	8.840E-02	6.221E-01	6.234E-01	FAIL ABUN
V-48	1.428E+04	3.686E+04	3.741E+04	SHORT HLIF
CR-51	-2.080E+01	8.926E+02	8.926E+02	SHORT HLIF
MN-54	-2.729E-02	1.379E-01	1.384E-01	NOT IDENT.
CO-56	6.006E-01	1.077E+00	1.111E+00	FAIL ABUN
MN-56	1.000E+41	1.814E+41	0.000E+00	SHORT HLIF
CO-57	3.881E-02	6.603E-02	6.831E-02	NOT IDENT.
CO-58	6.132E-02	1.226E+00	1.226E+00	NOT IDENT.
FE-59	3.195E+00	1.567E+01	1.573E+01	NOT IDENT.
CO-60	-4.484E-03	8.580E-02	8.582E-02	NOT IDENT.
ZN-65	1.647E-01	3.409E-01	3.489E-01	NOT IDENT.
GE-68	-2.607E-01	3.669E+00	3.671E+00	NOT IDENT.
AS-74	-6.317E+03	1.474E+04	1.501E+04	SHORT HLIF
SE-75	-1.205E-01	4.215E-01	4.249E-01	NOT IDENT.
BR-77	2.065E+39	1.828E+40	0.000E+00	SHORT HLIF
SR-82	5.037E+01	1.813E+03	1.813E+03	SHORT HLIF
RB-83	1.675E+00	1.292E+00	1.497E+00	NOT IDENT.
KR-85	-3.053E+01	1.861E+01	2.315E+01	NOT IDENT.
SR-85	-3.468E+00	2.114E+00	2.629E+00	NOT IDENT.
RB-86	-2.194E+04	5.854E+04	5.937E+04	SHORT HLIF
Y-88	1.564E-01	3.226E-01	3.302E-01	NOT IDENT.
Y-91	1.363E+02	1.088E+03	1.089E+03	NOT IDENT.
NB-94	-7.107E-03	6.854E-02	6.861E-02	NOT IDENT.
NB-95	3.041E-03	2.217E+00	2.217E+00	NOT IDENT.
ZR-95	2.419E-01	3.079E+00	3.081E+00	NOT IDENT.
NB-97	1.000E+41	1.929E+41	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	1.550E+41	0.000E+00	SHORT HLIF
MO-99	2.120E+33	2.090E+33	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	1.147E+41	0.000E+00	SHORT HLIF
RH-101	-1.496E-02	5.126E-02	5.171E-02	NOT IDENT.
RH-102	-9.265E-04	9.445E-02	9.445E-02	NOT IDENT.
RU-103	-1.245E+00	9.576E+00	9.592E+00	FAIL ABUN
RH-106	2.162E-01	8.728E-01	8.782E-01	NOT IDENT.
RU-106	2.162E-01	8.728E-01	8.782E-01	NOT IDENT.
AG-108M	7.238E-03	5.566E-02	5.576E-02	NOT IDENT.
AG-110M	2.637E-03	1.349E-01	1.349E-01	FAIL ABUN
SN-113	-1.369E-01	4.188E-01	4.233E-01	NOT IDENT.
CD-115	-6.488E+39	4.226E+40	0.000E+00	SHORT HLIF
SN-117M	-6.911E+04	2.120E+05	2.143E+05	SHORT HLIF
TE-123M	-2.899E-02	2.079E-01	2.083E-01	NOT IDENT.
SB-124	-1.536E-01	5.196E+00	5.196E+00	NOT IDENT.
SB-125	3.211E-02	1.991E-01	1.997E-01	FAIL ABUN
TE-125M	3.297E+01	4.267E+02	4.269E+02	NOT IDENT.
I-126	1.095E+06	2.097E+06	2.154E+06	SHORT HLIF
SB-126	1.263E+06	2.894E+06	2.949E+06	SHORT HLIF
SB-127	4.091E+22	1.595E+23	0.000E+00	SHORT HLIF
I-131	7.012E+09	1.572E+10	1.604E+10	SHORT HLIF
I-132	-1.000E+41	1.920E+42	0.000E+00	SHORT HLIF
TE-132	1.453E+27	2.870E+27	0.000E+00	SHORT HLIF
BA-133	6.087E-03	8.316E-02	8.321E-02	NOT IDENT.
I-133	-1.000E+41	3.567E+41	0.000E+00	SHORT HLIF
CS-134	1.099E-01	1.047E-01	1.158E-01	FAIL ABUN
CS-135	1.598E-02	2.682E-01	2.683E-01	NOT IDENT.
I-135	-1.000E+41	7.508E+41	0.000E+00	SHORT HLIF
CS-136	-8.042E+02	7.328E+05	7.328E+05	SHORT HLIF
CE-139	1.094E-01	1.882E-01	1.945E-01	NOT IDENT.
BA-140	-1.774E+06	3.404E+06	3.497E+06	SHORT HLIF
LA-140	+2.828E+05	1.283E+06	1.290E+06	SHORT HLIF
CE-141	-1.163E+01	4.342E+01	4.374E+01	NOT IDENT.
CE-143	1.000E+41	4.432E+41	0.000E+00	SHORT HLIF
CE-144	3.845E-01	5.592E-01	5.854E-01	NOT IDENT.
PM-144	-4.117E-03	9.409E-02	9.411E-02	NOT IDENT.
PR-144	-2.133E+00	8.554E+00	8.608E+00	NOT IDENT.
PM-146	6.430E-02	7.843E-02	8.362E-02	NOT IDENT.
ND-147	2.814E+07	6.964E+07	7.079E+07	SHORT HLIF
PM-147	-1.987E+02	1.102E+03	1.105E+03	NOT IDENT.
PM-149	7.516E+40	6.692E+41	0.000E+00	SHORT HLIF
EU-150	3.877E-03	4.925E-02	4.928E-02	FAIL ABUN
EU-152	8.353E-02	1.596E-01	1.640E-01	FAIL ABUN
GD-153	-2.851E-02	2.426E-01	2.430E-01	NOT IDENT.
EU-154	-1.030E-01	2.369E-01	2.414E-01	FAIL ABUN
EU-155	-4.819E-02	1.468E-01	1.484E-01	FAIL ABUN
TB-160	-3.728E-01	3.322E+00	3.326E+00	FAIL ABUN
HO-166M	-5.595E-02	1.134E-01	1.162E-01	NOT IDENT.
TM-171	3.572E+00	1.650E+01	1.658E+01	FAIL ABUN
HF-172	1.564E-01	3.599E-01	3.667E-01	FAIL ABUN

LU-172	1.714E-01	1.250E-01	1.469E-01	FAIL ABUN
LU-176	-2.145E-02	3.822E-02	3.942E-02	FAIL ABUN
HF-181	4.405E-03	8.388E+00	8.388E+00	NOT IDENT.
TA-182	6.625E-01	1.889E+00	1.912E+00	FAIL ABUN
RE-183	-4.310E-01	2.218E+00	2.227E+00	NOT IDENT.
RE-184	-3.087E+01	6.512E+01	6.659E+01	NOT IDENT.
W-188	-5.636E+01	2.053E+02	2.069E+02	FAIL ABUN
IR-192	6.475E-01	9.153E-01	9.607E-01	FAIL ABUN
HG-203	-3.671E+00	5.099E+00	5.361E+00	NOT IDENT.
BI-207	-7.355E-02	9.386E-02	9.955E-02	FAIL ABUN
PB-211	-4.319E-01	1.037E+00	1.056E+00	NOT IDENT.
RN-219	-2.174E-01	6.079E-01	6.158E-01	NOT IDENT.
RA-223	2.570E-01	1.012E+00	1.019E+00	FAIL ABUN
AC-227	1.942E-01	3.972E-01	4.067E-01	FAIL ABUN
TH-227	1.942E-01	3.972E-01	4.067E-01	FAIL ABUN
TH-229	7.441E-01	7.903E-01	8.586E-01	FAIL ABUN
TH-231	2.570E-01	1.012E+00	1.019E+00	FAIL ABUN
PA-233	2.688E-02	1.023E-01	1.030E-01	FAIL ABUN
PA-234	1.555E-01	5.312E-01	5.358E-01	FAIL ABUN
PA-234M	4.413E-01	7.927E+00	7.930E+00	NOT IDENT.
NP-237	2.688E-02	1.023E-01	1.030E-01	FAIL ABUN
NP-238	1.000E+41	3.104E+41	0.000E+00	SHORT HLIF
NP-239	1.391E-01	3.488E-01	3.544E-01	NOT IDENT.
PU-239	1.423E+03	6.681E+02	9.263E+02	FAIL ABUN
AM-241	-1.079E-02	1.060E-01	1.062E-01	NOT IDENT.
CM-243	1.828E-02	1.318E-01	1.321E-01	NOT IDENT.
BK-247	1.855E-02	1.381E-01	1.383E-01	NOT IDENT.
CM-247	-1.538E-02	5.773E-02	5.815E-02	NOT IDENT.
CF-249	-8.217E-03	5.798E-02	5.809E-02	FAIL ABUN
CF-251	-7.304E-02	2.010E-01	2.037E-01	NOT IDENT.
ANH-511	-8.832E-02	9.043E-02	9.880E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	100.7624	87.09	76.5680	136.47	61.9439
45.60	115.4579	87.57	76.6492	140.51	0.0000
46.54	115.8266	88.03	76.7267	143.76	49.9167
49.72	0.0000	88.34	76.7792	144.24	45.7026
51.35	110.3970	88.47	76.8005	145.44	52.1761
51.87	122.2180	89.96	77.0502	152.43	44.1212
52.39	136.4078	1093.63	77.1631	153.25	0.0000
52.97	145.4134	91.11	0.0000	323.87	58.2641
53.44	145.6249	92.59	77.4847	156.02	0.0000
54.07	140.6323	93.35	77.6093	158.56	0.0000
57.36	0.0000	94.56	59.6516	159.00	47.8068
57.53	137.6566	94.65	59.6628	162.33	44.7599
57.98	137.8370	94.67	59.6651	162.66	0.0000
59.27	152.6341	94.87	59.6904	163.33	53.5698
59.32	152.6557	97.43	62.6152	165.86	46.0804
59.54	146.4992	98.43	57.8414	176.31	51.1948
60.96	148.2875	98.44	57.8423	176.60	0.0000
61.17	148.3752	99.53	59.9352	177.52	59.0799
62.93	147.0000	100.11	55.0865	181.07	0.0000
63.29	147.1464	102.03	57.2725	181.52	52.2956
63.58	147.2633	103.18	58.3923	184.41	42.7436
64.28	125.5188	103.37	58.4144	143.76	42.8161
66.73	134.8522	105.21	64.5859	193.51	57.6541
67.24	134.1216	105.31	64.5983	197.03	57.1442
125.81	117.8353	106.12	54.7457	198.01	50.3473
67.75	117.8560	106.47	65.7392	201.83	41.3855
69.67	117.5293	109.28	63.0875	203.43	42.6170
70.83	147.3474	111.00	60.2774	205.31	38.0953
72.81	119.7028	111.76	0.0000	210.85	32.5356
72.87	119.7206	114.06	59.6090	215.65	40.5076
74.66	121.8031	116.30	0.0000	222.11	35.3133
74.82	121.8500	116.74	53.8079	227.09	42.6121
74.97	121.8950	119.76	58.1816	227.38	39.0732
77.11	122.5297	121.12	48.0894	228.16	0.0000
78.74	83.8829	121.22	48.0976	228.18	31.9974
79.69	90.3457	121.78	45.0719	116.74	31.9974
80.12	67.8274	122.06	43.0440	235.69	36.6413
80.19	0.0000	122.92	50.2935	235.96	36.6520
80.57	76.7005	123.07	55.4399	238.63	38.3550
81.00	83.0707	265.00	59.6094	238.98	0.0000
81.07	84.9724	125.81	49.5125	240.99	38.4512
81.75	83.2150	127.23	53.7680	242.00	38.4922
83.79	69.6704	127.91	51.0696	244.70	35.3848
84.00	65.9019	129.30	50.8430	252.40	0.0000
85.43	94.0861	131.20	38.8600	252.80	26.7618
86.55	76.4764	133.02	41.7609	254.15	0.0000
86.79	76.5167	133.52	43.1882	256.23	26.0413
86.94	76.5430	136.00	56.6516	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	43.0856	355.39	0.0000	584.27	16.4596
264.80	43.0910	356.01	30.6746	595.83	0.0000
265.00	38.1739	364.49	0.0000	427.87	25.9389
268.22	40.7656	366.42	0.0000	602.52	0.0000
269.46	27.2100	372.51	18.9103	604.72	18.7156
270.03	32.1747	375.05	24.3600	607.14	26.5469
271.23	43.3623	377.52	22.5978	609.32	21.8870
273.65	0.0000	356.01	25.4285	610.33	21.8981
276.40	26.1468	388.16	20.9542	614.28	12.5386
277.37	27.4174	388.63	0.0000	618.01	15.7025
277.60	27.4235	391.69	21.9219	620.36	14.6733
278.00	14.9641	264.66	22.0645	621.93	12.5869
279.20	44.9429	401.81	23.0026	630.19	0.0000
279.54	46.2060	402.40	23.9328	631.29	11.5922
279.70	46.2127	404.85	22.1304	633.25	8.4388
280.46	29.9978	410.95	21.1143	634.78	0.0000
283.69	31.7602	413.71	30.6193	635.95	12.6753
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	30.9741	423.72	0.0000	645.85	10.6144
285.90	0.0000	427.09	21.5382	657.76	12.8110
287.50	31.8731	427.87	25.2977	657.90	0.0000
290.67	31.5460	433.94	27.2831	661.66	16.0437
293.27	0.0000	439.40	19.8289	664.57	0.0000
351.93	29.1431	453.88	16.2052	666.33	0.0000
295.96	29.1627	463.37	22.0590	666.50	0.0000
879.38	20.3350	468.07	25.9728	667.71	0.0000
299.98	29.2680	473.00	0.0000	677.62	12.9321
300.09	29.2708	475.06	19.3237	685.70	0.0000
300.13	29.2722	476.78	20.3117	695.00	0.0000
301.36	25.4822	477.60	22.2574	696.49	13.0459
302.85	33.1705	482.18	18.4391	696.51	15.2202
256.23	25.5533	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	14.1383
306.78	31.5793	497.08	13.7106	697.49	14.1394
308.46	29.9165	505.52	29.5288	702.65	16.3531
311.90	30.0062	507.63	0.0000	706.68	14.1992
316.51	29.6955	511.00	33.5746	711.68	16.4203
319.41	0.0000	514.00	63.3125	720.70	0.0000
320.08	0.0000	514.00	63.3125	721.93	0.0000
321.04	27.9967	520.40	10.9226	722.78	13.2017
323.87	29.4498	520.69	0.0000	722.91	13.2026
325.23	39.0216	522.65	0.0000	723.31	14.8557
328.76	0.0000	527.90	0.0000	724.19	14.8612
333.37	28.2874	528.26	13.9647	727.33	14.3309
333.97	31.4458	529.59	13.9749	733.00	3.3154
334.37	28.8347	529.87	0.0000	735.93	16.5985
338.28	21.9147	531.02	0.0000	333.97	21.0387
338.32	21.9152	537.26	0.0000	739.50	0.0000
311.90	21.9538	546.56	0.0000	747.24	11.1202
340.48	21.9538	552.55	17.1909	748.06	12.2367
340.55	0.0000	563.25	19.3263	752.31	12.2591
344.28	19.8193	569.33	24.4932	753.82	0.0000
345.93	27.3432	946.00	24.4951	756.73	14.5155
351.06	30.1118	569.70	24.4980	756.80	14.5160
351.93	30.1325	583.19	16.4505	884.68	17.9206

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	20.1768	1274.44	12.8452	1620.50	2.1782
766.42	25.2274	1001.03	11.0277	1621.92	2.1790
766.84	26.9141	1002.74	12.8734	1678.03	0.0000
772.60	0.0000	1004.73	7.3611	1690.97	5.5310
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	0.0000
778.90	14.6525	1028.54	0.0000	1063.66	9.9000
783.70	0.0000	1037.84	8.3732	1771.35	3.6010
785.37	14.6922	1038.76	0.0000	1791.20	0.0000
792.07	6.7998	631.29	6.5313	1808.65	3.6287
794.95	6.8079	1048.07	0.0000	1810.72	0.0000
795.86	6.8105	1049.04	11.2053	1836.06	0.9123
810.06	10.2751	1050.41	13.0789		
810.29	6.8506	1063.66	15.9500		
344.28	6.8511	1077.00	0.0000		
810.76	10.2781	1077.34	7.5391		
815.77	0.0000	1085.87	4.7247		
1048.07	0.0000	1093.63	4.5469		
832.01	10.3656	1099.45	12.3367		
834.85	14.9895	1112.07	12.3851		
835.71	12.4572	1112.84	13.3412		
836.80	0.0000	1115.54	7.6299		
846.75	0.0000	1120.29	11.4617		
846.77	12.7429	1120.55	11.4631		
856.80	0.0000	1221.41	11.4653		
860.56	6.9880	1129.67	6.7056		
871.09	3.5082	1131.51	0.0000		
873.19	8.7775	1147.95	0.0000		
875.33	0.0000	1173.23	13.9764		
879.38	10.5575	1177.95	6.2203		
880.51	11.4424	1189.05	13.6522		
883.24	9.6918	1204.77	10.7758		
884.68	6.1709	1221.41	10.8275		
889.28	7.9478	1231.02	11.2807		
894.76	9.7338	1235.36	0.0000		
898.04	10.6318	1238.28	12.8580		
900.72	8.8687	1260.41	0.0000		
903.28	15.0908	1271.87	15.9756		
911.20	9.7932	1274.44	12.9889		
912.08	9.7965	1274.54	12.9897		
923.98	0.0000	1291.59	13.0508		
926.50	7.1624	1298.22	0.0000		
929.11	7.1689	1312.11	0.0000		
937.49	8.6288	1332.49	10.1501		
944.13	0.0000	1362.66	0.0000		
946.00	9.9174	1365.19	4.0952		
949.00	9.0253	1368.63	0.0000		
667.71	0.0000	1384.29	4.1157		
962.31	4.3526	1408.01	6.2109		
964.08	10.1623	1457.56	0.0000		
966.17	14.5283	1460.82	3.1469		
911.20	14.5425	1489.16	1.0562		
968.97	14.5425	1505.03	5.3015		
983.53	0.0000	1584.12	8.6411		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:09:08.68

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235054.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM43.CNF;151
Background date    : Z-OCT-2016 11:02:23.
Sample date       : 2-DEC-2015 14:51:00. Acquisition date : 3-OCT-2016 07:07:21.
Sample ID        : G405235054 Sample quantity : 1.46461E+02 GRAM
Detector name     : GAM43 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.68 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID         : 1596252 Detector SN# :
Matrix Spike ID  : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	59.35	33	103	1.50	118.49	115	8	9.17E-03	55.9	
2	1	74.65	136	132	1.23	149.08	141	24	3.77E-02	15.8	3.07E+00
3	1	76.99	191	110	1.12	153.77	141	24	5.30E-02	12.2	
4	1	80.99	35	89	1.25	161.77	141	24	9.67E-03	52.0	
5	0	86.94	50	103	1.04	173.69	171	6	1.39E-02	35.0	
6	5	89.52	43	64	1.06	178.85	177	16	1.20E-02	29.9	1.03E+00
7	5	92.80*	102	165	1.76	185.41	177	16	2.83E-02	27.3	
8	0	114.29	31	107	2.27	228.39	225	9	8.52E-03	63.6	
9	0	129.76	28	109	1.28	259.36	253	9	7.80E-03	70.3	
10	0	143.95*	13	116	1.38	287.74	283	9	3.63E-03	153.0	
11	0	185.66*	107	102	1.54	371.19	365	12	2.96E-02	21.9	
12	0	208.40	52	122	0.68	416.67	412	11	1.44E-02	43.5	
13	0	219.04	41	128	6.21	437.95	429	15	1.12E-02	62.8	
14	4	238.49*	425	42	1.03	476.87	469	20	1.18E-01	5.5	1.31E+00
15	4	241.58	122	70	1.68	483.05	469	20	3.40E-02	17.7	
16	0	295.04*	142	50	1.24	590.00	585	9	3.93E-02	12.4	
17	0	320.25	25	45	0.65	640.43	634	12	7.01E-03	56.8	
18	0	338.38	86	70	1.26	676.71	670	14	2.40E-02	23.2	
19	0	351.85*	240	49	1.19	703.65	698	11	6.66E-02	8.7	
20	0	382.39	38	84	7.31	764.75	748	21	1.05E-02	62.6	
21	0	409.10	36	21	3.19	818.17	813	10	1.00E-02	29.5	
22	0	441.72	21	18	1.10	883.43	880	8	5.77E-03	41.7	
23	0	464.44	19	55	3.37	928.88	920	13	5.18E-03	85.3	
24	0	511.23*	16	83	1.42	1022.49	1014	14	4.47E-03	134.7	
25	0	566.62	7	30	1.47	1133.29	1126	10	1.94E-03	151.2	
26	0	582.95*	117	21	1.55	1165.95	1161	13	3.25E-02	12.4	
27	0	609.22*	150	44	1.71	1218.50	1210	19	4.16E-02	13.4	
28	0	722.93	12	7	1.22	1445.96	1443	6	3.23E-03	50.7	
29	0	726.85	44	9	2.06	1453.81	1449	11	1.23E-02	19.6	
30	0	767.75	27	13	1.88	1535.63	1530	10	7.62E-03	30.8	
31	0	774.19	19	11	1.77	1548.50	1543	10	5.37E-03	40.5	
32	0	833.02	6	9	0.72	1666.18	1660	8	1.58E-03	103.8	
33	0	884.64	15	5	0.85	1769.43	1765	9	4.03E-03	40.8	
34	0	888.09	4	4	0.58	1776.34	1773	7	1.01E-03	103.7	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	890.84	9	1	0.95	1781.84	1779	6	2.42E-03	40.2	
36	0	902.44	10	15	4.10	1805.04	1797	12	2.75E-03	84.5	
37	0	910.91	98	4	1.79	1821.99	1814	17	2.71E-02	11.2	
38	0	922.79	19	17	4.11	1845.74	1836	17	5.41E-03	53.4	
39	0	969.69	39	41	0.72	1939.57	1929	17	1.09E-02	42.6	
40	0	1042.99	8	8	1.24	2086.17	2080	10	2.26E-03	78.8	
41	0	1120.95	39	26	1.27	2242.11	2235	20	1.08E-02	35.4	
42	0	1215.78	19	6	3.78	2431.79	2425	13	5.34E-03	35.3	
43	0	1314.44	4	4	0.94	2629.13	2623	8	1.11E-03	100.0	
44	0	1341.47	10	3	0.96	2683.18	2676	11	2.79E-03	45.2	
45	0	1353.06	6	2	0.75	2706.35	2702	8	1.63E-03	59.0	
46	0	1460.66*	336	0	1.99	2921.57	2914	18	9.33E-02	5.5	
47	0	1764.57*	29	0	2.08	3529.38	3522	14	8.10E-03	19.6	
48	0	1847.26	12	0	2.31	3694.75	3690	10	3.33E-03	28.9	

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

VMS Nuclide Identification Report V3.1 Generated 3-OCT-2016 08:09:10

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235054.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 2-DEC-2015 14:51:00 Acquisition date : 3-OCT-2016 07:07:21
 Sample ID : G405235054 Sample quantity : 146.46 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA43 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.68 0.0%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
U-235	143.76	CE-141	145.44
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.001E+00	1.552E+01	1.552E+01	11.02	OK
SC-46	889.28	99.98*	1.541E+00	1.220E-02	1.530E-01	207.36	OK
	1120.55	99.99	1.265E+00	1.561E-01	1.957E+00	70.74	OK
CD-109	88.03	3.70*	4.275E+00	9.991E-01	1.581E+00	143.54	OK
SN-126	64.28	9.60	1.983E+00	----- Line	Not Found	-----	Absent
	86.94	8.90	4.275E+00	4.153E-01	4.153E-01	143.54	OK
	87.57	37.00*	4.275E+00	9.991E-02	9.991E-02	143.54	OK
TL-208	277.37	6.60	4.205E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.199E+00	3.376E-01	3.376E-01	24.76	OK
	860.56	12.50	1.582E+00	----- Line	Not Found	-----	Absent
BI-211	72.87	1.23	2.941E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	3.426E+00	1.521E-02	1.521E-02	6072.10	OK
PB-212	74.82	10.28	3.129E+00	2.088E+00	2.088E+00	41.68	OK
	77.11	17.10	3.370E+00	2.127E+00	2.127E+00	24.49	OK
	238.63	43.60*	4.741E+00	1.202E+00	1.202E+00	11.04	OK
	300.09	3.30	3.935E+00	----- Line	Not Found	-----	Absent
BI-214	609.32	45.49*	2.118E+00	8.347E-01	8.350E-01	26.88	OK
	1120.29	14.92	1.265E+00	1.046E+00	1.046E+00	70.74	OK
	1764.49	15.30	8.362E-01	1.103E+00	1.103E+00	39.19	OK
PB-214	74.82	5.80	3.147E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.370E+00	3.749E+00	3.750E+00	24.49	OK
	87.09	3.41	4.287E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.688E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	3.992E+00	1.106E+00	1.106E+00	24.81	OK
	351.93	35.60*	3.426E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	2.118E+00	8.347E-01	8.350E-01	26.88	OK
	1120.29	14.92	1.265E+00	1.046E+00	1.046E+00	70.74	OK
	1764.49	15.30	8.362E-01	1.103E+00	1.103E+00	39.19	OK
RA-224	240.99	4.10*	4.695E+00	1.761E+00	1.761E+00	79.67	OK
RA-226	609.32	45.49*	2.118E+00	8.347E-01	8.350E-01	26.88	OK
	1120.29	14.92	1.265E+00	1.046E+00	1.046E+00	70.74	OK
	1764.49	15.30	8.362E-01	1.103E+00	1.103E+00	39.19	OK
AC-228	105.21	1.10	5.396E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.546E+00	1.225E+00	1.225E+00	46.39	OK
	794.95	4.25	1.691E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.621E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.508E+00	1.296E+00	1.296E+00	22.47	OK
	968.97	15.80	1.431E+00	8.914E-01	8.914E-01	85.15	OK
RA-228	105.21	1.10	5.396E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.546E+00	1.225E+00	1.225E+00	46.39	OK
	794.95	4.25	1.691E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.621E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.508E+00	1.296E+00	1.296E+00	22.47	OK
	968.97	15.80	1.431E+00	8.914E-01	8.914E-01	85.15	OK
TH-228	74.82	10.28	3.129E+00	2.088E+00	2.088E+00	41.68	OK
	77.11	17.10	3.370E+00	2.127E+00	2.127E+00	24.49	OK
	238.63	43.60*	4.741E+00	1.202E+00	1.202E+00	11.04	OK
	300.09	3.30	3.935E+00	----- Line	Not Found	-----	Absent
TH-230	609.32	45.49*	2.118E+00	8.347E-01	8.347E-01	26.88	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	1120.29	14.92	1.265E+00	1.046E+00	1.046E+00	70.74	OK
	1764.49	15.30	8.362E-01	1.103E+00	1.103E+00	39.19	OK
TH-232	105.21	1.10	5.396E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.546E+00	1.225E+00	1.225E+00	46.39	OK
	835.71	1.61	1.621E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.508E+00	1.296E+00	1.296E+00	22.47	OK
	968.97	15.80	1.431E+00	8.914E-01	8.914E-01	85.15	OK
U-234	609.32	45.49*	2.118E+00	8.347E-01	8.347E-01	26.88	OK
	1120.29	14.92	1.265E+00	1.046E+00	1.046E+00	70.74	OK
	1764.49	15.30	8.362E-01	1.103E+00	1.103E+00	39.19	OK
U-235	89.96	3.47	4.476E+00	1.770E+00	1.770E+00	59.83	OK
	93.35	5.60	4.711E+00	2.441E+00	2.441E+00	54.61	OK
	143.76	10.96*	6.023E+00	1.209E-01	1.209E-01	306.07	OK
	163.33	5.08	5.876E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	5.570E+00	1.999E-01	1.999E-01	43.72	OK
	205.31	5.01	5.260E+00	----- Line	Not Found	-----	Absent
AM-241	59.54	35.90*	1.428E+00	4.218E-01	4.223E-01	111.73	OK
AM-243	43.53	5.90	1.216E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.129E+00	3.195E-01	3.195E-01	41.68	OK
ANH-511	511.00	100.00*	2.464E+00	3.567E-02	3.567E-02	269.31	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235054.CNF;1
* Acquisition date   : 3-OCT-2016 07:07:21 Sensitivity      : 3.000
* Detector ID        : GAM43 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.68 Half life ratio : *****
* Sample date        : 2-DEC-2015 14:51:00 Analyst initials: MXR1
* Sample ID          : G405235054 Sample Quantity : 1.4646E+02 GRAM
* Batch Number       : 1596252 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 6-SEP-2016 07:25:20 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM43 CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.552E+01	1.677E+00	5.157E-01
SC-46	1.530E-01	3.108E-01	1.152E-01
CD-109	1.581E+00	2.224E+00	2.332E+00
SN-126	9.991E-02	1.405E-01	1.485E-01
TL-208	3.376E-01	8.191E-02	7.719E-02
BI-211	1.521E-02	9.053E-01	3.806E-01
PB-212	1.202E+00	1.300E-01	9.611E-02
BI-214	8.350E-01	2.200E-01	1.211E-01
PB-214	1.112E+00	1.888E-01	3.461E-01
RN-222	8.350E-01	2.200E-01	1.211E-01
RA-224	1.761E+00	1.375E+00	1.031E+00
RA-226	8.350E-01	2.200E-01	1.211E-01
AC-228	1.296E+00	2.854E-01	2.273E-01
RA-228	1.296E+00	2.854E-01	2.273E-01
TH-228	1.202E+00	1.300E-01	9.611E-02
TH-230	8.347E-01	2.199E-01	1.210E-01
TH-232	1.296E+00	2.854E-01	2.273E-01
U-234	8.347E-01	2.199E-01	1.210E-01
U-235	1.209E-01	3.628E-01	3.434E-01
AM-241	4.223E-01	4.624E-01	4.211E-01
AM-243	3.195E-01	1.305E-01	1.225E-01
ANH-511	3.567E-02	9.414E-02	6.666E-02

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

Nuclide	Key-Line. Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-4.010E+00	1.522E+01	2.731E+01	NOT IDENT.
NA-22	1.351E-02	4.553E-02	9.890E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	-7.073E-04	2.539E-02	5.852E-02	NOT IDENT.
V-48	0.000E+00	1.636E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	9.109E+02	0.000E+00	SHORT HLIF
MN-54	-5.347E-02	8.349E-02	1.217E-01	NOT IDENT.
CO-56	5.346E-02	4.945E-01	9.964E-01	NOT IDENT.

MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	1.423E-02	5.200E-02	9.678E-02	NOT IDENT.
CO-58	-3.193E-01	6.514E-01	1.179E+00	NOT IDENT.
FE-59	-6.345E-01	9.474E+00	1.774E+01	NOT IDENT.
CO-60	9.919E-03	3.967E-02	8.633E-02	NOT IDENT.
ZN-65	-1.844E-01	2.496E-01	3.338E-01	NOT IDENT.
GE-68	1.968E+00	2.654E+00	5.774E+00	NOT IDENT.
AS-73	5.872E+00	1.930E+01	3.759E+01	NOT IDENT.
AS-74	0.000E+00	6.773E+03	0.000E+00	SHORT HLIF
SE-75	-1.202E-01	2.122E-01	3.855E-01	NOT IDENT.
BR-77	0.000E+00	1.288E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	1.047E+03	0.000E+00	SHORT HLIF
RB-83	4.129E-01	7.755E-01	1.622E+00	NOT IDENT.
KR-85	6.607E+00	9.456E+00	1.703E+01	NOT IDENT.
SR-85	7.420E-01	1.062E+00	1.914E+00	NOT IDENT.
RB-86	0.000E+00	3.808E+04	0.000E+00	SHORT HLIF
Y-88	1.067E-01	2.734E-01	6.370E-01	NOT IDENT.
Y-91	-1.996E+02	5.378E+02	1.028E+03	NOT IDENT.
NB-94	4.359E-02	3.490E-02	7.821E-02	NOT IDENT.
NB-95	3.122E-01	1.190E+00	2.113E+00	NOT IDENT.
NB-95M	-7.960E-01	2.917E+00	4.860E+00	NOT IDENT.
ZR-95	-5.800E-01	1.550E+00	2.888E+00	FAIL ABUN
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	7.257E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-2.173E-02	4.177E-02	6.511E-02	NOT IDENT.
RH-102	3.239E-02	6.329E-02	1.334E-01	FAIL ABUN
RU-103	8.324E-01	6.924E+00	1.314E+01	FAIL ABUN
RH-106	3.598E-02	5.063E-01	1.020E+00	NOT IDENT.
RU-106	3.598E-02	5.063E-01	1.020E+00	NOT IDENT.
AG-108M	1.463E-03	2.826E-02	5.371E-02	FAIL ABUN
AG-110M	1.566E-01	1.253E-01	2.549E-01	FAIL ABUN
SN-113	4.918E-02	2.585E-01	4.966E-01	NOT IDENT.
CD-115	0.000E+00	2.199E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.400E+05	0.000E+00	SHORT HLIF
TE-123M	2.600E-02	1.429E-01	2.836E-01	NOT IDENT.
SB-124	9.314E-03	2.371E+00	5.094E+00	FAIL ABUN
SB-125	1.178E-01	1.121E-01	2.364E-01	FAIL ABUN
TE-125M	-6.842E+01	3.182E+02	5.709E+02	NOT IDENT.
I-126	0.000E+00	1.380E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	2.031E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	6.976E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	7.918E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.444E+27	0.000E+00	SHORT HLIF
BA-133	-1.789E-02	4.913E-02	7.821E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	3.433E-02	5.312E-02	1.134E-01	NOT IDENT.
CS-135	-2.465E-02	1.432E-01	2.696E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	5.068E+05	0.000E+00	SHORT HLIF
BA-137M	-4.439E-03	4.073E-02	7.821E-02	NOT IDENT.
CS-137	-4.689E-03	4.303E-02	8.262E-02	NOT IDENT.
CE-139	5.433E-02	1.184E-01	2.388E-01	NOT IDENT.
BA-140	0.000E+00	1.973E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	6.045E+05	0.000E+00	SHORT HLIF
CE-141	1.859E+01	5.575E+01	5.063E+01	FAIL ABUN
CE-143	0.000E+00	6.699E+40	0.000E+00	SHORT HLIF
CE-144	-8.299E-02	3.789E-01	7.097E-01	FAIL ABUN
PM-144	2.420E-02	5.510E-02	1.158E-01	NOT IDENT.
PR-144	2.108E+00	4.801E+00	1.009E+01	NOT IDENT.
PM-146	4.022E-02	4.464E-02	9.503E-02	NOT IDENT.
ND-147	0.000E+00	5.542E+07	0.000E+00	SHORT HLIF
PM-147	6.992E+02	8.977E+02	1.744E+03	NOT IDENT.
PM-149	0.000E+00	1.102E+41	0.000E+00	SHORT HLIF
EU-150	3.134E-04	2.641E-02	4.519E-02	FAIL ABUN
EU-152	-5.728E-02	1.164E-01	1.821E-01	NOT IDENT.
GD-153	-1.661E-01	2.432E-01	3.825E-01	NOT IDENT.
EU-154	3.504E-02	1.118E-01	2.432E-01	FAIL ABUN
EU-155	1.012E-01	1.353E-01	2.607E-01	FAIL ABUN
TB-160	5.072E-01	2.464E+00	4.417E+00	FAIL ABUN
HO-166M	3.067E-02	6.914E-02	1.410E-01	FAIL ABUN
TM-171	-3.926E+01	4.874E+01	8.606E+01	NOT IDENT.
HF-172	6.398E-02	2.869E-01	4.864E-01	FAIL ABUN
LU-172	-1.178E-01	9.316E-02	1.330E-01	FAIL ABUN
LU-176	7.663E-03	2.368E-02	4.686E-02	FAIL ABUN
HF-181	-1.270E-01	5.104E+00	9.522E+00	NOT IDENT.

TA-182	6.423E-01	1.097E+00	2.182E+00	FAIL ABUN
RE-183	9.110E+00	9.974E+00	1.010E+01	FAIL ABUN
RE-184	3.519E+01	5.828E+01	8.691E+01	FAIL ABUN
W-188	2.453E+01	1.430E+02	2.479E+02	NOT IDENT.
IR-192	-4.296E-01	6.059E-01	9.246E-01	FAIL ABUN
HG-203	-2.098E+00	2.797E+00	4.952E+00	NOT IDENT.
BI-207	-2.219E-02	5.014E-02	8.911E-02	FAIL ABUN
PB-210	2.532E+00	1.049E+01	2.072E+01	NOT IDENT.
PB-211	-1.013E+00	7.892E-01	1.006E+00	FAIL ABUN
BI-212	0.000E+00	7.412E-01	1.514E+00	FAIL ABUN
RN-219	2.876E-01	3.762E-01	7.780E-01	NOT IDENT.
RA-223	-1.866E-01	6.284E-01	1.025E+00	FAIL ABUN
AC-227	-5.008E-02	2.225E-01	4.193E-01	FAIL ABUN
TH-227	-5.008E-02	2.225E-01	4.193E-01	FAIL ABUN
TH-229	1.847E-01	4.558E-01	9.137E-01	FAIL ABUN
PA-231	3.344E-01	4.556E-01	9.238E-01	NOT IDENT.
TH-231	-1.866E-01	6.284E-01	1.025E+00	FAIL ABUN
PA-233	-1.938E-02	6.151E-02	1.132E-01	NOT IDENT.
PA-234	-1.068E-01	3.195E-01	5.832E-01	FAIL ABUN
PA-234M	-3.132E+00	4.935E+00	8.429E+00	FAIL ABUN
TH-234	1.355E+00	1.928E+00	3.641E+00	FAIL ABUN
NP-237	-1.938E-02	6.151E-02	1.132E-01	NOT IDENT.
NP-238	0.000E+00	7.173E+00	0.000E+00	SHORT HLIF
U-238	1.355E+00	1.928E+00	3.641E+00	FAIL ABUN
NP-239	-1.463E-01	2.923E-01	4.606E-01	NOT IDENT.
PU-239	4.577E+02	6.308E+02	6.731E+02	FAIL ABUN
CM-243	8.128E-03	1.140E-01	2.102E-01	NOT IDENT.
BK-247	-3.669E-02	6.994E-02	1.277E-01	NOT IDENT.
CM-247	2.675E-02	3.317E-02	6.940E-02	NOT IDENT.
CF-249	1.211E-02	4.119E-02	7.985E-02	NOT IDENT.
CF-251	-3.552E-02	1.151E-01	2.197E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	323	10.66*	1.001E+00	1.552E+01	1.552E+01	11.02
SC-46	889.28	4	99.98*	1.541E+00	1.220E-02	1.530E-01	207.36
	1120.55	39	99.99	1.265E+00	1.561E-01	1.957E+00	70.74
CD-109	88.03	62	3.70*	4.275E+00	2.018E+00	3.195E+00	69.94
SN-126	64.28	-----	9.60	1.983E+00	-----	Line Not Found	-----
	86.94	62	8.90	4.275E+00	8.390E-01	8.390E-01	69.94
	87.57	62	37.00*	4.275E+00	2.018E-01	2.018E-01	69.94
CE-141	145.44	16	48.29*	6.023E+00	2.745E-02	1.859E+01	306.07
TL-208	277.37	-----	6.60	4.205E+00	-----	Line Not Found	-----
	583.19	123	85.00*	2.199E+00	3.376E-01	3.376E-01	24.76
	860.56	-----	12.50	1.582E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	2.941E+00	-----	Line Not Found	-----
	351.06	264	12.92*	3.426E+00	3.062E+00	3.062E+00	17.33
PB-212	74.82	170	10.28	3.129E+00	2.712E+00	2.712E+00	31.58
	77.11	239	17.10	3.370E+00	2.127E+00	2.127E+00	24.49
	238.63	485	43.60*	4.741E+00	1.202E+00	1.202E+00	11.04
	300.09	-----	3.30	3.935E+00	-----	Line Not Found	-----
BI-214	609.32	157	45.49*	2.118E+00	8.347E-01	8.350E-01	26.88
	1120.29	39	14.92	1.265E+00	1.046E+00	1.046E+00	70.74
	1764.49	28	15.30	8.362E-01	1.103E+00	1.103E+00	39.19
PB-214	74.82	170	5.80	3.129E+00	4.807E+00	4.809E+00	31.58
	77.11	239	9.70	3.370E+00	3.749E+00	3.750E+00	24.49
	87.09	62	3.41	4.275E+00	2.190E+00	2.191E+00	69.94
	242.00	140	7.25	4.695E+00	2.101E+00	2.102E+00	35.42
	295.22	159	18.42	3.992E+00	1.106E+00	1.106E+00	24.81
	351.93	264	35.60*	3.426E+00	1.111E+00	1.112E+00	17.33
RN-222	609.32	157	45.49*	2.118E+00	8.347E-01	8.350E-01	26.88
	1120.29	39	14.92	1.265E+00	1.046E+00	1.046E+00	70.74
	1764.49	28	15.30	8.362E-01	1.103E+00	1.103E+00	39.19
RA-224	240.99	140	4.10*	4.695E+00	3.716E+00	3.716E+00	35.42
RA-226	609.32	157	45.49*	2.118E+00	8.347E-01	8.350E-01	26.88
	1120.29	39	14.92	1.265E+00	1.046E+00	1.046E+00	70.74
	1764.49	28	15.30	8.362E-01	1.103E+00	1.103E+00	39.19
AC-228	105.21	-----	1.10	5.396E+00	-----	Line Not Found	-----
	338.32	96	11.27	3.546E+00	1.225E+00	1.225E+00	46.39
	794.95	-----	4.25	1.691E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.621E+00	-----	Line Not Found	-----
	911.20	98	25.80*	1.508E+00	1.296E+00	1.296E+00	22.47
	968.97	39	15.80	1.431E+00	8.914E-01	8.914E-01	85.15
RA-228	105.21	-----	1.10	5.396E+00	-----	Line Not Found	-----
	338.32	96	11.27	3.546E+00	1.225E+00	1.225E+00	46.39
	794.95	-----	4.25	1.691E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.621E+00	-----	Line Not Found	-----
	911.20	98	25.80*	1.508E+00	1.296E+00	1.296E+00	22.47
	968.97	39	15.80	1.431E+00	8.914E-01	8.914E-01	85.15
TH-228	74.82	170	10.28	3.129E+00	2.712E+00	2.712E+00	31.58
	77.11	239	17.10	3.370E+00	2.127E+00	2.127E+00	24.49

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	238.63	485	43.60*	4.741E+00	1.202E+00	1.202E+00	11.04
	300.09	-----	3.30	3.935E+00	-----	Line Not Found	-----
TH-230	609.32	157	45.49*	2.118E+00	8.347E-01	8.347E-01	26.88
	1120.29	39	14.92	1.265E+00	1.046E+00	1.046E+00	70.74
	1764.49	28	15.30	8.362E-01	1.103E+00	1.103E+00	39.19
TH-232	105.21	-----	1.10	5.396E+00	-----	Line Not Found	-----
	338.32	96	11.27	3.546E+00	1.225E+00	1.225E+00	46.39
	835.71	-----	1.61	1.621E+00	-----	Line Not Found	-----
	911.20	98	25.80*	1.508E+00	1.296E+00	1.296E+00	22.47
	968.97	39	15.80	1.431E+00	8.914E-01	8.914E-01	85.15
U-234	609.32	157	45.49*	2.118E+00	8.347E-01	8.347E-01	26.88
	1120.29	39	14.92	1.265E+00	1.046E+00	1.046E+00	70.74
	1764.49	28	15.30	8.362E-01	1.103E+00	1.103E+00	39.19
U-235	89.96	54	3.47	4.476E+00	1.770E+00	1.770E+00	59.83
	93.35	126	5.60	4.711E+00	2.441E+00	2.441E+00	54.61
	143.76	16	10.96*	6.023E+00	1.209E-01	1.209E-01	306.07
	163.33	-----	5.08	5.876E+00	-----	Line Not Found	-----
	185.72	124	57.20	5.570E+00	1.999E-01	1.999E-01	43.72
	205.31	-----	5.01	5.260E+00	-----	Line Not Found	-----
AM-241	59.54	42	35.90*	1.428E+00	4.218E-01	4.223E-01	111.73
AM-243	43.53	-----	5.90	1.216E-01	-----	Line Not Found	-----
	74.66	170	67.20*	3.129E+00	4.149E-01	4.149E-01	31.58
ANH-511	511.00	17	100.00*	2.464E+00	3.567E-02	3.567E-02	269.31

Flag: "*" = Keyline

Total number of lines in spectrum 48
Number of unidentified lines 13
Number of lines tentatively identified by NID 35 72.92%

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	1.552E+01	1.552E+01	0.171E+01	11.02	
SC-46	83.79D	12.5	1.220E-02	1.530E-01	3.172E-01	207.36	
CD-109	461.40D	1.58	2.018E+00	3.195E+00	2.234E+00	69.94	
SN-126	2.30E+05Y	1.00	2.018E-01	2.018E-01	1.412E-01	69.94	
CE-141	32.51D	677.	2.745E-02	1.859E+01	5.689E+01	306.07	
TL-208	1.41E+10Y	1.00	3.376E-01	3.376E-01	0.836E-01	24.76	
BI-211	7.04E+08Y	1.00	3.062E+00	3.062E+00	0.531E+00	17.33	
PB-212	1.41E+10Y	1.00	1.202E+00	1.202E+00	0.133E+00	11.04	
BI-214	1600.00Y	1.00	8.347E-01	8.350E-01	2.245E-01	26.88	
PB-214	1600.00Y	1.00	1.111E+00	1.112E+00	0.193E+00	17.33	
RN-222	1600.00Y	1.00	8.347E-01	8.350E-01	2.245E-01	26.88	
RA-224	1.41E+10Y	1.00	3.716E+00	3.716E+00	1.316E+00	35.42	
RA-226	1600.00Y	1.00	8.347E-01	8.350E-01	2.245E-01	26.88	
AC-228	1.41E+10Y	1.00	1.296E+00	1.296E+00	0.291E+00	22.47	
RA-228	1.41E+10Y	1.00	1.296E+00	1.296E+00	0.291E+00	22.47	
TH-228	1.41E+10Y	1.00	1.202E+00	1.202E+00	0.133E+00	11.04	
TH-230	7.54E+04Y	1.00	8.347E-01	8.347E-01	2.244E-01	26.88	
TH-232	1.41E+10Y	1.00	1.296E+00	1.296E+00	0.291E+00	22.47	
U-234	2.45E+05Y	1.00	8.347E-01	8.347E-01	2.244E-01	26.88	
U-235	7.04E+08Y	1.00	1.209E-01	1.209E-01	3.702E-01	306.07	
AM-241	432.60Y	1.00	4.218E-01	4.223E-01	4.719E-01	111.73	
AM-243	7370.00Y	1.00	4.149E-01	4.149E-01	1.310E-01	31.58	
ANH-511	1.00E+09Y	1.00	3.567E-02	3.567E-02	9.606E-02	269.31	
Total Activity :			3.747E+01	5.735E+01			

Grand Total Activity : 3.747E+01 5.735E+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
1	80.99	43	111	1.25	161.77	141	24	9.67E-03	****	3.76E+00	T
0	114.29	37	130	2.27	228.39	225	9	8.52E-03	****	5.72E+00	T
0	129.76	34	131	1.28	259.36	253	9	7.80E-03	****	5.99E+00	T
0	208.40	60	141	0.68	416.67	412	11	1.44E-02	87.0	5.21E+00	
0	219.04	47	147	6.21	437.95	429	15	1.12E-02	****	5.04E+00	
0	320.25	28	50	0.65	640.43	634	12	7.01E-03	****	3.72E+00	T
0	382.39	41	92	7.31	764.75	748	21	1.05E-02	****	3.18E+00	T
0	409.10	39	23	3.19	818.17	813	10	1.00E-02	58.9	3.00E+00	
0	441.72	22	20	1.10	883.43	880	8	5.77E-03	83.4	2.80E+00	
0	464.44	20	60	3.37	928.88	920	13	5.18E-03	****	2.68E+00	T
0	566.62	7	32	1.47	1133.29	1126	10	1.94E-03	****	2.25E+00	
0	722.93	12	8	1.22	1445.96	1443	6	3.23E-03	****	1.83E+00	T
0	726.85	46	9	2.06	1453.81	1449	11	1.23E-02	39.3	1.82E+00	T
0	767.75	28	13	1.88	1535.63	1530	10	7.62E-03	61.5	1.74E+00	T
0	774.19	20	11	1.77	1548.50	1543	10	5.37E-03	81.0	1.73E+00	
0	833.02	6	9	0.72	1666.18	1660	8	1.58E-03	****	1.63E+00	T
0	884.64	15	6	0.85	1769.43	1765	9	4.03E-03	81.7	1.55E+00	T
0	890.84	9	1	0.95	1781.84	1779	6	2.42E-03	80.5	1.54E+00	
0	902.44	10	15	4.10	1805.04	1797	12	2.75E-03	****	1.52E+00	T
0	922.79	20	17	4.11	1845.74	1836	17	5.41E-03	****	1.49E+00	T
0	1042.99	8	8	1.24	2086.17	2080	10	2.26E-03	****	1.35E+00	
0	1215.78	19	6	3.78	2431.79	2425	13	5.34E-03	70.6	1.18E+00	
0	1314.44	4	4	0.94	2629.13	2623	8	1.11E-03	****	1.10E+00	
0	1341.47	10	3	0.96	2683.18	2676	11	2.79E-03	90.3	1.08E+00	
0	1353.06	6	2	0.75	2706.35	2702	8	1.63E-03	****	1.07E+00	
0	1847.26	11	0	2.31	3694.75	3690	10	3.33E-03	57.7	7.99E-01	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*                               *                                                *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235054.CNF;1    *
* Acquisition date   : 3-OCT-2016 07:07:21 Sensitivity      : 3.000              *
* Detector ID        : GAM43 Energy tolerance: 1.500          *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.68 Half life ratio  : *****          *
* Sample date        : 2-DEC-2015 14:51:00 Nuclide Library : SOLID          *
* Sample ID          : G405235054 Analyst initials: MXR1          *
* Batch Number       : 1596252 Sample Quantity : 1.4646E+02 GRAM      *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000          *
*                               Dry Weight      : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*                               *                                                *
* Eff. Cal. date     : 6-SEP-2016 07:25:20 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM43 CAN.CNF;7          *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.925E-01
SC-46	0.000E+00
CD-109	1.094E+00
SN-126	6.965E-02
TL-208	3.480E-02
BI-211	1.741E-01
PB-212	4.456E-02
BI-214	5.316E-02
PB-214	1.672E-01
RN-222	5.316E-02
RA-224	4.778E-01
RA-226	5.316E-02
AC-228	9.553E-02
RA-228	9.553E-02
TH-228	4.456E-02
TH-230	5.314E-02
TH-232	9.553E-02
U-234	5.314E-02
U-235	1.606E-01
AM-241	1.962E-01
AM-243	5.772E-02
ANH-511	3.044E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.225E+01	NOT IDENT.
NA-22	4.173E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.073E-02	NOT IDENT.
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.226E-02	NOT IDENT.
CO-56	4.298E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF

CO-57	4.522E-02	NOT IDENT.
CO-58	5.047E-01	NOT IDENT.
FE-59	7.741E+00	NOT IDENT.
CO-60	3.600E-02	NOT IDENT.
ZN-65	1.409E-01	NOT IDENT.
GE-68	2.523E+00	NOT IDENT.
AS-73	1.755E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.763E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	7.349E-01	NOT IDENT.
KR-85	7.810E+00	NOT IDENT.
SR-85	8.775E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	2.551E-01	NOT IDENT.
Y-91	4.295E+02	NOT IDENT.
NB-94	3.533E-02	NOT IDENT.
NB-95	9.455E-01	NOT IDENT.
NB-95M	2.263E+00	NOT IDENT.
ZR-95	1.242E+00	FAIL ABUN
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.040E-02	NOT IDENT.
RH-102	5.951E-02	FAIL ABUN
RU-103	5.885E+00	FAIL ABUN
RH-106	4.493E-01	NOT IDENT.
RU-106	4.493E-01	NOT IDENT.
AG-108M	2.408E-02	FAIL ABUN
AG-110M	1.128E-01	FAIL ABUN
SN-113	2.260E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.331E-01	NOT IDENT.
SB-124	1.981E+00	FAIL ABUN
SB-125	1.079E-01	FAIL ABUN
TE-125M	2.658E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.550E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	5.025E-02	NOT IDENT.
CS-135	1.244E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.504E-02	NOT IDENT.
CS-137	3.701E-02	NOT IDENT.
CE-139	1.122E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.361E+01	FAIL ABUN
CE-143	0.000E+00	SHORT HLIF
CE-144	3.318E-01	FAIL ABUN
PM-144	5.116E-02	NOT IDENT.
PR-144	4.458E+00	NOT IDENT.
PM-146	4.306E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	8.176E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.047E-02	FAIL ABUN
EU-152	8.296E-02	NOT IDENT.
GD-153	1.790E-01	NOT IDENT.
EU-154	1.028E-01	FAIL ABUN
EU-155	1.231E-01	FAIL ABUN
TB-160	1.926E+00	FAIL ABUN
HO-166M	6.344E-02	FAIL ABUN
TM-171	4.001E+01	NOT IDENT.
HF-172	2.283E-01	FAIL ABUN
LU-172	5.476E-02	FAIL ABUN
LU-176	2.144E-02	FAIL ABUN
HF-181	4.254E+00	NOT IDENT.
TA-182	9.505E-01	FAIL ABUN

RE-183	4.697E+00	FAIL ABUN
RE-184	3.862E+01	FAIL ABUN
W-188	1.147E+02	NOT IDENT.
IR-192	4.215E-01	FAIL ABUN
HG-203	2.276E+00	NOT IDENT.
BI-207	3.732E-02	FAIL ABUN
PB-210	9.681E+00	NOT IDENT.
PB-211	4.405E-01	FAIL ABUN
BI-212	6.991E-01	FAIL ABUN
RN-219	3.534E-01	NOT IDENT.
RA-223	4.633E-01	FAIL ABUN
AC-227	1.927E-01	FAIL ABUN
TH-227	1.927E-01	FAIL ABUN
TH-229	4.266E-01	FAIL ABUN
PA-231	4.276E-01	NOT IDENT.
TH-231	4.633E-01	FAIL ABUN
PA-233	5.170E-02	NOT IDENT.
PA-234	2.515E-01	FAIL ABUN
PA-234M	3.614E+00	FAIL ABUN
TH-234	1.713E+00	FAIL ABUN
NP-237	5.170E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
U-238	1.713E+00	FAIL ABUN
NP-239	2.143E-01	NOT IDENT.
PU-239	3.172E+02	FAIL ABUN
CM-243	9.835E-02	NOT IDENT.
BK-247	5.832E-02	NOT IDENT.
CM-247	3.143E-02	NOT IDENT.
CF-249	3.646E-02	NOT IDENT.
CF-251	1.025E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235054.CNF;1
* Acquisition date   : 3-OCT-2016 07:07:21 Sensitivity      : 3.000
* Detector ID        : GAM43 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.68 Half life ratio : *****
* Sample date        : 2-DEC-2015 14:51:00 Nuclide Library : SOLID
* Sample ID          : G405235054 Analyst initials: MXR1
* Batch Number       : 1596252 Sample Quantity : 1.4646E+02 GRAM
*                               Quantity Err(%) : 1.3656E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 6-SEP-2016 07:25:20 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM43 CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
              (pCi/GRAM )   (1.96-sigma)  (1.96-sigma)
K-40         1.552E+01      1.863E+00      1.863E+00
SC-46        1.530E-01      3.109E-01      3.109E-01
CD-109       1.581E+00      2.237E+00      2.237E+00
SN-126       9.991E-02      1.412E-01      1.412E-01
TL-208       3.376E-01      8.317E-02      8.317E-02
BI-211       1.521E-02      9.247E-01      9.247E-01
PB-212       1.202E+00      1.450E-01      1.450E-01
BI-214       8.350E-01      2.229E-01      2.229E-01
PB-214       1.112E+00      1.945E-01      1.945E-01
RN-222       8.350E-01      2.229E-01      2.229E-01
RA-224       1.761E+00      1.384E+00      1.384E+00
RA-226       8.350E-01      2.229E-01      2.229E-01
AC-228       1.296E+00      2.930E-01      2.930E-01
RA-228       1.296E+00      2.930E-01      2.930E-01
TH-228       1.202E+00      1.450E-01      1.450E-01
TH-230       8.347E-01      2.228E-01      2.228E-01
TH-232       1.296E+00      2.930E-01      2.930E-01
U-234        8.347E-01      2.228E-01      2.228E-01
U-235        1.209E-01      3.628E-01      3.628E-01
AM-241       4.223E-01      4.635E-01      4.635E-01
AM-243       3.195E-01      1.326E-01      1.326E-01
ANH-511      3.567E-02      9.415E-02      9.415E-02

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

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Nuclide      Key-Line
              Activity      K.L Act error      TPU
              (pCi/GRAM )   (1.96-sigma)  (1.96-sigma)
BE-7         -4.010E+00      1.522E+01      1.533E+01  NOT IDENT.
NA-22        1.351E-02      4.553E-02      4.594E-02  NOT IDENT.
NA-24        -1.000E+41      2.080E+41      0.000E+00  SHORT HLIF
AL-26        -7.073E-04      2.539E-02      2.539E-02  NOT IDENT.
V-48         -8.580E+03      1.636E+04      1.681E+04  SHORT HLIF
CR-51        8.187E+02      9.116E+02      9.835E+02  SHORT HLIF
MN-54        -5.347E-02      8.352E-02      8.693E-02  NOT IDENT.
CO-56        5.346E-02      4.945E-01      4.951E-01  NOT IDENT.

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MN-56	1.000E+41	9.252E+41	0.000E+00	SHORT HLIF
CO-57	1.423E-02	5.200E-02	5.239E-02	NOT IDENT.
CO-58	-3.193E-01	6.516E-01	6.673E-01	NOT IDENT.
FE-59	-6.345E-01	9.474E+00	9.478E+00	NOT IDENT.
CO-60	9.919E-03	3.968E-02	3.993E-02	NOT IDENT.
ZN-65	-1.844E-01	2.497E-01	2.632E-01	NOT IDENT.
GE-68	1.968E+00	2.655E+00	2.799E+00	NOT IDENT.
AS-73	5.872E+00	1.934E+01	1.952E+01	NOT IDENT.
AS-74	1.610E+03	6.774E+03	6.813E+03	SHORT HLIF
SE-75	-1.202E-01	2.123E-01	2.191E-01	NOT IDENT.
BR-77	1.190E+39	1.050E+40	0.000E+00	SHORT HLIF
SR-82	5.027E+01	1.047E+03	1.047E+03	SHORT HLIF
RB-83	4.129E-01	7.775E-01	7.995E-01	NOT IDENT.
KR-85	6.607E+00	9.460E+00	9.918E+00	NOT IDENT.
SR-85	7.420E-01	1.063E+00	1.114E+00	NOT IDENT.
RB-86	2.367E+04	3.809E+04	3.956E+04	SHORT HLIF
Y-88	1.067E-01	2.735E-01	2.777E-01	NOT IDENT.
Y-91	-1.996E+02	5.379E+02	5.453E+02	NOT IDENT.
NB-94	4.359E-02	3.495E-02	4.009E-02	NOT IDENT.
NB-95	3.122E-01	1.190E+00	1.198E+00	NOT IDENT.
NB-95M	-7.960E-01	2.918E+00	2.940E+00	NOT IDENT.
ZR-95	-5.800E-01	1.550E+00	1.572E+00	FAIL ABUN
NB-97	1.000E+41	3.737E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	2.783E+41	0.000E+00	SHORT HLIF
MO-99	3.133E+32	7.261E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	1.492E+42	0.000E+00	SHORT HLIF
RH-101	-2.173E-02	4.196E-02	4.309E-02	NOT IDENT.
RH-102	3.239E-02	6.335E-02	6.501E-02	FAIL ABUN
RU-103	8.324E-01	6.925E+00	6.935E+00	FAIL ABUN
RH-106	3.598E-02	5.063E-01	5.066E-01	NOT IDENT.
RU-106	3.598E-02	5.063E-01	5.066E-01	NOT IDENT.
AG-108M	1.463E-03	2.826E-02	2.826E-02	FAIL ABUN
AG-110M	1.566E-01	1.256E-01	1.441E-01	FAIL ABUN
SN-113	4.918E-02	2.585E-01	2.594E-01	NOT IDENT.
CD-115	4.496E+39	2.201E+40	0.000E+00	SHORT HLIF
SN-117M	5.210E+04	1.401E+05	1.421E+05	SHORT HLIF
TE-123M	2.600E-02	1.429E-01	1.434E-01	NOT IDENT.
SB-124	9.314E-03	2.371E+00	2.371E+00	FAIL ABUN
SB-125	1.178E-01	1.122E-01	1.241E-01	FAIL ABUN
TE-125M	-6.842E+01	3.182E+02	3.197E+02	NOT IDENT.
I-126	-3.929E+05	1.381E+06	1.393E+06	SHORT HLIF
SB-126	1.523E+06	2.051E+06	2.163E+06	SHORT HLIF
SB-127	3.402E+22	8.449E+22	0.000E+00	SHORT HLIF
I-131	-2.282E+09	7.919E+09	7.986E+09	SHORT HLIF
I-132	-1.000E+41	6.113E+42	0.000E+00	SHORT HLIF
TE-132	-5.877E+26	1.464E+27	0.000E+00	SHORT HLIF
BA-133	-1.789E-02	4.913E-02	4.979E-02	FAIL ABUN
I-133	-1.000E+41	6.871E+41	0.000E+00	SHORT HLIF
CS-134	3.433E-02	5.314E-02	5.535E-02	NOT IDENT.
CS-135	-2.465E-02	1.433E-01	1.437E-01	NOT IDENT.
I-135	-1.000E+41	1.157E+42	0.000E+00	SHORT HLIF
CS-136	7.616E+04	5.069E+05	5.080E+05	SHORT HLIF
BA-137M	-4.439E-03	4.073E-02	4.078E-02	NOT IDENT.
CS-137	-4.689E-03	4.303E-02	4.308E-02	NOT IDENT.
CE-139	5.433E-02	1.189E-01	1.214E-01	NOT IDENT.
BA-140	-7.218E+05	1.973E+06	2.000E+06	SHORT HLIF
LA-140	4.028E+05	6.048E+05	6.314E+05	SHORT HLIF
CE-141	1.859E+01	5.576E+01	5.638E+01	FAIL ABUN
CE-143	1.000E+41	6.779E+40	0.000E+00	SHORT HLIF
CE-144	-8.299E-02	3.789E-01	3.808E-01	FAIL ABUN
PM-144	2.420E-02	5.512E-02	5.619E-02	NOT IDENT.
PR-144	2.108E+00	4.802E+00	4.895E+00	NOT IDENT.
PM-146	4.022E-02	4.474E-02	4.827E-02	NOT IDENT.
ND-147	-5.996E+07	5.552E+07	6.175E+07	SHORT HLIF
PM-147	6.992E+02	8.982E+02	9.519E+02	NOT IDENT.
PM-149	1.000E+41	1.124E+41	0.000E+00	SHORT HLIF
EU-150	3.134E-04	2.641E-02	2.641E-02	FAIL ABUN
EU-152	-5.728E-02	1.165E-01	1.193E-01	NOT IDENT.
GD-153	-1.661E-01	2.434E-01	2.546E-01	NOT IDENT.
EU-154	3.504E-02	1.118E-01	1.129E-01	FAIL ABUN
EU-155	1.012E-01	1.355E-01	1.430E-01	FAIL ABUN
TB-160	5.072E-01	2.464E+00	2.475E+00	FAIL ABUN
HO-166M	3.067E-02	6.916E-02	7.053E-02	FAIL ABUN
TM-171	-3.926E+01	4.887E+01	5.198E+01	NOT IDENT.
HF-172	6.398E-02	2.871E-01	2.885E-01	FAIL ABUN
LU-172	-1.178E-01	9.392E-02	1.079E-01	FAIL ABUN
LU-176	7.663E-03	2.368E-02	2.393E-02	FAIL ABUN
HF-181	-1.270E-01	5.104E+00	5.105E+00	NOT IDENT.

TA-182	6.423E-01	1.097E+00	1.135E+00	FAIL ABUN
RE-183	9.110E+00	1.008E+01	1.088E+01	FAIL ABUN
RE-184	3.519E+01	5.891E+01	6.101E+01	FAIL ABUN
W-188	2.453E+01	1.430E+02	1.435E+02	NOT IDENT.
IR-192	-4.296E-01	6.061E-01	6.363E-01	FAIL ABUN
HG-203	-2.098E+00	2.798E+00	2.954E+00	NOT IDENT.
BI-207	-2.219E-02	5.014E-02	5.113E-02	FAIL ABUN
PB-210	2.532E+00	1.050E+01	1.056E+01	NOT IDENT.
PB-211	-1.013E+00	7.909E-01	9.134E-01	FAIL ABUN
BI-212	1.926E+00	7.476E-01	1.146E+00	FAIL ABUN
RN-219	2.876E-01	3.779E-01	3.996E-01	NOT IDENT.
RA-223	-1.866E-01	6.285E-01	6.341E-01	FAIL ABUN
AC-227	-5.008E-02	2.226E-01	2.237E-01	FAIL ABUN
TH-227	-5.008E-02	2.226E-01	2.237E-01	FAIL ABUN
TH-229	1.847E-01	4.559E-01	4.635E-01	FAIL ABUN
PA-231	3.344E-01	4.612E-01	4.852E-01	NOT IDENT.
TH-231	-1.866E-01	6.285E-01	6.341E-01	FAIL ABUN
PA-233	-1.938E-02	6.152E-02	6.213E-02	NOT IDENT.
PA-234	-1.068E-01	3.420E-01	3.454E-01	FAIL ABUN
PA-234M	-3.132E+00	4.937E+00	5.135E+00	FAIL ABUN
TH-234	1.355E+00	1.951E+00	2.045E+00	FAIL ABUN
NP-237	-1.938E-02	6.152E-02	6.213E-02	NOT IDENT.
NP-238	-1.000E+41	7.184E+40	0.000E+00	SHORT HLIF
U-238	1.355E+00	1.951E+00	2.045E+00	FAIL ABUN
NP-239	-1.463E-01	2.926E-01	2.999E-01	NOT IDENT.
PU-239	4.577E+02	6.311E+02	6.640E+02	FAIL ABUN
CM-243	8.128E-03	1.140E-01	1.140E-01	NOT IDENT.
BK-247	-3.669E-02	7.033E-02	7.225E-02	NOT IDENT.
CM-247	2.675E-02	3.348E-02	3.558E-02	NOT IDENT.
CF-249	1.211E-02	4.121E-02	4.157E-02	NOT IDENT.
CF-251	-3.552E-02	1.151E-01	1.162E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	56.5264	87.09	88.9700	136.47	69.4951
45.60	58.9785	87.57	76.0074	140.51	0.0000
46.54	62.2691	88.03	76.0804	143.76	70.2601
49.72	0.0000	88.34	76.1292	144.24	70.3099
51.35	71.6210	88.47	76.1494	145.44	64.9173
51.87	64.3473	89.96	69.4391	152.43	78.0023
52.39	75.0109	1093.63	69.5357	153.25	0.0000
52.97	62.4388	91.11	0.0000	323.87	71.3231
53.44	56.1657	92.59	69.8099	156.02	0.0000
54.07	66.8845	93.35	69.9161	158.56	0.0000
57.36	0.0000	94.56	70.0841	159.00	74.3935
57.53	55.7471	94.65	70.0964	162.33	76.4701
57.98	62.9718	94.67	70.0992	162.66	0.0000
59.27	62.4755	94.87	70.1271	163.33	81.7939
59.32	62.4839	97.43	87.7068	165.86	68.9747
59.54	62.5211	98.43	67.4762	176.31	71.6891
60.96	77.9079	98.44	67.4775	176.60	0.0000
61.17	77.9513	99.53	56.6107	177.52	70.9131
62.93	62.3599	100.11	60.2154	181.07	0.0000
63.29	59.5149	102.03	73.4689	181.52	58.7980
63.58	65.3704	103.18	68.8763	184.41	61.6911
64.28	86.2262	103.37	68.9011	143.76	61.7907
66.73	70.2891	105.21	75.0956	193.51	57.8548
67.24	67.0794	105.31	75.1091	197.03	66.2654
125.81	84.7669	106.12	84.7724	198.01	63.6155
67.75	84.7810	106.47	83.6318	201.83	67.5495
69.67	76.7009	109.28	66.0447	203.43	47.1887
70.83	84.3113	111.00	57.8156	205.31	50.8648
72.81	89.1681	111.76	0.0000	210.85	71.9332
72.87	89.1809	114.06	70.2357	215.65	62.5822
74.66	89.5551	116.30	0.0000	222.11	50.4185
74.82	89.5880	116.74	72.9936	227.09	59.1349
74.97	89.6191	119.76	67.2536	227.38	66.6643
77.11	90.0598	121.12	56.3763	228.16	0.0000
78.74	90.3912	121.22	56.3857	228.18	64.8412
79.69	90.5829	121.78	61.3457	116.74	64.8412
80.12	90.6696	122.06	61.3743	235.69	68.1914
80.19	0.0000	122.92	79.9001	235.96	53.9999
80.57	90.7593	123.07	71.3128	238.63	54.1478
81.00	90.8453	265.00	78.7690	238.98	0.0000
81.07	90.8594	125.81	72.4561	240.99	54.2777
81.75	78.8622	127.23	80.8741	242.00	54.3333
83.79	61.6930	127.91	71.8754	244.70	41.5773
84.00	75.4368	129.30	72.0345	252.40	0.0000
85.43	87.1317	131.20	63.1161	252.80	37.5761
86.55	88.8697	133.02	59.9648	254.15	0.0000
86.79	88.9140	133.52	74.0145	256.23	47.3683
86.94	88.9423	136.00	72.7921	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	48.7254	355.39	0.0000	584.27	28.1552
264.80	48.7325	356.01	39.4615	595.83	0.0000
265.00	46.7920	364.49	0.0000	427.87	12.8208
268.22	50.8447	366.42	0.0000	602.52	0.0000
269.46	47.9662	372.51	35.1531	604.72	19.0874
270.03	46.0333	375.05	22.4112	607.14	17.4565
271.23	43.1433	377.52	22.4514	609.32	17.4750
273.65	0.0000	356.01	35.4405	610.33	17.4837
276.40	39.4076	388.16	32.3175	614.28	16.2271
277.37	53.2474	388.63	0.0000	618.01	21.1126
277.60	53.2584	391.69	31.3175	620.36	14.7959
278.00	51.3049	264.66	22.8201	621.93	17.5835
279.20	58.2750	401.81	21.7505	630.19	0.0000
279.54	64.2211	402.40	19.5831	631.29	16.7338
279.70	64.2303	404.85	39.2322	633.25	26.0543
280.46	37.5756	410.95	37.7533	634.78	0.0000
283.69	53.5529	413.71	18.0895	635.95	14.9077
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	41.7163	423.72	0.0000	645.85	20.5941
285.90	0.0000	427.09	28.7586	657.76	21.6509
287.50	53.7341	427.87	21.0267	657.90	0.0000
290.67	47.8984	433.94	24.4430	661.66	26.4055
293.27	0.0000	439.40	25.0864	664.57	0.0000
351.93	46.0852	453.88	15.7528	666.33	0.0000
295.96	37.5938	463.37	29.4277	666.50	0.0000
879.38	46.7214	468.07	25.5396	667.71	0.0000
299.98	36.2153	473.00	0.0000	677.62	20.8996
300.09	36.2190	475.06	27.3574	685.70	0.0000
300.13	36.2197	476.78	23.9625	695.00	0.0000
301.36	38.2721	477.60	29.6827	696.49	14.3706
302.85	58.4897	482.18	24.0403	696.51	14.3706
256.23	40.3947	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	18.2091
306.78	33.3901	497.08	23.0969	697.49	18.2108
308.46	36.4768	505.52	34.8145	702.65	13.4493
311.90	42.6793	507.63	0.0000	706.68	26.9464
316.51	50.4930	511.00	37.2516	711.68	21.2185
319.41	0.0000	514.00	27.9863	720.70	0.0000
320.08	0.0000	514.00	27.9863	721.93	0.0000
321.04	32.7637	520.40	23.6992	722.78	23.2588
323.87	35.4048	520.69	0.0000	722.91	23.2603
325.23	52.3945	522.65	0.0000	723.31	20.1621
328.76	0.0000	527.90	0.0000	724.19	0.0000
333.37	31.0217	528.26	24.6846	727.33	7.7681
333.97	31.0364	529.59	22.9380	733.00	9.0847
334.37	27.9415	529.87	0.0000	735.93	18.5170
338.28	28.0278	531.02	0.0000	333.97	21.4548
338.32	28.0289	537.26	0.0000	739.50	0.0000
311.90	38.9946	546.56	0.0000	747.24	17.6265
340.48	38.9946	552.55	22.3328	748.06	24.4896
340.55	0.0000	563.25	20.1243	752.31	16.6825
344.28	45.3674	569.33	31.7244	753.82	0.0000
345.93	38.8461	946.00	25.9585	756.73	16.7131
351.06	38.7893	569.70	20.1920	756.80	16.7136
351.93	38.8149	583.19	28.1401	884.68	22.0876

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	20.5258	1274.44	11.8154	1620.50	2.0307
766.42	14.2137	1001.03	19.3645	1621.92	3.0469
766.84	12.4111	1002.74	13.9934	1678.03	0.0000
772.60	0.0000	1004.73	15.0797	1690.97	4.1234
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	2.0936
778.90	7.9368	1028.54	0.0000	1063.66	1.7467
783.70	0.0000	1037.84	10.4520	1771.35	2.9950
785.37	15.9150	1038.76	0.0000	1791.20	0.0000
792.07	23.9370	631.29	5.2406	1808.65	2.1123
794.95	11.9824	1048.07	0.0000	1810.72	0.0000
795.86	12.9853	1049.04	14.2045	1836.06	3.1857
810.06	10.0452	1050.41	14.2108		
810.29	12.0553	1063.66	13.1719		
344.28	12.0560	1077.00	0.0000		
810.76	17.0815	1077.34	8.8188		
815.77	0.0000	1085.87	14.3687		
1048.07	0.0000	1093.63	21.0503		
832.01	10.1309	1099.45	16.6489		
834.85	21.0952	1112.07	8.9131		
835.71	17.8557	1112.84	11.1444		
836.80	0.0000	1115.54	19.6292		
846.75	0.0000	1120.29	15.6372		
846.77	12.2260	1120.55	15.6381		
856.80	0.0000	1221.41	15.6415		
860.56	19.4581	1129.67	19.7130		
871.09	21.5909	1131.51	0.0000		
873.19	10.2893	1147.95	0.0000		
875.33	0.0000	1173.23	14.5211		
879.38	13.2004	1177.95	9.9967		
880.51	16.5073	1189.05	10.0289		
883.24	18.1763	1204.77	11.9050		
884.68	14.8790	1221.41	9.2007		
889.28	0.0000	1231.02	15.6827		
894.76	8.2966	1235.36	0.0000		
898.04	19.9354	1238.28	15.7142		
900.72	16.6289	1260.41	0.0000		
903.28	11.0960	1271.87	15.8595		
911.20	9.3889	1274.44	7.4684		
912.08	9.3917	1274.54	7.4684		
923.98	0.0000	1291.59	7.5027		
926.50	11.7472	1298.22	0.0000		
929.11	20.1568	1312.11	0.0000		
937.49	14.7408	1332.49	6.6356		
944.13	0.0000	1362.66	0.0000		
946.00	16.8965	1365.19	2.8679		
949.00	15.8565	1368.63	0.0000		
667.71	0.0000	1384.29	8.6454		
962.31	11.8938	1408.01	9.6631		
964.08	15.3013	1457.56	0.0000		
966.17	25.5198	1460.82	2.9364		
911.20	20.2229	1489.16	5.9127		
968.97	20.2229	1505.03	5.9347		
983.53	0.0000	1584.12	4.0287		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:19:11.60

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235055.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM11.CNF;517
Background date  : 2-OCT-2016 11:00:34.
Sample date     : 2-DEC-2015 14:59:00. Acquisition date : 3-OCT-2016 07:18:44.
Sample ID      : G405235055 Sample quantity : 1.42583E+02 GRAM
Detector name   : GAM11 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.58 0.0%
Energy tolerance: 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID       : 1596252 Detector SN# :
Matrix Spike ID : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.34*	14	132	0.86	126.58	124	7	3.93E-03	142.8	
2	1	73.12*	22	130	1.00	146.16	143	17	6.03E-03	88.0	4.65E+00
3	1	74.95*	158	127	1.01	149.82	143	17	4.38E-02	14.2	
4	1	77.09*	247	122	1.01	154.11	143	17	6.87E-02	9.8	
5	5	87.10	125	155	1.45	174.14	165	29	3.48E-02	19.9	5.13E+00
6	5	88.77	45	148	1.52	177.48	165	29	1.24E-02	58.2	
7	5	90.10	90	110	1.12	180.13	165	29	2.50E-02	23.2	
8	5	92.62*	112	128	1.53	185.18	165	29	3.12E-02	23.3	
9	0	186.16*	95	138	1.39	372.40	368	11	2.63E-02	27.8	
10	0	209.16	55	101	1.29	418.42	413	10	1.54E-02	36.6	
11	0	216.23	10	77	1.18	432.57	429	7	2.67E-03	154.9	
12	6	238.58*	444	50	0.96	477.29	471	20	1.23E-01	5.5	1.70E+00
13	6	241.80	115	87	1.97	483.74	471	20	3.20E-02	22.6	
14	0	270.53	29	74	0.75	541.23	538	9	8.08E-03	57.0	
15	3	277.21	35	48	1.28	554.60	551	13	9.71E-03	38.4	1.99E+00
16	3	280.00*	15	48	1.61	560.20	551	13	4.03E-03	89.8	
17	0	295.32*	132	84	1.02	590.85	586	10	3.68E-02	15.7	
18	0	299.81	21	75	0.72	599.83	599	7	5.90E-03	71.0	
19	0	328.23	43	50	2.96	656.71	652	10	1.19E-02	34.6	
20	0	338.39*	102	47	1.07	677.03	673	10	2.84E-02	16.4	
21	0	352.03*	260	82	1.29	704.33	697	13	7.23E-02	9.6	
22	0	409.52	26	41	0.78	819.37	815	9	7.08E-03	49.2	
23	0	463.24	31	32	0.97	926.88	924	6	8.49E-03	33.3	
24	0	466.55	15	25	0.61	933.50	930	8	4.26E-03	62.5	
25	0	511.15*	55	39	1.68	1022.75	1015	16	1.54E-02	33.8	
26	0	546.28	12	9	1.33	1093.04	1090	6	3.44E-03	47.4	
27	0	583.16*	138	22	1.47	1166.82	1161	12	3.83E-02	11.3	
28	0	609.52*	163	46	1.38	1219.56	1214	11	4.52E-02	11.5	
29	0	724.04	16	11	2.30	1448.71	1445	7	4.31E-03	43.0	
30	0	727.29*	21	24	1.41	1455.21	1452	9	5.95E-03	47.0	
31	0	795.61	20	15	0.98	1591.89	1586	12	5.45E-03	48.1	
32	0	806.09	25	27	5.27	1612.85	1597	21	7.00E-03	54.7	
33	0	835.33	22	17	1.88	1671.35	1665	11	5.97E-03	42.5	
34	0	861.31	21	24	3.79	1723.33	1717	16	5.83E-03	56.5	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	902.13	24	17	3.44	1804.99	1796	17	6.64E-03	44.5	
36	0	911.50*	85	20	1.66	1823.73	1818	15	2.35E-02	16.0	
37	0	968.97*	54	11	1.04	1938.70	1934	9	1.49E-02	18.2	
38	0	992.16	6	7	0.59	1985.10	1982	8	1.78E-03	77.8	
39	0	1004.93	15	3	1.99	2010.65	2007	8	4.10E-03	34.5	
40	0	1011.06	6	8	0.74	2022.90	2017	8	1.73E-03	88.1	
41	0	1120.75*	41	30	2.17	2242.33	2235	12	1.14E-02	31.5	
42	0	1218.96	10	16	0.54	2438.77	2431	12	2.80E-03	88.8	
43	0	1238.47	24	11	0.87	2477.79	2472	11	6.67E-03	33.7	
44	0	1307.89	8	4	0.65	2616.65	2613	7	2.15E-03	59.4	
45	0	1311.09	6	2	0.98	2623.04	2620	7	1.67E-03	55.4	
46	0	1378.42	18	3	1.37	2757.71	2751	14	4.98E-03	32.2	
47	0	1460.98*	409	12	1.83	2922.82	2915	16	1.14E-01	5.3	
48	0	1510.64	6	3	1.33	3022.13	3018	8	1.67E-03	68.7	
49	0	1765.50*	9	18	1.53	3531.79	3524	10	2.49E-03	97.1	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235055.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 2-DEC-2015 14:59:00   Acquisition date : 3-OCT-2016 07:18:44
Sample ID        : G405235055             Sample quantity  : 142.58 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA11                Detector geometry: CAN
Elapsed live time: 0 01:00:00.00           Elapsed real time: 0 01:00:00.58   0.0%
Energy tolerance : 1.50 keV               Half life ratio  : 10.00
Errors propagated: No                     Systematic Error : 0.00 %
Efficiency type  : Linear                  Efficiencies at  : Peak Energy
Abundance limit  : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.238E+00	1.566E+01	1.566E+01	10.65	OK
MN-54	834.85	99.98*	1.951E+00	5.867E-02	1.157E-01	84.94	OK
CD-109	88.03	3.70*	6.347E+00	1.222E+00	1.934E+00	116.41	OK
SN-126	64.28	9.60	3.887E+00	2.492E-01	2.492E-01	285.54	OK
	86.94	8.90	6.243E+00	1.089E+00	1.089E+00	53.79	OK
	87.57	37.00*	6.243E+00	2.620E-01	2.620E-01	53.79	OK
HG-203	70.83	3.69	4.810E+00	-----	Line Not Found	-----	Absent
	72.87	6.19	5.060E+00	4.502E-01	4.252E+01	176.05	OK
	279.20	81.56*	4.679E+00	2.224E-02	2.101E+00	179.62	OK
TL-208	277.37	6.60	4.717E+00	6.579E-01	6.579E-01	76.73	OK
	583.19	85.00*	2.582E+00	3.451E-01	3.451E-01	22.59	OK
	860.56	12.50	1.906E+00	4.681E-01	4.681E-01	113.09	OK
BI-211	72.87	1.23	5.060E+00	2.266E+00	2.266E+00	176.05	OK
	351.06	12.92*	3.883E+00	4.031E-01	4.031E-01	245.18	OK
PB-212	74.82	10.28	5.247E+00	1.369E+00	1.369E+00	41.15	OK
	77.11	17.10	5.454E+00	1.718E+00	1.718E+00	19.51	OK
	238.63	43.60*	5.301E+00	1.140E+00	1.140E+00	10.96	OK
	300.09	3.30	4.428E+00	8.462E-01	8.462E-01	142.02	OK
BI-214	609.32	45.49*	2.494E+00	7.851E-01	7.853E-01	22.91	OK
	1120.29	14.92	1.547E+00	9.205E-01	9.209E-01	62.91	OK
	1764.49	15.30	1.039E+00	2.798E-01	2.799E-01	194.22	OK
PB-214	74.82	5.80	5.234E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	5.454E+00	3.028E+00	3.029E+00	19.51	OK
	87.09	3.41	6.242E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	5.244E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	4.482E+00	9.343E-01	9.346E-01	31.36	OK
	351.93	35.60*	3.884E+00	-----	Line Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	2.494E+00	7.851E-01	7.853E-01	22.91	OK
	1120.29	14.92	1.547E+00	9.205E-01	9.209E-01	62.91	OK
	1764.49	15.30	1.039E+00	2.798E-01	2.799E-01	194.22	OK
RA-224	240.99	4.10*	5.247E+00	1.519E+00	1.519E+00	100.40	OK
RA-226	609.32	45.49*	2.494E+00	7.851E-01	7.853E-01	22.91	OK
	1120.29	14.92	1.547E+00	9.205E-01	9.209E-01	62.91	OK
	1764.49	15.30	1.039E+00	2.798E-01	2.799E-01	194.22	OK
AC-228	105.21	1.10	7.023E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.011E+00	1.305E+00	1.305E+00	32.77	OK
	794.95	4.25	2.027E+00	1.219E+00	1.219E+00	96.12	OK
	835.71	1.61	1.951E+00	3.643E+00	3.643E+00	84.94	OK
	911.20	25.80*	1.823E+00	9.506E-01	9.506E-01	32.02	OK
	968.97	15.80	1.738E+00	1.028E+00	1.028E+00	36.48	OK
RA-228	105.21	1.10	7.023E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.011E+00	1.305E+00	1.305E+00	32.77	OK
	794.95	4.25	2.027E+00	1.219E+00	1.219E+00	96.12	OK
	835.71	1.61	1.951E+00	3.643E+00	3.643E+00	84.94	OK
	911.20	25.80*	1.823E+00	9.506E-01	9.506E-01	32.02	OK
	968.97	15.80	1.738E+00	1.028E+00	1.028E+00	36.48	OK
TH-228	74.82	10.28	5.247E+00	1.369E+00	1.369E+00	41.15	OK
	77.11	17.10	5.454E+00	1.718E+00	1.718E+00	19.51	OK
	238.63	43.60*	5.301E+00	1.140E+00	1.140E+00	10.96	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	300.09	3.30	4.428E+00	8.462E-01	8.462E-01	142.02	OK
	609.32	45.49*	2.494E+00	7.851E-01	7.851E-01	22.91	OK
	1120.29	14.92	1.547E+00	9.205E-01	9.206E-01	62.91	OK
	1764.49	15.30	1.039E+00	2.798E-01	2.798E-01	194.22	OK
TH-232	105.21	1.10	7.023E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.011E+00	1.305E+00	1.305E+00	32.77	OK
	835.71	1.61	1.951E+00	3.643E+00	3.643E+00	84.94	OK
	911.20	25.80*	1.823E+00	9.506E-01	9.506E-01	32.02	OK
	968.97	15.80	1.738E+00	1.028E+00	1.028E+00	36.48	OK
TH-234	63.29	3.70*	3.887E+00	6.466E-01	6.466E-01	285.54	OK
	92.59	4.23	6.560E+00	2.586E+00	2.586E+00	46.65	OK
U-234	609.32	45.49*	2.494E+00	7.851E-01	7.851E-01	22.91	OK
	1120.29	14.92	1.547E+00	9.205E-01	9.205E-01	62.91	OK
	1764.49	15.30	1.039E+00	2.798E-01	2.798E-01	194.22	OK
U-235	89.96	3.47	6.425E+00	2.578E+00	2.578E+00	46.33	OK
	93.35	5.60	6.560E+00	1.953E+00	1.953E+00	46.65	OK
	143.76	10.96*	7.059E+00	-----	Line Not Found	-----	Absent
	163.33	5.08	6.731E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	6.280E+00	1.592E-01	1.592E-01	55.51	OK
U-238	205.31	5.01	5.902E+00	-----	Line Not Found	-----	Absent
	63.29	3.70*	3.887E+00	6.466E-01	6.466E-01	285.54	OK
	92.59	4.23	6.560E+00	2.586E+00	2.586E+00	46.65	OK
AM-243	43.53	5.90	9.310E-01	-----	Line Not Found	-----	Absent
	74.66	67.20*	5.247E+00	2.095E-01	2.095E-01	41.15	OK
ANH-511	511.00	100.00*	2.867E+00	1.076E-01	1.076E-01	67.65	OK

Flag: "*" = Keyline


```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235055.CNF;1 *
* Acquisition date   : 3-OCT-2016 07:18:44 Sensitivity      : 3.000          *
* Detector ID        : GAM11 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit: 75.000 *
* Elapsed real time  : 0 01:00:00.58 Half life ratio: ***** *
* Sample date       : 2-DEC-2015 14:59:00 Analyst initials: MXR1 *
* Sample ID         : G405235055 Sample Quantity: 1.4258E+02 GRAM *
* Batch Number      : 1596252 Wet Weight : 0.00000 *
* Wet wt corr       : 1.00000 Dry Weight : 0.00000 *
* Nuclide Library   : SOLID.NLB;6 *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date    : 2-AUG-2016 10:31:39 Eff. Geometry   : CAN *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM11.CAN.CNF;14 *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.566E+01	1.635E+00	7.527E-01
MN-54	1.157E-01	9.631E-02	1.061E-01
CD-109	1.934E+00	2.207E+00	1.583E+00
SN-126	2.620E-01	1.381E-01	1.004E-01
HG-203	2.101E+00	3.698E+00	4.402E+00
TL-208	3.451E-01	7.639E-02	6.780E-02
BI-211	4.031E-01	9.685E-01	3.207E-01
PB-212	1.140E+00	1.224E-01	8.561E-02
BI-214	7.853E-01	1.764E-01	1.117E-01
PB-214	1.081E+00	2.029E-01	3.276E-01
RN-222	7.853E-01	1.764E-01	1.117E-01
RA-224	1.519E+00	1.495E+00	9.180E-01
RA-226	7.853E-01	1.764E-01	1.117E-01
AC-228	9.506E-01	2.983E-01	1.994E-01
RA-228	9.506E-01	2.983E-01	1.994E-01
TH-228	1.140E+00	1.224E-01	8.561E-02
TH-230	7.851E-01	1.763E-01	1.116E-01
TH-232	9.506E-01	2.983E-01	1.994E-01
TH-234	6.466E-01	1.809E+00	1.744E+00
U-234	7.851E-01	1.763E-01	1.116E-01
U-235	1.054E-01	1.839E-01	3.559E-01
U-238	6.466E-01	1.809E+00	1.744E+00
AM-243	2.095E-01	8.449E-02	7.061E-02
ANH-511	1.076E-01	7.132E-02	4.428E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	2.135E+00	1.313E+01	2.602E+01	NOT IDENT.
NA-22	-7.539E-03	3.370E-02	6.721E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	-2.270E-02	2.650E-02	3.826E-02	NOT IDENT.
SC-46	-1.034E-01	3.186E-01	5.819E-01	FAIL ABUN
V-48	0.000E+00	1.852E+04	0.000E+00	SHORT HLIF

CR-51	0.000E+00	3.940E+02	0.000E+00	SHORT HLIF
CO-56	-9.827E-02	4.747E-01	8.743E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-1.965E-02	4.152E-02	7.600E-02	NOT IDENT.
CO-58	5.349E-01	5.409E-01	1.165E+00	NOT IDENT.
FE-59	-2.997E+00	6.039E+00	1.130E+01	NOT IDENT.
CO-60	5.845E-03	3.957E-02	8.222E-02	NOT IDENT.
ZN-65	-5.151E-02	1.780E-01	2.958E-01	NOT IDENT.
GE-68	8.335E-01	2.155E+00	4.619E+00	NOT IDENT.
AS-73	2.915E-01	6.694E+00	1.341E+01	NOT IDENT.
AS-74	0.000E+00	6.458E+03	0.000E+00	SHORT HLIF
SE-75	1.280E-01	2.108E-01	4.065E-01	FAIL ABUN
BR-77	0.000E+00	1.213E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	5.781E+02	0.000E+00	SHORT HLIF
RB-83	1.943E-01	5.513E-01	1.149E+00	NOT IDENT.
KR-85	4.389E+00	7.099E+00	1.350E+01	NOT IDENT.
SR-85	4.913E-01	7.974E-01	1.516E+00	NOT IDENT.
RB-86	0.000E+00	3.281E+04	0.000E+00	SHORT HLIF
Y-88	5.113E-02	1.433E-01	3.836E-01	NOT IDENT.
Y-91	5.437E+01	4.841E+02	9.935E+02	NOT IDENT.
NB-94	2.015E-03	2.978E-02	5.755E-02	NOT IDENT.
NB-95	-7.864E-01	9.864E-01	1.645E+00	NOT IDENT.
NB-95M	7.041E-01	2.337E+00	4.087E+00	NOT IDENT.
ZR-95	1.273E+00	1.398E+00	3.065E+00	FAIL ABUN
NB-97	0.000E+00	1.777E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.451E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	7.218E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-8.904E-03	3.026E-02	5.594E-02	NOT IDENT.
RH-102	2.331E-02	5.997E-02	1.209E-01	NOT IDENT.
RU-103	-1.254E+00	5.342E+00	1.024E+01	FAIL ABUN
RH-106	-3.852E-01	4.630E-01	7.868E-01	NOT IDENT.
RU-106	-3.852E-01	4.630E-01	7.868E-01	NOT IDENT.
AG-108M	-1.872E-02	2.145E-02	3.788E-02	FAIL ABUN
AG-110M	7.178E-02	1.000E-01	2.123E-01	NOT IDENT.
SN-113	-1.212E-01	2.078E-01	3.857E-01	NOT IDENT.
CD-115	0.000E+00	1.703E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.170E+05	0.000E+00	SHORT HLIF
TE-123M	-2.961E-02	1.236E-01	2.261E-01	NOT IDENT.
SB-124	-7.729E-01	1.971E+00	3.721E+00	FAIL ABUN
SB-125	3.077E-03	1.046E-01	2.047E-01	FAIL ABUN
TE-125M	4.238E+01	2.603E+02	5.035E+02	NOT IDENT.
I-126	0.000E+00	1.091E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.564E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	5.586E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	6.899E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.256E+27	0.000E+00	SHORT HLIF
BA-133	-7.207E-03	3.586E-02	6.292E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	8.021E-02	7.556E-02	1.061E-01	FAIL ABUN
CS-135	-8.247E-02	1.558E-01	2.408E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.942E+05	0.000E+00	SHORT HLIF
BA-137M	-1.994E-03	2.939E-02	6.125E-02	NOT IDENT.
CS-137	-2.107E-03	3.105E-02	6.470E-02	NOT IDENT.
CE-139	6.543E-02	1.032E-01	2.023E-01	NOT IDENT.
BA-140	0.000E+00	1.696E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	6.159E+05	0.000E+00	SHORT HLIF
CE-141	-2.425E+01	2.762E+01	4.810E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	7.253E-02	3.338E-01	6.393E-01	NOT IDENT.
PM-144	2.415E-02	5.483E-02	1.108E-01	NOT IDENT.
PR-144	2.030E+00	4.767E+00	9.618E+00	NOT IDENT.
PM-146	-4.580E-04	3.984E-02	7.823E-02	NOT IDENT.
ND-147	0.000E+00	4.655E+07	0.000E+00	SHORT HLIF
PM-147	-5.363E+01	6.984E+02	1.324E+03	NOT IDENT.
PM-149	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
EU-150	-6.984E-03	2.588E-02	4.469E-02	FAIL ABUN
EU-152	-5.224E-03	7.306E-02	1.457E-01	NOT IDENT.
GD-153	-9.376E-02	1.649E-01	2.789E-01	NOT IDENT.
EU-154	-1.843E-02	8.236E-02	1.643E-01	FAIL ABUN
EU-155	4.286E-02	9.480E-02	1.876E-01	FAIL ABUN
TB-160	-6.734E-02	1.655E+00	3.197E+00	FAIL ABUN
HO-166M	-5.234E-03	5.855E-02	1.099E-01	FAIL ABUN
TM-171	-7.729E-01	1.458E+01	2.911E+01	NOT IDENT.
HF-172	-3.845E-02	2.111E-01	3.938E-01	FAIL ABUN
LU-172	4.600E-02	6.608E-02	1.490E-01	FAIL ABUN

LU-176	-1.423E-02	2.274E-02	3.781E-02	FAIL ABUN
HF-181	-3.849E+00	4.018E+00	6.906E+00	NOT IDENT.
TA-182	5.096E-02	8.101E-01	1.486E+00	FAIL ABUN
RE-183	-1.584E-01	2.217E+00	4.397E+00	NOT IDENT.
RE-184	0.000E+00	6.264E+01	6.706E+01	FAIL ABUN
W-188	4.864E+01	1.191E+02	2.096E+02	FAIL ABUN
IR-192	-9.828E-02	4.658E-01	8.178E-01	FAIL ABUN
BI-207	2.538E-02	4.149E-02	9.231E-02	FAIL ABUN
PB-210	-1.565E-01	2.157E+00	4.309E+00	NOT IDENT.
PB-211	4.857E-01	7.072E-01	1.356E+00	NOT IDENT.
BI-212	7.973E-01	7.343E-01	1.204E+00	FAIL ABUN
RN-219	-2.008E-01	3.705E-01	6.866E-01	FAIL ABUN
RA-223	3.371E-03	5.541E-01	9.988E-01	FAIL ABUN
AC-227	-4.685E-02	2.038E-01	3.629E-01	FAIL ABUN
TH-227	-4.685E-02	2.038E-01	3.629E-01	FAIL ABUN
TH-229	2.503E-01	4.606E-01	8.830E-01	FAIL ABUN
PA-231	4.614E-01	4.617E-01	9.078E-01	NOT IDENT.
TH-231	3.371E-03	5.541E-01	9.988E-01	FAIL ABUN
PA-233	-4.883E-03	5.664E-02	1.011E-01	FAIL ABUN
PA-234	-7.978E-02	2.245E-01	4.036E-01	NOT IDENT.
PA-234M	2.193E-01	4.447E+00	7.990E+00	NOT IDENT.
NP-237	-4.883E-03	5.664E-02	1.011E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-1.615E-01	2.036E-01	3.634E-01	FAIL ABUN
PU-239	8.953E+01	2.788E+02	5.389E+02	NOT IDENT.
AM-241	2.645E-02	1.014E-01	2.048E-01	NOT IDENT.
CM-243	-7.247E-02	8.916E-02	1.604E-01	FAIL ABUN
BK-247	4.946E-02	7.313E-02	1.413E-01	NOT IDENT.
CM-247	-3.300E-02	3.395E-02	5.992E-02	FAIL ABUN
CF-249	8.827E-03	3.478E-02	7.019E-02	NOT IDENT.
CF-251	1.028E-01	9.801E-02	1.997E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	393	10.66*	1.238E+00	1.566E+01	1.566E+01	10.65
MN-54	834.85	22	99.98*	1.951E+00	5.867E-02	1.157E-01	84.94
CD-109	88.03	55	3.70*	6.347E+00	1.222E+00	1.934E+00	116.41
SN-126	64.28	18	9.60	3.887E+00	2.492E-01	2.492E-01	285.54
	86.94	153	8.90	6.243E+00	1.447E+00	1.447E+00	39.73
	87.57	153	37.00*	6.243E+00	3.481E-01	3.481E-01	39.73
HG-203	70.83	-----	3.69	4.810E+00	-----	Line Not Found	-----
	72.87	27	6.19	5.060E+00	4.502E-01	4.252E+01	176.05
	279.20	16	81.56*	4.679E+00	2.224E-02	2.101E+00	179.62
TL-208	277.37	39	6.60	4.717E+00	6.579E-01	6.579E-01	76.73
	583.19	144	85.00*	2.582E+00	3.451E-01	3.451E-01	22.59
	860.56	21	12.50	1.906E+00	4.681E-01	4.681E-01	113.09
BI-211	72.87	27	1.23	5.060E+00	2.266E+00	2.266E+00	176.05
	351.06	284	12.92*	3.883E+00	2.977E+00	2.977E+00	19.15
PB-212	74.82	194	10.28	5.247E+00	1.897E+00	1.897E+00	28.41
	77.11	304	17.10	5.454E+00	1.718E+00	1.718E+00	19.51
	238.63	500	43.60*	5.301E+00	1.140E+00	1.140E+00	10.96
	300.09	23	3.30	4.428E+00	8.462E-01	8.462E-01	142.02
BI-214	609.32	169	45.49*	2.494E+00	7.851E-01	7.853E-01	22.91
	1120.29	40	14.92	1.547E+00	9.205E-01	9.209E-01	62.91
	1764.49	8	15.30	1.039E+00	2.798E-01	2.799E-01	194.22
PB-214	74.82	194	5.80	5.247E+00	3.361E+00	3.363E+00	28.41
	77.11	304	9.70	5.454E+00	3.028E+00	3.029E+00	19.51
	87.09	153	3.41	6.243E+00	3.777E+00	3.778E+00	39.73
	242.00	130	7.25	5.247E+00	1.793E+00	1.794E+00	45.24
	295.22	147	18.42	4.482E+00	9.343E-01	9.346E-01	31.36
	351.93	284	35.60*	3.883E+00	1.081E+00	1.081E+00	19.15
RN-222	609.32	169	45.49*	2.494E+00	7.851E-01	7.853E-01	22.91
	1120.29	40	14.92	1.547E+00	9.205E-01	9.209E-01	62.91
	1764.49	8	15.30	1.039E+00	2.798E-01	2.799E-01	194.22
RA-224	240.99	130	4.10*	5.247E+00	3.171E+00	3.171E+00	45.24
RA-226	609.32	169	45.49*	2.494E+00	7.851E-01	7.853E-01	22.91
	1120.29	40	14.92	1.547E+00	9.205E-01	9.209E-01	62.91
	1764.49	8	15.30	1.039E+00	2.798E-01	2.799E-01	194.22
AC-228	105.21	-----	1.10	7.023E+00	-----	Line Not Found	-----
	338.32	112	11.27	4.011E+00	1.305E+00	1.305E+00	32.77
	794.95	20	4.25	2.027E+00	1.219E+00	1.219E+00	96.12
	835.71	22	1.61	1.951E+00	3.643E+00	3.643E+00	84.94
	911.20	85	25.80*	1.823E+00	9.506E-01	9.506E-01	32.02
	968.97	54	15.80	1.738E+00	1.028E+00	1.028E+00	36.48
RA-228	105.21	-----	1.10	7.023E+00	-----	Line Not Found	-----
	338.32	112	11.27	4.011E+00	1.305E+00	1.305E+00	32.77
	794.95	20	4.25	2.027E+00	1.219E+00	1.219E+00	96.12
	835.71	22	1.61	1.951E+00	3.643E+00	3.643E+00	84.94
	911.20	85	25.80*	1.823E+00	9.506E-01	9.506E-01	32.02
	968.97	54	15.80	1.738E+00	1.028E+00	1.028E+00	36.48
TH-228	74.82	194	10.28	5.247E+00	1.897E+00	1.897E+00	28.41

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	304	17.10	5.454E+00	1.718E+00	1.718E+00	19.51
	238.63	500	43.60*	5.301E+00	1.140E+00	1.140E+00	10.96
	300.09	23	3.30	4.428E+00	8.462E-01	8.462E-01	142.02
TH-230	609.32	169	45.49*	2.494E+00	7.851E-01	7.851E-01	22.91
	1120.29	40	14.92	1.547E+00	9.205E-01	9.206E-01	62.91
	1764.49	8	15.30	1.039E+00	2.798E-01	2.798E-01	194.22
TH-232	105.21	-----	1.10	7.023E+00	-----	Line Not Found	-----
	338.32	112	11.27	4.011E+00	1.305E+00	1.305E+00	32.77
	835.71	22	1.61	1.951E+00	3.643E+00	3.643E+00	84.94
	911.20	85	25.80*	1.823E+00	9.506E-01	9.506E-01	32.02
	968.97	54	15.80	1.738E+00	1.028E+00	1.028E+00	36.48
TH-234	63.29	18	3.70*	3.887E+00	6.466E-01	6.466E-01	285.54
	92.59	136	4.23	6.560E+00	2.586E+00	2.586E+00	46.65
U-234	609.32	169	45.49*	2.494E+00	7.851E-01	7.851E-01	22.91
	1120.29	40	14.92	1.547E+00	9.205E-01	9.205E-01	62.91
	1764.49	8	15.30	1.039E+00	2.798E-01	2.798E-01	194.22
U-235	89.96	109	3.47	6.425E+00	2.578E+00	2.578E+00	46.33
	93.35	136	5.60	6.560E+00	1.953E+00	1.953E+00	46.65
	143.76	-----	10.96*	7.059E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.731E+00	-----	Line Not Found	-----
	185.72	109	57.20	6.280E+00	1.592E-01	1.592E-01	55.51
	205.31	-----	5.01	5.902E+00	-----	Line Not Found	-----
U-238	63.29	18	3.70*	3.887E+00	6.466E-01	6.466E-01	285.54
	92.59	136	4.23	6.560E+00	2.586E+00	2.586E+00	46.65
AM-243	43.53	-----	5.90	9.310E-01	-----	Line Not Found	-----
	74.66	194	67.20*	5.247E+00	2.901E-01	2.901E-01	28.41
ANH-511	511.00	59	100.00*	2.867E+00	1.076E-01	1.076E-01	67.65

Flag: "*" = Keyline

Total number of lines in spectrum 49
Number of unidentified lines 9
Number of lines tentatively identified by NID 40 81.63%

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	1.566E+01	1.566E+01	0.167E+01	10.65	
MN-54	312.05D	1.97	5.867E-02	1.157E-01	0.983E-01	84.94	
CD-109	461.40D	1.58	1.222E+00	1.934E+00	2.252E+00	116.41	
SN-126	2.30E+05Y	1.00	3.481E-01	3.481E-01	1.383E-01	39.73	
HG-203	46.59D	94.5	2.224E-02	2.101E+00	3.774E+00	179.62	
TL-208	1.41E+10Y	1.00	3.451E-01	3.451E-01	0.780E-01	22.59	
BI-211	7.04E+08Y	1.00	2.977E+00	2.977E+00	0.570E+00	19.15	
PB-212	1.41E+10Y	1.00	1.140E+00	1.140E+00	0.125E+00	10.96	
BI-214	1600.00Y	1.00	7.851E-01	7.853E-01	1.800E-01	22.91	
PB-214	1600.00Y	1.00	1.081E+00	1.081E+00	0.207E+00	19.15	
RN-222	1600.00Y	1.00	7.851E-01	7.853E-01	1.800E-01	22.91	
RA-224	1.41E+10Y	1.00	3.171E+00	3.171E+00	1.435E+00	45.24	
RA-226	1600.00Y	1.00	7.851E-01	7.853E-01	1.800E-01	22.91	
AC-228	1.41E+10Y	1.00	9.506E-01	9.506E-01	3.044E-01	32.02	
RA-228	1.41E+10Y	1.00	9.506E-01	9.506E-01	3.044E-01	32.02	
TH-228	1.41E+10Y	1.00	1.140E+00	1.140E+00	0.125E+00	10.96	
TH-230	7.54E+04Y	1.00	7.851E-01	7.851E-01	1.799E-01	22.91	
TH-232	1.41E+10Y	1.00	9.506E-01	9.506E-01	3.044E-01	32.02	
TH-234	4.47E+09Y	1.00	6.466E-01	6.466E-01	18.46E-01	285.54	
U-234	2.45E+05Y	1.00	7.851E-01	7.851E-01	1.799E-01	22.91	
U-235	7.04E+08Y	1.00	1.592E-01	1.592E-01	0.884E-01	55.51	K
U-238	4.47E+09Y	1.00	6.466E-01	6.466E-01	18.46E-01	285.54	
AM-243	7370.00Y	1.00	2.901E-01	2.901E-01	0.824E-01	28.41	
ANH-511	1.00E+09Y	1.00	1.076E-01	1.076E-01	0.728E-01	67.65	
Total Activity :			3.580E+01	3.865E+01			

Grand Total Activity : 3.580E+01 3.865E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.16	63	114	1.29	418.42	413	10	1.54E-02	73.2	5.83E+00	
0	216.23	11	88	1.18	432.57	429	7	2.67E-03	****	5.70E+00	T
0	270.53	32	82	0.75	541.23	538	9	8.08E-03	****	4.81E+00	T
0	328.23	47	55	2.96	656.71	652	10	1.19E-02	69.2	4.11E+00	T
0	409.52	27	44	0.78	819.37	815	9	7.08E-03	98.3	3.43E+00	T
0	463.24	33	35	0.97	926.88	924	6	8.49E-03	66.6	3.10E+00	T
0	466.55	16	26	0.61	933.50	930	8	4.26E-03	****	3.09E+00	
0	546.28	13	9	1.33	1093.04	1090	6	3.44E-03	94.9	2.72E+00	T
0	724.04	16	11	2.30	1448.71	1445	7	4.31E-03	86.0	2.18E+00	T
0	727.29	22	25	1.41	1455.21	1452	9	5.95E-03	94.0	2.17E+00	T
0	806.09	26	27	5.27	1612.85	1597	21	7.00E-03	****	2.01E+00	
0	902.13	24	17	3.44	1804.99	1796	17	6.64E-03	89.0	1.84E+00	T
0	992.16	6	7	0.59	1985.10	1982	8	1.78E-03	****	1.71E+00	
0	1004.93	15	3	1.99	2010.65	2007	8	4.10E-03	69.0	1.69E+00	T
0	1011.06	6	8	0.74	2022.90	2017	8	1.73E-03	****	1.68E+00	
0	1218.96	10	16	0.54	2438.77	2431	12	2.80E-03	****	1.44E+00	
0	1238.47	23	11	0.87	2477.79	2472	11	6.67E-03	67.3	1.43E+00	T
0	1307.89	8	4	0.65	2616.65	2613	7	2.15E-03	****	1.36E+00	
0	1311.09	6	2	0.98	2623.04	2620	7	1.67E-03	****	1.36E+00	T
0	1378.42	17	3	1.37	2757.71	2751	14	4.98E-03	64.3	1.30E+00	
0	1510.64	6	3	1.33	3022.13	3018	8	1.67E-03	****	1.20E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235055.CNF;1
* Acquisition date   : 3-OCT-2016 07:18:44 Sensitivity      : 3.000
* Detector ID        : GAM11 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.58 Half life ratio : *****
* Sample date        : 2-DEC-2015 14:59:00 Nuclide Library : SOLID
* Sample ID          : G405235055 Analyst initials: MXR1
* Batch Number       : 1596252 Sample Quantity : 1.4258E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 2-AUG-2016 10:31:39 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM11 CAN.CNF;14
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	3.222E-01
MN-54	4.574E-02
CD-109	7.401E-01
SN-126	4.696E-02
HG-203	2.019E+00
TL-208	3.059E-02
BI-211	1.457E-01
PB-212	3.960E-02
BI-214	4.942E-02
PB-214	1.585E-01
RN-222	4.942E-02
RA-224	4.247E-01
RA-226	4.942E-02
AC-228	8.436E-02
RA-228	8.436E-02
TH-228	3.960E-02
TH-230	4.940E-02
TH-232	8.436E-02
TH-234	8.192E-01
U-234	4.940E-02
U-235	1.683E-01
U-238	8.192E-01
AM-243	3.315E-02
ANH-511	1.960E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.177E+01	NOT IDENT.
NA-22	2.716E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.209E-02	NOT IDENT.
SC-46	2.422E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF

CO-56	3.790E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	3.535E-02	NOT IDENT.
CO-58	5.100E-01	NOT IDENT.
FE-59	4.705E+00	NOT IDENT.
CO-60	3.515E-02	NOT IDENT.
ZN-65	1.261E-01	NOT IDENT.
GE-68	2.004E+00	NOT IDENT.
AS-73	6.282E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.882E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.076E-01	NOT IDENT.
KR-85	6.128E+00	NOT IDENT.
SR-85	6.882E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.394E-01	NOT IDENT.
Y-91	4.260E+02	NOT IDENT.
NB-94	2.552E-02	NOT IDENT.
NB-95	7.275E-01	NOT IDENT.
NB-95M	1.891E+00	NOT IDENT.
ZR-95	1.360E+00	FAIL ABUN
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.615E-02	NOT IDENT.
RH-102	5.423E-02	NOT IDENT.
RU-103	4.517E+00	FAIL ABUN
RH-106	3.407E-01	NOT IDENT.
RU-106	3.407E-01	NOT IDENT.
AG-108M	1.646E-02	FAIL ABUN
AG-110M	9.371E-02	NOT IDENT.
SN-113	1.728E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.054E-01	NOT IDENT.
SB-124	1.393E+00	FAIL ABUN
SB-125	9.321E-02	FAIL ABUN
TE-125M	2.361E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.821E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	4.754E-02	FAIL ABUN
CS-135	1.109E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	2.710E-02	NOT IDENT.
CS-137	2.863E-02	NOT IDENT.
CE-139	9.467E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.256E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.999E-01	NOT IDENT.
PM-144	4.958E-02	NOT IDENT.
PR-144	4.302E+00	NOT IDENT.
PM-146	3.515E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	6.166E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.043E-02	FAIL ABUN
EU-152	6.554E-02	NOT IDENT.
GD-153	1.302E-01	NOT IDENT.
EU-154	6.639E-02	FAIL ABUN
EU-155	8.808E-02	FAIL ABUN
TB-160	1.359E+00	FAIL ABUN
HO-166M	4.890E-02	FAIL ABUN
TM-171	1.359E+01	NOT IDENT.
HF-172	1.844E-01	FAIL ABUN
LU-172	6.465E-02	FAIL ABUN
LU-176	1.709E-02	FAIL ABUN

HF-181	3.005E+00	NOT IDENT.
TA-182	6.254E-01	FAIL ABUN
RE-183	2.053E+00	NOT IDENT.
RE-184	2.943E+01	FAIL ABUN
W-188	9.638E+01	FAIL ABUN
IR-192	3.718E-01	FAIL ABUN
BI-207	4.008E-02	FAIL ABUN
PB-210	2.020E+00	NOT IDENT.
PB-211	6.221E-01	NOT IDENT.
BI-212	5.519E-01	FAIL ABUN
RN-219	3.114E-01	FAIL ABUN
RA-223	4.550E-01	FAIL ABUN
AC-227	1.659E-01	FAIL ABUN
TH-227	1.659E-01	FAIL ABUN
TH-229	4.141E-01	FAIL ABUN
PA-231	4.227E-01	NOT IDENT.
TH-231	4.550E-01	FAIL ABUN
PA-233	4.609E-02	FAIL ABUN
PA-234	1.678E-01	NOT IDENT.
PA-234M	3.489E+00	NOT IDENT.
NP-237	4.609E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.685E-01	FAIL ABUN
PU-239	2.530E+02	NOT IDENT.
AM-241	9.609E-02	NOT IDENT.
CM-243	7.493E-02	FAIL ABUN
BK-247	6.559E-02	NOT IDENT.
CM-247	2.703E-02	FAIL ABUN
CF-249	3.199E-02	NOT IDENT.
CF-251	9.317E-02	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.566E+01	1.828E+00	1.828E+00
MN-54	1.157E-01	9.643E-02	9.643E-02
CD-109	1.934E+00	2.212E+00	2.212E+00
SN-126	2.620E-01	1.395E-01	1.395E-01
HG-203	2.101E+00	3.700E+00	3.700E+00
TL-208	3.451E-01	7.779E-02	7.779E-02
BI-211	4.031E-01	9.814E-01	9.814E-01
PB-212	1.140E+00	1.365E-01	1.365E-01
BI-214	7.853E-01	1.795E-01	1.795E-01
PB-214	1.081E+00	2.078E-01	2.078E-01
RN-222	7.853E-01	1.795E-01	1.795E-01
RA-224	1.519E+00	1.501E+00	1.501E+00
RA-226	7.853E-01	1.795E-01	1.795E-01
AC-228	9.506E-01	3.023E-01	3.023E-01
RA-228	9.506E-01	3.023E-01	3.023E-01
TH-228	1.140E+00	1.365E-01	1.365E-01
TH-230	7.851E-01	1.795E-01	1.795E-01
TH-232	9.506E-01	3.023E-01	3.023E-01
TH-234	6.466E-01	1.815E+00	1.815E+00
U-234	7.851E-01	1.795E-01	1.795E-01
U-235	1.054E-01	1.840E-01	1.840E-01
U-238	6.466E-01	1.815E+00	1.815E+00
AM-243	2.095E-01	8.608E-02	8.608E-02
ANH-511	1.076E-01	7.145E-02	7.145E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	2.135E+00	1.313E+01	1.316E+01	NOT IDENT.
NA-22	-7.539E-03	3.370E-02	3.387E-02	NOT IDENT.
NA-24	1.000E+41	2.584E+41	0.000E+00	SHORT HLIF
AL-26	-2.270E-02	2.654E-02	2.844E-02	NOT IDENT.
SC-46	-1.034E-01	3.187E-01	3.221E-01	FAIL ABUN
V-48	5.826E+03	1.852E+04	1.870E+04	SHORT HLIF

CR-51	-2.688E+02	3.941E+02	4.123E+02	SHORT HLIF
CO-56	-9.827E-02	4.747E-01	4.768E-01	FAIL ABUN
MN-56	-1.000E+41	4.830E+41	0.000E+00	SHORT HLIF
CO-57	-1.965E-02	4.153E-02	4.247E-02	NOT IDENT.
CO-58	5.349E-01	5.414E-01	5.927E-01	NOT IDENT.
FE-59	-2.997E+00	6.043E+00	6.192E+00	NOT IDENT.
CO-60	5.845E-03	3.957E-02	3.966E-02	NOT IDENT.
ZN-65	-5.151E-02	1.780E-01	1.795E-01	NOT IDENT.
GE-68	8.335E-01	2.155E+00	2.188E+00	NOT IDENT.
AS-73	2.915E-01	6.695E+00	6.696E+00	NOT IDENT.
AS-74	6.843E+03	6.483E+03	7.180E+03	SHORT HLIF
SE-75	1.280E-01	2.109E-01	2.187E-01	FAIL ABUN
BR-77	1.130E+39	9.968E+39	0.000E+00	SHORT HLIF
SR-82	-8.309E+01	5.781E+02	5.793E+02	SHORT HLIF
RB-83	1.943E-01	5.519E-01	5.588E-01	NOT IDENT.
KR-85	4.389E+00	7.101E+00	7.372E+00	NOT IDENT.
SR-85	4.913E-01	7.977E-01	8.279E-01	NOT IDENT.
RB-86	-1.047E+04	3.281E+04	3.315E+04	SHORT HLIF
Y-88	5.113E-02	1.433E-01	1.452E-01	NOT IDENT.
Y-91	5.437E+01	4.841E+02	4.847E+02	NOT IDENT.
NB-94	2.015E-03	2.978E-02	2.980E-02	NOT IDENT.
NB-95	-7.864E-01	9.870E-01	1.049E+00	NOT IDENT.
NB-95M	7.041E-01	2.338E+00	2.359E+00	NOT IDENT.
ZR-95	1.273E+00	1.399E+00	1.512E+00	FAIL ABUN
NB-97	1.000E+41	1.777E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.451E+41	0.000E+00	SHORT HLIF
MO-99	8.174E+31	7.219E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	7.433E+41	0.000E+00	SHORT HLIF
RH-101	-8.904E-03	3.031E-02	3.057E-02	NOT IDENT.
RH-102	2.331E-02	6.000E-02	6.091E-02	NOT IDENT.
RU-103	-1.254E+00	5.342E+00	5.372E+00	FAIL ABUN
RH-106	-3.852E-01	4.636E-01	4.951E-01	NOT IDENT.
RU-106	-3.852E-01	4.636E-01	4.951E-01	NOT IDENT.
AG-108M	-1.872E-02	2.147E-02	2.307E-02	FAIL ABUN
AG-110M	7.178E-02	1.001E-01	1.052E-01	NOT IDENT.
SN-113	-1.212E-01	2.079E-01	2.149E-01	NOT IDENT.
CD-115	6.075E+38	1.703E+40	0.000E+00	SHORT HLIF
SN-117M	-3.391E+04	1.171E+05	1.181E+05	SHORT HLIF
TE-123M	-2.961E-02	1.236E-01	1.243E-01	NOT IDENT.
SB-124	-7.729E-01	1.972E+00	2.002E+00	FAIL ABUN
SB-125	3.077E-03	1.046E-01	1.046E-01	FAIL ABUN
TE-125M	4.238E+01	2.604E+02	2.611E+02	NOT IDENT.
I-126	1.381E+06	1.108E+06	1.271E+06	SHORT HLIF
SB-126	-9.968E+04	1.564E+06	1.565E+06	SHORT HLIF
SB-127	-7.840E+21	5.693E+22	0.000E+00	SHORT HLIF
I-131	6.016E+09	6.905E+09	7.418E+09	SHORT HLIF
I-132	-1.000E+41	2.068E+42	0.000E+00	SHORT HLIF
TE-132	3.828E+26	1.266E+27	0.000E+00	SHORT HLIF
BA-133	-7.207E-03	3.587E-02	3.601E-02	FAIL ABUN
I-133	1.000E+41	2.903E+41	0.000E+00	SHORT HLIF
CS-134	8.021E-02	7.564E-02	8.384E-02	FAIL ABUN
CS-135	-8.247E-02	1.559E-01	1.603E-01	NOT IDENT.
I-135	1.000E+41	7.480E+41	0.000E+00	SHORT HLIF
CS-136	-4.421E+04	3.943E+05	3.948E+05	SHORT HLIF
BA-137M	-1.994E-03	2.939E-02	2.940E-02	NOT IDENT.
CS-137	-2.107E-03	3.105E-02	3.106E-02	NOT IDENT.
CE-139	6.543E-02	1.040E-01	1.081E-01	NOT IDENT.
BA-140	1.882E+06	1.698E+06	1.898E+06	SHORT HLIF
LA-140	-4.197E+05	6.162E+05	6.446E+05	SHORT HLIF
CE-141	-2.425E+01	2.764E+01	2.973E+01	NOT IDENT.
CE-143	1.000E+41	2.204E+42	0.000E+00	SHORT HLIF
CE-144	7.253E-02	3.338E-01	3.354E-01	NOT IDENT.
PM-144	2.415E-02	5.485E-02	5.592E-02	NOT IDENT.
PR-144	2.030E+00	4.768E+00	4.855E+00	NOT IDENT.
PM-146	-4.580E-04	3.984E-02	3.984E-02	NOT IDENT.
ND-147	-7.527E+06	4.655E+07	4.667E+07	SHORT HLIF
PM-147	-5.363E+01	6.984E+02	6.988E+02	NOT IDENT.
PM-149	2.313E+39	2.510E+41	0.000E+00	SHORT HLIF
EU-150	-6.984E-03	2.588E-02	2.608E-02	FAIL ABUN
EU-152	-5.224E-03	7.306E-02	7.310E-02	NOT IDENT.
GD-153	-9.376E-02	1.650E-01	1.704E-01	NOT IDENT.
EU-154	-1.843E-02	8.237E-02	8.279E-02	FAIL ABUN
EU-155	4.286E-02	9.485E-02	9.680E-02	FAIL ABUN
TB-160	-6.734E-02	1.655E+00	1.656E+00	FAIL ABUN
HO-166M	-5.234E-03	5.855E-02	5.860E-02	FAIL ABUN
TM-171	-7.729E-01	1.458E+01	1.458E+01	NOT IDENT.
HF-172	-3.845E-02	2.112E-01	2.119E-01	FAIL ABUN
LU-172	4.600E-02	6.625E-02	6.942E-02	FAIL ABUN

LU-176	-1.423E-02	2.275E-02	2.364E-02	FAIL ABUN
HF-181	-3.849E+00	4.021E+00	4.379E+00	NOT IDENT.
TA-182	5.096E-02	8.101E-01	8.104E-01	FAIL ABUN
RE-183	-1.584E-01	2.217E+00	2.218E+00	NOT IDENT.
RE-184	7.182E+01	6.503E+01	7.265E+01	FAIL ABUN
W-188	4.864E+01	1.192E+02	1.212E+02	FAIL ABUN
IR-192	-9.828E-02	4.658E-01	4.679E-01	FAIL ABUN
BI-207	2.538E-02	4.150E-02	4.305E-02	FAIL ABUN
PB-210	-1.565E-01	2.157E+00	2.158E+00	NOT IDENT.
PB-211	4.857E-01	7.076E-01	7.407E-01	NOT IDENT.
BI-212	7.973E-01	7.354E-01	8.185E-01	FAIL ABUN
RN-219	-2.008E-01	3.714E-01	3.822E-01	FAIL ABUN
RA-223	3.371E-03	5.541E-01	5.541E-01	FAIL ABUN
AC-227	-4.685E-02	2.039E-01	2.050E-01	FAIL ABUN
TH-227	-4.685E-02	2.039E-01	2.050E-01	FAIL ABUN
TH-229	2.503E-01	4.607E-01	4.744E-01	FAIL ABUN
PA-231	4.614E-01	4.721E-01	5.159E-01	NOT IDENT.
TH-231	3.371E-03	5.541E-01	5.541E-01	FAIL ABUN
PA-233	-4.883E-03	5.664E-02	5.668E-02	FAIL ABUN
PA-234	-7.978E-02	2.423E-01	2.450E-01	NOT IDENT.
PA-234M	2.193E-01	4.447E+00	4.448E+00	NOT IDENT.
NP-237	-4.883E-03	5.664E-02	5.668E-02	FAIL ABUN
NP-238	1.000E+41	4.420E+41	0.000E+00	SHORT HLIF
NP-239	-1.615E-01	2.040E-01	2.166E-01	FAIL ABUN
PU-239	8.953E+01	2.788E+02	2.817E+02	NOT IDENT.
AM-241	2.645E-02	1.015E-01	1.022E-01	NOT IDENT.
CM-243	-7.247E-02	8.941E-02	9.519E-02	FAIL ABUN
BK-247	4.946E-02	7.381E-02	7.710E-02	NOT IDENT.
CM-247	-3.300E-02	3.440E-02	3.748E-02	FAIL ABUN
CF-249	8.827E-03	3.478E-02	3.501E-02	NOT IDENT.
CF-251	1.028E-01	9.869E-02	1.090E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	55.4826	87.09	69.5624	136.47	58.4507
45.60	62.6247	87.57	69.6319	140.51	0.0000
46.54	66.2062	88.03	69.6979	143.76	76.7111
49.72	0.0000	88.34	69.7420	144.24	68.4663
51.35	63.7357	88.47	69.7606	145.44	99.7617
51.87	62.9705	89.96	69.9729	152.43	72.4218
52.39	68.2495	1093.63	70.0689	153.25	0.0000
52.97	56.2492	91.11	0.0000	323.87	53.6622
53.44	72.7896	92.59	70.3432	156.02	0.0000
54.07	83.3379	93.35	70.4488	158.56	0.0000
57.36	0.0000	94.56	70.6171	159.00	67.7861
57.53	83.2703	94.65	70.6295	162.33	67.0279
57.98	67.5750	94.67	70.6323	162.66	0.0000
59.27	81.9015	94.87	70.6600	163.33	71.3787
59.32	81.9125	97.43	80.6072	165.86	56.6538
59.54	71.3851	98.43	64.0961	176.31	72.5922
60.96	76.6674	98.44	64.0976	176.60	0.0000
61.17	76.7098	99.53	86.7110	177.52	43.4045
62.93	80.0254	100.11	91.6283	181.07	0.0000
63.29	80.0996	102.03	72.5985	181.52	59.9800
63.58	80.1590	103.18	91.1837	184.41	67.1245
64.28	80.3023	103.37	87.3344	143.76	66.8667
66.73	76.6081	105.21	68.1559	193.51	63.0683
67.24	88.9891	105.31	68.1682	197.03	47.7746
125.81	87.2861	106.12	69.2439	198.01	67.8506
67.75	89.1009	106.47	79.0466	201.83	53.6257
69.67	63.8988	109.28	71.5982	203.43	66.0356
70.83	91.8828	111.00	76.7348	205.31	68.7941
72.81	78.3443	111.76	0.0000	210.85	51.1639
72.87	78.3555	114.06	70.2205	215.65	53.3261
74.66	78.6809	116.30	0.0000	222.11	65.1243
74.82	78.7098	116.74	72.5294	227.09	39.0515
74.97	78.7373	119.76	61.9134	227.38	37.9146
77.11	79.1205	121.12	63.0538	228.16	0.0000
78.74	79.4092	121.22	63.0639	228.18	45.9955
79.69	86.3614	121.78	70.1357	116.74	45.9955
80.12	81.5037	122.06	70.1682	235.69	44.8086
80.19	0.0000	122.92	64.2441	235.96	52.5488
80.57	74.1675	123.07	64.2598	238.63	51.1422
81.00	70.5252	265.00	64.3237	238.98	0.0000
81.07	70.5356	125.81	76.6477	240.99	51.2637
81.75	79.3151	127.23	75.8108	242.00	51.3154
83.79	69.0826	127.91	75.8932	244.70	38.9806
84.00	69.1130	129.30	70.9891	252.40	0.0000
85.43	69.3219	131.20	73.2360	252.80	43.6134
86.55	69.4845	133.02	57.1228	254.15	0.0000
86.79	69.5190	133.52	71.4580	256.23	42.5753
86.94	69.5410	136.00	62.5079	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	40.5327	355.39	0.0000	584.27	28.6023
264.80	40.5379	356.01	28.3063	595.83	0.0000
265.00	42.9313	364.49	0.0000	427.87	20.8821
268.22	57.4131	366.42	0.0000	602.52	0.0000
269.46	39.9160	372.51	27.7839	604.72	23.9141
270.03	33.5474	375.05	35.6631	607.14	19.4540
271.23	33.5841	377.52	38.3407	609.32	19.9740
273.65	0.0000	356.01	34.1369	610.33	19.9837
276.40	40.9737	388.16	31.6069	614.28	19.5222
277.37	41.0100	388.63	0.0000	618.01	14.0410
277.60	41.0183	391.69	33.4448	620.36	11.0452
278.00	41.0339	264.66	30.1097	621.93	24.1162
279.20	41.0775	401.81	40.7694	630.19	0.0000
279.54	41.0909	402.40	44.3319	631.29	20.1880
279.70	41.0961	404.85	29.3080	633.25	31.3204
280.46	37.0924	410.95	20.0652	634.78	0.0000
283.69	33.9652	413.71	25.4628	635.95	23.2677
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	40.0919	423.72	0.0000	645.85	18.2944
285.90	0.0000	427.09	32.4478	657.76	16.3522
287.50	36.5140	427.87	34.2682	657.90	0.0000
290.67	35.8019	433.94	25.3494	661.66	12.2861
293.27	0.0000	439.40	34.5225	664.57	0.0000
351.93	35.5349	453.88	26.5869	666.33	0.0000
295.96	35.5579	463.37	16.5989	666.50	0.0000
879.38	44.2408	468.07	16.6465	667.71	0.0000
299.98	42.6531	473.00	0.0000	677.62	14.4386
300.09	42.6563	475.06	26.0039	685.70	0.0000
300.13	42.6584	476.78	32.5384	695.00	0.0000
301.36	40.6498	477.60	27.9034	696.49	18.7207
302.85	42.7568	482.18	27.0471	696.51	18.7214
256.23	37.8766	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	24.9707
306.78	40.8361	497.08	21.6388	697.49	23.9321
308.46	42.1327	505.52	18.4348	702.65	19.8149
311.90	37.2830	507.63	0.0000	706.68	21.9391
316.51	37.4240	511.00	19.9146	711.68	23.0339
319.41	0.0000	514.00	22.7979	720.70	0.0000
320.08	0.0000	514.00	22.7979	721.93	0.0000
321.04	28.3811	520.40	15.2533	722.78	17.3580
323.87	35.1384	520.69	0.0000	722.91	17.3594
325.23	37.6895	522.65	0.0000	723.31	11.0486
328.76	0.0000	527.90	0.0000	724.19	9.4739
333.37	34.1406	528.26	19.1496	727.33	22.1356
333.97	43.0126	529.59	18.2060	733.00	21.5546
334.37	41.7606	529.87	0.0000	735.93	20.1001
338.28	40.6191	531.02	0.0000	333.97	17.9961
338.32	40.6201	537.26	0.0000	739.50	0.0000
311.90	25.4303	546.56	0.0000	747.24	17.0072
340.48	25.4303	552.55	18.4325	748.06	19.1396
340.55	0.0000	563.25	22.4394	752.31	19.1733
344.28	28.0552	569.33	21.5318	753.82	0.0000
345.93	26.8140	946.00	20.5557	756.73	10.6714
351.06	33.3284	569.70	17.6206	756.80	10.6718
351.93	33.3506	583.19	28.5858	884.68	21.4063

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	31.0627	1274.44	6.9924	1620.50	6.1919
766.42	31.0709	1001.03	15.4075	1621.92	7.2264
766.84	22.5031	1002.74	11.2117	1678.03	0.0000
772.60	0.0000	1004.73	12.8548	1690.97	5.2386
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	6.8086
778.90	10.7682	1028.54	0.0000	1063.66	3.1952
783.70	0.0000	1037.84	15.0597	1771.35	3.1959
785.37	8.6370	1038.76	0.0000	1791.20	0.0000
792.07	9.7427	631.29	13.3255	1808.65	5.3665
794.95	11.3797	1048.07	0.0000	1810.72	0.0000
795.86	11.3835	1049.04	17.7808	1836.06	1.0792
810.06	4.9059	1050.41	12.4517		
810.29	3.2710	1063.66	8.9313		
344.28	3.2711	1077.00	0.0000		
810.76	6.5432	1077.34	10.7629		
815.77	0.0000	1085.87	16.1873		
1048.07	0.0000	1093.63	8.1129		
832.01	18.1415	1099.45	12.6422		
834.85	13.2085	1112.07	11.7844		
835.71	13.2129	1112.84	13.6002		
836.80	0.0000	1115.54	14.5186		
846.75	0.0000	1120.29	12.7217		
846.77	16.5851	1120.55	12.7225		
856.80	0.0000	1221.41	10.1808		
860.56	13.3369	1129.67	16.4026		
871.09	15.6201	1131.51	0.0000		
873.19	16.7487	1147.95	0.0000		
875.33	0.0000	1173.23	19.3812		
879.38	11.1914	1177.95	10.1655		
880.51	12.3155	1189.05	12.9797		
883.24	15.6896	1204.77	11.1746		
884.68	11.2130	1221.41	8.9813		
889.28	11.2317	1231.02	15.0088		
894.76	8.4402	1235.36	0.0000		
898.04	13.5205	1238.28	15.0391		
900.72	15.7893	1260.41	0.0000		
903.28	15.8035	1271.87	9.4855		
911.20	10.1880	1274.44	7.5938		
912.08	10.1913	1274.54	7.5938		
923.98	0.0000	1291.59	11.4426		
926.50	12.5196	1298.22	0.0000		
929.11	15.9482	1312.11	0.0000		
937.49	14.8525	1332.49	8.6743		
944.13	0.0000	1362.66	0.0000		
946.00	11.4583	1365.19	4.8596		
949.00	14.9112	1368.63	0.0000		
667.71	0.0000	1384.29	3.1250		
962.31	19.5885	1408.01	7.8589		
964.08	19.0237	1457.56	0.0000		
966.17	15.5759	1460.82	11.9407		
911.20	15.0127	1489.16	2.0034		
968.97	15.0127	1505.03	9.3840		
983.53	0.0000	1584.12	3.0712		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:51:13.42

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235056.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM01.CNF;402
Background date    : Z-OCT-2016 10:59:55.
Sample date       : 2-DEC-2015 14:50:00. Acquisition date : 3-OCT-2016 07:50:44.
Sample ID        : G405235056 Sample quantity : 1.01481E+02 GRAM
Detector name    : GAM01 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.36 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596252 Detector SN# :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.24*	29	118	1.18	127.18	124	8	8.09E-03	70.2	
2	3	74.92	119	129	1.09	150.53	147	15	3.30E-02	18.0	6.86E-01
3	3	77.27*	187	109	1.17	155.24	147	15	5.20E-02	12.3	
4	4	84.19*	37	167	1.77	169.08	164	31	1.02E-02	68.8	1.36E+00
5	4	87.35	99	142	1.64	175.39	164	31	2.76E-02	24.7	
6	4	89.92	67	131	1.63	180.54	164	31	1.87E-02	37.0	
7	4	92.69*	115	96	1.25	186.07	164	31	3.20E-02	19.9	
8	0	118.89	25	73	0.89	238.46	235	7	6.90E-03	61.0	
9	0	129.46	46	109	1.07	259.61	256	10	1.28E-02	44.8	
10	0	185.72*	105	107	1.62	372.12	365	13	2.91E-02	23.7	
11	0	209.81	34	104	0.96	420.28	415	10	9.49E-03	59.0	
12	5	238.68*	358	58	1.03	478.02	474	19	9.95E-02	6.3	6.39E+00
13	5	241.62*	99	93	2.17	483.90	474	19	2.74E-02	31.0	
14	0	270.14	34	63	1.11	540.93	535	10	9.46E-03	46.7	
15	0	277.36	32	43	0.69	555.37	552	8	8.81E-03	40.2	
16	0	295.66*	115	98	1.19	591.97	585	13	3.20E-02	20.2	
17	0	301.88	25	73	3.81	604.41	598	12	6.95E-03	71.8	
18	0	329.38	16	72	1.44	659.39	651	12	4.33E-03	111.9	
19	0	338.46*	66	65	1.04	677.55	672	11	1.82E-02	27.5	
20	0	352.05*	246	60	1.38	704.73	700	12	6.82E-02	9.2	
21	0	402.08	50	95	8.98	804.77	790	26	1.40E-02	55.5	
22	0	435.49	11	33	1.25	871.57	865	10	2.92E-03	106.2	
23	0	463.09	23	19	1.49	926.77	922	8	6.31E-03	39.9	
24	0	510.91*	39	46	2.44	1022.39	1014	17	1.07E-02	49.4	
25	0	565.33*	50	27	5.07	1131.21	1122	18	1.40E-02	28.9	
26	0	583.25*	89	24	1.47	1167.05	1160	14	2.48E-02	16.2	
27	0	609.44*	193	19	1.39	1219.40	1215	12	5.36E-02	8.7	
28	0	661.77	51	24	1.07	1324.04	1321	9	1.41E-02	22.5	
29	0	719.57	23	9	2.59	1439.62	1435	11	6.47E-03	31.7	
30	0	770.32	30	30	4.46	1541.09	1530	21	8.25E-03	50.5	
31	0	786.97	8	16	0.88	1574.38	1568	8	2.22E-03	93.5	
32	0	795.19	13	15	1.42	1590.81	1585	10	3.61E-03	62.3	
33	0	879.40	9	4	0.96	1759.18	1756	7	2.36E-03	50.1	
34	0	883.43	4	9	0.53	1767.23	1762	7	1.12E-03	131.8	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	911.67*	63	20	1.42	1823.70	1819	13	1.76E-02	20.9	
36	0	920.31	9	13	0.94	1840.98	1833	11	2.37E-03	90.5	
37	0	923.70	9	12	1.26	1847.74	1843	10	2.54E-03	83.7	
38	0	969.18	37	12	1.19	1938.68	1935	10	1.03E-02	24.1	
39	0	1043.52	9	5	1.47	2087.31	2081	10	2.58E-03	55.4	
40	0	1109.70	18	3	3.67	2219.61	2214	11	5.08E-03	29.2	
41	0	1120.23*	28	18	1.84	2240.67	2236	10	7.86E-03	33.8	
42	0	1225.45	6	12	0.50	2451.03	2447	8	1.59E-03	113.3	
43	0	1266.62	6	4	0.89	2533.33	2530	6	1.78E-03	63.9	
44	0	1275.23	5	7	1.39	2550.54	2543	10	1.26E-03	122.1	
45	0	1378.12	16	5	0.54	2756.24	2751	10	4.55E-03	35.3	
46	0	1460.75*	288	0	1.63	2921.40	2914	14	7.99E-02	6.0	
47	0	1589.26	8	1	1.39	3178.30	3175	6	2.10E-03	44.4	
48	0	1764.50*	30	7	1.53	3528.60	3522	10	8.19E-03	26.0	
49	0	1799.81	6	0	0.99	3599.17	3596	6	1.67E-03	40.8	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235056.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 2-DEC-2015 14:50:00 Acquisition date : 3-OCT-2016 07:50:44
Sample ID : G405235056 Sample quantity : 101.48 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA1 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.36 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	87.09	TH-229	88.47
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
NA-22	1274.54	99.94*	1.095E+00	2.878E-02	3.596E-02	244.20	OK
K-40	1460.82	10.66*	9.709E-01	1.922E+01	1.922E+01	11.93	OK
CD-109	88.03	3.70*	4.590E+00	3.160E+00	5.003E+00	67.98	OK
SN-126	64.28	9.60	2.294E+00	9.696E-01	9.696E-01	140.35	OK
	86.94	8.90	4.590E+00	1.314E+00	1.314E+00	67.98	OK
	87.57	37.00*	4.590E+00	3.160E-01	3.160E-01	67.98	OK
BA-137M	661.66	89.90*	1.883E+00	2.112E-01	2.154E-01	44.91	OK
CS-137	661.66	85.10*	1.883E+00	2.232E-01	2.275E-01	44.91	OK
TL-208	277.37	6.60	3.944E+00	8.703E-01	8.703E-01	80.47	OK
	583.19	85.00*	2.090E+00	3.536E-01	3.536E-01	32.35	OK
	860.56	12.50	1.520E+00	-----	Line Not Found	-----	Absent
BI-211	72.87	1.23	3.328E+00	-----	Line Not Found	-----	Absent
	351.06	12.92*	3.215E+00	9.152E-01	9.152E-01	167.70	OK
PB-212	74.82	10.28	3.532E+00	1.722E+00	1.722E+00	52.62	OK
	77.11	17.10	3.757E+00	2.130E+00	2.130E+00	24.57	OK
	238.63	43.60*	4.454E+00	1.321E+00	1.321E+00	12.53	OK
	300.09	3.30	3.690E+00	-----	Line Not Found	-----	Absent
BI-214	609.32	45.49*	2.015E+00	1.479E+00	1.480E+00	17.43	OK
	1120.29	14.92	1.223E+00	1.078E+00	1.078E+00	67.61	OK
	1764.49	15.30	8.116E-01	1.637E+00	1.638E+00	52.01	OK
PB-214	74.82	5.80	3.522E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	3.757E+00	3.755E+00	3.757E+00	24.57	OK
	87.09	3.41	4.572E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	4.406E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	3.737E+00	1.193E+00	1.193E+00	40.38	OK
	351.93	35.60*	3.216E+00	-----	Line Not Found	-----	<<INT Reject
RN-219	271.23	10.80	4.031E+00	5.586E-01	5.586E-01	93.47	OK
	401.81	6.60*	2.865E+00	1.886E+00	1.886E+00	110.94	OK
RN-222	609.32	45.49*	2.015E+00	1.479E+00	1.480E+00	17.43	OK
	1120.29	14.92	1.223E+00	1.078E+00	1.078E+00	67.61	OK
	1764.49	15.30	8.116E-01	1.637E+00	1.638E+00	52.01	OK
RA-224	240.99	4.10*	4.411E+00	1.794E+00	1.794E+00	143.11	OK
RA-226	609.32	45.49*	2.015E+00	1.479E+00	1.480E+00	17.43	OK
	1120.29	14.92	1.223E+00	1.078E+00	1.078E+00	67.61	OK
	1764.49	15.30	8.116E-01	1.637E+00	1.638E+00	52.01	OK
AC-228	105.21	1.10	5.519E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.327E+00	1.243E+00	1.243E+00	54.91	OK
	794.95	4.25	1.621E+00	1.321E+00	1.321E+00	124.51	OK
	835.71	1.61	1.557E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.450E+00	1.181E+00	1.181E+00	41.80	OK
	968.97	15.80	1.379E+00	1.190E+00	1.190E+00	48.16	OK
RA-228	105.21	1.10	5.519E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.327E+00	1.243E+00	1.243E+00	54.91	OK
	794.95	4.25	1.621E+00	1.321E+00	1.321E+00	124.51	OK
	835.71	1.61	1.557E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.450E+00	1.181E+00	1.181E+00	41.80	OK
	968.97	15.80	1.379E+00	1.190E+00	1.190E+00	48.16	OK
TH-228	74.82	10.28	3.532E+00	1.722E+00	1.722E+00	52.62	OK
	77.11	17.10	3.757E+00	2.130E+00	2.130E+00	24.57	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	238.63	43.60*	4.454E+00	1.321E+00	1.321E+00	12.53	OK
	300.09	3.30	3.690E+00	----- Line	Not Found	-----	Absent
TH-229	85.43	14.70	4.354E+00	4.200E-01	4.200E-01	137.59	OK
	88.47	24.00	4.590E+00	4.872E-01	4.873E-01	67.98	OK
	193.51	4.41*	5.168E+00	----- Line	Not Found	-----	Absent
	210.85	2.80	4.899E+00	1.787E+00	1.787E+00	118.06	OK
TH-230	609.32	45.49*	2.015E+00	1.479E+00	1.480E+00	17.43	OK
	1120.29	14.92	1.223E+00	1.078E+00	1.078E+00	67.61	OK
	1764.49	15.30	8.116E-01	1.637E+00	1.637E+00	52.01	OK
PA-231	283.69	1.70	3.870E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	3.671E+00	9.078E-01	9.078E-01	143.69	OK
TH-232	105.21	1.10	5.519E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.327E+00	1.243E+00	1.243E+00	54.91	OK
	835.71	1.61	1.557E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.450E+00	1.181E+00	1.181E+00	41.80	OK
	968.97	15.80	1.379E+00	1.190E+00	1.190E+00	48.16	OK
TH-234	63.29	3.70*	2.294E+00	2.516E+00	2.516E+00	140.35	OK
	92.59	4.23	4.940E+00	4.012E+00	4.012E+00	39.80	OK
U-234	609.32	45.49*	2.015E+00	1.479E+00	1.479E+00	17.43	OK
	1120.29	14.92	1.223E+00	1.078E+00	1.078E+00	67.61	OK
	1764.49	15.30	8.116E-01	1.637E+00	1.637E+00	52.01	OK
U-235	89.96	3.47	4.767E+00	2.967E+00	2.967E+00	73.97	OK
	93.35	5.60	4.940E+00	3.031E+00	3.031E+00	39.80	OK
	143.76	10.96*	5.868E+00	----- Line	Not Found	-----	Absent
	163.33	5.08	5.647E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	5.297E+00	2.485E-01	2.485E-01	47.46	OK
	205.31	5.01	4.973E+00	----- Line	Not Found	-----	Absent
U-238	63.29	3.70*	2.294E+00	2.516E+00	2.516E+00	140.35	OK
	92.59	4.23	4.940E+00	4.012E+00	4.012E+00	39.80	OK
AM-243	43.53	5.90	3.822E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.532E+00	2.634E-01	2.634E-01	52.62	OK
CM-247	278.00	3.40	3.944E+00	1.689E+00	1.689E+00	80.47	OK
	287.50	2.00	3.826E+00	----- Line	Not Found	-----	Absent
	402.40	72.00*	2.865E+00	1.729E-01	1.729E-01	110.94	OK
ANH-511	511.00	100.00*	2.335E+00	1.168E-01	1.168E-01	98.90	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235056.CNF;1    *
* Acquisition date   : 3-OCT-2016 07:50:44 Sensitivity      : 3.000             *
* Detector ID        : GAM01 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 01:00:00.36 Half life ratio : *****          *
* Sample date        : 2-DEC-2015 14:50:00 Analyst initials: MXR1        *
* Sample ID          : G405235056 Sample Quantity : 1.0148E+02 GRAM    *
* Batch Number       : 1596252 Wet Weight      : 0.00000        *
* Wet wt corr        : 1.00000 Dry Weight       : 0.00000        *
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 20-JUL-2016 07:03:55 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM01 CAN.CNF;9          *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
NA-22	3.596E-02	8.607E-02	1.623E-01
K-40	1.922E+01	2.247E+00	9.665E-01
CD-109	5.003E+00	3.333E+00	2.829E+00
SN-126	3.160E-01	2.105E-01	1.799E-01
BA-137M	2.154E-01	9.478E-02	8.188E-02
CS-137	2.275E-01	1.001E-01	8.650E-02
TL-208	3.536E-01	1.121E-01	8.415E-02
BI-211	9.152E-01	1.504E+00	5.541E-01
PB-212	1.321E+00	1.622E-01	1.463E-01
BI-214	1.480E+00	2.528E-01	1.585E-01
PB-214	1.526E+00	2.742E-01	5.099E-01
RN-219	1.886E+00	2.050E+00	1.157E+00
RN-222	1.480E+00	2.528E-01	1.585E-01
RA-224	1.794E+00	2.516E+00	1.569E+00
RA-226	1.480E+00	2.528E-01	1.585E-01
AC-228	1.181E+00	4.839E-01	4.780E-01
RA-228	1.181E+00	4.839E-01	4.780E-01
TH-228	1.321E+00	1.622E-01	1.463E-01
TH-229	-7.270E-01	7.080E-01	1.211E+00
TH-230	1.480E+00	2.527E-01	1.584E-01
PA-231	9.078E-01	1.278E+00	1.149E+00
TH-232	1.181E+00	4.839E-01	4.780E-01
TH-234	2.516E+00	3.460E+00	4.004E+00
U-234	1.479E+00	2.527E-01	1.584E-01
U-235	1.323E-03	2.863E-01	5.332E-01
U-238	2.516E+00	3.460E+00	4.004E+00
AM-243	2.634E-01	1.358E-01	1.527E-01
CM-247	1.729E-01	1.879E-01	1.062E-01
ANH-511	1.168E-01	1.132E-01	7.738E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-8.317E+00	1.757E+01	3.114E+01	NOT IDENT.

NA-24	0.000E+00	1.638E+41	0.000E+00	SHORT HLIF
AL-26	-8.408E-03	4.021E-02	8.619E-02	NOT IDENT.
SC-46	-2.005E-01	4.825E-01	8.570E-01	FAIL ABUN
V-48	0.000E+00	2.715E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	7.276E+02	0.000E+00	SHORT HLIF
MN-54	2.357E-02	9.243E-02	1.838E-01	NOT IDENT.
CO-56	-1.269E-01	7.765E-01	1.424E+00	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	5.378E-02	7.240E-02	1.319E-01	NOT IDENT.
CO-58	-5.712E-01	9.971E-01	1.685E+00	NOT IDENT.
FE-59	-3.805E+00	1.249E+01	2.198E+01	NOT IDENT.
CO-60	4.963E-02	6.260E-02	1.449E-01	NOT IDENT.
ZN-65	-2.445E-01	3.013E-01	3.769E-01	NOT IDENT.
GE-68	-1.554E+00	3.948E+00	6.833E+00	NOT IDENT.
AS-73	1.065E+00	1.931E+01	3.355E+01	NOT IDENT.
AS-74	0.000E+00	1.161E+04	0.000E+00	SHORT HLIF
SE-75	4.107E-01	3.104E-01	6.141E-01	FAIL ABUN
BR-77	0.000E+00	1.621E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	1.439E+03	0.000E+00	SHORT HLIF
RB-83	2.602E-01	9.162E-01	1.828E+00	NOT IDENT.
KR-85	3.894E+00	1.076E+01	1.932E+01	NOT IDENT.
SR-85	4.377E-01	1.210E+00	2.172E+00	NOT IDENT.
RB-86	0.000E+00	5.748E+04	0.000E+00	SHORT HLIF
Y-88	-6.096E-02	3.556E-01	7.446E-01	NOT IDENT.
Y-91	-7.074E+02	8.861E+02	1.537E+03	NOT IDENT.
NB-94	5.150E-03	4.562E-02	8.771E-02	NOT IDENT.
NB-95	-8.782E-01	1.565E+00	2.279E+00	NOT IDENT.
NB-95M	-1.423E+00	4.446E+00	7.129E+00	NOT IDENT.
ZR-95	4.433E-01	2.447E+00	4.714E+00	NOT IDENT.
NB-97	0.000E+00	1.436E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.223E+33	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.657E+41	0.000E+00	SHORT HLIF
RH-101	-2.685E-02	5.212E-02	8.382E-02	NOT IDENT.
RH-102	-2.462E-02	9.129E-02	1.650E-01	NOT IDENT.
RU-103	-1.435E-01	9.725E+00	1.824E+01	FAIL ABUN
RH-106	8.675E-02	7.708E-01	1.479E+00	NOT IDENT.
RU-106	8.675E-02	7.708E-01	1.479E+00	NOT IDENT.
AG-108M	3.834E-02	4.025E-02	8.450E-02	NOT IDENT.
AG-110M	6.092E-02	1.573E-01	3.112E-01	FAIL ABUN
SN-113	7.437E-02	3.723E-01	6.830E-01	NOT IDENT.
CD-115	0.000E+00	2.779E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.803E+05	0.000E+00	SHORT HLIF
TE-123M	6.262E-02	1.880E-01	3.603E-01	NOT IDENT.
SB-124	2.949E+00	2.653E+00	7.907E+00	NOT IDENT.
SB-125	7.366E-02	1.513E-01	3.017E-01	FAIL ABUN
TE-125M	2.398E+02	5.144E+02	9.023E+02	NOT IDENT.
I-126	0.000E+00	2.205E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	3.043E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	9.620E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.308E+10	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.284E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.104E+27	0.000E+00	SHORT HLIF
BA-133	-2.190E-02	7.246E-02	1.157E-01	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	8.693E-02	1.061E-01	1.698E-01	FAIL ABUN
CS-135	2.504E-02	2.262E-01	3.838E-01	NOT IDENT.
I-135	0.000E+00	8.597E+40	0.000E+00	SHORT HLIF
CS-136	0.000E+00	4.883E+05	0.000E+00	SHORT HLIF
CE-139	-4.365E-03	1.647E-01	3.064E-01	NOT IDENT.
BA-140	0.000E+00	2.606E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	8.560E+05	0.000E+00	SHORT HLIF
CE-141	5.775E+00	4.223E+01	7.912E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	-2.250E-01	5.813E-01	9.450E-01	NOT IDENT.
PM-144	-1.405E-02	9.562E-02	1.735E-01	NOT IDENT.
PR-144	-1.173E+00	8.339E+00	1.515E+01	NOT IDENT.
PM-146	-5.622E-02	7.224E-02	1.217E-01	NOT IDENT.
ND-147	0.000E+00	7.615E+07	0.000E+00	SHORT HLIF
PM-147	6.631E+02	1.236E+03	2.213E+03	NOT IDENT.
PM-149	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
EU-150	1.302E-02	4.168E-02	7.271E-02	FAIL ABUN
EU-152	-4.123E-02	1.359E-01	2.460E-01	NOT IDENT.
GD-153	-3.395E-02	3.101E-01	4.791E-01	NOT IDENT.
EU-154	8.791E-02	2.104E-01	3.576E-01	FAIL ABUN
EU-155	8.291E-02	1.812E-01	3.193E-01	FAIL ABUN
TB-160	2.476E+00	2.431E+00	5.699E+00	FAIL ABUN
HO-166M	-1.346E-02	8.706E-02	1.598E-01	FAIL ABUN

TM-171	-2.061E+00	4.545E+01	7.822E+01	NOT IDENT.
HF-172	2.944E-01	3.454E-01	6.337E-01	FAIL ABUN
LU-172	-2.267E-02	1.069E-01	1.962E-01	FAIL ABUN
LU-176	-1.540E-02	3.814E-02	6.050E-02	FAIL ABUN
HF-181	3.098E+00	6.816E+00	1.368E+01	NOT IDENT.
TA-182	-4.430E-01	1.488E+00	2.471E+00	FAIL ABUN
RE-183	-4.553E-01	6.173E+00	1.058E+01	NOT IDENT.
RE-184	8.850E+00	4.939E+01	9.761E+01	NOT IDENT.
W-188	-5.362E+01	1.982E+02	3.199E+02	FAIL ABUN
IR-192	2.829E-01	7.398E-01	1.431E+00	FAIL ABUN
HG-203	-3.501E+00	4.243E+00	6.329E+00	NOT IDENT.
BI-207	1.941E-02	8.051E-02	1.573E-01	FAIL ABUN
PB-210	-2.426E+00	7.363E+00	1.260E+01	NOT IDENT.
PB-211	-6.006E-01	1.022E+00	1.778E+00	NOT IDENT.
BI-212	1.071E+00	8.800E-01	1.856E+00	NOT IDENT.
RA-223	-1.870E-01	8.835E-01	1.445E+00	FAIL ABUN
AC-227	-8.628E-02	3.606E-01	6.548E-01	NOT IDENT.
TH-227	-8.628E-02	3.606E-01	6.548E-01	NOT IDENT.
TH-231	-1.870E-01	8.835E-01	1.445E+00	FAIL ABUN
PA-233	-2.617E-02	9.190E-02	1.663E-01	NOT IDENT.
PA-234	-4.521E-01	4.511E-01	6.750E-01	FAIL ABUN
PA-234M	1.111E-01	8.053E+00	1.541E+01	NOT IDENT.
NP-237	-2.617E-02	9.190E-02	1.663E-01	NOT IDENT.
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	-8.382E-03	4.284E-01	6.651E-01	FAIL ABUN
PU-239	8.918E+02	7.830E+02	9.430E+02	FAIL ABUN
AM-241	-8.625E-02	2.930E-01	4.494E-01	NOT IDENT.
CM-243	-5.985E-02	1.650E-01	2.708E-01	FAIL ABUN
BK-247	8.175E-02	1.086E-01	2.007E-01	FAIL ABUN
CF-249	1.794E-02	5.157E-02	1.014E-01	NOT IDENT.
CF-251	1.485E-01	1.675E-01	3.313E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
NA-22	1274.54	4	99.94*	1.095E+00	2.878E-02	3.596E-02	244.20
K-40	1460.82	269	10.66*	9.709E-01	1.922E+01	1.922E+01	11.93
CD-109	88.03	98	3.70*	4.590E+00	4.260E+00	6.743E+00	49.35
SN-126	64.28	29	9.60	2.294E+00	9.696E-01	9.696E-01	140.35
	86.94	98	8.90	4.590E+00	1.771E+00	1.771E+00	49.35
	87.57	98	37.00*	4.590E+00	4.260E-01	4.260E-01	49.35
BA-137M	661.66	48	89.90*	1.883E+00	2.112E-01	2.154E-01	44.91
CS-137	661.66	48	85.10*	1.883E+00	2.232E-01	2.275E-01	44.91
TL-208	277.37	31	6.60	3.944E+00	8.703E-01	8.703E-01	80.47
	583.19	85	85.00*	2.090E+00	3.536E-01	3.536E-01	32.35
	860.56	-----	12.50	1.520E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.328E+00	-----	Line Not Found	-----
	351.06	236	12.92*	3.215E+00	4.202E+00	4.202E+00	18.34
PB-212	74.82	118	10.28	3.532E+00	2.395E+00	2.395E+00	36.09
	77.11	185	17.10	3.757E+00	2.130E+00	2.130E+00	24.57
	238.63	347	43.60*	4.454E+00	1.321E+00	1.321E+00	12.53
	300.09	-----	3.30	3.690E+00	-----	Line Not Found	-----
BI-214	609.32	183	45.49*	2.015E+00	1.479E+00	1.480E+00	17.43
	1120.29	27	14.92	1.223E+00	1.078E+00	1.078E+00	67.61
	1764.49	27	15.30	8.116E-01	1.637E+00	1.638E+00	52.01
PB-214	74.82	118	5.80	3.532E+00	4.244E+00	4.246E+00	36.09
	77.11	185	9.70	3.757E+00	3.755E+00	3.757E+00	24.57
	87.09	98	3.41	4.590E+00	4.622E+00	4.624E+00	49.35
	242.00	95	7.25	4.411E+00	2.207E+00	2.208E+00	62.04
	295.22	111	18.42	3.737E+00	1.193E+00	1.193E+00	40.38
	351.93	236	35.60*	3.215E+00	1.525E+00	1.526E+00	18.34
RN-219	271.23	33	10.80	4.031E+00	5.586E-01	5.586E-01	93.47
	401.81	48	6.60*	2.865E+00	1.886E+00	1.886E+00	110.94
RN-222	609.32	183	45.49*	2.015E+00	1.479E+00	1.480E+00	17.43
	1120.29	27	14.92	1.223E+00	1.078E+00	1.078E+00	67.61
	1764.49	27	15.30	8.116E-01	1.637E+00	1.638E+00	52.01
RA-224	240.99	95	4.10*	4.411E+00	3.903E+00	3.903E+00	62.04
RA-226	609.32	183	45.49*	2.015E+00	1.479E+00	1.480E+00	17.43
	1120.29	27	14.92	1.223E+00	1.078E+00	1.078E+00	67.61
	1764.49	27	15.30	8.116E-01	1.637E+00	1.638E+00	52.01
AC-228	105.21	-----	1.10	5.519E+00	-----	Line Not Found	-----
	338.32	63	11.27	3.327E+00	1.243E+00	1.243E+00	54.91
	794.95	12	4.25	1.621E+00	1.321E+00	1.321E+00	124.51
	835.71	-----	1.61	1.557E+00	-----	Line Not Found	-----
	911.20	60	25.80*	1.450E+00	1.181E+00	1.181E+00	41.80
	968.97	35	15.80	1.379E+00	1.190E+00	1.190E+00	48.16
RA-228	105.21	-----	1.10	5.519E+00	-----	Line Not Found	-----
	338.32	63	11.27	3.327E+00	1.243E+00	1.243E+00	54.91
	794.95	12	4.25	1.621E+00	1.321E+00	1.321E+00	124.51
	835.71	-----	1.61	1.557E+00	-----	Line Not Found	-----
	911.20	60	25.80*	1.450E+00	1.181E+00	1.181E+00	41.80
	968.97	35	15.80	1.379E+00	1.190E+00	1.190E+00	48.16

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	118	10.28	3.532E+00	2.395E+00	2.395E+00	36.09
	77.11	185	17.10	3.757E+00	2.130E+00	2.130E+00	24.57
	238.63	347	43.60*	4.454E+00	1.321E+00	1.321E+00	12.53
	300.09	-----	3.30	3.690E+00	-----	Line Not Found	-----
TH-229	85.43	36	14.70	4.354E+00	4.200E-01	4.200E-01	137.59
	88.47	98	24.00	4.590E+00	6.567E-01	6.568E-01	49.35
	193.51	-----	4.41*	5.168E+00	-----	Line Not Found	-----
	210.85	33	2.80	4.899E+00	1.787E+00	1.787E+00	118.06
TH-230	609.32	183	45.49*	2.015E+00	1.479E+00	1.480E+00	17.43
	1120.29	27	14.92	1.223E+00	1.078E+00	1.078E+00	67.61
	1764.49	27	15.30	8.116E-01	1.637E+00	1.637E+00	52.01
PA-231	283.69	-----	1.70	3.870E+00	-----	Line Not Found	-----
	301.36	24	5.35*	3.671E+00	9.078E-01	9.078E-01	143.69
TH-232	105.21	-----	1.10	5.519E+00	-----	Line Not Found	-----
	338.32	63	11.27	3.327E+00	1.243E+00	1.243E+00	54.91
	835.71	-----	1.61	1.557E+00	-----	Line Not Found	-----
	911.20	60	25.80*	1.450E+00	1.181E+00	1.181E+00	41.80
	968.97	35	15.80	1.379E+00	1.190E+00	1.190E+00	48.16
TH-234	63.29	29	3.70*	2.294E+00	2.516E+00	2.516E+00	140.35
	92.59	113	4.23	4.940E+00	4.012E+00	4.012E+00	39.80
U-234	609.32	183	45.49*	2.015E+00	1.479E+00	1.479E+00	17.43
	1120.29	27	14.92	1.223E+00	1.078E+00	1.078E+00	67.61
	1764.49	27	15.30	8.116E-01	1.637E+00	1.637E+00	52.01
U-235	89.96	66	3.47	4.767E+00	2.967E+00	2.967E+00	73.97
	93.35	113	5.60	4.940E+00	3.031E+00	3.031E+00	39.80
	143.76	-----	10.96*	5.868E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.647E+00	-----	Line Not Found	-----
	185.72	102	57.20	5.297E+00	2.485E-01	2.485E-01	47.46
	205.31	-----	5.01	4.973E+00	-----	Line Not Found	-----
U-238	63.29	29	3.70*	2.294E+00	2.516E+00	2.516E+00	140.35
	92.59	113	4.23	4.940E+00	4.012E+00	4.012E+00	39.80
AM-243	43.53	-----	5.90	3.822E-01	-----	Line Not Found	-----
	74.66	118	67.20*	3.532E+00	3.663E-01	3.663E-01	36.09
CM-247	278.00	31	3.40	3.944E+00	1.689E+00	1.689E+00	80.47
	287.50	-----	2.00	3.826E+00	-----	Line Not Found	-----
	402.40	48	72.00*	2.865E+00	1.729E-01	1.729E-01	110.94
ANH-511	511.00	37	100.00*	2.335E+00	1.168E-01	1.168E-01	98.90

Flag: "*" = Keyline

Total number of lines in spectrum 49
Number of unidentified lines 12
Number of lines tentatively identified by NID 37 75.51%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
NA-22	2.60Y	1.25	2.878E-02	3.596E-02	8.782E-02	244.20	
K-40	1.25E+09Y	1.00	1.922E+01	1.922E+01	0.229E+01	11.93	
CD-109	461.40D	1.58	4.260E+00	6.743E+00	3.327E+00	49.35	
SN-126	2.30E+05Y	1.00	4.260E-01	4.260E-01	2.102E-01	49.35	
BA-137M	30.08Y	1.02	2.112E-01	2.154E-01	0.967E-01	44.91	
CS-137	30.08Y	1.02	2.232E-01	2.275E-01	1.022E-01	44.91	
TL-208	1.41E+10Y	1.00	3.536E-01	3.536E-01	1.144E-01	32.35	
BI-211	7.04E+08Y	1.00	4.202E+00	4.202E+00	0.771E+00	18.34	
PB-212	1.41E+10Y	1.00	1.321E+00	1.321E+00	0.166E+00	12.53	
BI-214	1600.00Y	1.00	1.479E+00	1.480E+00	0.258E+00	17.43	
PB-214	1600.00Y	1.00	1.525E+00	1.526E+00	0.280E+00	18.34	
RN-219	7.04E+08Y	1.00	1.886E+00	1.886E+00	2.092E+00	110.94	
RN-222	1600.00Y	1.00	1.479E+00	1.480E+00	0.258E+00	17.43	
RA-224	1.41E+10Y	1.00	3.903E+00	3.903E+00	2.422E+00	62.04	
RA-226	1600.00Y	1.00	1.479E+00	1.480E+00	0.258E+00	17.43	
AC-228	1.41E+10Y	1.00	1.181E+00	1.181E+00	0.494E+00	41.80	
RA-228	1.41E+10Y	1.00	1.181E+00	1.181E+00	0.494E+00	41.80	
TH-228	1.41E+10Y	1.00	1.321E+00	1.321E+00	0.166E+00	12.53	
TH-229	7340.00Y	1.00	6.567E-01	6.568E-01	3.241E-01	49.35	K
TH-230	7.54E+04Y	1.00	1.479E+00	1.480E+00	0.258E+00	17.43	
PA-231	7.04E+08Y	1.00	9.078E-01	9.078E-01	13.04E-01	143.69	
TH-232	1.41E+10Y	1.00	1.181E+00	1.181E+00	0.494E+00	41.80	
TH-234	4.47E+09Y	1.00	2.516E+00	2.516E+00	3.531E+00	140.35	
U-234	2.45E+05Y	1.00	1.479E+00	1.479E+00	0.258E+00	17.43	
U-235	7.04E+08Y	1.00	2.485E-01	2.485E-01	1.179E-01	47.46	K
U-238	4.47E+09Y	1.00	2.516E+00	2.516E+00	3.531E+00	140.35	
AM-243	7370.00Y	1.00	3.663E-01	3.663E-01	1.322E-01	36.09	
CM-247	1.56E+07Y	1.00	1.729E-01	1.729E-01	1.918E-01	110.94	
ANH-511	1.00E+09Y	1.00	1.168E-01	1.168E-01	1.155E-01	98.90	

Total Activity : 5.732E+01 5.982E+01

Grand Total Activity : 5.732E+01 5.982E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	118.89	24	72	0.89	238.46	235	7	6.90E-03	****	5.83E+00	T
0	129.46	45	107	1.07	259.61	256	10	1.28E-02	89.6	5.91E+00	T
0	329.38	15	70	1.44	659.39	651	12	4.33E-03	****	3.41E+00	T
0	435.49	10	31	1.25	871.57	865	10	2.92E-03	****	2.67E+00	
0	463.09	22	18	1.49	926.77	922	8	6.31E-03	79.7	2.54E+00	T
0	565.33	48	26	5.07	1131.21	1122	18	1.40E-02	57.7	2.14E+00	
0	719.57	22	8	2.59	1439.62	1435	11	6.47E-03	63.5	1.76E+00	T
0	770.32	28	29	4.46	1541.09	1530	21	8.25E-03	****	1.66E+00	
0	786.97	8	15	0.88	1574.38	1568	8	2.22E-03	****	1.63E+00	
0	879.40	8	3	0.96	1759.18	1756	7	2.36E-03	****	1.49E+00	T
0	883.43	4	8	0.53	1767.23	1762	7	1.12E-03	****	1.49E+00	T
0	920.31	8	13	0.94	1840.98	1833	11	2.37E-03	****	1.44E+00	
0	923.70	9	11	1.26	1847.74	1843	10	2.54E-03	****	1.43E+00	T
0	1043.52	9	4	1.47	2087.31	2081	10	2.58E-03	****	1.30E+00	
0	1109.70	17	3	3.67	2219.61	2214	11	5.08E-03	58.5	1.23E+00	
0	1225.45	5	12	0.50	2451.03	2447	8	1.59E-03	****	1.13E+00	
0	1266.62	6	3	0.89	2533.33	2530	6	1.78E-03	****	1.10E+00	
0	1378.12	15	4	0.54	2756.24	2751	10	4.55E-03	70.7	1.02E+00	
0	1589.26	7	1	1.39	3178.30	3175	6	2.10E-03	88.8	8.98E-01	
0	1799.81	6	0	0.99	3599.17	3596	6	1.67E-03	81.6	7.96E-01	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235056.CNF;1    *
* Acquisition date   : 3-OCT-2016 07:50:44 Sensitivity      : 3.000             *
* Detector ID        : GAM01 Energy tolerance: 1.500       *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.36 Half life ratio  : *****          *
* Sample date        : 2-DEC-2015 14:50:00 Nuclide Library : SOLID          *
* Sample ID          : G405235056 Analyst initials: MXR1          *
* Batch Number       : 1596252 Sample Quantity : 1.0148E+02 GRAM      *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000          *
*                               Dry Weight      : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 20-JUL-2016 07:03:55 Eff. Geometry  : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM01 CAN.CNF;9          *
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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
NA-22	6.986E-02
K-40	3.874E-01
CD-109	1.323E+00
SN-126	8.413E-02
BA-137M	3.496E-02
CS-137	3.693E-02
TL-208	3.648E-02
BI-211	2.532E-01
PB-212	6.806E-02
BI-214	6.839E-02
PB-214	2.464E-01
RN-219	5.262E-01
RN-222	6.839E-02
RA-224	7.297E-01
RA-226	6.839E-02
AC-228	2.125E-01
RA-228	2.125E-01
TH-228	6.806E-02
TH-229	5.620E-01
TH-230	6.836E-02
PA-231	5.241E-01
TH-232	2.125E-01
TH-234	1.885E+00
U-234	6.836E-02
U-235	2.512E-01
U-238	1.885E+00
AM-243	7.211E-02
CM-247	4.830E-02
ANH-511	3.443E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.350E+01	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF

AL-26	3.054E-02	NOT IDENT.
SC-46	3.443E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	7.935E-02	NOT IDENT.
CO-56	6.115E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	6.163E-02	NOT IDENT.
CO-58	7.182E-01	NOT IDENT.
FE-59	9.336E+00	NOT IDENT.
CO-60	6.197E-02	NOT IDENT.
ZN-65	1.504E-01	NOT IDENT.
GE-68	2.883E+00	NOT IDENT.
AS-73	1.568E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	2.829E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	8.018E-01	NOT IDENT.
KR-85	8.619E+00	NOT IDENT.
SR-85	9.688E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	2.788E-01	NOT IDENT.
Y-91	6.447E+02	NOT IDENT.
NB-94	3.831E-02	NOT IDENT.
NB-95	9.765E-01	NOT IDENT.
NB-95M	3.321E+00	NOT IDENT.
ZR-95	2.061E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	3.896E-02	NOT IDENT.
RH-102	7.191E-02	NOT IDENT.
RU-103	8.113E+00	FAIL ABUN
RH-106	6.501E-01	NOT IDENT.
RU-106	6.501E-01	NOT IDENT.
AG-108M	3.815E-02	NOT IDENT.
AG-110M	1.342E-01	FAIL ABUN
SN-113	3.086E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.679E-01	NOT IDENT.
SB-124	3.121E+00	NOT IDENT.
SB-125	1.357E-01	FAIL ABUN
TE-125M	4.250E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	5.254E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	7.540E-02	FAIL ABUN
CS-135	1.766E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.429E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	3.718E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	4.406E-01	NOT IDENT.
PM-144	7.687E-02	NOT IDENT.
PR-144	6.711E+00	NOT IDENT.
PM-146	5.426E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	1.032E+03	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	3.323E-02	FAIL ABUN
EU-152	1.111E-01	NOT IDENT.
GD-153	2.236E-01	NOT IDENT.
EU-154	1.511E-01	FAIL ABUN
EU-155	1.500E-01	FAIL ABUN
TB-160	2.436E+00	FAIL ABUN
HO-166M	6.956E-02	FAIL ABUN
TM-171	3.657E+01	NOT IDENT.

HF-172	2.965E-01	FAIL ABUN
LU-172	8.087E-02	FAIL ABUN
LU-176	2.732E-02	FAIL ABUN
HF-181	6.096E+00	NOT IDENT.
TA-182	1.030E+00	FAIL ABUN
RE-183	4.942E+00	NOT IDENT.
RE-184	4.171E+01	NOT IDENT.
W-188	1.464E+02	FAIL ABUN
IR-192	6.554E-01	FAIL ABUN
HG-203	2.871E+00	NOT IDENT.
BI-207	6.806E-02	FAIL ABUN
PB-210	5.898E+00	NOT IDENT.
PB-211	7.966E-01	NOT IDENT.
BI-212	8.428E-01	NOT IDENT.
RA-223	6.507E-01	FAIL ABUN
AC-227	3.026E-01	NOT IDENT.
TH-227	3.026E-01	NOT IDENT.
TH-231	6.507E-01	FAIL ABUN
PA-233	7.591E-02	NOT IDENT.
PA-234	2.787E-01	FAIL ABUN
PA-234M	6.829E+00	NOT IDENT.
NP-237	7.591E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
NP-239	3.110E-01	FAIL ABUN
PU-239	4.449E+02	FAIL ABUN
AM-241	2.099E-01	NOT IDENT.
CM-243	1.265E-01	FAIL ABUN
BK-247	9.228E-02	FAIL ABUN
CF-249	4.558E-02	NOT IDENT.
CF-251	1.551E-01	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235056.CNF;1
* Acquisition date   : 3-OCT-2016 07:50:44 Sensitivity      : 3.000
* Detector ID        : GAM01 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.36 Half life ratio : *****
* Sample date        : 2-DEC-2015 14:50:00 Nuclide Library : SOLID
* Sample ID          : G405235056 Analyst initials: MXR1
* Batch Number       : 1596252 Sample Quantity : 1.0148E+02 GRAM
*                               Quantity Err(%) : 1.9708E-03 %
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000
*                               Dry Weight       : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 20-JUL-2016 07:03:55 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM01 CAN.CNF;9
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
NA-22	3.596E-02	8.608E-02	8.608E-02
K-40	1.922E+01	2.460E+00	2.460E+00
CD-109	5.003E+00	3.365E+00	3.365E+00
SN-126	3.160E-01	2.119E-01	2.119E-01
BA-137M	2.154E-01	9.523E-02	9.523E-02
CS-137	2.275E-01	1.006E-01	1.006E-01
TL-208	3.536E-01	1.131E-01	1.131E-01
BI-211	9.152E-01	1.518E+00	1.518E+00
PB-212	1.321E+00	1.766E-01	1.766E-01
BI-214	1.480E+00	2.607E-01	2.607E-01
PB-214	1.526E+00	2.815E-01	2.815E-01
RN-219	1.886E+00	2.064E+00	2.064E+00
RN-222	1.480E+00	2.607E-01	2.607E-01
RA-224	1.794E+00	2.521E+00	2.521E+00
RA-226	1.480E+00	2.607E-01	2.607E-01
AC-228	1.181E+00	4.876E-01	4.876E-01
RA-228	1.181E+00	4.876E-01	4.876E-01
TH-228	1.321E+00	1.766E-01	1.766E-01
TH-229	-7.270E-01	7.088E-01	7.088E-01
TH-230	1.480E+00	2.606E-01	2.606E-01
PA-231	9.078E-01	1.293E+00	1.293E+00
TH-232	1.181E+00	4.876E-01	4.876E-01
TH-234	2.516E+00	3.505E+00	3.505E+00
U-234	1.479E+00	2.606E-01	2.606E-01
U-235	1.323E-03	2.863E-01	2.863E-01
U-238	2.516E+00	3.505E+00	3.505E+00
AM-243	2.634E-01	1.374E-01	1.374E-01
CM-247	1.729E-01	1.902E-01	1.902E-01
ANH-511	1.168E-01	1.133E-01	1.133E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)
BE-7	-8.317E+00	1.757E+01	1.796E+01 NOT IDENT.

NA-24	1.000E+41	1.698E+41	0.000E+00	SHORT HLIF
AL-26	-8.408E-03	4.022E-02	4.039E-02	NOT IDENT.
SC-46	-2.005E-01	4.826E-01	4.910E-01	FAIL ABUN
V-48	2.328E+04	2.716E+04	2.912E+04	SHORT HLIF
CR-51	7.961E+01	7.276E+02	7.285E+02	SHORT HLIF
MN-54	2.357E-02	9.243E-02	9.304E-02	NOT IDENT.
CO-56	-1.269E-01	7.766E-01	7.787E-01	NOT IDENT.
MN-56	-1.000E+41	6.597E+41	0.000E+00	SHORT HLIF
CO-57	5.378E-02	7.244E-02	7.639E-02	NOT IDENT.
CO-58	-5.712E-01	9.974E-01	1.030E+00	NOT IDENT.
FE-59	-3.805E+00	1.249E+01	1.261E+01	NOT IDENT.
CO-60	4.963E-02	6.263E-02	6.651E-02	NOT IDENT.
ZN-65	-2.445E-01	3.014E-01	3.209E-01	NOT IDENT.
GE-68	-1.554E+00	3.948E+00	4.010E+00	NOT IDENT.
AS-73	1.065E+00	1.931E+01	1.931E+01	NOT IDENT.
AS-74	-8.097E+03	1.163E+04	1.218E+04	SHORT HLIF
SE-75	4.107E-01	3.111E-01	3.620E-01	FAIL ABUN
BR-77	1.320E+39	1.165E+40	0.000E+00	SHORT HLIF
SR-82	-1.120E+03	1.440E+03	1.526E+03	SHORT HLIF
RB-83	2.602E-01	9.169E-01	9.243E-01	NOT IDENT.
KR-85	3.894E+00	1.076E+01	1.091E+01	NOT IDENT.
SR-85	4.377E-01	1.210E+00	1.226E+00	NOT IDENT.
RB-86	-2.691E+04	5.749E+04	5.876E+04	SHORT HLIF
Y-88	-6.096E-02	3.557E-01	3.567E-01	NOT IDENT.
Y-91	-7.074E+02	8.865E+02	9.421E+02	NOT IDENT.
NB-94	5.150E-03	4.563E-02	4.568E-02	NOT IDENT.
NB-95	-8.782E-01	1.565E+00	1.615E+00	NOT IDENT.
NB-95M	-1.423E+00	4.448E+00	4.494E+00	NOT IDENT.
ZR-95	4.433E-01	2.448E+00	2.456E+00	NOT IDENT.
NB-97	-1.000E+41	1.437E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	2.376E+41	0.000E+00	SHORT HLIF
MO-99	-1.177E+33	1.226E+33	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	1.659E+41	0.000E+00	SHORT HLIF
RH-101	-2.685E-02	5.235E-02	5.373E-02	NOT IDENT.
RH-102	-2.462E-02	9.131E-02	9.199E-02	NOT IDENT.
RU-103	-1.435E-01	9.725E+00	9.725E+00	FAIL ABUN
RH-106	8.675E-02	7.708E-01	7.718E-01	NOT IDENT.
RU-106	8.675E-02	7.708E-01	7.718E-01	NOT IDENT.
AG-108M	3.834E-02	4.028E-02	4.383E-02	NOT IDENT.
AG-110M	6.092E-02	1.573E-01	1.597E-01	FAIL ABUN
SN-113	7.437E-02	3.723E-01	3.738E-01	NOT IDENT.
CD-115	2.222E+40	2.809E+40	0.000E+00	SHORT HLIF
SN-117M	8.576E+04	1.806E+05	1.847E+05	SHORT HLIF
TE-123M	6.262E-02	1.880E-01	1.901E-01	NOT IDENT.
SB-124	2.949E+00	2.657E+00	2.971E+00	NOT IDENT.
SB-125	7.366E-02	1.514E-01	1.550E-01	FAIL ABUN
TE-125M	2.398E+02	5.146E+02	5.258E+02	NOT IDENT.
I-126	-2.409E+05	2.205E+06	2.208E+06	SHORT HLIF
SB-126	4.891E+06	3.182E+06	3.871E+06	SHORT HLIF
SB-127	-3.246E+22	1.064E+23	0.000E+00	SHORT HLIF
I-131	-8.032E+09	1.309E+10	1.358E+10	SHORT HLIF
I-132	1.000E+41	1.889E+42	0.000E+00	SHORT HLIF
TE-132	4.936E+26	2.114E+27	0.000E+00	SHORT HLIF
BA-133	-2.190E-02	7.247E-02	7.314E-02	FAIL ABUN
I-133	-1.000E+41	9.507E+41	0.000E+00	SHORT HLIF
CS-134	8.693E-02	1.061E-01	1.131E-01	FAIL ABUN
CS-135	2.504E-02	2.262E-01	2.265E-01	NOT IDENT.
I-135	-1.000E+41	6.961E+41	0.000E+00	SHORT HLIF
CS-136	-3.382E+04	4.883E+05	4.886E+05	SHORT HLIF
CE-139	-4.365E-03	1.647E-01	1.647E-01	NOT IDENT.
BA-140	-1.651E+06	2.607E+06	2.711E+06	SHORT HLIF
LA-140	-2.335E+05	8.560E+05	8.625E+05	SHORT HLIF
CE-141	5.775E+00	4.223E+01	4.231E+01	NOT IDENT.
CE-143	1.000E+41	2.275E+41	0.000E+00	SHORT HLIF
CE-144	-2.250E-01	5.814E-01	5.902E-01	NOT IDENT.
PM-144	-1.405E-02	9.562E-02	9.583E-02	NOT IDENT.
PR-144	-1.173E+00	8.339E+00	8.356E+00	NOT IDENT.
PM-146	-5.622E-02	7.235E-02	7.666E-02	NOT IDENT.
ND-147	7.175E+06	7.615E+07	7.622E+07	SHORT HLIF
PM-147	6.631E+02	1.236E+03	1.272E+03	NOT IDENT.
PM-149	1.000E+41	4.117E+41	0.000E+00	SHORT HLIF
EU-150	1.302E-02	4.168E-02	4.209E-02	FAIL ABUN
EU-152	-4.123E-02	1.359E-01	1.371E-01	NOT IDENT.
GD-153	-3.395E-02	3.101E-01	3.105E-01	NOT IDENT.
EU-154	8.791E-02	2.104E-01	2.141E-01	FAIL ABUN
EU-155	8.291E-02	1.813E-01	1.851E-01	FAIL ABUN
TB-160	2.476E+00	2.435E+00	2.679E+00	FAIL ABUN
HO-166M	-1.346E-02	8.707E-02	8.728E-02	FAIL ABUN

TM-171	-2.061E+00	4.545E+01	4.546E+01	NOT IDENT.
HF-172	2.944E-01	3.487E-01	3.731E-01	FAIL ABUN
LU-172	-2.267E-02	1.069E-01	1.074E-01	FAIL ABUN
LU-176	-1.540E-02	3.814E-02	3.877E-02	FAIL ABUN
HF-181	3.098E+00	6.818E+00	6.959E+00	NOT IDENT.
TA-182	-4.430E-01	1.488E+00	1.502E+00	FAIL ABUN
RE-183	-4.553E-01	6.173E+00	6.176E+00	NOT IDENT.
RE-184	8.850E+00	4.944E+01	4.960E+01	NOT IDENT.
W-188	-5.362E+01	1.983E+02	1.998E+02	FAIL ABUN
IR-192	2.829E-01	7.399E-01	7.508E-01	FAIL ABUN
HG-203	-3.501E+00	4.246E+00	4.530E+00	NOT IDENT.
BI-207	1.941E-02	8.051E-02	8.099E-02	FAIL ABUN
PB-210	-2.426E+00	7.366E+00	7.447E+00	NOT IDENT.
PB-211	-6.006E-01	1.023E+00	1.058E+00	NOT IDENT.
BI-212	1.071E+00	8.816E-01	1.005E+00	NOT IDENT.
RA-223	-1.870E-01	8.835E-01	8.875E-01	FAIL ABUN
AC-227	-8.628E-02	3.608E-01	3.629E-01	NOT IDENT.
TH-227	-8.628E-02	3.608E-01	3.629E-01	NOT IDENT.
TH-231	-1.870E-01	8.835E-01	8.875E-01	FAIL ABUN
PA-233	-2.617E-02	9.190E-02	9.266E-02	NOT IDENT.
PA-234	-4.521E-01	6.863E-01	7.160E-01	FAIL ABUN
PA-234M	1.111E-01	8.053E+00	8.053E+00	NOT IDENT.
NP-237	-2.617E-02	9.190E-02	9.266E-02	NOT IDENT.
NP-238	1.000E+41	3.683E+41	0.000E+00	SHORT HLIF
NP-239	-8.382E-03	4.284E-01	4.284E-01	FAIL ABUN
PU-239	8.918E+02	7.840E+02	8.811E+02	FAIL ABUN
AM-241	-8.625E-02	2.930E-01	2.956E-01	NOT IDENT.
CM-243	-5.985E-02	1.651E-01	1.673E-01	FAIL ABUN
BK-247	8.175E-02	1.098E-01	1.158E-01	FAIL ABUN
CF-249	1.794E-02	5.159E-02	5.222E-02	NOT IDENT.
CF-251	1.485E-01	1.683E-01	1.811E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	80.8814	879.38	69.2091	482.18	68.1542
45.60	59.0989	87.57	69.2191	133.52	73.2301
46.54	70.7781	87.09	69.2291	264.66	61.5581
49.72	0.0000	87.57	69.2607	122.06	61.5789
51.35	67.7282	88.03	69.2909	140.51	0.0000
51.87	73.6162	88.34	69.3113	143.76	78.0153
52.39	70.1573	193.51	69.3196	144.24	72.9518
52.97	60.8478	89.96	69.4170	145.44	78.1079
53.44	66.7384	90.64	69.4609	152.43	73.3682
125.81	72.6501	91.11	0.0000	153.25	0.0000
57.36	0.0000	63.29	69.5866	154.21	55.5202
57.53	70.6071	143.76	69.6349	156.02	0.0000
57.98	68.2905	94.56	69.7118	158.56	0.0000
1093.63	75.4714	94.65	69.7175	159.00	55.6994
57.98	75.4761	94.67	69.7188	162.33	66.1280
59.54	75.4958	94.87	69.7314	162.66	0.0000
60.96	56.7167	97.43	65.3963	163.33	53.2813
61.17	69.3375	311.90	65.4545	165.86	64.5592
62.93	86.4541	946.00	65.4553	176.31	71.9234
63.29	86.4899	99.53	61.4235	1048.07	0.0000
63.58	86.5186	1221.41	62.6839	177.52	52.8991
64.28	94.8906	265.00	72.6382	739.50	0.0000
66.73	74.5357	103.18	76.4078	181.52	70.4177
67.24	79.3386	103.37	76.4206	711.68	65.3168
67.68	86.9181	116.74	76.4206	185.72	65.3687
67.75	95.2594	105.21	69.1340	193.51	77.9338
69.67	95.4602	105.31	69.1400	197.03	61.4230
70.83	79.6499	106.12	71.6584	127.23	65.8485
72.81	90.9928	106.47	77.8589	306.78	57.1950
279.20	90.9986	109.28	75.5659	203.43	56.3672
72.87	90.9986	111.00	88.0794	205.31	68.7713
74.66	97.1676	228.16	0.0000	210.85	51.7403
74.82	97.1837	114.06	78.3511	215.65	68.2852
1063.66	97.1988	116.30	0.0000	222.11	48.0580
238.63	97.4136	116.74	69.7966	290.67	55.3260
351.93	97.4136	119.76	73.2962	177.52	58.9048
78.74	97.5755	121.12	56.2816	228.16	0.0000
79.69	81.9936	121.22	52.5336	228.18	52.6795
80.12	67.5532	121.78	51.3054	235.69	69.9210
80.19	0.0000	122.06	51.3166	256.23	65.8968
80.57	82.0657	122.92	68.1341	238.63	59.2552
81.00	82.1010	123.07	68.1419	238.98	0.0000
81.07	82.1067	123.68	76.8632	240.99	59.3278
81.75	74.9126	125.81	51.4658	242.00	59.3586
323.87	69.0091	127.23	70.3711	344.28	43.2295
84.00	69.0234	127.91	75.4367	252.40	0.0000
85.43	69.1191	129.30	63.7694	252.80	61.4936
86.55	69.1935	131.20	64.2807	254.15	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
256.23	54.3518	351.93	37.8206	583.19	14.3241
260.90	0.0000	507.63	0.0000	584.27	14.3287
264.66	23.1955	356.01	38.3568	595.83	0.0000
264.80	30.0197	364.49	0.0000	600.60	21.5947
265.00	30.0224	366.42	0.0000	602.52	0.0000
268.22	42.3705	372.51	22.8794	604.72	24.7090
269.46	37.3815	129.30	37.2163	607.14	24.7256
270.03	37.3915	377.52	23.8795	609.32	13.4015
271.23	50.6447	383.85	33.5132	497.08	13.4052
273.65	0.0000	388.16	22.0590	433.94	7.7423
356.01	57.6308	388.63	0.0000	696.49	23.7684
277.37	40.2680	391.69	26.5067	620.36	18.6138
277.60	40.2725	400.66	33.7268	621.93	16.5527
278.00	40.2805	401.81	33.7418	667.71	0.0000
279.20	48.0887	402.40	33.7489	631.29	18.6702
279.54	48.0962	404.85	33.7795	453.88	14.5292
279.70	48.1004	410.95	34.8230	595.83	0.0000
280.46	39.8688	413.71	24.2071	635.95	18.6943
283.69	40.3879	414.70	0.0000	636.99	0.0000
364.49	0.0000	423.72	0.0000	645.85	18.7449
285.41	42.2574	404.85	28.2165	884.68	18.8057
285.90	0.0000	427.87	20.4386	657.90	0.0000
402.40	44.1377	433.94	16.5812	661.66	11.5044
290.67	44.2021	333.97	20.5223	664.57	0.0000
293.27	0.0000	453.88	34.3762	666.33	0.0000
295.22	38.7572	463.37	22.1709	720.70	0.0000
295.96	38.7700	468.07	27.6343	667.71	0.0000
298.58	41.5887	685.70	0.0000	677.62	16.8047
299.98	36.0666	475.06	22.7529	685.70	0.0000
300.09	36.0682	476.78	18.8067	695.00	0.0000
300.13	36.0690	477.60	19.8018	696.49	22.1647
301.36	36.0888	482.18	16.8575	696.51	22.1647
302.85	36.1126	1596.21	0.0000	697.00	0.0000
304.50	29.1897	527.90	0.0000	697.30	14.7799
537.26	0.0000	497.08	21.9221	697.49	14.7804
306.78	36.1761	505.52	23.9800	702.65	14.7998
316.51	37.1313	507.63	0.0000	706.68	20.1063
311.90	41.8359	511.00	22.0204	711.68	16.9538
316.51	33.5361	514.00	18.0337	720.70	0.0000
531.02	0.0000	514.00	18.0337	721.93	0.0000
320.08	0.0000	520.40	14.0547	1690.97	12.7510
427.87	27.0683	238.98	0.0000	722.91	12.7515
323.87	30.8395	522.65	0.0000	1274.44	19.1287
325.23	28.0518	527.90	0.0000	724.19	27.1052
328.76	0.0000	528.26	17.1086	727.33	15.9570
388.16	39.4083	520.40	22.1495	733.00	12.7837
333.97	32.3795	529.87	0.0000	735.93	11.7269
334.37	29.5691	531.02	0.0000	737.46	11.7314
338.28	36.6688	537.26	0.0000	739.50	0.0000
911.20	36.6696	546.56	0.0000	747.24	12.8291
340.48	36.7021	552.55	18.2505	748.06	8.5544
340.55	0.0000	563.25	18.3091	752.31	9.6335
344.28	33.9324	795.86	22.9276	753.82	0.0000
345.93	30.1829	569.50	21.3999	756.73	12.8589
351.06	37.8076	569.70	21.4016	756.80	12.8589

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:52:04.97

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235057.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM05.CNF;477
Background date    : 2-OCT-2016 11:00:07.
Sample date       : 2-DEC-2015 14:55:00. Acquisition date : 3-OCT-2016 07:51:32.
Sample ID        : G405235057 Sample quantity : 1.15835E+02 GRAM
Detector name     : GAM05 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.59 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1596252 Detector SN# :
Matrix Spike ID   : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	31.49	24	93	0.53	64.83	63	6	6.56E-03	67.5	
2	0	46.20*	37	164	0.70	94.21	91	8	1.03E-02	66.2	
3	0	62.83*	129	200	0.90	127.46	123	9	3.57E-02	22.4	
4	1	72.69	36	136	0.93	147.17	144	18	9.90E-03	55.4	2.04E+00
5	1	74.52*	241	137	0.94	150.83	144	18	6.69E-02	10.4	
6	1	76.70*	384	139	0.94	155.17	144	18	1.07E-01	7.3	
7	5	83.62*	56	118	0.96	169.01	166	27	1.55E-02	33.4	8.49E-01
8	5	86.72*	141	150	1.41	175.21	166	27	3.92E-02	17.4	
9	5	89.64	120	107	1.03	181.04	166	27	3.34E-02	16.5	
10	5	92.39*	133	118	1.15	186.54	166	27	3.70E-02	17.7	
11	0	117.65	33	73	1.66	237.01	234	7	9.18E-03	46.4	
12	3	128.93	45	77	1.28	259.56	256	13	1.26E-02	37.2	2.80E+00
13	3	130.85	36	59	1.17	263.40	256	13	9.96E-03	43.2	
14	0	143.91*	12	135	1.40	289.50	284	9	3.37E-03	176.9	
15	0	185.50*	93	101	0.87	372.62	368	9	2.60E-02	23.0	
16	0	209.04	35	88	1.04	419.68	416	8	9.61E-03	50.0	
17	0	231.76	20	69	1.82	465.07	462	7	5.69E-03	70.5	
18	3	238.36*	424	59	0.96	478.27	471	17	1.18E-01	5.7	1.06E+00
19	3	241.38	130	58	1.50	484.31	471	17	3.62E-02	13.6	
20	3	269.63	40	39	1.55	540.77	537	25	1.10E-02	33.2	1.16E+00
21	3	276.86	18	66	1.56	555.22	537	25	5.01E-03	81.6	
22	0	284.39	15	64	4.54	570.27	562	11	4.11E-03	110.7	
23	0	287.37	41	31	2.31	576.23	572	10	1.14E-02	29.6	
24	0	294.89*	169	57	1.09	591.26	586	10	4.70E-02	11.5	
25	0	299.82	29	67	1.12	601.10	597	10	7.99E-03	55.9	
26	0	310.55	26	47	3.44	622.55	616	11	7.28E-03	54.2	
27	0	327.51	29	35	1.59	656.45	653	7	7.95E-03	39.1	
28	0	338.09*	119	45	1.11	677.59	672	13	3.29E-02	15.1	
29	0	351.68*	259	68	1.05	704.76	700	11	7.20E-02	8.8	
30	0	373.77	19	33	1.57	748.92	746	7	5.27E-03	54.6	
31	0	463.11	34	26	1.17	927.48	924	8	9.36E-03	31.4	
32	0	510.47*	44	67	1.39	1022.12	1014	16	1.21E-02	49.8	
33	0	583.14*	115	42	1.27	1167.37	1160	14	3.18E-02	15.4	
34	0	609.27*	205	27	1.24	1219.59	1213	14	5.70E-02	9.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	661.41	72	22	1.45	1323.81	1316	13	1.99E-02	18.1	
36	0	665.98	21	15	1.75	1332.95	1329	11	5.90E-03	42.5	
37	0	727.39	31	15	2.33	1455.68	1451	10	8.61E-03	29.5	
38	0	802.80*	18	7	0.66	1606.41	1601	9	5.03E-03	38.1	
39	0	806.83	19	6	0.95	1614.45	1611	8	5.28E-03	33.7	
40	0	842.74	22	11	2.80	1686.23	1681	11	6.11E-03	36.1	
41	0	904.18	14	6	0.91	1809.04	1805	8	3.95E-03	39.8	
42	0	911.32*	112	18	1.67	1823.31	1817	12	3.12E-02	12.2	
43	0	957.80	11	7	0.95	1916.20	1913	8	3.12E-03	52.0	
44	0	964.81	14	6	1.01	1930.22	1927	7	3.82E-03	41.3	
45	0	969.02	69	6	1.29	1938.64	1934	12	1.92E-02	14.0	
46	0	1000.86*	10	17	0.67	2002.27	1992	14	2.66E-03	100.5	
47	0	1006.36	7	3	1.10	2013.27	2010	6	2.06E-03	51.5	
48	0	1021.14*	8	14	1.42	2042.80	2039	9	2.19E-03	93.2	
49	0	1045.66	9	5	0.62	2091.82	2087	8	2.43E-03	58.3	
50	0	1120.83*	29	23	1.55	2242.07	2233	18	8.06E-03	43.1	
51	0	1239.14	23	26	1.40	2478.53	2473	14	6.47E-03	49.8	
52	0	1279.37	5	12	4.20	2558.95	2549	12	1.39E-03	145.6	
53	0	1285.23	6	2	0.64	2570.67	2567	7	1.74E-03	53.2	
54	0	1337.51	7	8	1.34	2675.16	2668	11	1.85E-03	92.1	
55	0	1396.44	8	2	0.70	2792.94	2788	9	2.19E-03	49.1	
56	0	1408.26	12	0	1.74	2816.58	2812	10	3.33E-03	28.9	
57	0	1461.08*	321	19	2.41	2922.16	2914	15	8.93E-02	6.3	
58	0	1764.58	41	0	1.07	3528.80	3523	13	1.14E-02	15.6	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235057.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 2-DEC-2015 14:55:00 Acquisition date : 3-OCT-2016 07:51:32
Sample ID : G405235057 Sample quantity : 115.83 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA5 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.59 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	TH-229	85.43
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.244E+00	1.482E+01	1.482E+01	12.70	OK
CD-109	88.03	3.70*	8.914E+00	1.772E+00	2.806E+00	60.17	OK
SN-126	64.28	9.60	9.124E+00	1.029E+00	1.029E+00	44.76	OK
	86.94	8.90	8.914E+00	7.368E-01	7.368E-01	60.17	OK
	87.57	37.00*	8.914E+00	1.772E-01	1.772E-01	60.17	OK
CS-135	268.22	16.00*	5.038E+00	3.243E-01	3.243E-01	66.49	OK
BA-137M	661.66	89.90*	2.417E+00	2.089E-01	2.129E-01	36.21	OK
CS-137	661.66	85.10*	2.417E+00	2.207E-01	2.250E-01	36.21	OK
TL-208	277.37	6.60	4.930E+00	3.652E-01	3.652E-01	163.20	OK
	583.19	85.00*	2.673E+00	3.217E-01	3.217E-01	30.77	OK
	860.56	12.50	1.959E+00	-----	Line Not Found	-----	Absent
PB-210	46.54	4.25*	9.666E+00	6.380E-01	6.549E-01	132.41	OK
PB-212	74.82	10.28	8.979E+00	1.087E+00	1.087E+00	37.83	OK
	77.11	17.10	8.967E+00	1.741E+00	1.741E+00	14.56	OK
	238.63	43.60*	5.564E+00	1.160E+00	1.160E+00	11.42	OK
	300.09	3.30	4.617E+00	1.239E+00	1.239E+00	111.85	OK
BI-214	609.32	45.49*	2.581E+00	1.112E+00	1.112E+00	18.02	OK
	1120.29	14.92	1.575E+00	7.645E-01	7.648E-01	86.25	OK
	1764.49	15.30	1.032E+00	1.574E+00	1.574E+00	31.23	OK
PB-214	74.82	5.80	8.977E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	8.967E+00	3.070E+00	3.071E+00	14.56	OK
	87.09	3.41	8.912E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	5.497E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	4.681E+00	1.290E+00	1.290E+00	23.00	OK
	351.93	35.60*	4.043E+00	1.173E+00	1.174E+00	17.65	OK
RN-222	609.32	45.49*	2.581E+00	1.112E+00	1.112E+00	18.02	OK
	1120.29	14.92	1.575E+00	7.645E-01	7.648E-01	86.25	OK
	1764.49	15.30	1.032E+00	1.574E+00	1.574E+00	31.23	OK
RA-224	240.99	4.10*	5.508E+00	1.542E+00	1.542E+00	75.39	OK
RA-226	609.32	45.49*	2.581E+00	1.112E+00	1.112E+00	18.02	OK
	1120.29	14.92	1.575E+00	7.645E-01	7.648E-01	86.25	OK
	1764.49	15.30	1.032E+00	1.574E+00	1.574E+00	31.23	OK
AC-228	105.21	1.10	8.704E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.178E+00	1.645E+00	1.645E+00	30.14	OK
	794.95	4.25	2.087E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	2.005E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.870E+00	1.457E+00	1.457E+00	24.31	OK
	968.97	15.80	1.779E+00	1.530E+00	1.530E+00	27.95	OK
RA-228	105.21	1.10	8.704E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.178E+00	1.645E+00	1.645E+00	30.14	OK
	794.95	4.25	2.087E+00	-----	Line Not Found	-----	Absent
	835.71	1.61	2.005E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.870E+00	1.457E+00	1.457E+00	24.31	OK
	968.97	15.80	1.779E+00	1.530E+00	1.530E+00	27.95	OK
TH-228	74.82	10.28	8.979E+00	1.087E+00	1.087E+00	37.83	OK
	77.11	17.10	8.967E+00	1.741E+00	1.741E+00	14.56	OK
	238.63	43.60*	5.564E+00	1.160E+00	1.160E+00	11.42	OK
	300.09	3.30	4.617E+00	1.239E+00	1.239E+00	111.85	OK
TH-229	85.43	14.70	8.914E+00	4.461E-01	4.461E-01	60.17	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	88.47	24.00	8.893E+00	3.886E-01	3.886E-01	33.02	OK
	193.51	4.41*	6.511E+00	----- Line	Not Found	-----	Absent
	210.85	2.80	6.116E+00	----- Line	Not Found	-----	Absent
TH-230	609.32	45.49*	2.581E+00	1.112E+00	1.112E+00	18.02	OK
	1120.29	14.92	1.575E+00	7.645E-01	7.645E-01	86.25	OK
	1764.49	15.30	1.032E+00	1.574E+00	1.574E+00	31.23	OK
TH-232	105.21	1.10	8.704E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.178E+00	1.645E+00	1.645E+00	30.14	OK
	835.71	1.61	2.005E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.870E+00	1.457E+00	1.457E+00	24.31	OK
	968.97	15.80	1.779E+00	1.530E+00	1.530E+00	27.95	OK
PA-233	300.13	6.63	4.617E+00	6.166E-01	6.166E-01	111.85	OK
	311.90	38.50*	4.484E+00	9.945E-02	9.945E-02	108.41	OK
	340.48	4.45	4.154E+00	----- Line	Not Found	-----	Absent
TH-234	63.29	3.70*	9.124E+00	2.669E+00	2.669E+00	44.76	OK
	92.59	4.23	8.869E+00	2.447E+00	2.447E+00	35.39	OK
U-234	609.32	45.49*	2.581E+00	1.112E+00	1.112E+00	18.02	OK
	1120.29	14.92	1.575E+00	7.645E-01	7.645E-01	86.25	OK
	1764.49	15.30	1.032E+00	1.574E+00	1.574E+00	31.23	OK
U-235	89.96	3.47	8.893E+00	2.688E+00	2.688E+00	33.02	OK
	93.35	5.60	8.869E+00	1.849E+00	1.849E+00	35.39	OK
	143.76	10.96*	7.805E+00	9.619E-02	9.619E-02	353.72	OK
	163.33	5.08	7.279E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	6.705E+00	1.634E-01	1.634E-01	45.99	OK
	205.31	5.01	6.238E+00	----- Line	Not Found	-----	Absent
U-238	63.29	3.70*	9.124E+00	2.669E+00	2.669E+00	44.76	OK
	92.59	4.23	8.869E+00	2.447E+00	2.447E+00	35.39	OK
PU-239	129.30	0.01*	8.197E+00	5.946E+02	5.946E+02	74.31	OK
	375.05	0.00	3.844E+00	2.064E+03	2.064E+03	109.17	OK
	413.71	0.00	3.534E+00	----- Line	Not Found	-----	Absent
AM-243	43.53	5.90	9.491E+00	----- Line	Not Found	-----	Absent
	74.66	67.20*	8.979E+00	1.663E-01	1.663E-01	37.83	OK
ANH-511	511.00	100.00*	2.976E+00	9.425E-02	9.425E-02	99.66	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235057.CNF;1
* Acquisition date   : 3-OCT-2016 07:51:32 Sensitivity      : 3.000
* Detector ID        : GAM05 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.59 Half life ratio : *****
* Sample date        : 2-DEC-2015 14:55:00 Analyst initials: MXR1
* Sample ID          : G405235057 Sample Quantity : 1.1583E+02 GRAM
* Batch Number       : 1596252 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 4-SEP-2016 08:00:28 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM05 CAN.CNF;20
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.482E+01	1.845E+00	6.930E-01
CD-109	2.806E+00	1.654E+00	1.283E+00
SN-126	1.772E-01	1.045E-01	8.100E-02
CS-135	3.243E-01	2.113E-01	2.661E-01
BA-137M	2.129E-01	7.556E-02	7.185E-02
CS-137	2.250E-01	7.982E-02	7.590E-02
TL-208	3.217E-01	9.701E-02	6.547E-02
PB-210	6.549E-01	8.498E-01	6.972E-01
PB-212	1.160E+00	1.298E-01	9.511E-02
BI-214	1.112E+00	1.964E-01	1.275E-01
PB-214	1.174E+00	2.030E-01	1.304E-01
RN-222	1.112E+00	1.964E-01	1.275E-01
RA-224	1.542E+00	1.139E+00	1.020E+00
RA-226	1.112E+00	1.964E-01	1.275E-01
AC-228	1.457E+00	3.470E-01	2.959E-01
RA-228	1.457E+00	3.470E-01	2.959E-01
TH-228	1.160E+00	1.298E-01	9.511E-02
TH-229	-1.705E-01	4.424E-01	7.744E-01
TH-230	1.112E+00	1.964E-01	1.275E-01
TH-232	1.457E+00	3.470E-01	2.959E-01
PA-233	9.945E-02	1.057E-01	9.168E-02
TH-234	2.669E+00	1.171E+00	8.652E-01
U-234	1.112E+00	1.964E-01	1.275E-01
U-235	9.619E-02	3.334E-01	2.876E-01
U-238	2.669E+00	1.171E+00	8.652E-01
PU-239	5.946E+02	4.330E+02	4.347E+02
AM-243	1.663E-01	6.167E-02	5.094E-02
ANH-511	9.425E-02	9.205E-02	5.649E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-4.080E-01	1.560E+01	2.970E+01	NOT IDENT.
NA-22	1.150E-02	5.274E-02	9.900E-02	NOT IDENT.

NA-24	0.000E+00	1.887E+41	0.000E+00	SHORT HLIF
AL-26	-2.923E-03	4.248E-02	8.481E-02	NOT IDENT.
SC-46	3.292E-01	4.356E-01	9.297E-01	FAIL ABUN
V-48	0.000E+00	2.219E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	6.096E+02	0.000E+00	SHORT HLIF
MN-54	-1.825E-02	8.935E-02	1.588E-01	NOT IDENT.
CO-56	-1.867E-01	6.254E-01	1.032E+00	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-1.356E-02	4.248E-02	7.717E-02	NOT IDENT.
CO-58	-5.131E-01	8.645E-01	1.246E+00	NOT IDENT.
FE-59	-2.163E+00	7.424E+00	1.420E+01	NOT IDENT.
CO-60	-6.648E-03	4.244E-02	7.341E-02	NOT IDENT.
ZN-65	-3.291E-02	1.991E-01	3.378E-01	NOT IDENT.
GE-68	1.482E+00	2.539E+00	5.533E+00	NOT IDENT.
AS-73	1.372E+00	2.258E+00	4.518E+00	NOT IDENT.
AS-74	0.000E+00	8.017E+03	0.000E+00	SHORT HLIF
SE-75	-1.731E-02	2.457E-01	4.334E-01	NOT IDENT.
BR-77	0.000E+00	1.296E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	9.019E+02	0.000E+00	SHORT HLIF
RB-83	5.226E-01	6.834E-01	1.456E+00	NOT IDENT.
KR-85	-2.533E+00	9.981E+00	1.621E+01	NOT IDENT.
SR-85	-2.890E-01	1.121E+00	1.820E+00	NOT IDENT.
RB-86	0.000E+00	3.750E+04	0.000E+00	SHORT HLIF
Y-88	2.007E-01	2.412E-01	6.413E-01	NOT IDENT.
Y-91	-4.706E+02	5.827E+02	9.852E+02	NOT IDENT.
NB-94	2.358E-02	3.520E-02	7.225E-02	NOT IDENT.
NB-95	-6.240E-01	1.155E+00	1.971E+00	NOT IDENT.
NB-95M	-1.684E-01	2.511E+00	4.468E+00	NOT IDENT.
ZR-95	-4.362E-01	1.798E+00	3.251E+00	NOT IDENT.
NB-97	0.000E+00	1.642E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	9.557E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	8.332E+40	0.000E+00	SHORT HLIF
RH-101	-2.473E-02	2.979E-02	4.689E-02	NOT IDENT.
RH-102	5.794E-03	7.128E-02	1.363E-01	FAIL ABUN
RU-103	-2.458E+00	6.735E+00	1.238E+01	FAIL ABUN
RH-106	-1.378E-01	5.142E-01	9.486E-01	NOT IDENT.
RU-106	-1.378E-01	5.142E-01	9.486E-01	NOT IDENT.
AG-108M	1.293E-02	2.933E-02	5.944E-02	NOT IDENT.
AG-110M	1.235E-02	1.124E-01	2.164E-01	NOT IDENT.
SN-113	-2.551E-02	2.405E-01	4.626E-01	NOT IDENT.
CD-115	0.000E+00	2.162E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.254E+05	0.000E+00	SHORT HLIF
TE-123M	1.236E-02	1.313E-01	2.427E-01	NOT IDENT.
SB-124	8.533E-01	2.134E+00	5.179E+00	NOT IDENT.
SB-125	2.586E-03	9.572E-02	1.885E-01	FAIL ABUN
TE-125M	7.125E+01	2.584E+02	4.920E+02	NOT IDENT.
I-126	0.000E+00	1.858E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.868E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	7.977E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	9.673E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.470E+27	0.000E+00	SHORT HLIF
BA-133	3.118E-02	4.185E-02	8.175E-02	FAIL ABUN
I-133	0.000E+00	1.054E+41	0.000E+00	SHORT HLIF
CS-134	8.100E-02	6.282E-02	1.359E-01	FAIL ABUN
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	4.575E+05	0.000E+00	SHORT HLIF
CE-139	2.891E-02	1.040E-01	1.959E-01	NOT IDENT.
BA-140	0.000E+00	1.950E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	6.868E+05	0.000E+00	SHORT HLIF
CE-141	-6.913E+00	2.633E+01	4.381E+01	NOT IDENT.
CE-143	0.000E+00	1.002E+41	0.000E+00	SHORT HLIF
CE-144	6.266E-03	2.721E-01	4.785E-01	NOT IDENT.
PM-144	4.109E-02	6.091E-02	1.259E-01	NOT IDENT.
PR-144	3.545E+00	5.302E+00	1.095E+01	NOT IDENT.
PM-146	5.332E-02	4.458E-02	9.779E-02	NOT IDENT.
ND-147	0.000E+00	4.966E+07	0.000E+00	SHORT HLIF
PM-147	-1.960E+02	7.428E+02	1.255E+03	NOT IDENT.
PM-149	0.000E+00	5.800E+40	0.000E+00	SHORT HLIF
EU-150	1.283E-02	3.042E-02	5.234E-02	FAIL ABUN
EU-152	9.310E-02	9.925E-02	2.031E-01	FAIL ABUN
GD-153	-5.012E-03	1.443E-01	2.694E-01	NOT IDENT.
EU-154	2.812E-02	1.289E-01	2.420E-01	NOT IDENT.
EU-155	3.631E-02	8.797E-02	1.702E-01	FAIL ABUN
TB-160	-4.829E-01	2.026E+00	3.683E+00	FAIL ABUN
HO-166M	-7.540E-03	6.419E-02	1.198E-01	FAIL ABUN
TM-171	1.374E-01	4.592E+00	8.916E+00	NOT IDENT.

HF-172	-2.133E-02	2.188E-01	3.740E-01	FAIL ABUN
LU-172	-4.430E-02	7.225E-02	1.299E-01	FAIL ABUN
LU-176	-8.702E-03	2.509E-02	3.893E-02	FAIL ABUN
HF-181	-2.728E+00	4.912E+00	8.827E+00	NOT IDENT.
TA-182	-8.829E-01	1.139E+00	1.940E+00	FAIL ABUN
RE-183	2.162E-01	1.000E+00	1.957E+00	NOT IDENT.
RE-184	4.936E+01	3.847E+01	8.300E+01	FAIL ABUN
W-188	2.368E-01	1.422E+02	2.053E+02	FAIL ABUN
IR-192	-2.643E-02	5.317E-01	9.364E-01	FAIL ABUN
HG-203	-2.678E-01	3.354E+00	4.749E+00	FAIL ABUN
BI-207	9.534E-03	5.008E-02	1.035E-01	FAIL ABUN
BI-211	0.000E+00	5.591E-01	1.000E+00	FAIL ABUN
PB-211	-1.130E-02	6.654E-01	1.291E+00	NOT IDENT.
BI-212	1.310E+00	7.566E-01	1.425E+00	FAIL ABUN
RN-219	-1.032E-01	3.581E-01	6.770E-01	NOT IDENT.
RA-223	-2.873E-01	6.702E-01	1.015E+00	FAIL ABUN
AC-227	-1.220E-02	2.177E-01	3.902E-01	FAIL ABUN
TH-227	-1.220E-02	2.177E-01	3.902E-01	FAIL ABUN
PA-231	3.039E-02	5.201E-01	8.531E-01	FAIL ABUN
TH-231	-2.873E-01	6.702E-01	1.015E+00	FAIL ABUN
PA-234	4.694E-02	3.417E-01	6.469E-01	FAIL ABUN
PA-234M	4.103E+00	8.086E+00	1.091E+01	FAIL ABUN
NP-237	9.945E-02	1.057E-01	1.119E-01	FAIL ABUN
NP-238	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
NP-239	3.358E-01	3.052E-01	3.731E-01	FAIL ABUN
AM-241	2.664E-03	5.058E-02	9.129E-02	NOT IDENT.
CM-243	-3.432E-02	7.706E-02	1.402E-01	FAIL ABUN
BK-247	4.861E-02	7.488E-02	1.437E-01	FAIL ABUN
CM-247	-1.586E-02	3.372E-02	6.222E-02	FAIL ABUN
CF-249	3.662E-02	4.189E-02	8.713E-02	NOT IDENT.
CF-251	-9.189E-03	1.076E-01	1.952E-01	FAIL ABUN

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	303	10.66*	1.244E+00	1.482E+01	1.482E+01	12.70
CD-109	88.03	151	3.70*	8.914E+00	2.961E+00	4.687E+00	34.81
SN-126	64.28	139	9.60	9.124E+00	1.029E+00	1.029E+00	44.76
	86.94	151	8.90	8.914E+00	1.231E+00	1.231E+00	34.81
	87.57	151	37.00*	8.914E+00	2.961E-01	2.961E-01	34.81
CS-135	268.22	40	16.00*	5.038E+00	3.243E-01	3.243E-01	66.49
BA-137M	661.66	70	89.90*	2.417E+00	2.089E-01	2.129E-01	36.21
CS-137	661.66	70	85.10*	2.417E+00	2.207E-01	2.250E-01	36.21
TL-208	277.37	18	6.60	4.930E+00	3.652E-01	3.652E-01	163.20
	583.19	113	85.00*	2.673E+00	3.217E-01	3.217E-01	30.77
	860.56	-----	12.50	1.959E+00	-----	Line Not Found	-----
PB-210	46.54	40	4.25*	9.666E+00	6.380E-01	6.549E-01	132.41
BI-211	72.87	38	1.23	8.991E+00	2.246E+00	2.246E+00	110.80
	351.06	261	12.92*	4.043E+00	3.233E+00	3.233E+00	17.65
PB-212	74.82	258	10.28	8.979E+00	1.815E+00	1.815E+00	20.70
	77.11	412	17.10	8.967E+00	1.741E+00	1.741E+00	14.56
	238.63	434	43.60*	5.564E+00	1.160E+00	1.160E+00	11.42
	300.09	29	3.30	4.617E+00	1.239E+00	1.239E+00	111.85
BI-214	609.32	201	45.49*	2.581E+00	1.112E+00	1.112E+00	18.02
	1120.29	28	14.92	1.575E+00	7.645E-01	7.648E-01	86.25
	1764.49	38	15.30	1.032E+00	1.574E+00	1.574E+00	31.23
PB-214	74.82	258	5.80	8.979E+00	3.217E+00	3.218E+00	20.70
	77.11	412	9.70	8.967E+00	3.070E+00	3.071E+00	14.56
	87.09	151	3.41	8.914E+00	3.213E+00	3.214E+00	34.81
	242.00	133	7.25	5.508E+00	2.162E+00	2.162E+00	27.13
	295.22	172	18.42	4.681E+00	1.290E+00	1.290E+00	23.00
	351.93	261	35.60*	4.043E+00	1.173E+00	1.174E+00	17.65
RN-222	609.32	201	45.49*	2.581E+00	1.112E+00	1.112E+00	18.02
	1120.29	28	14.92	1.575E+00	7.645E-01	7.648E-01	86.25
	1764.49	38	15.30	1.032E+00	1.574E+00	1.574E+00	31.23
RA-224	240.99	133	4.10*	5.508E+00	3.822E+00	3.822E+00	27.13
RA-226	609.32	201	45.49*	2.581E+00	1.112E+00	1.112E+00	18.02
	1120.29	28	14.92	1.575E+00	7.645E-01	7.648E-01	86.25
	1764.49	38	15.30	1.032E+00	1.574E+00	1.574E+00	31.23
AC-228	105.21	-----	1.10	8.704E+00	-----	Line Not Found	-----
	338.32	120	11.27	4.178E+00	1.645E+00	1.645E+00	30.14
	794.95	-----	4.25	2.087E+00	-----	Line Not Found	-----
	835.71	-----	1.61	2.005E+00	-----	Line Not Found	-----
	911.20	108	25.80*	1.870E+00	1.457E+00	1.457E+00	24.31
	968.97	66	15.80	1.779E+00	1.530E+00	1.530E+00	27.95
RA-228	105.21	-----	1.10	8.704E+00	-----	Line Not Found	-----
	338.32	120	11.27	4.178E+00	1.645E+00	1.645E+00	30.14
	794.95	-----	4.25	2.087E+00	-----	Line Not Found	-----
	835.71	-----	1.61	2.005E+00	-----	Line Not Found	-----
	911.20	108	25.80*	1.870E+00	1.457E+00	1.457E+00	24.31
	968.97	66	15.80	1.779E+00	1.530E+00	1.530E+00	27.95
TH-228	74.82	258	10.28	8.979E+00	1.815E+00	1.815E+00	20.70

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	412	17.10	8.967E+00	1.741E+00	1.741E+00	14.56
	238.63	434	43.60*	5.564E+00	1.160E+00	1.160E+00	11.42
	300.09	29	3.30	4.617E+00	1.239E+00	1.239E+00	111.85
TH-229	85.43	151	14.70	8.914E+00	7.453E-01	7.454E-01	34.81
	88.47	128	24.00	8.893E+00	3.886E-01	3.886E-01	33.02
	193.51	-----	4.41*	6.511E+00	-----	Line Not Found	-----
	210.85	-----	2.80	6.116E+00	-----	Line Not Found	-----
TH-230	609.32	201	45.49*	2.581E+00	1.112E+00	1.112E+00	18.02
	1120.29	28	14.92	1.575E+00	7.645E-01	7.645E-01	86.25
	1764.49	38	15.30	1.032E+00	1.574E+00	1.574E+00	31.23
TH-232	105.21	-----	1.10	8.704E+00	-----	Line Not Found	-----
	338.32	120	11.27	4.178E+00	1.645E+00	1.645E+00	30.14
	835.71	-----	1.61	2.005E+00	-----	Line Not Found	-----
	911.20	108	25.80*	1.870E+00	1.457E+00	1.457E+00	24.31
	968.97	66	15.80	1.779E+00	1.530E+00	1.530E+00	27.95
PA-233	300.13	29	6.63	4.617E+00	6.166E-01	6.166E-01	111.85
	311.90	26	38.50*	4.484E+00	9.945E-02	9.945E-02	108.41
	340.48	-----	4.45	4.154E+00	-----	Line Not Found	-----
TH-234	63.29	139	3.70*	9.124E+00	2.669E+00	2.669E+00	44.76
	92.59	142	4.23	8.869E+00	2.447E+00	2.447E+00	35.39
U-234	609.32	201	45.49*	2.581E+00	1.112E+00	1.112E+00	18.02
	1120.29	28	14.92	1.575E+00	7.645E-01	7.645E-01	86.25
	1764.49	38	15.30	1.032E+00	1.574E+00	1.574E+00	31.23
U-235	89.96	128	3.47	8.893E+00	2.688E+00	2.688E+00	33.02
	93.35	142	5.60	8.869E+00	1.849E+00	1.849E+00	35.39
	143.76	13	10.96*	7.805E+00	9.619E-02	9.619E-02	353.72
	163.33	-----	5.08	7.279E+00	-----	Line Not Found	-----
	185.72	97	57.20	6.705E+00	1.634E-01	1.634E-01	45.99
	205.31	-----	5.01	6.238E+00	-----	Line Not Found	-----
U-238	63.29	139	3.70*	9.124E+00	2.669E+00	2.669E+00	44.76
	92.59	142	4.23	8.869E+00	2.447E+00	2.447E+00	35.39
PU-239	129.30	47	0.01*	8.197E+00	5.946E+02	5.946E+02	74.31
	375.05	19	0.00	3.844E+00	2.064E+03	2.064E+03	109.17
	413.71	-----	0.00	3.534E+00	-----	Line Not Found	-----
AM-243	43.53	-----	5.90	9.491E+00	-----	Line Not Found	-----
	74.66	258	67.20*	8.979E+00	2.776E-01	2.777E-01	20.70
ANH-511	511.00	43	100.00*	2.976E+00	9.425E-02	9.425E-02	99.66

Flag: "*" = Keyline

Total number of lines in spectrum 58
Number of unidentified lines 11
Number of lines tentatively identified by NID 47 81.03%

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	1.482E+01	1.482E+01	0.188E+01	12.70	
CD-109	461.40D	1.58	2.961E+00	4.687E+00	1.632E+00	34.81	
SN-126	2.30E+05Y	1.00	2.961E-01	2.961E-01	1.031E-01	34.81	
CS-135	2.30E+06Y	1.00	3.243E-01	3.243E-01	2.156E-01	66.49	
BA-137M	30.08Y	1.02	2.089E-01	2.129E-01	0.771E-01	36.21	
CS-137	30.08Y	1.02	2.207E-01	2.250E-01	0.814E-01	36.21	
TL-208	1.41E+10Y	1.00	3.217E-01	3.217E-01	0.990E-01	30.77	
PB-210	22.20Y	1.03	6.380E-01	6.549E-01	8.672E-01	132.41	
BI-211	7.04E+08Y	1.00	3.233E+00	3.233E+00	0.571E+00	17.65	
PB-212	1.41E+10Y	1.00	1.160E+00	1.160E+00	0.132E+00	11.42	
BI-214	1600.00Y	1.00	1.112E+00	1.112E+00	0.200E+00	18.02	
PB-214	1600.00Y	1.00	1.173E+00	1.174E+00	0.207E+00	17.65	
RN-222	1600.00Y	1.00	1.112E+00	1.112E+00	0.200E+00	18.02	
RA-224	1.41E+10Y	1.00	3.822E+00	3.822E+00	1.037E+00	27.13	
RA-226	1600.00Y	1.00	1.112E+00	1.112E+00	0.200E+00	18.02	
AC-228	1.41E+10Y	1.00	1.457E+00	1.457E+00	0.354E+00	24.31	
RA-228	1.41E+10Y	1.00	1.457E+00	1.457E+00	0.354E+00	24.31	
TH-228	1.41E+10Y	1.00	1.160E+00	1.160E+00	0.132E+00	11.42	
TH-229	7340.00Y	1.00	3.886E-01	3.886E-01	1.283E-01	33.02	K
TH-230	7.54E+04Y	1.00	1.112E+00	1.112E+00	0.200E+00	18.02	
TH-232	1.41E+10Y	1.00	1.457E+00	1.457E+00	0.354E+00	24.31	
PA-233	2.14E+06Y	1.00	9.945E-02	9.945E-02	10.78E-02	108.41	
TH-234	4.47E+09Y	1.00	2.669E+00	2.669E+00	1.194E+00	44.76	
U-234	2.45E+05Y	1.00	1.112E+00	1.112E+00	0.200E+00	18.02	
U-235	7.04E+08Y	1.00	9.619E-02	9.619E-02	34.02E-02	353.72	
U-238	4.47E+09Y	1.00	2.669E+00	2.669E+00	1.194E+00	44.76	
PU-239	24110.00Y	1.00	5.946E+02	5.946E+02	4.418E+02	74.31	
AM-243	7370.00Y	1.00	2.776E-01	2.777E-01	0.575E-01	20.70	
ANH-511	1.00E+09Y	1.00	9.425E-02	9.425E-02	9.393E-02	99.66	

Total Activity : 6.412E+02 6.429E+02

Grand Total Activity : 6.412E+02 6.429E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	31.49	26	104	0.53	64.83	63	6	6.56E-03	****	1.49E+00	
5	83.62	60	126	0.96	169.01	166	27	1.55E-02	66.8	8.93E+00	T
0	117.65	35	77	1.66	237.01	234	7	9.18E-03	92.7	8.46E+00	T
3	130.85	38	61	1.17	263.40	256	13	9.96E-03	86.3	8.15E+00	T
0	209.04	36	91	1.04	419.68	416	8	9.61E-03	99.9	6.15E+00	
0	231.76	21	70	1.82	465.07	462	7	5.69E-03	****	5.69E+00	
0	284.39	15	65	4.54	570.27	562	11	4.11E-03	****	4.82E+00	T
0	287.37	42	31	2.31	576.23	572	10	1.14E-02	59.2	4.78E+00	T
0	327.51	29	36	1.59	656.45	653	7	7.95E-03	78.2	4.29E+00	T
0	463.11	33	26	1.17	927.48	924	8	9.36E-03	62.8	3.22E+00	T
0	665.98	21	14	1.75	1332.95	1329	11	5.90E-03	85.0	2.40E+00	T
0	727.39	30	15	2.33	1455.68	1451	10	8.61E-03	59.0	2.24E+00	T
0	802.80	18	7	0.66	1606.41	1601	9	5.03E-03	76.2	2.07E+00	T
0	806.83	18	6	0.95	1614.45	1611	8	5.28E-03	67.4	2.06E+00	
0	842.74	21	11	2.80	1686.23	1681	11	6.11E-03	72.3	1.99E+00	
0	904.18	14	6	0.91	1809.04	1805	8	3.95E-03	79.5	1.88E+00	T
0	957.80	11	7	0.95	1916.20	1913	8	3.12E-03	****	1.80E+00	
0	964.81	13	6	1.01	1930.22	1927	7	3.82E-03	82.6	1.78E+00	T
0	1000.86	9	17	0.67	2002.27	1992	14	2.66E-03	****	1.73E+00	T
0	1006.36	7	2	1.10	2013.27	2010	6	2.06E-03	****	1.72E+00	
0	1021.14	8	14	1.42	2042.80	2039	9	2.19E-03	****	1.70E+00	T
0	1045.66	8	5	0.62	2091.82	2087	8	2.43E-03	****	1.67E+00	T
0	1239.14	22	24	1.40	2478.53	2473	14	6.47E-03	99.6	1.44E+00	T
0	1279.37	5	11	4.20	2558.95	2549	12	1.39E-03	****	1.40E+00	
0	1285.23	6	2	0.64	2570.67	2567	7	1.74E-03	****	1.40E+00	
0	1337.51	6	8	1.34	2675.16	2668	11	1.85E-03	****	1.35E+00	
0	1396.44	7	2	0.70	2792.94	2788	9	2.19E-03	98.3	1.30E+00	
0	1408.26	11	0	1.74	2816.58	2812	10	3.33E-03	57.7	1.29E+00	T

Flags: "T" = Tentatively associated


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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                 *
*                                     *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235057.CNF;1 *
* Acquisition date   : 3-OCT-2016 07:51:32 Sensitivity      : 3.000          *
* Detector ID        : GAM05 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.59 Half life ratio  : *****      *
* Sample date        : 2-DEC-2015 14:55:00 Nuclide Library : SOLID      *
* Sample ID          : G405235057 Analyst initials: MXR1         *
* Batch Number       : 1596252 Sample Quantity : 1.1583E+02 GRAM    *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000          *
*                                     Dry Weight      : 0.00000          *
*****
*                                     CALIBRATION INFORMATION                   *
*                                     *                                         *
* Eff. Cal. date     : 4-SEP-2016 08:00:28 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM05 CAN.CNF;20      *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.807E-01
CD-109	5.988E-01
SN-126	3.779E-02
CS-135	1.221E-01
BA-137M	3.180E-02
CS-137	3.360E-02
TL-208	2.887E-02
PB-210	3.262E-01
PB-212	4.390E-02
BI-214	5.627E-02
PB-214	5.906E-02
RN-222	5.627E-02
RA-224	4.711E-01
RA-226	5.627E-02
AC-228	1.298E-01
RA-228	1.298E-01
TH-228	4.390E-02
TH-229	3.563E-01
TH-230	5.625E-02
TH-232	1.298E-01
PA-233	4.070E-02
TH-234	4.061E-01
U-234	5.625E-02
U-235	1.334E-01
U-238	4.061E-01
PU-239	2.001E+02
AM-243	2.399E-02
ANH-511	2.529E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.341E+01	NOT IDENT.
NA-22	4.175E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF

AL-26	3.373E-02	NOT IDENT.
SC-46	4.073E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	7.079E-02	NOT IDENT.
CO-56	4.475E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	3.588E-02	NOT IDENT.
CO-58	5.376E-01	NOT IDENT.
FE-59	5.971E+00	NOT IDENT.
CO-60	2.950E-02	NOT IDENT.
ZN-65	1.429E-01	NOT IDENT.
GE-68	2.402E+00	NOT IDENT.
AS-73	2.130E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.995E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	6.498E-01	NOT IDENT.
KR-85	7.381E+00	NOT IDENT.
SR-85	8.288E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	2.560E-01	NOT IDENT.
Y-91	4.076E+02	NOT IDENT.
NB-94	3.231E-02	NOT IDENT.
NB-95	8.736E-01	NOT IDENT.
NB-95M	2.060E+00	NOT IDENT.
ZR-95	1.422E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.155E-02	NOT IDENT.
RH-102	6.084E-02	FAIL ABUN
RU-103	5.488E+00	FAIL ABUN
RH-106	4.127E-01	NOT IDENT.
RU-106	4.127E-01	NOT IDENT.
AG-108M	2.685E-02	NOT IDENT.
AG-110M	9.351E-02	NOT IDENT.
SN-113	2.082E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.129E-01	NOT IDENT.
SB-124	2.016E+00	NOT IDENT.
SB-125	8.363E-02	FAIL ABUN
TE-125M	2.307E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.712E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	6.144E-02	FAIL ABUN
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	9.077E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.030E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.183E-01	NOT IDENT.
PM-144	5.613E-02	NOT IDENT.
PR-144	4.882E+00	NOT IDENT.
PM-146	4.430E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	5.810E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.396E-02	FAIL ABUN
EU-152	9.314E-02	FAIL ABUN
GD-153	1.263E-01	NOT IDENT.
EU-154	1.020E-01	NOT IDENT.
EU-155	7.963E-02	FAIL ABUN
TB-160	1.558E+00	FAIL ABUN
HO-166M	5.281E-02	FAIL ABUN
TM-171	4.187E+00	NOT IDENT.
HF-172	1.740E-01	FAIL ABUN

LU-172	5.316E-02	FAIL ABUN
LU-176	1.738E-02	FAIL ABUN
HF-181	3.893E+00	NOT IDENT.
TA-182	8.289E-01	FAIL ABUN
RE-183	9.206E-01	NOT IDENT.
RE-184	3.664E+01	FAIL ABUN
W-188	9.300E+01	FAIL ABUN
IR-192	4.255E-01	FAIL ABUN
HG-203	2.165E+00	FAIL ABUN
BI-207	4.450E-02	FAIL ABUN
BI-211	4.835E-01	FAIL ABUN
PB-211	5.806E-01	NOT IDENT.
BI-212	6.538E-01	FAIL ABUN
RN-219	3.016E-01	NOT IDENT.
RA-223	4.564E-01	FAIL ABUN
AC-227	1.773E-01	FAIL ABUN
TH-227	1.773E-01	FAIL ABUN
PA-231	3.907E-01	FAIL ABUN
TH-231	4.564E-01	FAIL ABUN
PA-234	2.832E-01	FAIL ABUN
PA-234M	4.853E+00	FAIL ABUN
NP-237	5.080E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.733E-01	FAIL ABUN
AM-241	4.294E-02	NOT IDENT.
CM-243	6.512E-02	FAIL ABUN
BK-247	6.610E-02	FAIL ABUN
CM-247	2.772E-02	FAIL ABUN
CF-249	3.998E-02	NOT IDENT.
CF-251	9.015E-02	FAIL ABUN

```

*****
*                                     *
*               GEL Laboratories LLC   *
*             2040 Savage Road         *
*             Charleston, SC 29407     *
*                                     *
*****
*               DETECTOR AND SAMPLE DATA               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235057.CNF;1 *
* Acquisition date   : 3-OCT-2016 07:51:32 Sensitivity      : 3.000          *
* Detector ID       : GAM05           Energy tolerance:    1.500          *
* Elapsed live time : 0 01:00:00.00   Abundance limit :    75.000        *
* Elapsed real time : 0 01:00:00.59   Half life ratio :    *****        *
* Sample date       : 2-DEC-2015 14:55:00 Nuclide Library :    SOLID          *
* Sample ID        : G405235057       Analyst initials:    MXR1           *
* Batch Number     : 1596252          Sample Quantity :    1.1583E+02 GRAM    *
*                                     Quantity Err(%) :    1.7266E-03 %        *
* Wet wt corr      : 1.00000          Wet Weight       :    0.00000        *
*                                     Dry Weight        :    0.00000        *
*****
*               CALIBRATION INFORMATION                 *
*
* Eff. Cal. date    : 4-SEP-2016 08:00:28 Eff. Geometry   : CAN           *
* Eff. File        : DKA100:[CANBERRA.GAMMA]EFF GAM05 CAN.CNF;20          *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
             (pCi/GRAM )   (1.96-sigma)  (1.96-sigma)
K-40         1.482E+01      2.001E+00      2.001E+00
CD-109       2.806E+00      1.687E+00      1.687E+00
SN-126       1.772E-01      1.061E-01      1.061E-01
CS-135       3.243E-01      2.124E-01      2.124E-01
BA-137M      2.129E-01      7.611E-02      7.611E-02
CS-137       2.250E-01      8.040E-02      8.040E-02
TL-208       3.217E-01      9.798E-02      9.798E-02
PB-210       6.549E-01      8.519E-01      8.519E-01
PB-212       1.160E+00      1.437E-01      1.437E-01
BI-214       1.112E+00      2.021E-01      2.021E-01
PB-214       1.174E+00      2.088E-01      2.088E-01
RN-222       1.112E+00      2.021E-01      2.021E-01
RA-224       1.542E+00      1.152E+00      1.152E+00
RA-226       1.112E+00      2.021E-01      2.021E-01
AC-228       1.457E+00      3.549E-01      3.549E-01
RA-228       1.457E+00      3.549E-01      3.549E-01
TH-228       1.160E+00      1.437E-01      1.437E-01
TH-229       -1.705E-01      4.425E-01      4.425E-01
TH-230       1.112E+00      2.021E-01      2.021E-01
TH-232       1.457E+00      3.549E-01      3.549E-01
PA-233       9.945E-02      1.058E-01      1.058E-01
TH-234       2.669E+00      1.311E+00      1.311E+00
U-234        1.112E+00      2.021E-01      2.021E-01
U-235        9.619E-02      3.335E-01      3.335E-01
U-238        2.669E+00      1.311E+00      1.311E+00
PU-239       5.946E+02      4.338E+02      4.338E+02
AM-243       1.663E-01      6.408E-02      6.408E-02
ANH-511      9.425E-02      9.213E-02      9.213E-02

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

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Nuclide      Key-Line      K.L Act error      TPU
             Activity      (1.96-sigma)      (1.96-sigma)
BE-7         -4.080E-01      1.560E+01      1.560E+01 NOT IDENT.
NA-22        1.150E-02      5.274E-02      5.300E-02 NOT IDENT.

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NA-24	1.000E+41	1.939E+41	0.000E+00	SHORT HLIF
AL-26	-2.923E-03	4.248E-02	4.250E-02	NOT IDENT.
SC-46	3.292E-01	4.358E-01	4.604E-01	FAIL ABUN
V-48	-7.745E+03	2.219E+04	2.246E+04	SHORT HLIF
CR-51	-4.315E+02	6.099E+02	6.401E+02	SHORT HLIF
MN-54	-1.825E-02	8.935E-02	8.973E-02	NOT IDENT.
CO-56	-1.867E-01	6.254E-01	6.311E-01	FAIL ABUN
MN-56	-1.000E+41	3.275E+41	0.000E+00	SHORT HLIF
CO-57	-1.356E-02	4.248E-02	4.292E-02	NOT IDENT.
CO-58	-5.131E-01	8.648E-01	8.952E-01	NOT IDENT.
FE-59	-2.163E+00	7.425E+00	7.489E+00	NOT IDENT.
CO-60	-6.648E-03	4.244E-02	4.254E-02	NOT IDENT.
ZN-65	-3.291E-02	1.991E-01	1.996E-01	NOT IDENT.
GE-68	1.482E+00	2.539E+00	2.626E+00	NOT IDENT.
AS-73	1.372E+00	2.275E+00	2.358E+00	NOT IDENT.
AS-74	1.536E+03	8.018E+03	8.048E+03	SHORT HLIF
SE-75	-1.731E-02	2.457E-01	2.458E-01	NOT IDENT.
BR-77	1.158E+39	1.022E+40	0.000E+00	SHORT HLIF
SR-82	5.007E+02	9.022E+02	9.300E+02	SHORT HLIF
RB-83	5.226E-01	6.872E-01	7.264E-01	NOT IDENT.
KR-85	-2.533E+00	9.981E+00	1.005E+01	NOT IDENT.
SR-85	-2.890E-01	1.121E+00	1.129E+00	NOT IDENT.
RB-86	1.513E+04	3.751E+04	3.812E+04	SHORT HLIF
Y-88	2.007E-01	2.416E-01	2.580E-01	NOT IDENT.
Y-91	-4.706E+02	5.830E+02	6.204E+02	NOT IDENT.
NB-94	2.358E-02	3.522E-02	3.679E-02	NOT IDENT.
NB-95	-6.240E-01	1.156E+00	1.189E+00	NOT IDENT.
NB-95M	-1.684E-01	2.511E+00	2.512E+00	NOT IDENT.
ZR-95	-4.362E-01	1.798E+00	1.809E+00	NOT IDENT.
NB-97	1.000E+41	1.642E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	2.092E+41	0.000E+00	SHORT HLIF
MO-99	-4.577E+31	9.557E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	8.390E+40	0.000E+00	SHORT HLIF
RH-101	-2.473E-02	3.013E-02	3.212E-02	NOT IDENT.
RH-102	5.794E-03	7.128E-02	7.133E-02	FAIL ABUN
RU-103	-2.458E+00	6.736E+00	6.826E+00	FAIL ABUN
RH-106	-1.378E-01	5.143E-01	5.180E-01	NOT IDENT.
RU-106	-1.378E-01	5.143E-01	5.180E-01	NOT IDENT.
AG-108M	1.293E-02	2.933E-02	2.991E-02	NOT IDENT.
AG-110M	1.235E-02	1.124E-01	1.125E-01	NOT IDENT.
SN-113	-2.551E-02	2.405E-01	2.407E-01	NOT IDENT.
CD-115	1.871E+40	2.190E+40	0.000E+00	SHORT HLIF
SN-117M	-5.451E+04	1.256E+05	1.280E+05	SHORT HLIF
TE-123M	1.236E-02	1.313E-01	1.315E-01	NOT IDENT.
SB-124	8.533E-01	2.134E+00	2.169E+00	NOT IDENT.
SB-125	2.586E-03	9.572E-02	9.573E-02	FAIL ABUN
TE-125M	7.125E+01	2.584E+02	2.604E+02	NOT IDENT.
I-126	2.231E+06	1.884E+06	2.135E+06	SHORT HLIF
SB-126	-1.558E+06	1.891E+06	2.017E+06	SHORT HLIF
SB-127	-3.139E+22	9.110E+22	0.000E+00	SHORT HLIF
I-131	2.122E+08	9.673E+09	9.674E+09	SHORT HLIF
I-132	1.000E+41	1.939E+42	0.000E+00	SHORT HLIF
TE-132	5.883E+26	1.490E+27	0.000E+00	SHORT HLIF
BA-133	3.118E-02	4.187E-02	4.417E-02	FAIL ABUN
I-133	1.000E+41	2.124E+41	0.000E+00	SHORT HLIF
CS-134	8.100E-02	6.291E-02	7.274E-02	FAIL ABUN
I-135	1.000E+41	1.132E+42	0.000E+00	SHORT HLIF
CS-136	-2.198E+05	4.581E+05	4.687E+05	SHORT HLIF
CE-139	2.891E-02	1.042E-01	1.050E-01	NOT IDENT.
BA-140	-7.912E+05	1.950E+06	1.982E+06	SHORT HLIF
LA-140	-3.570E+04	6.868E+05	6.870E+05	SHORT HLIF
CE-141	-6.913E+00	2.634E+01	2.652E+01	NOT IDENT.
CE-143	1.000E+41	1.007E+41	0.000E+00	SHORT HLIF
CE-144	6.266E-03	2.721E-01	2.721E-01	NOT IDENT.
PM-144	4.109E-02	6.096E-02	6.371E-02	NOT IDENT.
PR-144	3.545E+00	5.304E+00	5.539E+00	NOT IDENT.
PM-146	5.332E-02	4.475E-02	5.079E-02	NOT IDENT.
ND-147	-3.013E+07	4.969E+07	5.151E+07	SHORT HLIF
PM-147	-1.960E+02	7.429E+02	7.481E+02	NOT IDENT.
PM-149	1.000E+41	6.211E+40	0.000E+00	SHORT HLIF
EU-150	1.283E-02	3.042E-02	3.097E-02	FAIL ABUN
EU-152	9.310E-02	9.938E-02	1.079E-01	FAIL ABUN
GD-153	-5.012E-03	1.443E-01	1.443E-01	NOT IDENT.
EU-154	2.812E-02	1.289E-01	1.295E-01	NOT IDENT.
EU-155	3.631E-02	8.801E-02	8.952E-02	FAIL ABUN
TB-160	-4.829E-01	2.026E+00	2.038E+00	FAIL ABUN
HO-166M	-7.540E-03	6.419E-02	6.428E-02	FAIL ABUN
TM-171	1.374E-01	4.592E+00	4.593E+00	NOT IDENT.

HF-172	-2.133E-02	2.188E-01	2.190E-01	FAIL ABUN
LU-172	-4.430E-02	7.239E-02	7.510E-02	FAIL ABUN
LU-176	-8.702E-03	2.509E-02	2.540E-02	FAIL ABUN
HF-181	-2.728E+00	4.914E+00	5.065E+00	NOT IDENT.
TA-182	-8.829E-01	1.140E+00	1.207E+00	FAIL ABUN
RE-183	2.162E-01	1.001E+00	1.006E+00	NOT IDENT.
RE-184	4.936E+01	4.031E+01	4.604E+01	FAIL ABUN
W-188	2.368E-01	1.422E+02	1.422E+02	FAIL ABUN
IR-192	-2.643E-02	5.317E-01	5.319E-01	FAIL ABUN
HG-203	-2.678E-01	3.354E+00	3.356E+00	FAIL ABUN
BI-207	9.534E-03	5.008E-02	5.027E-02	FAIL ABUN
BI-211	3.233E+00	5.776E-01	1.568E+00	FAIL ABUN
PB-211	-1.130E-02	6.654E-01	6.654E-01	NOT IDENT.
BI-212	1.310E+00	7.595E-01	9.619E-01	FAIL ABUN
RN-219	-1.032E-01	3.583E-01	3.613E-01	NOT IDENT.
RA-223	-2.873E-01	6.705E-01	6.829E-01	FAIL ABUN
AC-227	-1.220E-02	2.177E-01	2.177E-01	FAIL ABUN
TH-227	-1.220E-02	2.177E-01	2.177E-01	FAIL ABUN
PA-231	3.039E-02	5.201E-01	5.203E-01	FAIL ABUN
TH-231	-2.873E-01	6.705E-01	6.829E-01	FAIL ABUN
PA-234	4.694E-02	3.459E-01	3.466E-01	FAIL ABUN
PA-234M	4.103E+00	8.088E+00	8.296E+00	FAIL ABUN
NP-237	9.945E-02	1.058E-01	1.149E-01	FAIL ABUN
NP-238	-1.000E+41	2.483E+41	0.000E+00	SHORT HLIF
NP-239	3.358E-01	3.064E-01	3.418E-01	FAIL ABUN
AM-241	2.664E-03	5.058E-02	5.060E-02	NOT IDENT.
CM-243	-3.432E-02	7.712E-02	7.866E-02	FAIL ABUN
BK-247	4.861E-02	7.551E-02	7.863E-02	FAIL ABUN
CM-247	-1.586E-02	3.382E-02	3.457E-02	FAIL ABUN
CF-249	3.662E-02	4.199E-02	4.512E-02	NOT IDENT.
CF-251	-9.189E-03	1.076E-01	1.076E-01	FAIL ABUN

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	63.4503	87.09	64.9837	136.47	47.6878
45.60	70.4172	87.57	65.0611	140.51	0.0000
46.54	70.6720	88.03	65.1345	143.76	55.1985
49.72	0.0000	88.34	65.1836	144.24	55.2438
51.35	79.8433	88.47	65.2045	145.44	59.3106
51.87	76.8232	89.96	65.4405	152.43	59.0054
52.39	69.0301	1093.63	65.5477	153.25	0.0000
52.97	68.3754	91.11	0.0000	323.87	52.1555
53.44	66.8949	92.59	65.8526	156.02	0.0000
54.07	59.8580	93.35	65.9706	158.56	0.0000
57.36	0.0000	94.56	60.7934	159.00	57.6123
57.53	72.6732	94.65	60.8063	162.33	46.7384
57.98	78.4414	94.67	60.8089	162.66	0.0000
59.27	77.9597	94.87	60.8369	163.33	45.7938
59.32	77.9725	97.43	71.0959	165.86	48.0169
59.54	82.3627	98.43	80.2770	176.31	52.9276
60.96	83.8263	98.44	80.2787	176.60	0.0000
61.17	77.6180	99.53	56.0621	177.52	50.9417
62.93	78.0475	100.11	66.9998	181.07	0.0000
63.29	78.1346	102.03	59.1021	181.52	43.2210
63.58	78.2046	103.18	61.0745	184.41	49.3494
64.28	86.8973	103.37	66.5712	143.76	49.4412
66.73	89.7589	105.21	57.6816	193.51	52.1059
67.24	99.0508	105.31	61.3572	197.03	49.1501
125.81	91.6787	106.12	67.8857	198.01	72.7522
67.75	86.6955	106.47	79.8712	201.83	69.8976
69.67	86.0665	109.28	69.2648	203.43	56.0363
70.83	77.3814	111.00	58.3915	205.31	56.1752
72.81	87.1200	111.76	0.0000	210.85	53.6776
72.87	87.1349	114.06	49.7428	215.65	38.3149
74.66	87.5687	116.30	0.0000	222.11	39.7271
74.82	87.6072	116.74	62.5153	227.09	48.8514
74.97	87.6434	119.76	44.0227	227.38	51.0895
77.11	88.1549	121.12	58.0124	228.16	0.0000
78.74	88.5400	121.22	58.0236	228.18	38.5398
79.69	83.8790	121.78	57.7706	116.74	38.5398
80.12	86.2740	122.06	65.3829	235.69	48.2326
80.19	0.0000	122.92	51.2541	235.96	48.2484
80.57	82.9204	123.07	51.2689	238.63	48.3986
81.00	67.4484	265.00	64.6361	238.98	0.0000
81.07	67.4609	125.81	62.3536	240.99	48.5312
81.75	94.7266	127.23	61.2439	242.00	45.1984
83.79	64.4496	127.91	45.0335	244.70	40.8043
84.00	64.4841	129.30	45.1497	252.40	0.0000
85.43	64.7167	131.20	45.3082	252.80	41.1784
86.55	64.8974	133.02	41.2676	254.15	0.0000
86.79	64.9357	133.52	36.1416	256.23	34.4458
86.94	64.9600	136.00	48.6206	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	46.3501	355.39	0.0000	584.27	18.7271
264.80	46.3574	356.01	21.4866	595.83	0.0000
265.00	32.4570	364.49	0.0000	427.87	28.8466
268.22	41.8744	366.42	0.0000	602.52	0.0000
269.46	35.7176	372.51	30.7537	604.72	26.9176
270.03	35.7391	375.05	34.6704	607.14	17.9692
271.23	35.7840	377.52	36.0262	609.32	18.9900
273.65	0.0000	356.01	38.7964	610.33	19.0008
276.40	35.9777	388.16	27.6829	614.28	13.5297
277.37	36.0142	388.63	0.0000	618.01	15.0629
277.60	36.0227	391.69	28.6279	620.36	20.1099
278.00	36.0376	264.66	23.5871	621.93	18.1143
279.20	37.6514	401.81	26.2311	630.19	0.0000
279.54	37.6641	402.40	28.8669	631.29	20.2271
279.70	37.6699	404.85	27.1685	633.25	21.2606
280.46	37.6997	410.95	45.7846	634.78	0.0000
283.69	30.7322	413.71	30.8806	635.95	17.2359
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	4.7363	423.72	0.0000	645.85	23.4399
285.90	0.0000	427.09	16.0400	657.76	10.7670
287.50	26.8952	427.87	20.5073	657.90	0.0000
290.67	30.9488	433.94	23.2848	661.66	20.0356
293.27	0.0000	439.40	17.9818	664.57	0.0000
351.93	31.8856	453.88	15.4415	666.33	0.0000
295.96	21.5387	463.37	23.7720	666.50	0.0000
879.38	23.9929	468.07	30.2688	667.71	0.0000
299.98	35.2380	473.00	0.0000	677.62	14.5013
300.09	35.2415	475.06	28.5687	685.70	0.0000
300.13	35.2433	476.78	24.9115	695.00	0.0000
301.36	38.4932	477.60	29.5404	696.49	14.6369
302.85	40.1550	482.18	25.9270	696.51	14.6375
256.23	38.6094	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	20.9188
306.78	29.0208	497.08	25.2460	697.49	23.0125
308.46	29.0669	505.52	22.5630	702.65	15.7300
311.90	21.0615	507.63	0.0000	706.68	22.0647
316.51	34.1694	511.00	24.5284	711.68	17.9048
319.41	0.0000	514.00	39.6980	720.70	0.0000
320.08	0.0000	514.00	39.6980	721.93	0.0000
321.04	20.8329	520.40	14.2346	722.78	15.8820
323.87	34.4027	520.69	0.0000	722.91	12.7065
325.23	18.0428	522.65	0.0000	723.31	14.2976
328.76	0.0000	527.90	0.0000	724.19	9.5358
333.37	38.0039	528.26	13.3506	727.33	14.8551
333.97	31.4115	529.59	13.3614	733.00	14.8949
334.37	28.1147	529.87	0.0000	735.93	17.0462
338.28	23.6491	531.02	0.0000	333.97	13.8596
338.32	23.6497	537.26	0.0000	739.50	0.0000
311.90	24.9420	546.56	0.0000	747.24	13.9225
340.48	24.9420	552.55	19.3538	748.06	18.2133
340.55	0.0000	563.25	25.3187	752.31	20.3962
344.28	26.0260	569.33	17.5906	753.82	0.0000
345.93	36.7562	946.00	17.5928	756.73	19.3616
351.06	31.0456	569.70	15.6393	756.80	19.3623
351.93	31.0689	583.19	18.7163	884.68	18.3461

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	28.0820	1274.44	8.5321	1620.50	2.1292
766.42	25.9287	1001.03	12.4641	1621.92	6.3896
766.84	20.5308	1002.74	14.2534	1678.03	0.0000
772.60	0.0000	1004.73	3.5658	1690.97	2.1642
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	4.3999
778.90	10.8643	1028.54	0.0000	1063.66	4.4053
783.70	0.0000	1037.84	9.0192	1771.35	3.3049
785.37	25.0599	1038.76	0.0000	1791.20	0.0000
792.07	21.8555	631.29	10.1322	1808.65	5.5527
794.95	18.6007	1048.07	0.0000	1810.72	0.0000
795.86	13.1353	1049.04	17.3848	1836.06	1.1170
810.06	16.5204	1050.41	18.6353		
810.29	19.8259	1063.66	10.9197		
344.28	19.8274	1077.00	0.0000		
810.76	21.4828	1077.34	9.1425		
815.77	0.0000	1085.87	17.4205		
1048.07	0.0000	1093.63	11.9503		
832.01	15.5632	1099.45	11.9733		
834.85	25.5989	1112.07	11.0984		
835.71	24.4949	1112.84	12.3340		
836.80	0.0000	1115.54	11.8516		
846.75	0.0000	1120.29	12.0550		
846.77	13.4224	1120.55	12.0566		
856.80	0.0000	1221.41	12.0590		
860.56	19.1236	1129.67	17.6733		
871.09	12.4269	1131.51	0.0000		
873.19	6.7842	1147.95	0.0000		
875.33	0.0000	1173.23	16.9761		
879.38	12.4685	1177.95	9.4452		
880.51	15.8765	1189.05	12.3216		
883.24	13.6230	1204.77	15.2383		
884.68	12.4950	1221.41	20.1015		
889.28	9.1042	1231.02	18.2404		
894.76	9.1237	1235.36	0.0000		
898.04	15.9875	1238.28	12.5073		
900.72	12.0031	1260.41	0.0000		
903.28	17.1643	1271.87	3.1094		
911.20	17.2180	1274.44	7.7793		
912.08	17.2235	1274.54	7.7793		
923.98	0.0000	1291.59	8.7951		
926.50	17.3199	1298.22	0.0000		
929.11	15.0254	1312.11	0.0000		
937.49	18.5521	1332.49	6.3273		
944.13	0.0000	1362.66	0.0000		
946.00	15.1222	1365.19	5.9861		
949.00	13.9746	1368.63	0.0000		
667.71	0.0000	1384.29	2.0057		
962.31	10.5333	1408.01	6.0557		
964.08	12.6483	1457.56	0.0000		
966.17	3.5161	1460.82	6.1403		
911.20	8.4475	1489.16	10.3088		
968.97	8.4475	1505.03	6.2102		
983.53	0.0000	1584.12	9.4982		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:52:57.76

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235058.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM06.CNF;499
Background date    : Z-OCT-2016 11:00:12.
Sample date       : 2-DEC-2015 15:00:00. Acquisition date : 3-OCT-2016 07:51:57.
Sample ID        : G405235058 Sample quantity : 1.40622E+02 GRAM
Detector name     : GAM06 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.66 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID         : 1596252 Detector SN# :
Matrix Spike ID  : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.38*	25	133	1.24	126.47	123	8	7.03E-03	83.1	
2	4	74.89*	124	128	1.36	149.48	143	19	3.43E-02	18.8	1.73E+00
3	4	77.17	202	88	1.14	154.03	143	19	5.60E-02	11.1	
4	4	79.22	51	87	1.37	158.13	143	19	1.41E-02	44.5	
5	0	87.15	60	120	1.49	173.97	171	6	1.67E-02	31.6	
6	3	89.98	65	94	1.13	179.63	177	14	1.80E-02	24.7	2.15E+00
7	3	92.87*	76	129	1.28	185.40	177	14	2.12E-02	30.3	
8	0	102.61	24	88	1.23	204.88	200	8	6.65E-03	71.4	
9	0	129.51	27	161	0.96	258.63	253	12	7.57E-03	95.3	
10	0	153.61	30	81	0.86	306.80	304	7	8.19E-03	53.7	
11	0	177.33	25	64	0.86	354.20	349	8	7.06E-03	58.5	
12	0	185.74*	66	127	1.23	370.99	365	11	1.84E-02	35.9	
13	0	209.36	52	96	1.19	418.21	412	10	1.44E-02	38.1	
14	4	238.57*	359	46	1.18	476.59	469	24	9.97E-02	6.3	1.28E+00
15	4	241.97*	100	62	1.70	483.37	469	24	2.79E-02	19.8	
16	0	289.24	42	55	2.13	577.85	573	13	1.18E-02	39.3	
17	0	295.20*	129	58	1.27	589.77	585	10	3.58E-02	14.4	
18	0	314.64	8	52	0.69	628.63	622	8	2.22E-03	160.1	
19	0	338.31	71	70	1.18	675.94	670	13	1.99E-02	26.7	
20	0	351.91	239	57	1.06	703.12	697	12	6.64E-02	9.0	
21	0	358.65	20	45	1.42	716.60	712	9	5.56E-03	64.5	
22	0	401.80	39	73	6.83	802.84	788	22	1.08E-02	59.4	
23	0	408.85	33	56	3.49	816.93	810	18	9.03E-03	56.0	
24	0	463.77	32	33	1.61	926.71	921	12	9.00E-03	40.6	
25	0	546.34	10	12	1.41	1091.79	1088	8	2.65E-03	71.1	
26	0	583.42*	73	48	0.82	1165.92	1157	16	2.04E-02	24.4	
27	0	609.15*	160	35	1.32	1217.36	1212	13	4.46E-02	11.4	
28	0	614.41	8	11	1.72	1227.87	1224	8	2.17E-03	79.9	
29	0	637.75	20	13	0.92	1274.53	1269	13	5.45E-03	44.2	
30	0	782.94	9	11	1.11	1564.83	1558	9	2.43E-03	76.9	
31	0	860.04*	15	8	1.25	1719.00	1715	8	4.03E-03	44.7	
32	0	911.12*	43	35	1.63	1821.14	1814	14	1.19E-02	33.2	
33	0	967.76	89	19	4.91	1934.42	1924	20	2.47E-02	16.2	
34	0	1070.72	10	8	1.02	2140.32	2132	11	2.66E-03	66.6	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1074.01	7	4	1.12	2146.91	2144	6	1.89E-03	61.8	
36	0	1119.38	47	0	1.63	2237.66	2232	11	1.31E-02	14.6	
37	0	1184.25	16	8	3.85	2367.40	2361	12	4.46E-03	44.5	
38	0	1211.50	10	19	4.02	2421.91	2411	13	2.76E-03	96.8	
39	0	1238.54*	13	20	0.96	2476.01	2466	14	3.63E-03	79.6	
40	0	1274.57	13	8	0.59	2548.08	2541	15	3.68E-03	52.9	
41	0	1280.43	13	4	2.12	2559.80	2555	9	3.58E-03	40.4	
42	0	1291.47	8	0	1.35	2581.88	2579	6	2.22E-03	35.4	
43	0	1459.92*	268	5	2.15	2918.87	2911	18	7.43E-02	6.5	
44	0	1558.82	8	0	0.88	3116.75	3111	11	2.22E-03	35.4	
45	0	1764.00	29	6	2.40	3527.33	3522	11	7.92E-03	24.6	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235058.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 2-DEC-2015 15:00:00 Acquisition date : 3-OCT-2016 07:51:57
Sample ID : G405235058 Sample quantity : 140.62 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA6 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.66 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
NA-22	1274.54	99.94*	1.136E+00	6.042E-02	7.552E-02	105.89	OK
K-40	1460.82	10.66*	1.005E+00	1.278E+01	1.278E+01	12.92	OK
CD-109	88.03	3.70*	5.194E+00	1.008E+00	1.596E+00	129.43	OK
SN-126	64.28	9.60	2.650E+00	6.557E-01	6.557E-01	166.19	OK
	86.94	8.90	5.194E+00	4.192E-01	4.192E-01	129.43	OK
	87.57	37.00*	5.194E+00	1.008E-01	1.008E-01	129.43	OK
TL-208	277.37	6.60	3.958E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.242E+00	2.136E-01	2.136E-01	48.76	OK
	860.56	12.50	1.625E+00	3.833E-01	3.833E-01	89.41	OK
BI-211	72.87	1.23	3.859E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	3.304E+00	2.400E-01	2.400E-01	435.46	OK
PB-212	74.82	10.28	4.088E+00	1.302E+00	1.302E+00	56.98	OK
	77.11	17.10	4.331E+00	1.770E+00	1.770E+00	22.26	OK
	238.63	43.60*	4.430E+00	1.110E+00	1.110E+00	12.54	OK
	300.09	3.30	3.729E+00	----- Line	Not Found	-----	Absent
BI-214	609.32	45.49*	2.167E+00	8.998E-01	9.001E-01	22.81	OK
	1120.29	14.92	1.281E+00	1.290E+00	1.290E+00	29.17	OK
	1764.49	15.30	8.593E-01	1.090E+00	1.091E+00	49.19	OK
PB-214	74.82	5.80	4.080E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	4.331E+00	3.121E+00	3.122E+00	22.26	OK
	87.09	3.41	5.190E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.384E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	3.776E+00	1.089E+00	1.090E+00	28.83	OK
	351.93	35.60*	3.304E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	2.167E+00	8.998E-01	9.001E-01	22.81	OK
	1120.29	14.92	1.281E+00	1.290E+00	1.290E+00	29.17	OK
	1764.49	15.30	8.593E-01	1.090E+00	1.091E+00	49.19	OK
RA-224	240.99	4.10*	4.384E+00	1.403E+00	1.403E+00	102.14	OK
RA-226	609.32	45.49*	2.167E+00	8.998E-01	9.001E-01	22.81	OK
	1120.29	14.92	1.281E+00	1.290E+00	1.290E+00	29.17	OK
	1764.49	15.30	8.593E-01	1.090E+00	1.091E+00	49.19	OK
AC-228	105.21	1.10	6.007E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.404E+00	1.082E+00	1.082E+00	53.31	OK
	794.95	4.25	1.739E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.666E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.544E+00	5.761E-01	5.761E-01	66.46	OK
	968.97	15.80	1.463E+00	2.045E+00	2.045E+00	32.42	OK
RA-228	105.21	1.10	6.007E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.404E+00	1.082E+00	1.082E+00	53.31	OK
	794.95	4.25	1.739E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.666E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.544E+00	5.761E-01	5.761E-01	66.46	OK
	968.97	15.80	1.463E+00	2.045E+00	2.045E+00	32.42	OK
TH-228	74.82	10.28	4.088E+00	1.302E+00	1.302E+00	56.98	OK
	77.11	17.10	4.331E+00	1.770E+00	1.770E+00	22.26	OK
	238.63	43.60*	4.430E+00	1.110E+00	1.110E+00	12.54	OK
	300.09	3.30	3.729E+00	----- Line	Not Found	-----	Absent
TH-230	609.32	45.49*	2.167E+00	8.998E-01	8.998E-01	22.81	OK
	1120.29	14.92	1.281E+00	1.290E+00	1.290E+00	29.17	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-232	1764.49	15.30	8.593E-01	1.090E+00	1.090E+00	49.19	OK
	105.21	1.10	6.007E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.404E+00	1.082E+00	1.082E+00	53.31	OK
	835.71	1.61	1.666E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.544E+00	5.761E-01	5.761E-01	66.46	OK
	968.97	15.80	1.463E+00	2.045E+00	2.045E+00	32.42	OK
TH-234	63.29	3.70*	2.650E+00	1.701E+00	1.701E+00	166.19	OK
	92.59	4.23	5.546E+00	2.088E+00	2.088E+00	60.51	OK
U-234	609.32	45.49*	2.167E+00	8.998E-01	8.998E-01	22.81	OK
	1120.29	14.92	1.281E+00	1.290E+00	1.290E+00	29.17	OK
	1764.49	15.30	8.593E-01	1.090E+00	1.090E+00	49.19	OK
U-235	89.96	3.47	5.381E+00	2.237E+00	2.237E+00	49.44	OK
	93.35	5.60	5.546E+00	1.577E+00	1.577E+00	60.51	OK
	143.76	10.96*	5.990E+00	----- Line	Not Found	-----	Absent
	163.33	5.08	5.669E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	5.267E+00	1.340E-01	1.340E-01	71.82	OK
	205.31	5.01	4.931E+00	----- Line	Not Found	-----	Absent
U-238	63.29	3.70*	2.650E+00	1.701E+00	1.701E+00	166.19	OK
	92.59	4.23	5.546E+00	2.088E+00	2.088E+00	60.51	OK
AM-243	43.53	5.90	3.924E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	4.088E+00	1.992E-01	1.992E-01	56.98	OK
CM-247	278.00	3.40	3.951E+00	----- Line	Not Found	-----	Absent
	287.50	2.00	3.852E+00	----- Line	Not Found	-----	Absent
	402.40	72.00*	2.988E+00	1.037E-01	1.037E-01	118.78	OK

Flag: "*" = Keyline

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235058.CNF;1
* Acquisition date   : 3-OCT-2016 07:51:57 Sensitivity      : 3.000
* Detector ID        : GAM06 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.66 Half life ratio : *****
* Sample date       : 2-DEC-2015 15:00:00 Analyst initials: MXR1
* Sample ID         : G405235058 Sample Quantity : 1.4062E+02 GRAM
* Batch Number      : 1596252 Wet Weight      : 0.00000
* Wet wt corr       : 1.00000 Dry Weight      : 0.00000
* Nuclide Library   : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 8-MAR-2016 07:26:53 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM06 CAN.CNF;14
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
NA-22	7.552E-02	7.836E-02	9.996E-02
K-40	1.278E+01	1.618E+00	7.994E-01
CD-109	1.596E+00	2.025E+00	2.003E+00
SN-126	1.008E-01	1.279E-01	1.272E-01
TL-208	2.136E-01	1.020E-01	6.600E-02
BI-211	2.400E-01	1.024E+00	3.567E-01
PB-212	1.110E+00	1.364E-01	9.399E-02
BI-214	9.001E-01	2.012E-01	1.463E-01
PB-214	1.177E+00	2.085E-01	3.626E-01
RN-222	9.001E-01	2.012E-01	1.463E-01
RA-224	1.403E+00	1.404E+00	1.008E+00
RA-226	9.001E-01	2.012E-01	1.463E-01
AC-228	5.761E-01	3.752E-01	2.910E-01
RA-228	5.761E-01	3.752E-01	2.910E-01
TH-228	1.110E+00	1.364E-01	9.399E-02
TH-230	8.998E-01	2.012E-01	1.463E-01
TH-232	5.761E-01	3.752E-01	2.910E-01
TH-234	1.701E+00	2.771E+00	2.380E+00
U-234	8.998E-01	2.012E-01	1.463E-01
U-235	-1.530E-01	1.872E-01	3.260E-01
U-238	1.701E+00	2.771E+00	2.380E+00
AM-243	1.992E-01	1.112E-01	8.266E-02
CM-247	1.037E-01	1.207E-01	6.739E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-4.102E+00	1.362E+01	2.569E+01	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	1.269E-02	1.758E-02	5.887E-02	NOT IDENT.
SC-46	-1.707E-01	4.398E-01	7.772E-01	FAIL ABUN
V-48	0.000E+00	1.713E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	5.082E+02	0.000E+00	SHORT HLIF
MN-54	1.705E-03	6.077E-02	1.186E-01	NOT IDENT.

CO-56	1.384E-01	4.630E-01	9.559E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-2.016E-02	4.351E-02	7.949E-02	NOT IDENT.
CO-58	1.792E-01	6.560E-01	1.320E+00	NOT IDENT.
FE-59	-1.947E+00	7.246E+00	1.413E+01	FAIL ABUN
CO-60	-2.169E-02	4.225E-02	7.685E-02	NOT IDENT.
ZN-65	8.983E-02	1.839E-01	3.719E-01	NOT IDENT.
GE-68	2.020E+00	2.047E+00	4.873E+00	NOT IDENT.
AS-73	7.549E+00	1.039E+01	2.208E+01	NOT IDENT.
AS-74	0.000E+00	7.044E+03	0.000E+00	SHORT HLIF
SE-75	-2.326E-02	2.292E-01	4.117E-01	FAIL ABUN
BR-77	0.000E+00	1.361E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	8.291E+02	0.000E+00	SHORT HLIF
RB-83	-3.538E-01	6.272E-01	1.136E+00	NOT IDENT.
KR-85	-1.858E+01	9.356E+00	1.389E+01	NOT IDENT.
SR-85	-2.090E+00	1.051E+00	1.560E+00	NOT IDENT.
RB-86	0.000E+00	3.208E+04	0.000E+00	SHORT HLIF
Y-88	6.817E-02	1.110E-01	3.905E-01	NOT IDENT.
Y-91	-2.083E+02	7.454E+02	1.216E+03	NOT IDENT.
NB-94	-1.263E-02	3.108E-02	5.598E-02	NOT IDENT.
NB-95	5.774E-01	9.991E-01	2.050E+00	NOT IDENT.
NB-95M	1.957E-01	2.765E+00	4.683E+00	NOT IDENT.
ZR-95	-2.882E-01	1.759E+00	3.263E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.022E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	7.855E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-2.229E-02	3.652E-02	5.969E-02	NOT IDENT.
RH-102	6.837E-02	6.025E-02	1.357E-01	NOT IDENT.
RU-103	-2.835E+00	5.818E+00	1.072E+01	FAIL ABUN
RH-106	2.237E-02	4.221E-01	8.509E-01	NOT IDENT.
RU-106	2.237E-02	4.221E-01	8.509E-01	NOT IDENT.
AG-108M	-3.215E-02	2.698E-02	4.484E-02	FAIL ABUN
AG-110M	5.421E-02	8.817E-02	1.971E-01	NOT IDENT.
SN-113	-7.223E-02	2.496E-01	4.541E-01	NOT IDENT.
CD-115	0.000E+00	2.009E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.359E+05	0.000E+00	SHORT HLIF
TE-123M	-3.504E-02	1.363E-01	2.485E-01	NOT IDENT.
SB-124	7.596E-02	3.073E+00	6.265E+00	NOT IDENT.
SB-125	-2.627E-02	1.070E-01	2.044E-01	FAIL ABUN
TE-125M	9.559E+01	2.871E+02	5.625E+02	NOT IDENT.
I-126	0.000E+00	1.303E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.648E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	6.412E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	9.269E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.869E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.592E+27	0.000E+00	SHORT HLIF
BA-133	4.894E-03	5.346E-02	7.836E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	5.284E-02	5.281E-02	1.164E-01	NOT IDENT.
CS-135	3.380E-02	1.620E-01	2.983E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.683E+05	0.000E+00	SHORT HLIF
BA-137M	4.642E-02	3.850E-02	8.476E-02	NOT IDENT.
CS-137	4.904E-02	4.067E-02	8.954E-02	NOT IDENT.
CE-139	-8.686E-02	1.131E-01	1.949E-01	NOT IDENT.
BA-140	0.000E+00	1.662E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	6.663E+05	0.000E+00	SHORT HLIF
CE-141	2.817E+01	2.646E+01	5.419E+01	NOT IDENT.
CE-143	0.000E+00	6.984E+40	0.000E+00	SHORT HLIF
CE-144	-7.366E-02	3.891E-01	6.645E-01	FAIL ABUN
PM-144	1.324E-02	5.214E-02	1.058E-01	NOT IDENT.
PR-144	1.189E+00	4.549E+00	9.238E+00	NOT IDENT.
PM-146	1.308E-02	4.512E-02	9.156E-02	NOT IDENT.
ND-147	0.000E+00	5.207E+07	0.000E+00	SHORT HLIF
PM-147	-3.347E+01	7.316E+02	1.394E+03	NOT IDENT.
PM-149	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
EU-150	-1.835E-02	2.882E-02	4.702E-02	FAIL ABUN
EU-152	1.166E-03	9.081E-02	1.739E-01	NOT IDENT.
GD-153	-5.349E-02	1.574E-01	2.953E-01	FAIL ABUN
EU-154	1.846E-01	1.916E-01	2.716E-01	FAIL ABUN
EU-155	2.398E-02	1.112E-01	2.016E-01	FAIL ABUN
TB-160	1.937E+00	1.786E+00	4.239E+00	FAIL ABUN
HO-166M	7.871E-03	5.148E-02	1.036E-01	FAIL ABUN
TM-171	-2.742E+01	2.468E+01	4.497E+01	NOT IDENT.
HF-172	4.928E-02	2.480E-01	4.426E-01	FAIL ABUN
LU-172	5.876E-02	9.137E-02	1.987E-01	FAIL ABUN
LU-176	-1.208E-02	2.141E-02	4.057E-02	FAIL ABUN

HF-181	8.071E-01	4.529E+00	9.173E+00	NOT IDENT.
TA-182	-1.536E-02	1.066E+00	2.109E+00	FAIL ABUN
RE-183	1.327E+00	3.440E+00	7.050E+00	NOT IDENT.
RE-184	1.813E+01	3.674E+01	7.623E+01	NOT IDENT.
W-188	0.000E+00	2.591E+02	2.156E+02	FAIL ABUN
IR-192	-7.938E-03	5.172E-01	9.318E-01	FAIL ABUN
HG-203	-3.093E+00	3.173E+00	5.047E+00	NOT IDENT.
BI-207	-1.544E-02	5.957E-02	1.003E-01	FAIL ABUN
PB-210	2.381E+00	4.614E+00	9.569E+00	NOT IDENT.
PB-211	5.370E-01	6.003E-01	1.138E+00	NOT IDENT.
BI-212	1.783E-01	5.427E-01	1.076E+00	NOT IDENT.
RN-219	0.000E+00	1.317E+00	7.759E-01	FAIL ABUN
RA-223	5.720E-01	5.498E-01	1.211E+00	FAIL ABUN
AC-227	4.106E-02	2.457E-01	4.551E-01	FAIL ABUN
TH-227	4.106E-02	2.457E-01	4.551E-01	FAIL ABUN
TH-229	3.130E-02	4.717E-01	8.765E-01	FAIL ABUN
PA-231	-4.929E-02	4.551E-01	8.940E-01	NOT IDENT.
TH-231	5.720E-01	5.498E-01	1.211E+00	FAIL ABUN
PA-233	2.051E-02	6.940E-02	1.286E-01	NOT IDENT.
PA-234	-1.490E-01	2.800E-01	5.238E-01	NOT IDENT.
PA-234M	2.711E+00	5.044E+00	1.066E+01	NOT IDENT.
NP-237	2.051E-02	6.940E-02	1.286E-01	NOT IDENT.
NP-238	0.000E+00	8.269E+40	0.000E+00	SHORT HLIF
NP-239	-6.698E-02	2.234E-01	4.153E-01	FAIL ABUN
PU-239	4.395E+02	8.211E+02	6.694E+02	FAIL ABUN
AM-241	-2.189E-02	1.575E-01	2.870E-01	NOT IDENT.
CM-243	1.252E-01	1.753E-01	1.629E-01	FAIL ABUN
BK-247	-1.648E-02	7.841E-02	1.388E-01	FAIL ABUN
CF-249	3.881E-03	3.619E-02	7.266E-02	NOT IDENT.
CF-251	1.658E-01	1.901E-01	2.156E-01	FAIL ABUN
ANH-511	-7.462E-03	5.064E-02	1.081E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
NA-22	1274.54	13	99.94*	1.136E+00	6.042E-02	7.552E-02	105.89
K-40	1460.82	257	10.66*	1.005E+00	1.278E+01	1.278E+01	12.92
CD-109	88.03	72	3.70*	5.194E+00	2.012E+00	3.185E+00	63.25
SN-126	64.28	31	9.60	2.650E+00	6.557E-01	6.557E-01	166.19
	86.94	72	8.90	5.194E+00	8.365E-01	8.365E-01	63.25
	87.57	72	37.00*	5.194E+00	2.012E-01	2.012E-01	63.25
TL-208	277.37	-----	6.60	3.958E+00	-----	Line Not Found	-----
	583.19	76	85.00*	2.242E+00	2.136E-01	2.136E-01	48.76
	860.56	15	12.50	1.625E+00	3.833E-01	3.833E-01	89.41
BI-211	72.87	-----	1.23	3.859E+00	-----	Line Not Found	-----
	351.06	259	12.92*	3.304E+00	3.241E+00	3.241E+00	18.08
PB-212	74.82	151	10.28	4.088E+00	1.917E+00	1.917E+00	37.59
	77.11	246	17.10	4.331E+00	1.770E+00	1.770E+00	22.26
	238.63	402	43.60*	4.430E+00	1.110E+00	1.110E+00	12.54
	300.09	-----	3.30	3.729E+00	-----	Line Not Found	-----
BI-214	609.32	166	45.49*	2.167E+00	8.998E-01	9.001E-01	22.81
	1120.29	46	14.92	1.281E+00	1.290E+00	1.290E+00	29.17
	1764.49	27	15.30	8.593E-01	1.090E+00	1.091E+00	49.19
PB-214	74.82	151	5.80	4.088E+00	3.397E+00	3.398E+00	37.59
	77.11	246	9.70	4.331E+00	3.121E+00	3.122E+00	22.26
	87.09	72	3.41	5.194E+00	2.183E+00	2.184E+00	63.25
	242.00	112	7.25	4.384E+00	1.883E+00	1.883E+00	39.68
	295.22	142	18.42	3.776E+00	1.089E+00	1.090E+00	28.83
	351.93	259	35.60*	3.304E+00	1.176E+00	1.177E+00	18.08
RN-222	609.32	166	45.49*	2.167E+00	8.998E-01	9.001E-01	22.81
	1120.29	46	14.92	1.281E+00	1.290E+00	1.290E+00	29.17
	1764.49	27	15.30	8.593E-01	1.090E+00	1.091E+00	49.19
RA-224	240.99	112	4.10*	4.384E+00	3.329E+00	3.329E+00	39.68
RA-226	609.32	166	45.49*	2.167E+00	8.998E-01	9.001E-01	22.81
	1120.29	46	14.92	1.281E+00	1.290E+00	1.290E+00	29.17
	1764.49	27	15.30	8.593E-01	1.090E+00	1.091E+00	49.19
AC-228	105.21	-----	1.10	6.007E+00	-----	Line Not Found	-----
	338.32	78	11.27	3.404E+00	1.082E+00	1.082E+00	53.31
	794.95	-----	4.25	1.739E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.666E+00	-----	Line Not Found	-----
	911.20	43	25.80*	1.544E+00	5.761E-01	5.761E-01	66.46
	968.97	89	15.80	1.463E+00	2.045E+00	2.045E+00	32.42
RA-228	105.21	-----	1.10	6.007E+00	-----	Line Not Found	-----
	338.32	78	11.27	3.404E+00	1.082E+00	1.082E+00	53.31
	794.95	-----	4.25	1.739E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.666E+00	-----	Line Not Found	-----
	911.20	43	25.80*	1.544E+00	5.761E-01	5.761E-01	66.46
	968.97	89	15.80	1.463E+00	2.045E+00	2.045E+00	32.42
TH-228	74.82	151	10.28	4.088E+00	1.917E+00	1.917E+00	37.59
	77.11	246	17.10	4.331E+00	1.770E+00	1.770E+00	22.26
	238.63	402	43.60*	4.430E+00	1.110E+00	1.110E+00	12.54
	300.09	-----	3.30	3.729E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-230	609.32	166	45.49*	2.167E+00	8.998E-01	8.998E-01	22.81
	1120.29	46	14.92	1.281E+00	1.290E+00	1.290E+00	29.17
	1764.49	27	15.30	8.593E-01	1.090E+00	1.090E+00	49.19
TH-232	105.21	-----	1.10	6.007E+00	-----	Line Not Found	-----
	338.32	78	11.27	3.404E+00	1.082E+00	1.082E+00	53.31
	835.71	-----	1.61	1.666E+00	-----	Line Not Found	-----
	911.20	43	25.80*	1.544E+00	5.761E-01	5.761E-01	66.46
	968.97	89	15.80	1.463E+00	2.045E+00	2.045E+00	32.42
TH-234	63.29	31	3.70*	2.650E+00	1.701E+00	1.701E+00	166.19
	92.59	92	4.23	5.546E+00	2.088E+00	2.088E+00	60.51
U-234	609.32	166	45.49*	2.167E+00	8.998E-01	8.998E-01	22.81
	1120.29	46	14.92	1.281E+00	1.290E+00	1.290E+00	29.17
	1764.49	27	15.30	8.593E-01	1.090E+00	1.090E+00	49.19
U-235	89.96	78	3.47	5.381E+00	2.237E+00	2.237E+00	49.44
	93.35	92	5.60	5.546E+00	1.577E+00	1.577E+00	60.51
	143.76	-----	10.96*	5.990E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.669E+00	-----	Line Not Found	-----
	185.72	76	57.20	5.267E+00	1.340E-01	1.340E-01	71.82
	205.31	-----	5.01	4.931E+00	-----	Line Not Found	-----
U-238	63.29	31	3.70*	2.650E+00	1.701E+00	1.701E+00	166.19
	92.59	92	4.23	5.546E+00	2.088E+00	2.088E+00	60.51
AM-243	43.53	-----	5.90	3.924E-01	-----	Line Not Found	-----
	74.66	151	67.20*	4.088E+00	2.932E-01	2.932E-01	37.59
CM-247	278.00	-----	3.40	3.951E+00	-----	Line Not Found	-----
	287.50	-----	2.00	3.852E+00	-----	Line Not Found	-----
	402.40	42	72.00*	2.988E+00	1.037E-01	1.037E-01	118.78

Flag: "*" = Keyline

Total number of lines in spectrum 45
Number of unidentified lines 9
Number of lines tentatively identified by NID 36 80.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
NA-22	2.60Y	1.25	6.042E-02	7.552E-02	7.996E-02	105.89	
K-40	1.25E+09Y	1.00	1.278E+01	1.278E+01	0.165E+01	12.92	
CD-109	461.40D	1.58	2.012E+00	3.185E+00	2.014E+00	63.25	
SN-126	2.30E+05Y	1.00	2.012E-01	2.012E-01	1.273E-01	63.25	
TL-208	1.41E+10Y	1.00	2.136E-01	2.136E-01	1.041E-01	48.76	
BI-211	7.04E+08Y	1.00	3.241E+00	3.241E+00	0.586E+00	18.08	
PB-212	1.41E+10Y	1.00	1.110E+00	1.110E+00	0.139E+00	12.54	
BI-214	1600.00Y	1.00	8.998E-01	9.001E-01	2.053E-01	22.81	
PB-214	1600.00Y	1.00	1.176E+00	1.177E+00	0.213E+00	18.08	
RN-222	1600.00Y	1.00	8.998E-01	9.001E-01	2.053E-01	22.81	
RA-224	1.41E+10Y	1.00	3.329E+00	3.329E+00	1.321E+00	39.68	
RA-226	1600.00Y	1.00	8.998E-01	9.001E-01	2.053E-01	22.81	
AC-228	1.41E+10Y	1.00	5.761E-01	5.761E-01	3.829E-01	66.46	
RA-228	1.41E+10Y	1.00	5.761E-01	5.761E-01	3.829E-01	66.46	
TH-228	1.41E+10Y	1.00	1.110E+00	1.110E+00	0.139E+00	12.54	
TH-230	7.54E+04Y	1.00	8.998E-01	8.998E-01	2.053E-01	22.81	
TH-232	1.41E+10Y	1.00	5.761E-01	5.761E-01	3.829E-01	66.46	
TH-234	4.47E+09Y	1.00	1.701E+00	1.701E+00	2.827E+00	166.19	
U-234	2.45E+05Y	1.00	8.998E-01	8.998E-01	2.053E-01	22.81	
U-235	7.04E+08Y	1.00	1.340E-01	1.340E-01	0.962E-01	71.82	K
U-238	4.47E+09Y	1.00	1.701E+00	1.701E+00	2.827E+00	166.19	
AM-243	7370.00Y	1.00	2.932E-01	2.932E-01	1.102E-01	37.59	
CM-247	1.56E+07Y	1.00	1.037E-01	1.037E-01	1.232E-01	118.78	

Total Activity : 3.540E+01 3.659E+01

Grand Total Activity : 3.540E+01 3.659E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	79.22	62	106	1.37	158.13	143	19	1.41E-02	88.9	4.54E+00	T
0	102.61	29	105	1.23	204.88	200	8	6.65E-03	****	5.94E+00	T
0	129.51	32	188	0.96	258.63	253	12	7.57E-03	****	6.15E+00	T
0	153.61	34	93	0.86	306.80	304	7	8.19E-03	****	5.84E+00	T
0	177.33	29	73	0.86	354.20	349	8	7.06E-03	****	5.42E+00	T
0	209.36	59	108	1.19	418.21	412	10	1.44E-02	76.1	4.86E+00	T
0	289.24	47	60	2.13	577.85	573	13	1.18E-02	78.5	3.83E+00	T
0	314.64	9	57	0.69	628.63	622	8	2.22E-03	****	3.60E+00	
0	358.65	22	49	1.42	716.60	712	9	5.56E-03	****	3.26E+00	
0	408.85	35	59	3.49	816.93	810	18	9.03E-03	****	2.95E+00	
0	463.77	34	35	1.61	926.71	921	12	9.00E-03	81.2	2.68E+00	T
0	546.34	10	13	1.41	1091.79	1088	8	2.65E-03	****	2.36E+00	T
0	614.41	8	12	1.72	1227.87	1224	8	2.17E-03	****	2.15E+00	T
0	637.75	20	14	0.92	1274.53	1269	13	5.45E-03	88.4	2.09E+00	T
0	782.94	9	11	1.11	1564.83	1558	9	2.43E-03	****	1.76E+00	T
0	1070.72	9	8	1.02	2140.32	2132	11	2.66E-03	****	1.33E+00	
0	1074.01	7	4	1.12	2146.91	2144	6	1.89E-03	****	1.33E+00	
0	1184.25	16	8	3.85	2367.40	2361	12	4.46E-03	88.9	1.22E+00	
0	1211.50	10	19	4.02	2421.91	2411	13	2.76E-03	****	1.19E+00	
0	1238.54	13	19	0.96	2476.01	2466	14	3.63E-03	****	1.17E+00	T
0	1280.43	13	4	2.12	2559.80	2555	9	3.58E-03	80.9	1.13E+00	
0	1291.47	8	0	1.35	2581.88	2579	6	2.22E-03	70.7	1.12E+00	T
0	1558.82	8	0	0.88	3116.75	3111	11	2.22E-03	70.7	9.49E-01	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235058.CNF;1
* Acquisition date   : 3-OCT-2016 07:51:57 Sensitivity      : 3.000
* Detector ID        : GAM06 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.66 Half life ratio : *****
* Sample date        : 2-DEC-2015 15:00:00 Nuclide Library : SOLID
* Sample ID          : G405235058 Analyst initials: MXR1
* Batch Number       : 1596252 Sample Quantity : 1.4062E+02 GRAM
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 8-MAR-2016 07:26:53 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM06 CAN.CNF;14
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
NA-22	4.199E-02
K-40	3.321E-01
CD-109	9.394E-01
SN-126	5.968E-02
TL-208	2.913E-02
BI-211	1.609E-01
PB-212	4.311E-02
BI-214	6.569E-02
PB-214	1.750E-01
RN-222	6.569E-02
RA-224	4.623E-01
RA-226	6.569E-02
AC-228	1.272E-01
RA-228	1.272E-01
TH-228	4.311E-02
TH-230	6.566E-02
TH-232	1.272E-01
TH-234	1.112E+00
U-234	6.566E-02
U-235	1.515E-01
U-238	1.112E+00
AM-243	3.853E-02
CM-247	3.024E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.139E+01	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.086E-02	NOT IDENT.
SC-46	3.305E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.062E-02	NOT IDENT.
CO-56	4.088E-01	FAIL ABUN

MN-56	0.000E+00	SHORT HLIF
CO-57	3.661E-02	NOT IDENT.
CO-58	5.741E-01	NOT IDENT.
FE-59	5.907E+00	FAIL ABUN
CO-60	3.100E-02	NOT IDENT.
ZN-65	1.592E-01	NOT IDENT.
GE-68	2.064E+00	NOT IDENT.
AS-73	1.026E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.877E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.898E-01	NOT IDENT.
KR-85	6.218E+00	NOT IDENT.
SR-85	6.984E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.316E-01	NOT IDENT.
Y-91	5.207E+02	NOT IDENT.
NB-94	2.418E-02	NOT IDENT.
NB-95	9.133E-01	NOT IDENT.
NB-95M	2.156E+00	NOT IDENT.
ZR-95	1.428E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.769E-02	NOT IDENT.
RH-102	6.057E-02	NOT IDENT.
RU-103	4.652E+00	FAIL ABUN
RH-106	3.639E-01	NOT IDENT.
RU-106	3.639E-01	NOT IDENT.
AG-108M	1.951E-02	FAIL ABUN
AG-110M	8.370E-02	NOT IDENT.
SN-113	2.034E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.150E-01	NOT IDENT.
SB-124	2.555E+00	NOT IDENT.
SB-125	9.143E-02	FAIL ABUN
TE-125M	2.627E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.531E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.166E-02	NOT IDENT.
CS-135	1.376E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.827E-02	NOT IDENT.
CS-137	4.043E-02	NOT IDENT.
CE-139	8.965E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.532E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.088E-01	FAIL ABUN
PM-144	4.608E-02	NOT IDENT.
PR-144	4.026E+00	NOT IDENT.
PM-146	4.113E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	6.433E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.122E-02	FAIL ABUN
EU-152	7.826E-02	NOT IDENT.
GD-153	1.366E-01	FAIL ABUN
EU-154	1.163E-01	FAIL ABUN
EU-155	9.402E-02	FAIL ABUN
TB-160	1.834E+00	FAIL ABUN
HO-166M	4.466E-02	FAIL ABUN
TM-171	2.066E+01	NOT IDENT.
HF-172	2.065E-01	FAIL ABUN
LU-172	8.732E-02	FAIL ABUN
LU-176	1.811E-02	FAIL ABUN
HF-181	4.062E+00	NOT IDENT.

TA-182	9.093E-01	FAIL ABUN
RE-183	3.284E+00	NOT IDENT.
RE-184	3.321E+01	NOT IDENT.
W-188	9.768E+01	FAIL ABUN
IR-192	4.215E-01	FAIL ABUN
HG-203	2.304E+00	NOT IDENT.
BI-207	4.276E-02	FAIL ABUN
PB-210	4.484E+00	NOT IDENT.
PB-211	5.029E-01	NOT IDENT.
BI-212	4.794E-01	NOT IDENT.
RN-219	3.503E-01	FAIL ABUN
RA-223	5.524E-01	FAIL ABUN
AC-227	2.088E-01	FAIL ABUN
TH-227	2.088E-01	FAIL ABUN
TH-229	4.050E-01	FAIL ABUN
PA-231	4.095E-01	NOT IDENT.
TH-231	5.524E-01	FAIL ABUN
PA-233	5.897E-02	NOT IDENT.
PA-234	2.211E-01	NOT IDENT.
PA-234M	4.717E+00	NOT IDENT.
NP-237	5.897E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
NP-239	1.922E-01	FAIL ABUN
PU-239	3.152E+02	FAIL ABUN
AM-241	1.334E-01	NOT IDENT.
CM-243	7.521E-02	FAIL ABUN
BK-247	6.330E-02	FAIL ABUN
CF-249	3.266E-02	NOT IDENT.
CF-251	9.973E-02	FAIL ABUN
ANH-511	5.111E-02	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
NA-22	7.552E-02	7.862E-02	7.862E-02
K-40	1.278E+01	1.950E+00	1.950E+00
CD-109	1.596E+00	2.046E+00	2.046E+00
SN-126	1.008E-01	1.292E-01	1.292E-01
TL-208	2.136E-01	1.037E-01	1.037E-01
BI-211	2.400E-01	1.097E+00	1.097E+00
PB-212	1.110E+00	1.691E-01	1.691E-01
BI-214	9.001E-01	2.153E-01	2.153E-01
PB-214	1.177E+00	2.337E-01	2.337E-01
RN-222	9.001E-01	2.153E-01	2.153E-01
RA-224	1.403E+00	1.432E+00	1.432E+00
RA-226	9.001E-01	2.153E-01	2.153E-01
AC-228	5.761E-01	3.827E-01	3.827E-01
RA-228	5.761E-01	3.827E-01	3.827E-01
TH-228	1.110E+00	1.691E-01	1.691E-01
TH-230	8.998E-01	2.152E-01	2.152E-01
TH-232	5.761E-01	3.827E-01	3.827E-01
TH-234	1.701E+00	2.797E+00	2.797E+00
U-234	8.998E-01	2.152E-01	2.152E-01
U-235	-1.530E-01	1.875E-01	1.875E-01
U-238	1.701E+00	2.797E+00	2.797E+00
AM-243	1.992E-01	1.132E-01	1.132E-01
CM-247	1.037E-01	1.222E-01	1.222E-01

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-4.102E+00	1.362E+01	1.375E+01	NOT IDENT.
NA-24	1.000E+41	1.630E+43	0.000E+00	SHORT HLIF
AL-26	1.269E-02	1.761E-02	1.851E-02	NOT IDENT.
SC-46	-1.707E-01	4.403E-01	4.470E-01	FAIL ABUN
V-48	3.213E+03	1.713E+04	1.720E+04	SHORT HLIF
CR-51	3.086E+02	5.090E+02	5.277E+02	SHORT HLIF
MN-54	1.705E-03	6.077E-02	6.078E-02	NOT IDENT.

CO-56	1.384E-01	4.633E-01	4.675E-01	FAIL ABUN
MN-56	1.000E+41	3.348E+41	0.000E+00	SHORT HLIF
CO-57	-2.016E-02	4.353E-02	4.447E-02	NOT IDENT.
CO-58	1.792E-01	6.563E-01	6.612E-01	NOT IDENT.
FE-59	-1.947E+00	7.255E+00	7.308E+00	FAIL ABUN
CO-60	-2.169E-02	4.229E-02	4.340E-02	NOT IDENT.
ZN-65	8.983E-02	1.846E-01	1.890E-01	NOT IDENT.
GE-68	2.020E+00	2.075E+00	2.266E+00	NOT IDENT.
AS-73	7.549E+00	1.051E+01	1.105E+01	NOT IDENT.
AS-74	-3.527E+03	7.054E+03	7.231E+03	SHORT HLIF
SE-75	-2.326E-02	2.292E-01	2.294E-01	FAIL ABUN
BR-77	1.107E+39	9.771E+39	0.000E+00	SHORT HLIF
SR-82	2.146E+01	8.291E+02	8.291E+02	SHORT HLIF
RB-83	-3.538E-01	6.297E-01	6.496E-01	NOT IDENT.
KR-85	-1.858E+01	9.492E+00	1.266E+01	NOT IDENT.
SR-85	-2.090E+00	1.067E+00	1.423E+00	NOT IDENT.
RB-86	2.281E+04	3.231E+04	3.391E+04	SHORT HLIF
Y-88	6.817E-02	1.111E-01	1.153E-01	NOT IDENT.
Y-91	-2.083E+02	7.456E+02	7.515E+02	NOT IDENT.
NB-94	-1.263E-02	3.111E-02	3.162E-02	NOT IDENT.
NB-95	5.774E-01	1.001E+00	1.034E+00	NOT IDENT.
NB-95M	1.957E-01	2.765E+00	2.767E+00	NOT IDENT.
ZR-95	-2.882E-01	1.759E+00	1.764E+00	NOT IDENT.
NB-97	-1.000E+41	4.274E+41	0.000E+00	SHORT HLIF
ZR-97	-1.000E+41	1.026E+41	0.000E+00	SHORT HLIF
MO-99	3.047E+32	7.863E+32	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	2.984E+41	0.000E+00	SHORT HLIF
RH-101	-2.229E-02	3.677E-02	3.812E-02	NOT IDENT.
RH-102	6.837E-02	6.071E-02	6.809E-02	NOT IDENT.
RU-103	-2.835E+00	5.823E+00	5.962E+00	FAIL ABUN
RH-106	2.237E-02	4.221E-01	4.222E-01	NOT IDENT.
RU-106	2.237E-02	4.221E-01	4.222E-01	NOT IDENT.
AG-108M	-3.215E-02	2.712E-02	3.075E-02	FAIL ABUN
AG-110M	5.421E-02	8.843E-02	9.175E-02	NOT IDENT.
SN-113	-7.223E-02	2.496E-01	2.517E-01	NOT IDENT.
CD-115	-3.768E+39	2.010E+40	0.000E+00	SHORT HLIF
SN-117M	-7.517E+04	1.363E+05	1.404E+05	SHORT HLIF
TE-123M	-3.504E-02	1.363E-01	1.373E-01	NOT IDENT.
SB-124	7.596E-02	3.073E+00	3.074E+00	NOT IDENT.
SB-125	-2.627E-02	1.070E-01	1.076E-01	FAIL ABUN
TE-125M	9.559E+01	2.872E+02	2.904E+02	NOT IDENT.
I-126	-1.044E+05	1.303E+06	1.304E+06	SHORT HLIF
SB-126	-1.950E+05	1.649E+06	1.651E+06	SHORT HLIF
SB-127	-2.415E+22	7.253E+22	0.000E+00	SHORT HLIF
I-131	-5.715E+09	9.284E+09	9.634E+09	SHORT HLIF
I-132	-1.000E+41	1.894E+42	0.000E+00	SHORT HLIF
TE-132	3.407E+26	1.599E+27	0.000E+00	SHORT HLIF
BA-133	4.894E-03	5.346E-02	5.351E-02	NOT IDENT.
I-133	-1.000E+41	5.326E+41	0.000E+00	SHORT HLIF
CS-134	5.284E-02	5.310E-02	5.820E-02	NOT IDENT.
CS-135	3.380E-02	1.621E-01	1.628E-01	NOT IDENT.
I-135	1.000E+41	8.141E+41	0.000E+00	SHORT HLIF
CS-136	2.296E+05	3.709E+05	3.850E+05	SHORT HLIF
BA-137M	4.642E-02	3.869E-02	4.399E-02	NOT IDENT.
CS-137	4.904E-02	4.087E-02	4.647E-02	NOT IDENT.
CE-139	-8.686E-02	1.145E-01	1.211E-01	NOT IDENT.
BA-140	6.440E+05	1.663E+06	1.688E+06	SHORT HLIF
LA-140	-3.322E+05	6.668E+05	6.834E+05	SHORT HLIF
CE-141	2.817E+01	2.654E+01	2.942E+01	NOT IDENT.
CE-143	1.000E+41	7.109E+40	0.000E+00	SHORT HLIF
CE-144	-7.366E-02	3.891E-01	3.905E-01	FAIL ABUN
PM-144	1.324E-02	5.216E-02	5.250E-02	NOT IDENT.
PR-144	1.189E+00	4.551E+00	4.582E+00	NOT IDENT.
PM-146	1.308E-02	4.514E-02	4.553E-02	NOT IDENT.
ND-147	-7.103E+06	5.208E+07	5.217E+07	SHORT HLIF
PM-147	-3.347E+01	7.317E+02	7.318E+02	NOT IDENT.
PM-149	-3.033E+40	3.220E+41	0.000E+00	SHORT HLIF
EU-150	-1.835E-02	2.887E-02	3.004E-02	FAIL ABUN
EU-152	1.166E-03	9.081E-02	9.081E-02	NOT IDENT.
GD-153	-5.349E-02	1.574E-01	1.593E-01	FAIL ABUN
EU-154	1.846E-01	1.922E-01	2.094E-01	FAIL ABUN
EU-155	2.398E-02	1.113E-01	1.118E-01	FAIL ABUN
TB-160	1.937E+00	1.803E+00	2.004E+00	FAIL ABUN
HO-166M	7.871E-03	5.148E-02	5.160E-02	FAIL ABUN
TM-171	-2.742E+01	2.481E+01	2.771E+01	NOT IDENT.
HF-172	4.928E-02	2.481E-01	2.491E-01	FAIL ABUN
LU-172	5.876E-02	9.209E-02	9.583E-02	FAIL ABUN
LU-176	-1.208E-02	2.144E-02	2.212E-02	FAIL ABUN

HF-181	8.071E-01	4.529E+00	4.544E+00	NOT IDENT.
TA-182	-1.536E-02	1.066E+00	1.066E+00	FAIL ABUN
RE-183	1.327E+00	3.446E+00	3.498E+00	NOT IDENT.
RE-184	1.813E+01	3.707E+01	3.796E+01	NOT IDENT.
W-188	3.367E+02	2.634E+02	3.040E+02	FAIL ABUN
IR-192	-7.938E-03	5.172E-01	5.172E-01	FAIL ABUN
HG-203	-3.093E+00	3.186E+00	3.478E+00	NOT IDENT.
BI-207	-1.544E-02	5.963E-02	6.003E-02	FAIL ABUN
PB-210	2.381E+00	4.618E+00	4.742E+00	NOT IDENT.
PB-211	5.370E-01	6.022E-01	6.491E-01	NOT IDENT.
BI-212	1.783E-01	5.430E-01	5.489E-01	NOT IDENT.
RN-219	1.131E+00	1.327E+00	1.422E+00	FAIL ABUN
RA-223	5.720E-01	5.530E-01	6.101E-01	FAIL ABUN
AC-227	4.106E-02	2.457E-01	2.464E-01	FAIL ABUN
TH-227	4.106E-02	2.457E-01	2.464E-01	FAIL ABUN
TH-229	3.130E-02	4.717E-01	4.719E-01	FAIL ABUN
PA-231	-4.929E-02	4.553E-01	4.558E-01	NOT IDENT.
TH-231	5.720E-01	5.530E-01	6.101E-01	FAIL ABUN
PA-233	2.051E-02	6.943E-02	7.004E-02	NOT IDENT.
PA-234	-1.490E-01	3.284E-01	3.352E-01	NOT IDENT.
PA-234M	2.711E+00	5.061E+00	5.206E+00	NOT IDENT.
NP-237	2.051E-02	6.943E-02	7.004E-02	NOT IDENT.
NP-238	-1.000E+41	8.394E+40	0.000E+00	SHORT HLIF
NP-239	-6.698E-02	2.235E-01	2.255E-01	FAIL ABUN
PU-239	4.395E+02	8.217E+02	8.453E+02	FAIL ABUN
AM-241	-2.189E-02	1.575E-01	1.578E-01	NOT IDENT.
CM-243	1.252E-01	1.758E-01	1.846E-01	FAIL ABUN
BK-247	-1.648E-02	7.849E-02	7.884E-02	FAIL ABUN
CF-249	3.881E-03	3.619E-02	3.624E-02	NOT IDENT.
CF-251	1.658E-01	1.913E-01	2.053E-01	FAIL ABUN
ANH-511	-7.462E-03	5.065E-02	5.076E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	62.9377	879.38	77.4414	482.18	66.2441
45.60	71.0732	87.57	77.4662	133.52	62.1524
46.54	56.6870	87.09	77.4911	264.66	54.0733
49.72	0.0000	87.57	76.2976	122.06	58.2747
51.35	44.4594	88.03	76.3708	140.51	0.0000
51.87	60.2444	88.34	76.4203	143.76	72.5976
52.39	64.7096	193.51	76.4410	144.24	63.1732
52.97	54.3087	89.96	72.8428	145.44	45.3542
53.44	43.8576	90.64	72.9449	152.43	53.9833
125.81	43.9379	91.11	0.0000	153.25	0.0000
57.36	0.0000	63.29	73.2342	154.21	58.7480
57.53	56.7952	143.76	73.3461	156.02	0.0000
57.98	54.2001	94.56	65.7842	158.56	0.0000
1093.63	59.7424	94.65	65.7961	159.00	56.9910
57.98	62.4257	94.67	65.7987	162.33	62.6525
59.54	61.8682	94.87	65.8247	162.66	0.0000
60.96	56.1338	97.43	58.3736	163.33	53.0023
61.17	56.1653	311.90	46.7893	165.86	59.6955
62.93	66.6320	946.00	46.7904	176.31	41.8118
63.29	66.6947	99.53	53.4008	1048.07	0.0000
63.58	66.7451	1221.41	46.9409	177.52	42.6109
64.28	66.8660	265.00	41.2233	739.50	0.0000
66.73	67.8911	103.18	49.8371	181.52	59.0714
67.24	86.1867	103.37	49.8549	711.68	60.0257
67.68	90.2309	116.74	49.8549	185.72	60.1230
67.75	90.2467	105.21	59.2406	193.51	48.3304
69.67	72.0521	105.31	59.2516	197.03	55.3052
70.83	97.9736	106.12	45.4939	127.23	49.7189
72.81	62.7549	106.47	70.2638	306.78	48.8061
279.20	62.7638	109.28	59.6814	203.43	57.9937
72.87	62.7638	111.00	52.8811	205.31	51.6613
74.66	63.0289	228.16	0.0000	210.85	48.9284
74.82	63.0522	114.06	55.1733	215.65	46.1163
1063.66	63.0745	116.30	0.0000	222.11	55.7314
238.63	63.3863	116.74	57.4453	290.67	39.6876
351.93	63.3863	119.76	43.5593	177.52	46.7059
78.74	63.6213	121.12	48.7357	228.16	0.0000
79.69	63.7567	121.22	48.7438	228.18	50.2515
80.12	51.3046	121.78	45.7399	235.69	43.9733
80.19	0.0000	122.06	54.9134	256.23	41.2367
80.57	53.8611	122.92	54.9921	238.63	41.3499
81.00	50.1514	123.07	49.9125	238.98	0.0000
81.07	50.1591	123.68	57.1006	240.99	41.4498
81.75	65.3042	125.81	60.0287	242.00	41.4920
323.87	64.3336	127.23	69.7388	344.28	41.6058
84.00	64.3627	127.91	63.6556	252.40	0.0000
85.43	92.4099	129.30	63.7975	252.80	39.5450
86.55	77.4029	131.20	63.9905	254.15	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
256.23	38.4753	351.93	28.7159	583.19	19.0866
260.90	0.0000	507.63	0.0000	584.27	19.0966
264.66	37.5760	356.01	26.1865	595.83	0.0000
264.80	35.1561	364.49	0.0000	600.60	18.2424
265.00	40.0123	366.42	0.0000	602.52	0.0000
268.22	43.7827	372.51	28.2773	604.72	16.7565
269.46	42.6167	129.30	19.4765	607.14	30.5029
270.03	34.1113	377.52	22.1720	609.32	25.9555
271.23	51.2247	383.85	26.7279	497.08	25.9690
273.65	0.0000	388.16	25.0229	433.94	16.8364
356.01	41.6658	388.63	0.0000	696.49	9.2003
277.37	39.2500	391.69	29.0270	620.36	12.2813
277.60	39.2578	400.66	25.6930	621.93	11.2663
278.00	41.7270	401.81	25.7133	667.71	0.0000
279.20	56.5159	402.40	25.7238	631.29	10.2889
279.54	54.0748	404.85	8.1370	453.88	16.9921
279.70	54.0829	410.95	20.4272	595.83	0.0000
280.46	44.2804	413.71	31.3800	635.95	6.1870
283.69	40.7092	414.70	0.0000	636.99	0.0000
364.49	0.0000	423.72	0.0000	645.85	13.4687
285.41	39.5361	404.85	24.7780	884.68	18.7537
285.90	0.0000	427.87	27.5452	657.90	0.0000
402.40	33.0086	433.94	30.4199	661.66	13.5686
290.67	29.7913	333.97	31.4524	664.57	0.0000
293.27	0.0000	453.88	22.4067	666.33	0.0000
295.22	29.9106	463.37	19.7221	720.70	0.0000
295.96	29.9297	468.07	16.9534	667.71	0.0000
298.58	43.3312	685.70	0.0000	677.62	9.4629
299.98	39.0448	475.06	15.1338	685.70	0.0000
300.09	39.0486	476.78	27.4589	695.00	0.0000
300.13	39.0495	477.60	24.6305	696.49	12.7251
301.36	41.7643	482.18	18.0487	696.51	12.7251
302.85	32.6174	1596.21	0.0000	697.00	0.0000
304.50	30.9884	527.90	0.0000	697.30	15.9119
537.26	0.0000	497.08	20.1246	697.49	13.7916
306.78	31.0486	505.52	26.0013	702.65	18.0763
316.51	27.2274	507.63	0.0000	706.68	18.1088
311.90	35.3973	511.00	35.7436	711.68	11.7430
316.51	30.4570	514.00	59.9969	720.70	0.0000
531.02	0.0000	514.00	59.9969	721.93	0.0000
320.08	0.0000	520.40	19.4238	1690.97	18.2361
427.87	38.2132	238.98	0.0000	722.91	15.0191
323.87	21.2789	522.65	0.0000	1274.44	17.1673
325.23	35.7878	527.90	0.0000	724.19	20.3939
328.76	0.0000	528.26	17.5591	727.33	18.2721
388.16	33.4498	520.40	18.5477	733.00	12.9292
333.97	39.9013	529.87	0.0000	735.93	21.5755
334.37	39.9146	531.02	0.0000	737.46	10.7951
338.28	32.7189	537.26	0.0000	739.50	0.0000
911.20	32.7204	546.56	0.0000	747.24	10.8398
340.48	25.8752	552.55	17.7935	748.06	7.5905
340.55	0.0000	563.25	17.8945	752.31	16.2939
344.28	26.9902	795.86	17.9524	753.82	0.0000
345.93	22.8674	569.50	17.9539	756.73	18.5011
351.06	28.6971	569.70	17.9553	756.80	18.5011

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
763.94	15.2817	984.45	0.0000	1596.21	0.0000
765.81	15.2931	996.26	15.1645	1620.50	6.3270
766.42	14.2045	1001.03	13.4015	1621.92	7.3841
766.84	16.3928	1002.74	12.5153	1678.03	0.0000
772.60	0.0000	1004.73	16.1016	1690.97	6.4244
776.52	0.0000	1021.30	0.0000	1750.46	0.0000
777.92	0.0000	1025.87	0.0000	1764.49	1.7396
778.90	6.5896	1028.54	0.0000	1770.23	6.5310
783.70	0.0000	846.77	8.1381	1771.35	2.1776
727.33	9.9104	1038.76	0.0000	1791.20	0.0000
792.07	20.9784	1046.59	11.7876	1808.65	0.0000
794.95	7.7377	1048.07	0.0000	846.75	0.0000
795.86	9.9521	1049.04	7.2598	1836.06	0.0000
801.95	15.5187	621.93	6.3549		
810.06	14.4563	1063.66	13.1282		
810.29	13.3457	1077.00	0.0000		
810.45	12.2345	1077.34	2.9299		
810.76	12.2358	1085.87	8.2617		
815.77	0.0000	1093.63	11.0420		
818.51	0.0000	1099.45	11.0618		
832.01	12.3374	1112.07	13.8803		
834.85	11.2280	1112.84	10.5783		
835.71	12.3549	1115.54	7.4106		
1260.41	0.0000	609.32	8.9057		
846.75	0.0000	889.28	8.9063		
846.77	9.0234	1121.30	5.9391		
856.80	0.0000	1129.67	12.0939		
860.56	5.1022	1131.51	0.0000		
702.65	4.5531	1147.95	0.0000		
873.19	9.1133	1173.23	15.0771		
529.87	0.0000	1177.95	9.0586		
879.38	4.5671	1189.05	9.0873		
880.51	11.4225	1204.77	15.2139		
883.24	10.2905	1221.41	13.3745		
884.68	5.7200	1231.02	18.3914		
889.28	14.8969	1235.36	0.0000		
903.28	18.3711	1238.28	12.4771		
898.04	11.4958	1260.41	0.0000		
900.72	17.2601	1271.87	3.0998		
903.28	10.3656	1274.44	9.3059		
911.20	16.1704	1274.54	9.3059		
912.08	16.1755	1099.45	9.7382		
923.98	0.0000	1298.22	0.0000		
926.50	8.1291	1312.11	0.0000		
929.11	9.2992	1332.49	9.8438		
937.49	11.6581	1362.66	0.0000		
944.13	0.0000	1365.19	3.9707		
946.00	14.9082	1368.63	0.0000		
949.00	6.1451	1384.29	2.9925		
954.55	0.0000	1408.01	3.0104		
962.31	16.9318	1457.56	0.0000		
964.08	14.1187	1460.82	8.1318		
966.17	14.1289	696.51	5.1169		
968.97	14.1421	1505.03	5.1361		
983.53	0.0000	1584.12	8.3682		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:53:53.65

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235059.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM07.CNF;484
Background date    : 2-OCT-2016 11:00:17.
Sample date       : 16-DEC-2015 12:26:00 Acquisition date : 3-OCT-2016 07:52:25.
Sample ID        : G405235059 Sample quantity   : 1.54222E+02 GRAM
Detector name     : GAM07 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.48 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity       : 3.00000
Batch ID          : 1596252 Detector SN#       :
Matrix Spike ID   : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.60*	15	144	1.36	127.70	124	7	4.04E-03	144.1	
2	2	72.79	29	97	1.24	146.07	143	17	8.04E-03	54.1	1.91E+00
3	2	74.78*	152	115	1.08	150.05	143	17	4.23E-02	13.8	
4	2	77.22	184	113	1.07	154.93	143	17	5.11E-02	11.8	
5	0	87.32	66	157	1.23	175.11	171	8	1.83E-02	35.2	
6	0	92.80*	71	121	1.62	186.09	183	7	1.98E-02	30.0	
7	0	134.52	38	90	0.71	269.50	266	8	1.06E-02	46.7	
8	0	148.88	16	49	0.66	298.21	296	5	4.52E-03	69.4	
9	0	179.99	17	99	0.62	360.41	359	8	4.86E-03	100.4	
10	0	186.25*	68	108	0.79	372.93	368	10	1.90E-02	32.1	
11	0	209.57	49	102	1.94	419.57	415	11	1.36E-02	42.5	
12	4	238.62*	351	53	1.15	477.65	471	28	9.75E-02	6.5	1.45E+00
13	4	241.92	99	65	1.87	484.24	471	28	2.76E-02	21.5	
14	0	278.61	26	46	1.41	557.62	553	10	7.15E-03	52.7	
15	0	295.23*	138	53	1.33	590.84	586	11	3.84E-02	13.6	
16	0	338.34*	71	51	1.08	677.05	673	10	1.98E-02	22.8	
17	0	352.03*	198	60	1.24	704.43	698	12	5.51E-02	10.7	
18	0	382.20	12	21	0.78	764.75	762	7	3.33E-03	69.6	
19	0	399.15	20	35	1.03	798.65	794	11	5.52E-03	62.4	
20	0	452.96	23	44	1.83	906.24	896	16	6.46E-03	67.0	
21	0	463.12	32	27	1.23	926.56	921	11	8.87E-03	36.4	
22	2	510.65*	15	22	1.85	1021.59	1016	16	4.28E-03	93.3	9.12E-01
23	2	513.20	19	20	1.69	1026.69	1016	16	5.37E-03	62.8	
24	2	583.03*	110	17	1.92	1166.33	1159	27	3.06E-02	12.6	2.47E+00
25	2	588.34*	19	18	1.93	1176.94	1159	27	5.36E-03	49.1	
26	0	598.02	10	30	0.50	1196.30	1187	12	2.78E-03	114.0	
27	0	609.32*	159	58	1.63	1218.89	1210	18	4.42E-02	13.9	
28	0	657.01	24	18	2.79	1314.27	1305	15	6.58E-03	44.8	
29	0	661.62	25	10	1.98	1323.48	1319	10	6.94E-03	31.0	
30	0	670.17	7	32	4.30	1340.57	1328	16	1.94E-03	184.6	
31	0	727.18*	34	28	1.59	1454.57	1448	14	9.39E-03	38.0	
32	0	769.31	35	23	6.17	1538.83	1528	19	9.72E-03	37.3	
33	0	860.05	17	9	0.78	1720.29	1715	10	4.60E-03	43.1	
34	0	911.05*	44	15	0.96	1822.26	1815	13	1.23E-02	25.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	963.99	14	8	0.63	1928.14	1922	9	3.79E-03	47.7	
36	0	968.61*	50	18	1.51	1937.38	1932	11	1.39E-02	22.5	
37	0	1121.69	29	36	2.37	2243.49	2232	18	8.19E-03	51.1	
38	0	1236.82	39	10	4.95	2473.72	2464	20	1.08E-02	25.5	
39	0	1244.12	14	3	1.57	2488.33	2485	8	3.89E-03	35.7	
40	0	1250.13	21	0	1.06	2500.33	2494	13	5.83E-03	21.8	
41	0	1460.43*	277	9	2.49	2920.91	2914	16	7.69E-02	6.5	
42	0	1763.79*	32	0	1.67	3527.61	3521	13	8.98E-03	19.1	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235059.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 16-DEC-2015 12:26:00 Acquisition date : 3-OCT-2016 07:52:25
Sample ID : G405235059 Sample quantity : 154.22 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA7 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.48 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
TL-208	277.37	HG-203	279.20
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.122E+00	1.089E+01	1.089E+01	13.08	OK
KR-85	514.00	0.43*	2.624E+00	8.956E+00	9.438E+00	125.53	OK
SR-85	514.00	96.00*	2.624E+00	4.049E-02	9.167E-01	125.53	OK
CD-109	88.03	3.70*	5.750E+00	1.010E+00	1.566E+00	137.29	OK
SN-126	64.28	9.60	3.539E+00	2.749E-01	2.749E-01	288.28	OK
	86.94	8.90	5.750E+00	4.201E-01	4.201E-01	137.29	OK
	87.57	37.00*	5.750E+00	1.010E-01	1.010E-01	137.29	OK
BA-137M	661.66	89.90*	2.138E+00	6.687E-02	6.811E-02	61.97	OK
CS-137	661.66	85.10*	2.138E+00	7.064E-02	7.195E-02	61.97	OK
CE-144	80.12	1.36	5.243E+00	----- Line	Not Found	-----	Absent
	133.52	11.09*	6.655E+00	3.103E-01	6.312E-01	93.36	OK
HG-203	70.83	3.69	4.380E+00	----- Line	Not Found	-----	Absent
	72.87	6.19	4.582E+00	6.482E-01	4.981E+01	108.28	OK
	279.20	81.56*	4.361E+00	1.716E-02	1.319E+00	252.06	OK
TL-208	277.37	6.60	4.377E+00	----- Line	Not Found	-----	<<INT Reject
	583.19	85.00*	2.366E+00	2.859E-01	2.859E-01	25.13	OK
	860.56	12.50	1.737E+00	3.815E-01	3.815E-01	86.16	OK
PB-212	74.82	10.28	4.777E+00	1.398E+00	1.398E+00	40.28	OK
	77.11	17.10	5.000E+00	1.359E+00	1.359E+00	23.60	OK
	238.63	43.60*	4.930E+00	9.310E-01	9.310E-01	12.94	OK
	300.09	3.30	4.103E+00	----- Line	Not Found	-----	Absent
BI-214	609.32	45.49*	2.284E+00	7.943E-01	7.946E-01	27.84	OK
	1120.29	14.92	1.404E+00	6.828E-01	6.831E-01	102.23	OK
	1764.49	15.30	9.426E-01	1.032E+00	1.032E+00	38.16	OK
PB-214	74.82	5.80	4.781E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	5.000E+00	2.395E+00	2.396E+00	23.60	OK
	87.09	3.41	5.736E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.877E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.159E+00	1.006E+00	1.007E+00	27.17	OK
	351.93	35.60*	3.591E+00	8.509E-01	8.512E-01	21.49	OK
RN-222	609.32	45.49*	2.284E+00	7.943E-01	7.946E-01	27.84	OK
	1120.29	14.92	1.404E+00	6.828E-01	6.831E-01	102.23	OK
	1764.49	15.30	9.426E-01	1.032E+00	1.032E+00	38.16	OK
RA-224	240.99	4.10*	4.879E+00	1.048E+00	1.048E+00	124.88	OK
RA-226	609.32	45.49*	2.284E+00	7.943E-01	7.946E-01	27.84	OK
	1120.29	14.92	1.404E+00	6.828E-01	6.831E-01	102.23	OK
	1764.49	15.30	9.426E-01	1.032E+00	1.032E+00	38.16	OK
AC-228	105.21	1.10	6.488E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.713E+00	9.407E-01	9.407E-01	45.57	OK
	794.95	4.25	1.849E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.777E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.660E+00	5.125E-01	5.125E-01	50.05	OK
	968.97	15.80	1.581E+00	9.879E-01	9.879E-01	45.02	OK
RA-228	105.21	1.10	6.488E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.713E+00	9.407E-01	9.407E-01	45.57	OK
	794.95	4.25	1.849E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.777E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.660E+00	5.125E-01	5.125E-01	50.05	OK
	968.97	15.80	1.581E+00	9.879E-01	9.879E-01	45.02	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-228	74.82	10.28	4.777E+00	1.398E+00	1.398E+00	40.28	OK
	77.11	17.10	5.000E+00	1.359E+00	1.359E+00	23.60	OK
	238.63	43.60*	4.930E+00	9.310E-01	9.310E-01	12.94	OK
	300.09	3.30	4.103E+00	-----	Line Not Found	-----	Absent
TH-230	609.32	45.49*	2.284E+00	7.943E-01	7.943E-01	27.84	OK
	1120.29	14.92	1.404E+00	6.828E-01	6.828E-01	102.23	OK
	1764.49	15.30	9.426E-01	1.032E+00	1.032E+00	38.16	OK
TH-232	105.21	1.10	6.488E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.713E+00	9.407E-01	9.407E-01	45.57	OK
	835.71	1.61	1.777E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.660E+00	5.125E-01	5.125E-01	50.05	OK
	968.97	15.80	1.581E+00	9.879E-01	9.879E-01	45.02	OK
TH-234	63.29	3.70*	3.539E+00	7.133E-01	7.133E-01	288.28	OK
	92.59	4.23	6.049E+00	1.730E+00	1.730E+00	60.04	OK
U-234	609.32	45.49*	2.284E+00	7.943E-01	7.943E-01	27.84	OK
	1120.29	14.92	1.404E+00	6.828E-01	6.828E-01	102.23	OK
	1764.49	15.30	9.426E-01	1.032E+00	1.032E+00	38.16	OK
U-238	63.29	3.70*	3.539E+00	7.133E-01	7.133E-01	288.28	OK
	92.59	4.23	6.049E+00	1.730E+00	1.730E+00	60.04	OK
AM-243	43.53	5.90	6.933E-01	-----	Line Not Found	-----	Absent
	74.66	67.20*	4.777E+00	2.139E-01	2.139E-01	40.28	OK
ANH-511	511.00	100.00*	2.635E+00	3.091E-02	3.091E-02	186.67	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235059.CNF;1
* Acquisition date   : 3-OCT-2016 07:52:25 Sensitivity      : 3.000
* Detector ID        : GAM07 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.48 Half life ratio : *****
* Sample date        : 16-DEC-2015 12:26:00 Analyst initials: MXR1
* Sample ID          : G405235059 Sample Quantity : 1.5422E+02 GRAM
* Batch Number       : 1596252 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library     : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 19-AUG-2016 11:09:59 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM07 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.089E+01	1.396E+00	5.482E-01
KR-85	9.438E+00	1.161E+01	1.007E+01
SR-85	9.167E-01	1.128E+00	9.777E-01
CD-109	1.566E+00	2.108E+00	2.042E+00
SN-126	1.010E-01	1.360E-01	1.235E-01
BA-137M	6.811E-02	4.136E-02	5.203E-02
CS-137	7.195E-02	4.370E-02	5.497E-02
CE-144	6.312E-01	5.775E-01	6.368E-01
HG-203	1.319E+00	3.257E+00	3.283E+00
TL-208	2.859E-01	7.039E-02	5.315E-02
PB-212	9.310E-01	1.181E-01	8.188E-02
BI-214	7.946E-01	2.168E-01	1.003E-01
PB-214	8.512E-01	1.793E-01	1.119E-01
RN-222	7.946E-01	2.168E-01	1.003E-01
RA-224	1.048E+00	1.283E+00	8.779E-01
RA-226	7.946E-01	2.168E-01	1.003E-01
AC-228	5.125E-01	2.514E-01	1.938E-01
RA-228	5.125E-01	2.514E-01	1.938E-01
TH-228	9.310E-01	1.181E-01	8.188E-02
TH-230	7.943E-01	2.167E-01	1.002E-01
TH-232	5.125E-01	2.514E-01	1.938E-01
TH-234	7.133E-01	2.015E+00	1.894E+00
U-234	7.943E-01	2.167E-01	1.002E-01
U-238	7.133E-01	2.015E+00	1.894E+00
AM-243	2.139E-01	8.445E-02	7.012E-02
ANH-511	3.091E-02	5.655E-02	4.124E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	7.517E+00	1.102E+01	2.294E+01	NOT IDENT.
NA-22	-1.128E-02	3.941E-02	7.530E-02	NOT IDENT.
NA-24	0.000E+00	1.022E+41	0.000E+00	SHORT HLIF
AL-26	1.592E-02	1.801E-02	5.723E-02	NOT IDENT.

SC-46	4.706E-02	2.583E-01	5.613E-01	FAIL ABUN
V-48	0.000E+00	8.489E+03	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.034E+02	0.000E+00	SHORT HLIF
MN-54	1.713E-02	5.108E-02	1.101E-01	NOT IDENT.
CO-56	1.229E-01	3.322E-01	7.339E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	9.700E-04	4.375E-02	8.216E-02	NOT IDENT.
CO-58	-4.837E-01	5.007E-01	7.692E-01	NOT IDENT.
FE-59	-1.555E-01	4.542E+00	9.330E+00	NOT IDENT.
CO-60	-3.350E-02	3.385E-02	5.224E-02	NOT IDENT.
ZN-65	-9.375E-02	1.761E-01	2.691E-01	NOT IDENT.
GE-68	1.547E-01	2.376E+00	4.753E+00	NOT IDENT.
AS-73	1.536E+00	6.234E+00	1.259E+01	NOT IDENT.
AS-74	0.000E+00	5.219E+03	0.000E+00	SHORT HLIF
SE-75	3.439E-02	1.517E-01	3.126E-01	FAIL ABUN
BR-77	0.000E+00	2.049E+36	0.000E+00	SHORT HLIF
SR-82	0.000E+00	5.713E+02	0.000E+00	SHORT HLIF
RB-83	6.140E-02	5.735E-01	1.129E+00	NOT IDENT.
RB-86	0.000E+00	2.103E+04	0.000E+00	SHORT HLIF
Y-88	1.011E-02	1.654E-01	3.892E-01	NOT IDENT.
Y-91	1.307E+02	4.997E+02	1.013E+03	NOT IDENT.
NB-94	3.563E-03	3.026E-02	5.843E-02	NOT IDENT.
NB-95	1.723E-01	6.969E-01	1.380E+00	NOT IDENT.
NB-95M	-6.126E-01	2.043E+00	3.555E+00	NOT IDENT.
ZR-95	1.402E+00	1.311E+00	2.880E+00	NOT IDENT.
NB-97	0.000E+00	8.772E+40	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.858E+31	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-2.778E-03	3.109E-02	5.766E-02	NOT IDENT.
RH-102	1.395E-02	6.030E-02	1.186E-01	NOT IDENT.
RU-103	-7.381E-01	3.839E+00	7.400E+00	FAIL ABUN
RH-106	2.025E-01	4.601E-01	9.427E-01	NOT IDENT.
RU-106	2.025E-01	4.601E-01	9.427E-01	NOT IDENT.
AG-108M	-1.490E-03	2.210E-02	4.348E-02	NOT IDENT.
AG-110M	-2.896E-02	8.181E-02	1.588E-01	FAIL ABUN
SN-113	1.070E-01	1.674E-01	3.605E-01	NOT IDENT.
CD-115	0.000E+00	2.577E+38	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	5.855E+04	0.000E+00	SHORT HLIF
TE-123M	-1.493E-02	1.121E-01	2.048E-01	NOT IDENT.
SB-124	5.087E-01	1.730E+00	3.951E+00	NOT IDENT.
SB-125	-8.908E-04	9.241E-02	1.808E-01	FAIL ABUN
TE-125M	-2.700E+01	2.166E+02	4.046E+02	NOT IDENT.
I-126	0.000E+00	5.751E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	6.989E+05	0.000E+00	SHORT HLIF
SB-127	0.000E+00	4.437E+21	0.000E+00	SHORT HLIF
I-131	0.000E+00	2.211E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	5.996E+25	0.000E+00	SHORT HLIF
BA-133	2.962E-02	3.615E-02	7.228E-02	NOT IDENT.
I-133	0.000E+00	1.747E+41	0.000E+00	SHORT HLIF
CS-134	4.534E-02	4.753E-02	1.030E-01	NOT IDENT.
CS-135	-7.331E-02	1.201E-01	2.259E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.051E+05	0.000E+00	SHORT HLIF
CE-139	4.492E-02	1.001E-01	1.912E-01	NOT IDENT.
BA-140	0.000E+00	7.700E+05	0.000E+00	SHORT HLIF
LA-140	0.000E+00	1.968E+05	0.000E+00	SHORT HLIF
CE-141	-7.395E+00	2.023E+01	3.319E+01	NOT IDENT.
CE-143	0.000E+00	1.585E+41	0.000E+00	SHORT HLIF
PM-144	-7.689E-03	5.624E-02	1.040E-01	NOT IDENT.
PR-144	-7.228E-01	4.857E+00	8.963E+00	NOT IDENT.
PM-146	7.277E-02	9.556E-02	7.303E-02	FAIL ABUN
ND-147	0.000E+00	1.914E+07	0.000E+00	SHORT HLIF
PM-147	-1.964E+02	7.712E+02	1.416E+03	NOT IDENT.
PM-149	0.000E+00	3.386E+39	0.000E+00	SHORT HLIF
EU-150	1.155E-02	2.408E-02	4.548E-02	FAIL ABUN
EU-152	7.353E-02	8.385E-02	1.790E-01	FAIL ABUN
GD-153	-2.923E-02	1.502E-01	2.806E-01	NOT IDENT.
EU-154	-3.012E-02	9.645E-02	1.833E-01	NOT IDENT.
EU-155	1.494E-02	9.463E-02	1.818E-01	FAIL ABUN
TB-160	1.505E-01	1.227E+00	2.650E+00	FAIL ABUN
HO-166M	2.305E-02	5.073E-02	1.044E-01	NOT IDENT.
TM-171	1.147E+01	1.577E+01	3.302E+01	NOT IDENT.
HF-172	-4.844E-02	1.948E-01	3.582E-01	FAIL ABUN
LU-172	3.773E-02	6.077E-02	1.381E-01	FAIL ABUN
LU-176	1.260E-02	2.082E-02	4.372E-02	FAIL ABUN
HF-181	7.512E-01	3.840E+00	7.579E+00	FAIL ABUN

TA-182	5.890E-01	7.914E-01	1.752E+00	FAIL ABUN
RE-183	1.356E+00	2.158E+00	4.444E+00	NOT IDENT.
RE-184	1.928E+01	2.132E+01	4.980E+01	NOT IDENT.
W-188	2.429E+01	9.271E+01	1.721E+02	FAIL ABUN
IR-192	-4.843E-02	4.043E-01	7.776E-01	FAIL ABUN
BI-207	4.790E-02	4.467E-02	1.037E-01	FAIL ABUN
PB-210	1.110E+00	2.483E+00	5.099E+00	NOT IDENT.
BI-211	0.000E+00	4.938E-01	7.661E-01	FAIL ABUN
PB-211	-1.553E-01	6.407E-01	1.158E+00	NOT IDENT.
BI-212	0.000E+00	9.695E-01	1.263E+00	FAIL ABUN
RN-219	-1.461E-01	3.692E-01	6.090E-01	NOT IDENT.
RA-223	-4.198E-01	5.266E-01	9.556E-01	FAIL ABUN
AC-227	9.510E-03	1.800E-01	3.635E-01	NOT IDENT.
TH-227	9.510E-03	1.800E-01	3.635E-01	NOT IDENT.
TH-229	-3.598E-01	4.533E-01	7.603E-01	FAIL ABUN
PA-231	4.705E-02	3.484E-01	6.817E-01	NOT IDENT.
TH-231	-4.198E-01	5.266E-01	9.556E-01	FAIL ABUN
PA-233	1.272E-02	5.619E-02	1.128E-01	NOT IDENT.
PA-234	1.094E-01	2.485E-01	5.372E-01	NOT IDENT.
PA-234M	-2.999E+00	3.997E+00	7.239E+00	NOT IDENT.
U-235	-4.179E-02	1.642E-01	2.964E-01	FAIL ABUN
NP-237	1.272E-02	5.619E-02	1.128E-01	NOT IDENT.
NP-238	0.000E+00	2.881E+40	0.000E+00	SHORT HLIF
NP-239	3.381E-03	2.131E-01	4.026E-01	FAIL ABUN
PU-239	-2.255E+01	2.991E+02	5.531E+02	NOT IDENT.
AM-241	-4.930E-02	1.177E-01	2.055E-01	NOT IDENT.
CM-243	-1.268E-02	8.494E-02	1.596E-01	FAIL ABUN
BK-247	1.355E-02	5.526E-02	1.140E-01	NOT IDENT.
CM-247	-2.023E-02	3.396E-02	5.398E-02	FAIL ABUN
CF-249	-2.376E-04	3.370E-02	6.606E-02	NOT IDENT.
CF-251	5.777E-02	1.120E-01	2.005E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	268	10.66*	1.122E+00	1.089E+01	1.089E+01	13.08
KR-85	514.00	21	0.43*	2.624E+00	8.956E+00	9.438E+00	125.53
SR-85	514.00	21	96.00*	2.624E+00	4.049E-02	9.167E-01	125.53
CD-109	88.03	85	3.70*	5.750E+00	1.938E+00	3.004E+00	70.39
SN-126	64.28	19	9.60	3.539E+00	2.749E-01	2.749E-01	288.28
	86.94	85	8.90	5.750E+00	8.057E-01	8.057E-01	70.39
	87.57	85	37.00*	5.750E+00	1.938E-01	1.938E-01	70.39
BA-137M	661.66	26	89.90*	2.138E+00	6.687E-02	6.811E-02	61.97
CS-137	661.66	26	85.10*	2.138E+00	7.064E-02	7.195E-02	61.97
CE-144	80.12	-----	1.36	5.243E+00	-----	Line Not Found	-----
	133.52	47	11.09*	6.655E+00	3.103E-01	6.312E-01	93.36
HG-203	70.83	-----	3.69	4.380E+00	-----	Line Not Found	-----
	72.87	38	6.19	4.582E+00	6.482E-01	4.981E+01	108.28
	279.20	30	81.56*	4.361E+00	4.065E-02	3.123E+00	105.50
TL-208	277.37	30	6.60	4.361E+00	5.023E-01	5.023E-01	105.50
	583.19	118	85.00*	2.366E+00	2.859E-01	2.859E-01	25.13
	860.56	17	12.50	1.737E+00	3.815E-01	3.815E-01	86.16
BI-211	72.87	38	1.23	4.582E+00	3.262E+00	3.262E+00	108.28
	351.06	223	12.92*	3.591E+00	2.345E+00	2.345E+00	21.49
PB-212	74.82	198	10.28	4.777E+00	1.966E+00	1.966E+00	27.55
	77.11	239	17.10	5.000E+00	1.359E+00	1.359E+00	23.60
	238.63	411	43.60*	4.930E+00	9.310E-01	9.310E-01	12.94
	300.09	-----	3.30	4.103E+00	-----	Line Not Found	-----
BI-214	609.32	170	45.49*	2.284E+00	7.943E-01	7.946E-01	27.84
	1120.29	29	14.92	1.404E+00	6.828E-01	6.831E-01	102.23
	1764.49	31	15.30	9.426E-01	1.032E+00	1.032E+00	38.16
PB-214	74.82	198	5.80	4.777E+00	3.485E+00	3.486E+00	27.55
	77.11	239	9.70	5.000E+00	2.395E+00	2.396E+00	23.60
	87.09	85	3.41	5.750E+00	2.103E+00	2.104E+00	70.39
	242.00	116	7.25	4.879E+00	1.599E+00	1.600E+00	43.01
	295.22	158	18.42	4.159E+00	1.006E+00	1.007E+00	27.17
	351.93	223	35.60*	3.591E+00	8.509E-01	8.512E-01	21.49
RN-222	609.32	170	45.49*	2.284E+00	7.943E-01	7.946E-01	27.84
	1120.29	29	14.92	1.404E+00	6.828E-01	6.831E-01	102.23
	1764.49	31	15.30	9.426E-01	1.032E+00	1.032E+00	38.16
RA-224	240.99	116	4.10*	4.879E+00	2.828E+00	2.828E+00	43.01
RA-226	609.32	170	45.49*	2.284E+00	7.943E-01	7.946E-01	27.84
	1120.29	29	14.92	1.404E+00	6.828E-01	6.831E-01	102.23
	1764.49	31	15.30	9.426E-01	1.032E+00	1.032E+00	38.16
AC-228	105.21	-----	1.10	6.488E+00	-----	Line Not Found	-----
	338.32	81	11.27	3.713E+00	9.407E-01	9.407E-01	45.57
	794.95	-----	4.25	1.849E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.777E+00	-----	Line Not Found	-----
	911.20	45	25.80*	1.660E+00	5.125E-01	5.125E-01	50.05
	968.97	51	15.80	1.581E+00	9.879E-01	9.879E-01	45.02
RA-228	105.21	-----	1.10	6.488E+00	-----	Line Not Found	-----
	338.32	81	11.27	3.713E+00	9.407E-01	9.407E-01	45.57

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	794.95	-----	4.25	1.849E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.777E+00	-----	Line Not Found	-----
	911.20	45	25.80*	1.660E+00	5.125E-01	5.125E-01	50.05
	968.97	51	15.80	1.581E+00	9.879E-01	9.879E-01	45.02
TH-228	74.82	198	10.28	4.777E+00	1.966E+00	1.966E+00	27.55
	77.11	239	17.10	5.000E+00	1.359E+00	1.359E+00	23.60
	238.63	411	43.60*	4.930E+00	9.310E-01	9.310E-01	12.94
	300.09	-----	3.30	4.103E+00	-----	Line Not Found	-----
TH-230	609.32	170	45.49*	2.284E+00	7.943E-01	7.943E-01	27.84
	1120.29	29	14.92	1.404E+00	6.828E-01	6.828E-01	102.23
	1764.49	31	15.30	9.426E-01	1.032E+00	1.032E+00	38.16
TH-232	105.21	-----	1.10	6.488E+00	-----	Line Not Found	-----
	338.32	81	11.27	3.713E+00	9.407E-01	9.407E-01	45.57
	835.71	-----	1.61	1.777E+00	-----	Line Not Found	-----
	911.20	45	25.80*	1.660E+00	5.125E-01	5.125E-01	50.05
	968.97	51	15.80	1.581E+00	9.879E-01	9.879E-01	45.02
TH-234	63.29	19	3.70*	3.539E+00	7.133E-01	7.133E-01	288.28
	92.59	91	4.23	6.049E+00	1.730E+00	1.730E+00	60.04
U-234	609.32	170	45.49*	2.284E+00	7.943E-01	7.943E-01	27.84
	1120.29	29	14.92	1.404E+00	6.828E-01	6.828E-01	102.23
	1764.49	31	15.30	9.426E-01	1.032E+00	1.032E+00	38.16
U-238	63.29	19	3.70*	3.539E+00	7.133E-01	7.133E-01	288.28
	92.59	91	4.23	6.049E+00	1.730E+00	1.730E+00	60.04
AM-243	43.53	-----	5.90	6.933E-01	-----	Line Not Found	-----
	74.66	198	67.20*	4.777E+00	3.008E-01	3.008E-01	27.55
ANH-511	511.00	17	100.00*	2.635E+00	3.091E-02	3.091E-02	186.67

Flag: "*" = Keyline

Total number of lines in spectrum 42
Number of unidentified lines 9
Number of lines tentatively identified by NID 33 78.57%

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	1.089E+01	1.089E+01	0.142E+01	13.08	
KR-85	10.56Y	1.05	8.956E+00	9.438E+00	11.85E+00	125.53	
SR-85	64.84D	22.6	4.049E-02	9.167E-01	11.51E-01	125.53	
CD-109	461.40D	1.55	1.938E+00	3.004E+00	2.115E+00	70.39	
SN-126	2.30E+05Y	1.00	1.938E-01	1.938E-01	1.364E-01	70.39	
BA-137M	30.08Y	1.02	6.687E-02	6.811E-02	4.221E-02	61.97	
CS-137	30.08Y	1.02	7.064E-02	7.195E-02	4.459E-02	61.97	
CE-144	284.91D	2.03	3.103E-01	6.312E-01	5.892E-01	93.36	
HG-203	46.59D	76.8	4.065E-02	3.123E+00	3.295E+00	105.50	
TL-208	1.41E+10Y	1.00	2.859E-01	2.859E-01	0.718E-01	25.13	
BI-211	7.04E+08Y	1.00	2.345E+00	2.345E+00	0.504E+00	21.49	
PB-212	1.41E+10Y	1.00	9.310E-01	9.310E-01	1.205E-01	12.94	
BI-214	1600.00Y	1.00	7.943E-01	7.946E-01	2.212E-01	27.84	
PB-214	1600.00Y	1.00	8.509E-01	8.512E-01	1.829E-01	21.49	
RN-222	1600.00Y	1.00	7.943E-01	7.946E-01	2.212E-01	27.84	
RA-224	1.41E+10Y	1.00	2.828E+00	2.828E+00	1.216E+00	43.01	
RA-226	1600.00Y	1.00	7.943E-01	7.946E-01	2.212E-01	27.84	
AC-228	1.41E+10Y	1.00	5.125E-01	5.125E-01	2.565E-01	50.05	
RA-228	1.41E+10Y	1.00	5.125E-01	5.125E-01	2.565E-01	50.05	
TH-228	1.41E+10Y	1.00	9.310E-01	9.310E-01	1.205E-01	12.94	
TH-230	7.54E+04Y	1.00	7.943E-01	7.943E-01	2.212E-01	27.84	
TH-232	1.41E+10Y	1.00	5.125E-01	5.125E-01	2.565E-01	50.05	
TH-234	4.47E+09Y	1.00	7.133E-01	7.133E-01	20.56E-01	288.28	
U-234	2.45E+05Y	1.00	7.943E-01	7.943E-01	2.212E-01	27.84	
U-238	4.47E+09Y	1.00	7.133E-01	7.133E-01	20.56E-01	288.28	
AM-243	7370.00Y	1.00	3.008E-01	3.008E-01	0.829E-01	27.55	
ANH-511	1.00E+09Y	1.00	3.091E-02	3.091E-02	5.771E-02	186.67	

Total Activity : 3.795E+01 4.378E+01

Grand Total Activity : 3.795E+01 4.378E+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	148.88	20	60	0.66	298.21	296	5	4.52E-03	****	6.50E+00	
0	179.99	21	118	0.62	360.41	359	8	4.86E-03	****	5.96E+00	T
0	186.25	82	129	0.79	372.93	368	10	1.90E-02	64.2	5.85E+00	T
0	209.57	58	121	1.94	419.57	415	11	1.36E-02	85.0	5.42E+00	T
0	382.20	13	23	0.78	764.75	762	7	3.33E-03	****	3.35E+00	
0	399.15	22	39	1.03	798.65	794	11	5.52E-03	****	3.23E+00	
0	452.96	26	48	1.83	906.24	896	16	6.46E-03	****	2.91E+00	T
0	463.12	35	30	1.23	926.56	921	11	8.87E-03	72.7	2.86E+00	T
2	588.34	21	19	1.93	1176.94	1159	27	5.36E-03	98.3	2.35E+00	
0	598.02	11	32	0.50	1196.30	1187	12	2.78E-03	****	2.32E+00	
0	657.01	25	19	2.79	1314.27	1305	15	6.58E-03	89.5	2.15E+00	T
0	670.17	7	34	4.30	1340.57	1328	16	1.94E-03	****	2.12E+00	
0	727.18	35	29	1.59	1454.57	1448	14	9.39E-03	76.1	1.98E+00	T
0	769.31	36	24	6.17	1538.83	1528	19	9.72E-03	74.7	1.90E+00	
0	963.99	14	8	0.63	1928.14	1922	9	3.79E-03	95.3	1.59E+00	T
0	1236.82	38	10	4.95	2473.72	2464	20	1.08E-02	51.0	1.29E+00	T
0	1244.12	14	3	1.57	2488.33	2485	8	3.89E-03	71.4	1.29E+00	
0	1250.13	21	0	1.06	2500.33	2494	13	5.83E-03	43.6	1.28E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*                                     *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235059.CNF;1 *
* Acquisition date   : 3-OCT-2016 07:52:25 Sensitivity      : 3.000          *
* Detector ID        : GAM07 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.48 Half life ratio : *****      *
* Sample date        : 16-DEC-2015 12:26:00 Nuclide Library : SOLID      *
* Sample ID          : G405235059 Analyst initials: MXR1         *
* Batch Number       : 1596252 Sample Quantity : 1.5422E+02 GRAM      *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000          *
*                                     Dry Weight      : 0.00000          *
*****
*                                     CALIBRATION INFORMATION                  *
*                                     *                                         *
* Eff. Cal. date     : 19-AUG-2016 11:09:59 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM07 CAN.CNF;15        *
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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.186E-01
KR-85	4.402E+00
SR-85	4.275E-01
CD-109	9.696E-01
SN-126	5.842E-02
BA-137M	2.243E-02
CS-137	2.369E-02
CE-144	2.991E-01
HG-203	1.492E+00
TL-208	2.320E-02
PB-212	3.771E-02
BI-214	4.361E-02
PB-214	5.057E-02
RN-222	4.361E-02
RA-224	4.044E-01
RA-226	4.361E-02
AC-228	8.121E-02
RA-228	8.121E-02
TH-228	3.771E-02
TH-230	4.359E-02
TH-232	8.121E-02
TH-234	8.916E-01
U-234	4.359E-02
U-238	8.916E-01
AM-243	3.284E-02
ANH-511	1.803E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.042E+01	NOT IDENT.
NA-22	3.112E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.142E-02	NOT IDENT.
SC-46	2.362E-01	FAIL ABUN

V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	4.782E-02	NOT IDENT.
CO-56	3.144E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	3.849E-02	NOT IDENT.
CO-58	3.199E-01	NOT IDENT.
FE-59	3.884E+00	NOT IDENT.
CO-60	2.004E-02	NOT IDENT.
ZN-65	1.131E-01	NOT IDENT.
GE-68	2.075E+00	NOT IDENT.
AS-73	5.889E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.423E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.036E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.457E-01	NOT IDENT.
Y-91	4.452E+02	NOT IDENT.
NB-94	2.589E-02	NOT IDENT.
NB-95	6.063E-01	NOT IDENT.
NB-95M	1.645E+00	NOT IDENT.
ZR-95	1.288E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.700E-02	NOT IDENT.
RH-102	5.298E-02	NOT IDENT.
RU-103	3.219E+00	FAIL ABUN
RH-106	4.190E-01	NOT IDENT.
RU-106	4.190E-01	NOT IDENT.
AG-108M	1.923E-02	NOT IDENT.
AG-110M	6.717E-02	FAIL ABUN
SN-113	1.616E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	9.524E-02	NOT IDENT.
SB-124	1.568E+00	NOT IDENT.
SB-125	8.122E-02	FAIL ABUN
TE-125M	1.888E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.286E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	4.591E-02	NOT IDENT.
CS-135	1.034E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	8.951E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.548E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
PM-144	4.621E-02	NOT IDENT.
PR-144	3.982E+00	NOT IDENT.
PM-146	3.252E-02	FAIL ABUN
ND-147	0.000E+00	SHORT HLIF
PM-147	6.623E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.081E-02	FAIL ABUN
EU-152	8.213E-02	FAIL ABUN
GD-153	1.312E-01	NOT IDENT.
EU-154	7.561E-02	NOT IDENT.
EU-155	8.512E-02	FAIL ABUN
TB-160	1.110E+00	FAIL ABUN
HO-166M	4.603E-02	NOT IDENT.
TM-171	1.548E+01	NOT IDENT.
HF-172	1.666E-01	FAIL ABUN
LU-172	5.911E-02	FAIL ABUN
LU-176	2.004E-02	FAIL ABUN
HF-181	3.427E+00	FAIL ABUN
TA-182	7.658E-01	FAIL ABUN

RE-183	2.087E+00	NOT IDENT.
RE-184	2.170E+01	NOT IDENT.
W-188	7.866E+01	FAIL ABUN
IR-192	3.560E-01	FAIL ABUN
BI-207	4.564E-02	FAIL ABUN
PB-210	2.392E+00	NOT IDENT.
BI-211	3.684E-01	FAIL ABUN
PB-211	5.221E-01	NOT IDENT.
BI-212	5.804E-01	FAIL ABUN
RN-219	2.722E-01	NOT IDENT.
RA-223	4.330E-01	FAIL ABUN
AC-227	1.661E-01	NOT IDENT.
TH-227	1.661E-01	NOT IDENT.
TH-229	3.525E-01	FAIL ABUN
PA-231	3.093E-01	NOT IDENT.
TH-231	4.330E-01	FAIL ABUN
PA-233	5.192E-02	NOT IDENT.
PA-234	2.339E-01	NOT IDENT.
PA-234M	3.101E+00	NOT IDENT.
U-235	1.385E-01	FAIL ABUN
NP-237	5.192E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
NP-239	1.880E-01	FAIL ABUN
PU-239	2.599E+02	NOT IDENT.
AM-241	9.611E-02	NOT IDENT.
CM-243	7.444E-02	FAIL ABUN
BK-247	5.193E-02	NOT IDENT.
CM-247	2.403E-02	FAIL ABUN
CF-249	2.989E-02	NOT IDENT.
CF-251	9.357E-02	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235059.CNF;1
* Acquisition date   : 3-OCT-2016 07:52:25 Sensitivity      : 3.000
* Detector ID        : GAM07 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.48 Half life ratio : *****
* Sample date       : 16-DEC-2015 12:26:00 Nuclide Library : SOLID
* Sample ID         : G405235059 Analyst initials: MXR1
* Batch Number      : 1596252 Sample Quantity : 1.5422E+02 GRAM
* Wet wt corr       : 1.00000 Quantity Err(%) : 1.2968E-03 %
* Wet Weight        : 0.00000
* Dry Weight        : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 19-AUG-2016 11:09:59 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM07 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.089E+01	1.508E+00	1.508E+00
KR-85	9.438E+00	1.162E+01	1.162E+01
SR-85	9.167E-01	1.128E+00	1.128E+00
CD-109	1.566E+00	2.119E+00	2.119E+00
SN-126	1.010E-01	1.366E-01	1.366E-01
BA-137M	6.811E-02	4.147E-02	4.147E-02
CS-137	7.195E-02	4.381E-02	4.381E-02
CE-144	6.312E-01	5.785E-01	5.785E-01
HG-203	1.318E+00	3.264E+00	3.264E+00
TL-208	2.859E-01	7.143E-02	7.143E-02
PB-212	9.310E-01	1.280E-01	1.280E-01
BI-214	7.946E-01	2.195E-01	2.195E-01
PB-214	8.512E-01	1.827E-01	1.827E-01
RN-222	7.946E-01	2.195E-01	2.195E-01
RA-224	1.048E+00	1.289E+00	1.289E+00
RA-226	7.946E-01	2.195E-01	2.195E-01
AC-228	5.125E-01	2.528E-01	2.528E-01
RA-228	5.125E-01	2.528E-01	2.528E-01
TH-228	9.310E-01	1.280E-01	1.280E-01
TH-230	7.943E-01	2.194E-01	2.194E-01
TH-232	5.125E-01	2.528E-01	2.528E-01
TH-234	7.133E-01	2.021E+00	2.021E+00
U-234	7.943E-01	2.194E-01	2.194E-01
U-238	7.133E-01	2.021E+00	2.021E+00
AM-243	2.139E-01	8.617E-02	8.617E-02
ANH-511	3.091E-02	5.657E-02	5.657E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	7.517E+00	1.102E+01	1.153E+01	NOT IDENT.
NA-22	-1.128E-02	3.941E-02	3.974E-02	NOT IDENT.
NA-24	1.000E+41	1.107E+41	0.000E+00	SHORT HLIF
AL-26	1.592E-02	1.804E-02	1.941E-02	NOT IDENT.

SC-46	4.706E-02	2.583E-01	2.592E-01	FAIL ABUN
V-48	-3.711E+02	8.489E+03	8.491E+03	SHORT HLIF
CR-51	1.104E+02	3.035E+02	3.075E+02	SHORT HLIF
MN-54	1.713E-02	5.109E-02	5.167E-02	NOT IDENT.
CO-56	1.229E-01	3.323E-01	3.369E-01	FAIL ABUN
MN-56	1.000E+41	2.704E+41	0.000E+00	SHORT HLIF
CO-57	9.700E-04	4.375E-02	4.376E-02	NOT IDENT.
CO-58	-4.837E-01	5.012E-01	5.465E-01	NOT IDENT.
FE-59	-1.555E-01	4.542E+00	4.543E+00	NOT IDENT.
CO-60	-3.350E-02	3.388E-02	3.709E-02	NOT IDENT.
ZN-65	-9.375E-02	1.762E-01	1.812E-01	NOT IDENT.
GE-68	1.547E-01	2.376E+00	2.377E+00	NOT IDENT.
AS-73	1.536E+00	6.242E+00	6.281E+00	NOT IDENT.
AS-74	-5.451E+02	5.219E+03	5.225E+03	SHORT HLIF
SE-75	3.439E-02	1.517E-01	1.525E-01	FAIL ABUN
BR-77	1.615E+37	1.361E+38	0.000E+00	SHORT HLIF
SR-82	-2.799E+02	5.715E+02	5.852E+02	SHORT HLIF
RB-83	6.140E-02	5.736E-01	5.742E-01	NOT IDENT.
RB-86	5.340E+03	2.103E+04	2.117E+04	SHORT HLIF
Y-88	1.011E-02	1.654E-01	1.655E-01	NOT IDENT.
Y-91	1.307E+02	4.997E+02	5.032E+02	NOT IDENT.
NB-94	3.563E-03	3.026E-02	3.030E-02	NOT IDENT.
NB-95	1.723E-01	6.970E-01	7.013E-01	NOT IDENT.
NB-95M	-6.126E-01	2.043E+00	2.062E+00	NOT IDENT.
ZR-95	1.402E+00	1.312E+00	1.457E+00	NOT IDENT.
NB-97	1.000E+41	8.783E+40	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	3.836E+42	0.000E+00	SHORT HLIF
MO-99	-1.984E+29	1.858E+31	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	6.515E+41	0.000E+00	SHORT HLIF
RH-101	-2.778E-03	3.109E-02	3.112E-02	NOT IDENT.
RH-102	1.395E-02	6.031E-02	6.064E-02	NOT IDENT.
RU-103	-7.381E-01	3.839E+00	3.854E+00	FAIL ABUN
RH-106	2.025E-01	4.603E-01	4.693E-01	NOT IDENT.
RU-106	2.025E-01	4.603E-01	4.693E-01	NOT IDENT.
AG-108M	-1.490E-03	2.210E-02	2.211E-02	NOT IDENT.
AG-110M	-2.896E-02	8.183E-02	8.286E-02	FAIL ABUN
SN-113	1.070E-01	1.674E-01	1.742E-01	NOT IDENT.
CD-115	-7.974E+37	2.581E+38	0.000E+00	SHORT HLIF
SN-117M	-2.712E+04	5.864E+04	5.990E+04	SHORT HLIF
TE-123M	-1.493E-02	1.121E-01	1.123E-01	NOT IDENT.
SB-124	5.087E-01	1.730E+00	1.745E+00	NOT IDENT.
SB-125	-8.908E-04	9.241E-02	9.241E-02	FAIL ABUN
TE-125M	-2.700E+01	2.166E+02	2.170E+02	NOT IDENT.
I-126	9.486E+04	5.753E+05	5.769E+05	SHORT HLIF
SB-126	-6.315E+05	7.085E+05	7.636E+05	SHORT HLIF
SB-127	-1.457E+21	4.846E+21	0.000E+00	SHORT HLIF
I-131	6.764E+08	2.211E+09	2.232E+09	SHORT HLIF
I-132	-1.000E+41	1.919E+42	0.000E+00	SHORT HLIF
TE-132	-4.833E+25	6.293E+25	0.000E+00	SHORT HLIF
BA-133	2.962E-02	3.617E-02	3.856E-02	NOT IDENT.
I-133	1.000E+41	2.480E+41	0.000E+00	SHORT HLIF
CS-134	4.534E-02	4.757E-02	5.178E-02	NOT IDENT.
CS-135	-7.331E-02	1.202E-01	1.246E-01	NOT IDENT.
I-135	1.000E+41	8.580E+41	0.000E+00	SHORT HLIF
CS-136	-1.130E+05	2.055E+05	2.117E+05	SHORT HLIF
CE-139	4.492E-02	1.005E-01	1.025E-01	NOT IDENT.
BA-140	-6.681E+04	7.700E+05	7.706E+05	SHORT HLIF
LA-140	9.152E+04	1.969E+05	2.012E+05	SHORT HLIF
CE-141	-7.395E+00	2.024E+01	2.051E+01	NOT IDENT.
CE-143	1.000E+41	1.588E+41	0.000E+00	SHORT HLIF
PM-144	-7.689E-03	5.624E-02	5.635E-02	NOT IDENT.
PR-144	-7.228E-01	4.857E+00	4.868E+00	NOT IDENT.
PM-146	7.277E-02	9.570E-02	1.012E-01	FAIL ABUN
ND-147	4.171E+06	1.914E+07	1.924E+07	SHORT HLIF
PM-147	-1.964E+02	7.712E+02	7.763E+02	NOT IDENT.
PM-149	-6.735E+38	3.389E+39	0.000E+00	SHORT HLIF
EU-150	1.155E-02	2.409E-02	2.464E-02	FAIL ABUN
EU-152	7.353E-02	8.395E-02	9.025E-02	FAIL ABUN
GD-153	-2.923E-02	1.502E-01	1.508E-01	NOT IDENT.
EU-154	-3.012E-02	9.646E-02	9.741E-02	NOT IDENT.
EU-155	1.494E-02	9.464E-02	9.488E-02	FAIL ABUN
TB-160	1.505E-01	1.227E+00	1.229E+00	FAIL ABUN
HO-166M	2.305E-02	5.075E-02	5.180E-02	NOT IDENT.
TM-171	1.147E+01	1.581E+01	1.663E+01	NOT IDENT.
HF-172	-4.844E-02	1.950E-01	1.962E-01	FAIL ABUN
LU-172	3.773E-02	6.089E-02	6.322E-02	FAIL ABUN
LU-176	1.260E-02	2.083E-02	2.159E-02	FAIL ABUN
HF-181	7.512E-01	3.841E+00	3.856E+00	FAIL ABUN

TA-182	5.890E-01	7.917E-01	8.350E-01	FAIL ABUN
RE-183	1.356E+00	2.169E+00	2.253E+00	NOT IDENT.
RE-184	1.928E+01	2.179E+01	2.346E+01	NOT IDENT.
W-188	2.429E+01	9.275E+01	9.340E+01	FAIL ABUN
IR-192	-4.843E-02	4.043E-01	4.049E-01	FAIL ABUN
BI-207	4.790E-02	4.471E-02	4.965E-02	FAIL ABUN
PB-210	1.110E+00	2.485E+00	2.535E+00	NOT IDENT.
BI-211	2.345E+00	5.048E-01	1.171E+00	FAIL ABUN
PB-211	-1.553E-01	6.408E-01	6.446E-01	NOT IDENT.
BI-212	1.300E+00	9.717E-01	1.135E+00	FAIL ABUN
RN-219	-1.461E-01	3.697E-01	3.755E-01	NOT IDENT.
RA-223	-4.198E-01	5.272E-01	5.602E-01	FAIL ABUN
AC-227	9.510E-03	1.800E-01	1.800E-01	NOT IDENT.
TH-227	9.510E-03	1.800E-01	1.800E-01	NOT IDENT.
TH-229	-3.598E-01	4.536E-01	4.817E-01	FAIL ABUN
PA-231	4.705E-02	3.485E-01	3.492E-01	NOT IDENT.
TH-231	-4.198E-01	5.272E-01	5.602E-01	FAIL ABUN
PA-233	1.272E-02	5.619E-02	5.649E-02	NOT IDENT.
PA-234	1.094E-01	2.782E-01	2.826E-01	NOT IDENT.
PA-234M	-2.999E+00	3.999E+00	4.221E+00	NOT IDENT.
U-235	-4.179E-02	1.642E-01	1.653E-01	FAIL ABUN
NP-237	1.272E-02	5.619E-02	5.649E-02	NOT IDENT.
NP-238	-1.519E+40	2.882E+40	0.000E+00	SHORT HLIF
NP-239	3.381E-03	2.131E-01	2.131E-01	FAIL ABUN
PU-239	-2.255E+01	2.991E+02	2.993E+02	NOT IDENT.
AM-241	-4.930E-02	1.178E-01	1.199E-01	NOT IDENT.
CM-243	-1.268E-02	8.495E-02	8.514E-02	FAIL ABUN
BK-247	1.355E-02	5.532E-02	5.566E-02	NOT IDENT.
CM-247	-2.023E-02	3.413E-02	3.533E-02	FAIL ABUN
CF-249	-2.376E-04	3.370E-02	3.370E-02	NOT IDENT.
CF-251	5.777E-02	1.122E-01	1.152E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	61.8428	87.09	102.9616	136.47	51.4932
45.60	57.4230	87.57	103.0528	140.51	0.0000
46.54	57.5739	88.03	119.2779	143.76	68.8229
49.72	0.0000	88.34	119.3454	144.24	61.9794
51.35	64.1545	88.47	101.1167	145.44	73.5732
51.87	58.4010	89.96	88.7174	152.43	67.2784
52.39	58.4795	1093.63	88.8264	153.25	0.0000
52.97	60.5187	91.11	0.0000	323.87	74.4053
53.44	64.5002	92.59	96.5653	156.02	0.0000
54.07	67.5397	93.35	96.6951	158.56	0.0000
57.36	0.0000	94.56	86.6078	159.00	61.9848
57.53	65.1581	94.65	86.6214	162.33	65.7600
57.98	65.2286	94.67	86.6245	162.66	0.0000
59.27	87.2403	94.87	86.6550	163.33	59.9610
59.32	87.2507	97.43	64.2096	165.86	61.3231
59.54	80.6830	98.43	81.4719	176.31	65.6583
60.96	72.9904	98.44	81.4731	176.60	0.0000
61.17	67.7149	99.53	64.4398	177.52	52.5991
62.93	86.9879	100.11	64.5030	181.07	0.0000
63.29	87.0594	102.03	64.7113	181.52	52.8375
63.58	87.1170	103.18	68.0762	184.41	67.4647
64.28	82.9090	103.37	68.0978	143.76	49.8673
66.73	95.4640	105.21	68.3035	193.51	73.0042
67.24	85.8119	105.31	68.3146	197.03	54.9584
125.81	88.9265	106.12	48.8607	198.01	79.4667
67.75	88.9399	106.47	49.9745	201.83	73.6478
69.67	90.6631	109.28	64.3877	203.43	62.7049
70.83	81.3916	111.00	72.2227	205.31	54.2031
72.81	72.5357	111.76	0.0000	210.85	52.0322
72.87	72.5449	114.06	73.6677	215.65	54.7717
74.66	72.8130	116.30	0.0000	222.11	41.7577
74.82	72.8369	116.74	66.2425	227.09	46.1545
74.97	72.8596	119.76	68.7633	227.38	52.0432
77.11	73.1754	121.12	73.3477	228.16	0.0000
78.74	85.4764	121.22	76.6932	228.18	62.1635
79.69	78.7304	121.78	81.2066	116.74	62.1635
80.12	78.7965	122.06	73.4499	235.69	58.3753
80.19	0.0000	122.92	61.2859	235.96	52.0430
80.57	65.0300	123.07	61.2993	238.63	45.8097
81.00	73.3926	265.00	58.0073	238.98	0.0000
81.07	74.7878	125.81	64.9013	240.99	45.9091
81.75	78.0064	127.23	75.1253	242.00	45.9514
83.79	79.3555	127.91	54.9962	244.70	46.0646
84.00	84.9584	129.30	83.2195	252.40	0.0000
85.43	86.5839	131.20	66.1531	252.80	48.9774
86.55	102.8584	133.02	88.9309	254.15	0.0000
86.79	102.9040	133.52	79.9432	256.23	37.0599
86.94	102.9332	136.00	57.5141	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	31.2539	355.39	0.0000	584.27	15.8899
264.80	29.5217	356.01	20.9486	595.83	0.0000
265.00	31.2634	364.49	0.0000	427.87	22.4159
268.22	49.6361	366.42	0.0000	602.52	0.0000
269.46	37.4841	372.51	31.0698	604.72	17.6461
270.03	37.5025	375.05	26.4067	607.14	14.9889
271.23	37.5401	377.52	27.3946	609.32	15.0043
273.65	0.0000	356.01	32.7256	610.33	15.0111
276.40	27.6195	388.16	30.4388	614.28	8.0560
277.37	34.2226	388.63	0.0000	618.01	21.5194
277.60	33.3521	391.69	17.1606	620.36	21.5422
278.00	33.3629	264.66	24.4500	621.93	16.1682
279.20	33.3961	401.81	30.2247	630.19	0.0000
279.54	33.4054	402.40	31.6760	631.29	20.5656
279.70	33.4093	404.85	32.3012	633.25	22.7500
280.46	46.1864	410.95	33.7752	634.78	0.0000
283.69	38.1059	413.71	28.9996	635.95	24.9466
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	40.6318	423.72	0.0000	645.85	10.8936
285.90	0.0000	427.09	29.2358	657.76	22.9952
287.50	40.7011	427.87	26.3249	657.90	0.0000
290.67	33.2642	433.94	20.5493	661.66	13.1621
293.27	0.0000	439.40	25.5239	664.57	0.0000
351.93	39.1714	453.88	21.7793	666.33	0.0000
295.96	39.1947	463.37	21.8971	666.50	0.0000
879.38	33.4732	468.07	13.4725	667.71	0.0000
299.98	25.4675	473.00	0.0000	677.62	14.3558
300.09	25.4698	475.06	22.0407	685.70	0.0000
300.13	25.4709	476.78	28.0786	695.00	0.0000
301.36	29.5209	477.60	23.0749	696.49	23.3729
302.85	42.0937	482.18	27.1566	696.51	23.3729
256.23	33.1797	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	22.2673
306.78	30.5434	497.08	17.2369	697.49	23.3823
308.46	38.6774	505.52	22.9161	702.65	18.9687
311.90	40.5835	507.63	0.0000	706.68	16.7645
316.51	38.9145	511.00	16.3428	711.68	13.4390
319.41	0.0000	514.00	16.3685	720.70	0.0000
320.08	0.0000	514.00	16.3685	721.93	0.0000
321.04	28.1499	520.40	21.5554	722.78	15.1864
323.87	44.5887	520.69	0.0000	722.91	11.8125
325.23	50.0978	522.65	0.0000	723.31	11.8142
328.76	0.0000	527.90	0.0000	724.19	3.3767
333.37	20.8916	528.26	22.6732	727.33	15.7773
333.97	30.2513	529.59	18.5632	733.00	11.8599
334.37	33.0110	529.87	0.0000	735.93	9.0465
338.28	28.5056	531.02	0.0000	333.97	10.1836
338.32	28.5069	537.26	0.0000	739.50	0.0000
311.90	24.8665	546.56	0.0000	747.24	7.9508
340.48	24.8665	552.55	20.8643	748.06	14.7705
340.55	0.0000	563.25	15.7306	752.31	14.7948
344.28	27.7039	569.33	29.4504	753.82	0.0000
345.93	27.7362	946.00	29.4526	756.73	11.4001
351.06	29.6921	569.70	28.4030	756.80	11.4006
351.93	29.7096	583.19	15.8813	884.68	17.1478

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	14.8720	1274.44	12.9998	1620.50	5.4312
766.42	14.8757	1001.03	16.7388	1621.92	2.1731
766.84	14.8778	1002.74	15.8171	1678.03	0.0000
772.60	0.0000	1004.73	12.1030	1690.97	3.3058
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	2.2360
778.90	16.0958	1028.54	0.0000	1063.66	3.3576
783.70	0.0000	1037.84	9.4037	1771.35	1.1194
785.37	19.5926	1038.76	0.0000	1791.20	0.0000
792.07	24.2633	631.29	16.0288	1808.65	0.0000
794.95	15.0360	1048.07	0.0000	1810.72	0.0000
795.86	11.5702	1049.04	14.1531	1836.06	2.7199
810.06	17.4463	1050.41	11.3269		
810.29	17.4475	1063.66	7.5811		
344.28	18.6120	1077.00	0.0000		
810.76	18.6139	1077.34	15.2227		
815.77	0.0000	1085.87	13.3523		
1048.07	0.0000	1093.63	6.6911		
832.01	16.7056	1099.45	8.6177		
834.85	11.4417	1112.07	6.5893		
835.71	10.5648	1112.84	9.2268		
836.80	0.0000	1115.54	15.3896		
846.75	0.0000	1120.29	10.5945		
846.77	8.8388	1120.55	10.5958		
856.80	0.0000	1221.41	10.5978		
860.56	9.9473	1129.67	6.7599		
871.09	15.1536	1131.51	0.0000		
873.19	8.9203	1147.95	0.0000		
875.33	0.0000	1173.23	17.5924		
879.38	8.0456	1177.95	15.6572		
880.51	12.5200	1189.05	10.7966		
883.24	5.3707	1204.77	14.7849		
884.68	13.4335	1221.41	8.9099		
889.28	8.0725	1231.02	6.3516		
894.76	12.5807	1235.36	0.0000		
898.04	8.9963	1238.28	12.7273		
900.72	14.4067	1260.41	0.0000		
903.28	7.2095	1271.87	8.0234		
911.20	9.0359	1274.44	10.0360		
912.08	13.0153	1274.54	10.0360		
923.98	0.0000	1291.59	9.0714		
926.50	9.0817	1298.22	0.0000		
929.11	9.9983	1312.11	0.0000		
937.49	21.8745	1332.49	11.2001		
944.13	0.0000	1362.66	0.0000		
946.00	10.9673	1365.19	4.1050		
949.00	19.2113	1368.63	0.0000		
667.71	0.0000	1384.29	6.1857		
962.31	11.7598	1408.01	6.2201		
964.08	22.0620	1457.56	0.0000		
966.17	22.0767	1460.82	5.2466		
911.20	10.3117	1489.16	4.2241		
968.97	10.3117	1505.03	10.5975		
983.53	0.0000	1584.12	9.7020		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:54:50.50

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235060.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM18.CNF;511
Background date    : 2-OCT-2016 11:01:02.
Sample date       : 16-DEC-2015 12:33:00 Acquisition date : 3-OCT-2016 07:52:52.
Sample ID        : G405235060 Sample quantity  : 1.52266E+02 GRAM
Detector name    : GAM18 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.97 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity      : 3.00000
Batch ID        : 1596252 Detector SN#      :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	52.18	14	130	1.29	105.19	101	7	3.75E-03	142.4	
2	0	63.20*	11	195	1.10	127.21	122	9	2.97E-03	243.0	
3	4	74.85	151	154	1.15	150.50	146	13	4.21E-02	15.8	4.04E-01
4	4	77.19*	196	142	1.18	155.16	146	13	5.45E-02	12.8	
5	0	84.19*	30	127	1.13	169.15	166	6	8.40E-03	63.6	
6	4	87.07	93	106	1.34	174.91	172	21	2.58E-02	20.1	2.30E+00
7	4	89.95	74	119	1.16	180.67	172	21	2.05E-02	27.0	
8	4	92.65*	92	113	1.12	186.05	172	21	2.56E-02	24.3	
9	0	98.34	83	101	2.24	197.43	193	9	2.30E-02	24.8	
10	3	105.29	55	98	1.38	211.31	205	15	1.52E-02	35.0	1.67E+00
11	3	107.63	32	64	1.04	216.00	205	15	8.93E-03	45.0	
12	0	129.29	30	124	1.11	259.27	255	8	8.40E-03	67.0	
13	0	166.52	94	215	5.83	333.68	324	19	2.61E-02	39.1	
14	0	209.69	74	161	1.29	419.95	414	13	2.05E-02	37.4	
15	4	238.86*	414	95	1.23	478.25	473	16	1.15E-01	6.3	5.06E+00
16	4	241.93	131	68	1.53	484.38	473	16	3.63E-02	17.1	
17	0	277.02	44	70	1.73	554.50	550	9	1.21E-02	38.2	
18	0	295.58*	199	99	1.08	591.59	586	12	5.53E-02	12.4	
19	0	328.12	52	96	6.58	656.64	648	16	1.45E-02	44.7	
20	0	337.01*	25	211	1.46	674.41	671	18	6.91E-03	140.8	
21	0	352.22*	359	98	1.30	704.79	698	14	9.98E-02	8.0	
22	0	463.23	27	44	1.48	926.66	921	10	7.47E-03	50.4	
23	0	511.13*	64	86	3.11	1022.40	1013	19	1.77E-02	41.8	
24	0	584.24*	130	90	1.10	1168.51	1160	19	3.62E-02	20.5	
25	0	609.73*	265	89	1.94	1219.48	1213	17	7.36E-02	10.5	
26	0	661.89	51	24	2.64	1323.73	1317	12	1.42E-02	23.8	
27	0	728.51	50	33	0.90	1456.88	1449	14	1.38E-02	28.9	
28	0	770.32	52	55	4.57	1540.47	1527	22	1.45E-02	38.9	
29	0	794.93*	25	22	2.36	1589.66	1582	15	7.05E-03	46.7	
30	0	861.65	30	24	1.63	1723.03	1715	14	8.39E-03	39.2	
31	0	912.24*	121	35	1.79	1824.15	1816	18	3.36E-02	15.2	
32	0	936.58	34	59	2.90	1872.80	1862	26	9.49E-03	60.8	
33	0	970.08*	53	41	1.53	1939.78	1933	14	1.47E-02	29.9	
34	0	1072.48	7	31	0.49	2144.48	2134	16	1.96E-03	173.7	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1100.48	34	28	8.92	2200.47	2187	23	9.46E-03	44.2	
36	0	1121.39*	51	31	2.03	2242.26	2236	12	1.42E-02	27.2	
37	0	1238.36	52	8	1.96	2476.12	2467	17	1.43E-02	19.0	
38	0	1281.49	26	17	8.79	2562.33	2551	22	7.34E-03	43.8	
39	0	1416.11	14	7	1.58	2831.50	2825	14	3.89E-03	48.2	
40	0	1461.62*	538	0	2.88	2922.49	2912	20	1.49E-01	4.4	
41	0	1624.62	8	7	1.34	3248.40	3240	13	2.08E-03	79.0	
42	0	1766.95*	25	21	1.91	3533.01	3522	16	7.02E-03	46.2	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235060.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 16-DEC-2015 12:33:00 Acquisition date : 3-OCT-2016 07:52:52
 Sample ID : G405235060 Sample quantity : 152.27 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA18 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.97 0.0%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	87.09	EU-155	86.55
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	87.09	TH-229	88.47
PB-214	242.00	RA-224	240.99
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.911E+00	1.258E+01	1.258E+01	8.70	OK
AS-73	53.44	10.30*	1.379E+00	6.226E-01	7.731E+00	284.82	OK
CD-109	88.03	3.70*	6.119E+00	1.619E+00	2.510E+00	65.60	OK
SN-126	64.28	9.60	3.086E+00	2.325E-01	2.325E-01	486.00	OK
	86.94	8.90	6.119E+00	6.732E-01	6.732E-01	65.60	OK
	87.57	37.00*	6.119E+00	1.619E-01	1.619E-01	65.60	OK
BA-137M	661.66	89.90*	3.371E+00	8.731E-02	8.893E-02	47.55	OK
CS-137	661.66	85.10*	3.371E+00	9.223E-02	9.395E-02	47.55	OK
CE-139	165.86	80.00*	7.900E+00	8.805E-02	3.828E-01	78.21	OK
EU-155	86.55	30.70	6.119E+00	1.952E-01	2.193E-01	65.60	OK
	105.31	21.10*	7.389E+00	2.170E-01	2.439E-01	70.02	OK
TM-171	51.35	0.27	1.379E+00	2.375E+01	3.169E+01	284.82	OK
	52.39	0.47*	1.379E+00	1.364E+01	1.821E+01	284.82	OK
	66.73	0.14	3.622E+00	-----	Line Not Found	-----	Absent
TL-208	277.37	6.60	6.132E+00	6.083E-01	6.083E-01	76.34	OK
	583.19	85.00*	3.673E+00	2.195E-01	2.195E-01	41.05	OK
	860.56	12.50	2.812E+00	4.335E-01	4.335E-01	78.30	OK
BI-211	72.87	1.23	4.495E+00	-----	Line Not Found	-----	Absent
	351.06	12.92*	5.219E+00	9.795E-02	9.795E-02	868.18	OK
PB-212	74.82	10.28	4.756E+00	1.387E+00	1.387E+00	46.14	OK
	77.11	17.10	5.050E+00	1.440E+00	1.440E+00	25.57	OK
	238.63	43.60*	6.719E+00	8.109E-01	8.109E-01	12.67	OK
	300.09	3.30	5.819E+00	-----	Line Not Found	-----	Absent
BI-214	609.32	45.49*	3.566E+00	8.545E-01	8.548E-01	21.01	OK
	1120.29	14.92	2.335E+00	7.203E-01	7.205E-01	54.33	OK
	1764.49	15.30	1.634E+00	-----	Line Not Found	-----	Absent
PB-214	74.82	5.80	4.752E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	5.050E+00	2.539E+00	2.540E+00	25.57	OK
	87.09	3.41	6.121E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	6.668E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	5.877E+00	1.033E+00	1.033E+00	24.89	OK
	351.93	35.60*	5.221E+00	-----	Line Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	3.566E+00	8.545E-01	8.548E-01	21.01	OK
	1120.29	14.92	2.335E+00	7.203E-01	7.205E-01	54.33	OK
	1764.49	15.30	1.634E+00	-----	Line Not Found	-----	Absent
RA-224	240.99	4.10*	6.669E+00	9.142E-01	9.142E-01	113.85	OK
RA-226	609.32	45.49*	3.566E+00	8.545E-01	8.548E-01	21.01	OK
	1120.29	14.92	2.335E+00	7.203E-01	7.205E-01	54.33	OK
	1764.49	15.30	1.634E+00	-----	Line Not Found	-----	Absent
AC-228	105.21	1.10	7.389E+00	4.163E+00	4.163E+00	70.02	OK
	338.32	11.27	5.379E+00	2.278E-01	2.278E-01	281.64	OK
	794.95	4.25	2.973E+00	1.022E+00	1.022E+00	93.48	OK
	835.71	1.61	2.872E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	2.703E+00	8.687E-01	8.687E-01	30.43	OK
	968.97	15.80	2.589E+00	6.436E-01	6.436E-01	59.83	OK
RA-228	105.21	1.10	7.389E+00	4.163E+00	4.163E+00	70.02	OK
	338.32	11.27	5.379E+00	2.278E-01	2.278E-01	281.64	OK
	794.95	4.25	2.973E+00	1.022E+00	1.022E+00	93.48	OK
	835.71	1.61	2.872E+00	-----	Line Not Found	-----	Absent

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-228	911.20	25.80*	2.703E+00	8.687E-01	8.687E-01	30.43	OK
	968.97	15.80	2.589E+00	6.436E-01	6.436E-01	59.83	OK
	74.82	10.28	4.756E+00	1.387E+00	1.387E+00	46.14	OK
	77.11	17.10	5.050E+00	1.440E+00	1.440E+00	25.57	OK
	238.63	43.60*	6.719E+00	8.109E-01	8.109E-01	12.67	OK
TH-229	300.09	3.30	5.819E+00	-----	Line Not Found	-----	Absent
	85.43	14.70	5.837E+00	2.220E-01	2.220E-01	127.28	OK
	88.47	24.00	6.119E+00	2.496E-01	2.497E-01	65.60	OK
	193.51	4.41*	7.490E+00	-----	Line Not Found	-----	Absent
	210.85	2.80	7.213E+00	2.121E+00	2.121E+00	74.87	OK
TH-230	609.32	45.49*	3.566E+00	8.545E-01	8.545E-01	21.01	OK
	1120.29	14.92	2.335E+00	7.203E-01	7.203E-01	54.33	OK
	1764.49	15.30	1.634E+00	-----	Line Not Found	-----	Absent
TH-232	105.21	1.10	7.389E+00	4.163E+00	4.163E+00	70.02	OK
	338.32	11.27	5.379E+00	2.278E-01	2.278E-01	281.64	OK
	835.71	1.61	2.872E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	2.703E+00	8.687E-01	8.687E-01	30.43	OK
TH-234	968.97	15.80	2.589E+00	6.436E-01	6.436E-01	59.83	OK
	63.29	3.70*	3.086E+00	6.033E-01	6.033E-01	486.00	OK
	92.59	4.23	6.599E+00	2.060E+00	2.060E+00	48.52	OK
U-234	609.32	45.49*	3.566E+00	8.545E-01	8.545E-01	21.01	OK
	1120.29	14.92	2.335E+00	7.203E-01	7.203E-01	54.33	OK
	1764.49	15.30	1.634E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	3.086E+00	6.033E-01	6.033E-01	486.00	OK
	92.59	4.23	6.599E+00	2.060E+00	2.060E+00	48.52	OK
AM-243	43.53	5.90	3.443E-01	-----	Line Not Found	-----	Absent
	74.66	67.20*	4.756E+00	2.122E-01	2.122E-01	46.14	OK
ANH-511	511.00	100.00*	4.028E+00	8.422E-02	8.422E-02	83.59	OK

Flag: "*" = Keyline


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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235060.CNF;1    *
* Acquisition date   : 3-OCT-2016 07:52:52 Sensitivity      : 3.000              *
* Detector ID        : GAM18 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.97 Half life ratio : *****      *
* Sample date        : 16-DEC-2015 12:33:00 Analyst initials: MXR1      *
* Sample ID          : G405235060 Sample Quantity : 1.5227E+02 GRAM    *
* Batch Number       : 1596252 Wet Weight      : 0.00000      *
* Wet wt corr        : 1.00000 Dry Weight      : 0.00000      *
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 25-JUN-2016 08:25:19 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM18 CAN.CNF;10        *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.258E+01	1.073E+00	4.220E-01
AS-73	7.731E+00	2.158E+01	1.736E+01
CD-109	2.510E+00	1.614E+00	1.485E+00
SN-126	1.619E-01	1.041E-01	9.638E-02
BA-137M	8.893E-02	4.144E-02	4.779E-02
CS-137	9.395E-02	4.377E-02	5.049E-02
CE-139	3.828E-01	2.934E-01	1.495E-01
EU-155	2.439E-01	1.674E-01	1.640E-01
TM-171	1.821E+01	5.082E+01	4.304E+01
TL-208	2.195E-01	8.832E-02	4.724E-02
BI-211	9.795E-02	8.334E-01	2.654E-01
PB-212	8.109E-01	1.007E-01	7.359E-02
BI-214	8.548E-01	1.760E-01	1.083E-01
PB-214	1.069E+00	1.672E-01	2.692E-01
RN-222	8.548E-01	1.760E-01	1.083E-01
RA-224	9.142E-01	1.020E+00	7.882E-01
RA-226	8.548E-01	1.760E-01	1.083E-01
AC-228	8.687E-01	2.591E-01	1.617E-01
RA-228	8.687E-01	2.591E-01	1.617E-01
TH-228	8.109E-01	1.007E-01	7.359E-02
TH-229	-3.947E-02	3.454E-01	6.788E-01
TH-230	8.545E-01	1.759E-01	1.082E-01
TH-232	8.687E-01	2.591E-01	1.617E-01
TH-234	6.033E-01	2.874E+00	2.136E+00
U-234	8.545E-01	1.759E-01	1.082E-01
U-238	6.033E-01	2.874E+00	2.136E+00
AM-243	2.122E-01	9.595E-02	7.523E-02
ANH-511	8.422E-02	6.899E-02	3.998E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-5.557E+00	8.733E+00	1.478E+01	NOT IDENT.
NA-22	2.268E-02	4.171E-02	7.560E-02	NOT IDENT.

NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	-2.989E-04	1.908E-02	4.029E-02	NOT IDENT.
SC-46	-7.038E-02	2.922E-01	5.247E-01	FAIL ABUN
V-48	0.000E+00	8.240E+03	0.000E+00	SHORT HLIF
CR-51	0.000E+00	2.845E+02	0.000E+00	SHORT HLIF
MN-54	1.610E-02	5.573E-02	1.060E-01	NOT IDENT.
CO-56	3.776E-01	3.590E-01	7.502E-01	FAIL ABUN
MN-56	0.000E+00	9.528E+40	0.000E+00	SHORT HLIF
CO-57	4.337E-03	3.855E-02	7.303E-02	NOT IDENT.
CO-58	7.600E-02	4.554E-01	8.663E-01	NOT IDENT.
FE-59	0.000E+00	1.023E+01	9.408E+00	FAIL ABUN
CO-60	1.634E-02	2.645E-02	5.680E-02	NOT IDENT.
ZN-65	4.146E-02	1.594E-01	2.741E-01	NOT IDENT.
GE-68	-4.203E-01	1.888E+00	3.046E+00	NOT IDENT.
AS-74	0.000E+00	3.459E+03	0.000E+00	SHORT HLIF
SE-75	-4.605E-02	1.588E-01	2.988E-01	NOT IDENT.
BR-77	0.000E+00	1.745E+36	0.000E+00	SHORT HLIF
SR-82	0.000E+00	4.995E+02	0.000E+00	SHORT HLIF
RB-83	2.200E-01	4.577E-01	9.376E-01	NOT IDENT.
KR-85	1.238E+01	6.724E+00	1.359E+01	NOT IDENT.
SR-85	1.198E+00	6.527E-01	1.318E+00	NOT IDENT.
RB-86	0.000E+00	1.777E+04	0.000E+00	SHORT HLIF
Y-88	-4.490E-03	1.644E-01	3.309E-01	NOT IDENT.
Y-91	-5.238E+01	3.562E+02	6.648E+02	NOT IDENT.
NB-94	-2.393E-04	2.378E-02	4.447E-02	NOT IDENT.
NB-95	1.615E-01	5.690E-01	1.109E+00	NOT IDENT.
NB-95M	9.593E-01	1.887E+00	3.429E+00	NOT IDENT.
ZR-95	8.370E-01	1.007E+00	2.092E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.051E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.892E+31	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	3.778E-03	2.789E-02	4.893E-02	NOT IDENT.
RH-102	-3.628E-02	4.095E-02	7.046E-02	NOT IDENT.
RU-103	-1.015E+00	4.028E+00	7.599E+00	FAIL ABUN
RH-106	-3.191E-01	3.943E-01	6.886E-01	NOT IDENT.
RU-106	-3.191E-01	3.943E-01	6.886E-01	NOT IDENT.
AG-108M	-2.547E-05	2.128E-02	3.946E-02	NOT IDENT.
AG-110M	3.550E-02	7.729E-02	1.529E-01	FAIL ABUN
SN-113	-2.955E-05	1.553E-01	2.921E-01	NOT IDENT.
CD-115	0.000E+00	1.989E+38	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	5.101E+04	0.000E+00	SHORT HLIF
TE-123M	2.728E-02	1.006E-01	1.880E-01	NOT IDENT.
SB-124	2.685E-01	1.046E+00	2.390E+00	NOT IDENT.
SB-125	2.614E-02	8.280E-02	1.580E-01	FAIL ABUN
TE-125M	-1.277E+02	2.022E+02	3.333E+02	NOT IDENT.
I-126	0.000E+00	5.246E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	6.304E+05	0.000E+00	SHORT HLIF
SB-127	0.000E+00	3.855E+21	0.000E+00	SHORT HLIF
I-131	0.000E+00	2.065E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	5.094E+25	0.000E+00	SHORT HLIF
BA-133	7.916E-03	3.483E-02	6.022E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	6.643E-02	6.086E-02	8.178E-02	FAIL ABUN
CS-135	2.868E-02	1.188E-01	2.308E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	1.433E+05	0.000E+00	SHORT HLIF
BA-140	0.000E+00	6.668E+05	0.000E+00	SHORT HLIF
LA-140	0.000E+00	2.154E+05	0.000E+00	SHORT HLIF
CE-141	-1.295E+01	1.806E+01	3.148E+01	NOT IDENT.
CE-143	0.000E+00	9.214E+40	0.000E+00	SHORT HLIF
CE-144	-2.495E-01	2.813E-01	4.850E-01	NOT IDENT.
PM-144	3.621E-02	4.308E-02	8.859E-02	NOT IDENT.
PR-144	3.123E+00	3.726E+00	7.660E+00	NOT IDENT.
PM-146	9.919E-03	3.422E-02	6.507E-02	NOT IDENT.
ND-147	0.000E+00	1.537E+07	0.000E+00	SHORT HLIF
PM-147	-7.533E+01	6.585E+02	1.229E+03	NOT IDENT.
PM-149	0.000E+00	2.804E+39	0.000E+00	SHORT HLIF
EU-150	5.816E-03	2.852E-02	3.932E-02	FAIL ABUN
EU-152	2.385E-02	8.200E-02	1.428E-01	NOT IDENT.
GD-153	0.000E+00	2.857E-01	2.985E-01	FAIL ABUN
EU-154	6.113E-02	1.034E-01	1.886E-01	NOT IDENT.
TB-160	1.267E-01	1.410E+00	2.652E+00	FAIL ABUN
HO-166M	-3.137E-02	4.273E-02	7.382E-02	NOT IDENT.
HF-172	-8.909E-02	1.977E-01	3.265E-01	FAIL ABUN
LU-172	4.267E-02	6.744E-02	1.248E-01	FAIL ABUN
LU-176	-1.803E-04	1.849E-02	3.524E-02	FAIL ABUN

HF-181	3.068E+00	3.180E+00	6.393E+00	NOT IDENT.
TA-182	-2.158E-01	7.473E-01	1.351E+00	FAIL ABUN
RE-183	5.465E-01	2.527E+00	5.193E+00	NOT IDENT.
RE-184	5.823E+00	1.670E+01	3.349E+01	NOT IDENT.
W-188	9.420E+00	8.269E+01	1.442E+02	FAIL ABUN
IR-192	-8.742E-02	3.319E-01	6.161E-01	FAIL ABUN
HG-203	-2.850E-01	1.735E+00	2.937E+00	NOT IDENT.
BI-207	1.454E-02	4.325E-02	7.645E-02	FAIL ABUN
PB-210	2.770E+00	4.415E+00	9.309E+00	NOT IDENT.
PB-211	1.805E-01	5.147E-01	9.913E-01	NOT IDENT.
BI-212	0.000E+00	6.855E-01	9.833E-01	FAIL ABUN
RN-219	-2.561E-02	2.713E-01	5.031E-01	NOT IDENT.
RA-223	1.134E-02	5.329E-01	9.020E-01	FAIL ABUN
AC-227	-7.758E-03	1.889E-01	3.623E-01	NOT IDENT.
TH-227	-7.758E-03	1.889E-01	3.623E-01	NOT IDENT.
PA-231	2.007E-01	3.755E-01	7.107E-01	NOT IDENT.
TH-231	1.134E-02	5.329E-01	9.020E-01	FAIL ABUN
PA-233	-2.676E-02	4.398E-02	7.919E-02	NOT IDENT.
PA-234	-1.247E-02	2.597E-01	4.351E-01	FAIL ABUN
PA-234M	-4.999E-01	3.162E+00	5.920E+00	NOT IDENT.
U-235	-5.600E-02	1.548E-01	2.781E-01	FAIL ABUN
NP-237	-2.676E-02	4.398E-02	7.919E-02	FAIL ABUN
NP-238	0.000E+00	2.948E+40	0.000E+00	SHORT HLIF
NP-239	5.043E-02	1.882E-01	3.640E-01	FAIL ABUN
PU-239	3.616E+02	4.747E+02	5.111E+02	FAIL ABUN
AM-241	-3.858E-02	1.363E-01	2.492E-01	NOT IDENT.
CM-243	5.940E-03	7.980E-02	1.536E-01	FAIL ABUN
BK-247	-1.357E-02	5.673E-02	1.073E-01	FAIL ABUN
CM-247	-2.657E-02	2.618E-02	4.327E-02	FAIL ABUN
CF-249	1.658E-03	2.597E-02	4.928E-02	NOT IDENT.
CF-251	-4.537E-02	8.860E-02	1.528E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	520	10.66*	1.911E+00	1.258E+01	1.258E+01	8.70
AS-73	53.44	18	10.30*	1.379E+00	6.226E-01	7.731E+00	284.82
CD-109	88.03	118	3.70*	6.119E+00	2.571E+00	3.986E+00	40.27
SN-126	64.28	14	9.60	3.086E+00	2.325E-01	2.325E-01	486.00
	86.94	118	8.90	6.119E+00	1.069E+00	1.069E+00	40.27
	87.57	118	37.00*	6.119E+00	2.571E-01	2.571E-01	40.27
BA-137M	661.66	54	89.90*	3.371E+00	8.731E-02	8.893E-02	47.55
CS-137	661.66	54	85.10*	3.371E+00	9.223E-02	9.395E-02	47.55
CE-139	165.86	113	80.00*	7.900E+00	8.805E-02	3.828E-01	78.21
EU-155	86.55	118	30.70	6.119E+00	3.099E-01	3.482E-01	40.27
	105.31	69	21.10*	7.389E+00	2.170E-01	2.439E-01	70.02
TM-171	51.35	18	0.27	1.379E+00	2.375E+01	3.169E+01	284.82
	52.39	18	0.47*	1.379E+00	1.364E+01	1.821E+01	284.82
	66.73	-----	0.14	3.622E+00	-----	Line Not Found	-----
TL-208	277.37	50	6.60	6.132E+00	6.083E-01	6.083E-01	76.34
	583.19	139	85.00*	3.673E+00	2.195E-01	2.195E-01	41.05
	860.56	31	12.50	2.812E+00	4.335E-01	4.335E-01	78.30
BI-211	72.87	-----	1.23	4.495E+00	-----	Line Not Found	-----
	351.06	403	12.92*	5.219E+00	2.945E+00	2.945E+00	15.96
PB-212	74.82	195	10.28	4.756E+00	1.970E+00	1.970E+00	31.64
	77.11	252	17.10	5.050E+00	1.440E+00	1.440E+00	25.57
	238.63	482	43.60*	6.719E+00	8.109E-01	8.109E-01	12.67
	300.09	-----	3.30	5.819E+00	-----	Line Not Found	-----
BI-214	609.32	281	45.49*	3.566E+00	8.545E-01	8.548E-01	21.01
	1120.29	51	14.92	2.335E+00	7.203E-01	7.205E-01	54.33
	1764.49	-----	15.30	1.634E+00	-----	Line Not Found	-----
PB-214	74.82	195	5.80	4.756E+00	3.491E+00	3.492E+00	31.64
	77.11	252	9.70	5.050E+00	2.539E+00	2.540E+00	25.57
	87.09	118	3.41	6.119E+00	2.790E+00	2.791E+00	40.27
	242.00	152	7.25	6.669E+00	1.550E+00	1.551E+00	34.16
	295.22	227	18.42	5.877E+00	1.033E+00	1.033E+00	24.89
	351.93	403	35.60*	5.219E+00	1.069E+00	1.069E+00	15.96
RN-222	609.32	281	45.49*	3.566E+00	8.545E-01	8.548E-01	21.01
	1120.29	51	14.92	2.335E+00	7.203E-01	7.205E-01	54.33
	1764.49	-----	15.30	1.634E+00	-----	Line Not Found	-----
RA-224	240.99	152	4.10*	6.669E+00	2.741E+00	2.741E+00	34.16
RA-226	609.32	281	45.49*	3.566E+00	8.545E-01	8.548E-01	21.01
	1120.29	51	14.92	2.335E+00	7.203E-01	7.205E-01	54.33
	1764.49	-----	15.30	1.634E+00	-----	Line Not Found	-----
AC-228	105.21	69	1.10	7.389E+00	4.163E+00	4.163E+00	70.02
	338.32	28	11.27	5.379E+00	2.278E-01	2.278E-01	281.64
	794.95	26	4.25	2.973E+00	1.022E+00	1.022E+00	93.48
	835.71	-----	1.61	2.872E+00	-----	Line Not Found	-----
	911.20	123	25.80*	2.703E+00	8.687E-01	8.687E-01	30.43
	968.97	53	15.80	2.589E+00	6.436E-01	6.436E-01	59.83
RA-228	105.21	69	1.10	7.389E+00	4.163E+00	4.163E+00	70.02
	338.32	28	11.27	5.379E+00	2.278E-01	2.278E-01	281.64

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	794.95	26	4.25	2.973E+00	1.022E+00	1.022E+00	93.48
	835.71	-----	1.61	2.872E+00	-----	Line Not Found	-----
	911.20	123	25.80*	2.703E+00	8.687E-01	8.687E-01	30.43
	968.97	53	15.80	2.589E+00	6.436E-01	6.436E-01	59.83
TH-228	74.82	195	10.28	4.756E+00	1.970E+00	1.970E+00	31.64
	77.11	252	17.10	5.050E+00	1.440E+00	1.440E+00	25.57
	238.63	482	43.60*	6.719E+00	8.109E-01	8.109E-01	12.67
	300.09	-----	3.30	5.819E+00	-----	Line Not Found	-----
TH-229	85.43	39	14.70	5.837E+00	2.220E-01	2.220E-01	127.28
	88.47	118	24.00	6.119E+00	3.964E-01	3.965E-01	40.27
	193.51	-----	4.41*	7.490E+00	-----	Line Not Found	-----
	210.85	87	2.80	7.213E+00	2.121E+00	2.121E+00	74.87
TH-230	609.32	281	45.49*	3.566E+00	8.545E-01	8.545E-01	21.01
	1120.29	51	14.92	2.335E+00	7.203E-01	7.203E-01	54.33
	1764.49	-----	15.30	1.634E+00	-----	Line Not Found	-----
TH-232	105.21	69	1.10	7.389E+00	4.163E+00	4.163E+00	70.02
	338.32	28	11.27	5.379E+00	2.278E-01	2.278E-01	281.64
	835.71	-----	1.61	2.872E+00	-----	Line Not Found	-----
	911.20	123	25.80*	2.703E+00	8.687E-01	8.687E-01	30.43
	968.97	53	15.80	2.589E+00	6.436E-01	6.436E-01	59.83
TH-234	63.29	14	3.70*	3.086E+00	6.033E-01	6.033E-01	486.00
	92.59	117	4.23	6.599E+00	2.060E+00	2.060E+00	48.52
U-234	609.32	281	45.49*	3.566E+00	8.545E-01	8.545E-01	21.01
	1120.29	51	14.92	2.335E+00	7.203E-01	7.203E-01	54.33
	1764.49	-----	15.30	1.634E+00	-----	Line Not Found	-----
U-238	63.29	14	3.70*	3.086E+00	6.033E-01	6.033E-01	486.00
	92.59	117	4.23	6.599E+00	2.060E+00	2.060E+00	48.52
AM-243	43.53	-----	5.90	3.443E-01	-----	Line Not Found	-----
	74.66	195	67.20*	4.756E+00	3.013E-01	3.014E-01	31.64
ANH-511	511.00	69	100.00*	4.028E+00	8.422E-02	8.422E-02	83.59

Flag: "*" = Keyline

Total number of lines in spectrum 42
Number of unidentified lines 6
Number of lines tentatively identified by NID 36 85.71%

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	1.258E+01	1.258E+01	0.109E+01	8.70	
AS-73	80.30D	12.4	6.226E-01	7.731E+00	22.02E+00	284.82	
CD-109	461.40D	1.55	2.571E+00	3.986E+00	1.605E+00	40.27	
SN-126	2.30E+05Y	1.00	2.571E-01	2.571E-01	1.036E-01	40.27	
BA-137M	30.08Y	1.02	8.731E-02	8.893E-02	4.228E-02	47.55	
CS-137	30.08Y	1.02	9.223E-02	9.395E-02	4.467E-02	47.55	
CE-139	137.64D	4.35	8.805E-02	3.828E-01	2.994E-01	78.21	
EU-155	4.75Y	1.12	2.170E-01	2.439E-01	1.708E-01	70.02	
TM-171	1.92Y	1.33	1.364E+01	1.821E+01	5.186E+01	284.82	
TL-208	1.41E+10Y	1.00	2.195E-01	2.195E-01	0.901E-01	41.05	
BI-211	7.04E+08Y	1.00	2.945E+00	2.945E+00	0.470E+00	15.96	
PB-212	1.41E+10Y	1.00	8.109E-01	8.109E-01	1.028E-01	12.67	
BI-214	1600.00Y	1.00	8.545E-01	8.548E-01	1.796E-01	21.01	
PB-214	1600.00Y	1.00	1.069E+00	1.069E+00	0.171E+00	15.96	
RN-222	1600.00Y	1.00	8.545E-01	8.548E-01	1.796E-01	21.01	
RA-224	1.41E+10Y	1.00	2.741E+00	2.741E+00	0.936E+00	34.16	
RA-226	1600.00Y	1.00	8.545E-01	8.548E-01	1.796E-01	21.01	
AC-228	1.41E+10Y	1.00	8.687E-01	8.687E-01	2.644E-01	30.43	
RA-228	1.41E+10Y	1.00	8.687E-01	8.687E-01	2.644E-01	30.43	
TH-228	1.41E+10Y	1.00	8.109E-01	8.109E-01	1.028E-01	12.67	
TH-229	7340.00Y	1.00	3.964E-01	3.965E-01	1.597E-01	40.27	K
TH-230	7.54E+04Y	1.00	8.545E-01	8.545E-01	1.795E-01	21.01	
TH-232	1.41E+10Y	1.00	8.687E-01	8.687E-01	2.644E-01	30.43	
TH-234	4.47E+09Y	1.00	6.033E-01	6.033E-01	29.32E-01	486.00	
U-234	2.45E+05Y	1.00	8.545E-01	8.545E-01	1.795E-01	21.01	
U-238	4.47E+09Y	1.00	6.033E-01	6.033E-01	29.32E-01	486.00	
AM-243	7370.00Y	1.00	3.013E-01	3.014E-01	0.954E-01	31.64	
ANH-511	1.00E+09Y	1.00	8.422E-02	8.422E-02	7.039E-02	83.59	

Total Activity : 4.762E+01 6.103E+01

Grand Total Activity : 4.762E+01 6.103E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	89.95	94	151	1.16	180.67	172	21	2.05E-02	54.1	6.38E+00	T
0	98.34	104	127	2.24	197.43	193	9	2.30E-02	49.6	7.00E+00	T
3	107.63	40	80	1.04	216.00	205	15	8.93E-03	90.0	7.50E+00	T
0	129.29	37	152	1.11	259.27	255	8	8.40E-03	****	8.04E+00	T
0	328.12	59	108	6.58	656.64	648	16	1.45E-02	89.4	5.48E+00	T
0	463.23	29	48	1.48	926.66	921	10	7.47E-03	****	4.31E+00	T
0	728.51	52	35	0.90	1456.88	1449	14	1.38E-02	57.8	3.16E+00	T
0	770.32	54	57	4.57	1540.47	1527	22	1.45E-02	77.7	3.04E+00	
0	936.58	35	60	2.90	1872.80	1862	26	9.49E-03	****	2.65E+00	T
0	1072.48	7	31	0.49	2144.48	2134	16	1.96E-03	****	2.41E+00	
0	1100.48	34	28	8.92	2200.47	2187	23	9.46E-03	88.5	2.37E+00	T
0	1238.36	51	8	1.96	2476.12	2467	17	1.43E-02	38.1	2.17E+00	T
0	1281.49	26	16	8.79	2562.33	2551	22	7.34E-03	87.6	2.12E+00	
0	1416.11	14	7	1.58	2831.50	2825	14	3.89E-03	96.4	1.96E+00	
0	1624.62	7	6	1.34	3248.40	3240	13	2.08E-03	****	1.75E+00	
0	1766.95	24	20	1.91	3533.01	3522	16	7.02E-03	92.4	1.63E+00	

Flags: "T" = Tentatively associated

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*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                          *
*                               Charleston, SC 29407                     *
*                               *****                                  *
*                               *                                         *
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235060.CNF;1 *
* Acquisition date   : 3-OCT-2016 07:52:52 Sensitivity      : 3.000        *
* Detector ID       : GAM18 Energy tolerance: 1.500        *
* Elapsed live time : 0 01:00:00.00 Abundance limit : 75.000    *
* Elapsed real time : 0 01:00:00.97 Half life ratio : *****    *
* Sample date       : 16-DEC-2015 12:33:00 Nuclide Library : SOLID      *
* Sample ID         : G405235060 Analyst initials: MXR1        *
* Batch Number      : 1596252 Sample Quantity : 1.5227E+02 GRAM    *
* Wet wt corr       : 1.00000 Wet Weight      : 0.00000        *
*                               Dry Weight      : 0.00000        *
*                               *****                                  *
*                               *                                         *
*                               CALIBRATION INFORMATION                   *
*                               *                                         *
* Eff. Cal. date    : 25-JUN-2016 08:25:19 Eff. Geometry   : CAN        *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM18 CAN.CNF;10      *
*                               *****                                  *

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	1.781E-01
AS-73	8.124E+00
CD-109	6.940E-01
SN-126	4.505E-02
BA-137M	2.160E-02
CS-137	2.282E-02
CE-139	6.990E-02
EU-155	7.686E-02
TM-171	2.006E+01
TL-208	2.143E-02
BI-211	1.224E-01
PB-212	3.441E-02
BI-214	4.992E-02
PB-214	1.309E-01
RN-222	4.992E-02
RA-224	3.686E-01
RA-226	4.992E-02
AC-228	7.114E-02
RA-228	7.114E-02
TH-228	3.441E-02
TH-229	3.181E-01
TH-230	4.990E-02
TH-232	7.114E-02
TH-234	1.005E+00
U-234	4.990E-02
U-238	1.005E+00
AM-243	3.536E-02
ANH-511	1.828E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	6.692E+00	NOT IDENT.
NA-22	3.389E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF

AL-26	1.596E-02	NOT IDENT.
SC-46	2.348E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	4.847E-02	NOT IDENT.
CO-56	3.423E-01	FAIL ABUN
MN-56	0.000E+00	SHORT HLIF
CO-57	3.431E-02	NOT IDENT.
CO-58	3.927E-01	NOT IDENT.
FE-59	4.229E+00	FAIL ABUN
CO-60	2.476E-02	NOT IDENT.
ZN-65	1.240E-01	NOT IDENT.
GE-68	1.339E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.392E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.287E-01	NOT IDENT.
KR-85	6.379E+00	NOT IDENT.
SR-85	6.189E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.370E-01	NOT IDENT.
Y-91	2.953E+02	NOT IDENT.
NB-94	2.012E-02	NOT IDENT.
NB-95	5.018E-01	NOT IDENT.
NB-95M	1.617E+00	NOT IDENT.
ZR-95	9.502E-01	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.292E-02	NOT IDENT.
RH-102	3.115E-02	NOT IDENT.
RU-103	3.481E+00	FAIL ABUN
RH-106	3.105E-01	NOT IDENT.
RU-106	3.105E-01	NOT IDENT.
AG-108M	1.804E-02	NOT IDENT.
AG-110M	6.883E-02	FAIL ABUN
SN-113	1.333E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	8.827E-02	NOT IDENT.
SB-124	9.563E-01	NOT IDENT.
SB-125	7.281E-02	FAIL ABUN
TE-125M	1.548E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.784E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	3.739E-02	FAIL ABUN
CS-135	1.085E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.483E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.264E-01	NOT IDENT.
PM-144	4.062E-02	NOT IDENT.
PR-144	3.512E+00	NOT IDENT.
PM-146	2.986E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	5.754E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.831E-02	FAIL ABUN
EU-152	6.625E-02	NOT IDENT.
GD-153	1.410E-01	FAIL ABUN
EU-154	8.464E-02	NOT IDENT.
TB-160	1.192E+00	FAIL ABUN
HO-166M	3.298E-02	NOT IDENT.
HF-172	1.527E-01	FAIL ABUN
LU-172	5.635E-02	FAIL ABUN
LU-176	1.632E-02	FAIL ABUN
HF-181	2.956E+00	NOT IDENT.

TA-182	6.088E-01	FAIL ABUN
RE-183	2.429E+00	NOT IDENT.
RE-184	1.476E+01	NOT IDENT.
W-188	6.681E+01	FAIL ABUN
IR-192	2.849E-01	FAIL ABUN
HG-203	1.361E+00	NOT IDENT.
BI-207	3.443E-02	FAIL ABUN
PB-210	4.381E+00	NOT IDENT.
PB-211	4.571E-01	NOT IDENT.
BI-212	4.594E-01	FAIL ABUN
RN-219	2.295E-01	NOT IDENT.
RA-223	4.195E-01	FAIL ABUN
AC-227	1.698E-01	NOT IDENT.
TH-227	1.698E-01	NOT IDENT.
PA-231	3.330E-01	NOT IDENT.
TH-231	4.195E-01	FAIL ABUN
PA-233	3.641E-02	NOT IDENT.
PA-234	1.961E-01	FAIL ABUN
PA-234M	2.642E+00	NOT IDENT.
U-235	1.311E-01	FAIL ABUN
NP-237	3.641E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.705E-01	FAIL ABUN
PU-239	2.416E+02	FAIL ABUN
AM-241	1.166E-01	NOT IDENT.
CM-243	7.201E-02	FAIL ABUN
BK-247	4.994E-02	FAIL ABUN
CM-247	1.962E-02	FAIL ABUN
CF-249	2.249E-02	NOT IDENT.
CF-251	7.114E-02	NOT IDENT.

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235060.CNF;1
* Acquisition date   : 3-OCT-2016 07:52:52 Sensitivity      : 3.000
* Detector ID        : GAM18 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.97 Half life ratio : *****
* Sample date        : 16-DEC-2015 12:33:00 Nuclide Library: SOLID
* Sample ID          : G405235060 Analyst initials: MXR1
* Batch Number       : 1596252 Sample Quantity : 1.5227E+02 GRAM
*                               Quantity Err(%) : 1.3135E-03 %
* Wet wt corr        : 1.00000 Wet Weight : 0.00000
*                               Dry Weight  : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 25-JUN-2016 08:25:19 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM18 CAN.CNF;10
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.258E+01	1.258E+00	1.258E+00
AS-73	7.731E+00	2.164E+01	2.164E+01
CD-109	2.510E+00	1.637E+00	1.637E+00
SN-126	1.619E-01	1.053E-01	1.053E-01
BA-137M	8.893E-02	4.161E-02	4.161E-02
CS-137	9.395E-02	4.396E-02	4.396E-02
CE-139	3.828E-01	3.033E-01	3.033E-01
EU-155	2.439E-01	1.683E-01	1.683E-01
TM-171	1.821E+01	5.084E+01	5.084E+01
TL-208	2.195E-01	8.882E-02	8.882E-02
BI-211	9.795E-02	8.513E-01	8.513E-01
PB-212	8.109E-01	1.095E-01	1.095E-01
BI-214	8.548E-01	1.798E-01	1.798E-01
PB-214	1.069E+00	1.730E-01	1.730E-01
RN-222	8.548E-01	1.798E-01	1.798E-01
RA-224	9.142E-01	1.028E+00	1.028E+00
RA-226	8.548E-01	1.798E-01	1.798E-01
AC-228	8.687E-01	2.629E-01	2.629E-01
RA-228	8.687E-01	2.629E-01	2.629E-01
TH-228	8.109E-01	1.095E-01	1.095E-01
TH-229	-3.947E-02	3.454E-01	3.454E-01
TH-230	8.545E-01	1.797E-01	1.797E-01
TH-232	8.687E-01	2.629E-01	2.629E-01
TH-234	6.033E-01	2.877E+00	2.877E+00
U-234	8.545E-01	1.797E-01	1.797E-01
U-238	6.033E-01	2.877E+00	2.877E+00
AM-243	2.122E-01	9.750E-02	9.750E-02
ANH-511	8.422E-02	6.907E-02	6.907E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	-5.557E+00	8.736E+00	9.088E+00	NOT IDENT.
NA-22	2.268E-02	4.171E-02	4.295E-02	NOT IDENT.

NA-24	1.000E+41	7.562E+41	0.000E+00	SHORT HLIF
AL-26	-2.989E-04	1.908E-02	1.908E-02	NOT IDENT.
SC-46	-7.038E-02	2.922E-01	2.939E-01	FAIL ABUN
V-48	6.086E+03	8.244E+03	8.688E+03	SHORT HLIF
CR-51	7.805E+01	2.845E+02	2.867E+02	SHORT HLIF
MN-54	1.610E-02	5.573E-02	5.620E-02	NOT IDENT.
CO-56	3.776E-01	3.593E-01	3.976E-01	FAIL ABUN
MN-56	1.000E+41	9.537E+40	0.000E+00	SHORT HLIF
CO-57	4.337E-03	3.855E-02	3.860E-02	NOT IDENT.
CO-58	7.600E-02	4.554E-01	4.567E-01	NOT IDENT.
FE-59	1.180E+01	1.027E+01	1.156E+01	FAIL ABUN
CO-60	1.634E-02	2.646E-02	2.747E-02	NOT IDENT.
ZN-65	4.146E-02	1.594E-01	1.605E-01	NOT IDENT.
GE-68	-4.203E-01	1.888E+00	1.897E+00	NOT IDENT.
AS-74	-2.237E+03	3.464E+03	3.608E+03	SHORT HLIF
SE-75	-4.605E-02	1.588E-01	1.601E-01	NOT IDENT.
BR-77	1.405E+37	1.184E+38	0.000E+00	SHORT HLIF
SR-82	1.925E+02	4.996E+02	5.070E+02	SHORT HLIF
RB-83	2.200E-01	4.587E-01	4.693E-01	NOT IDENT.
KR-85	1.238E+01	6.743E+00	8.753E+00	NOT IDENT.
SR-85	1.198E+00	6.545E-01	8.485E-01	NOT IDENT.
RB-86	-4.772E+03	1.778E+04	1.791E+04	SHORT HLIF
Y-88	-4.490E-03	1.644E-01	1.644E-01	NOT IDENT.
Y-91	-5.238E+01	3.562E+02	3.569E+02	NOT IDENT.
NB-94	-2.393E-04	2.378E-02	2.378E-02	NOT IDENT.
NB-95	1.615E-01	5.690E-01	5.737E-01	NOT IDENT.
NB-95M	9.593E-01	1.889E+00	1.938E+00	NOT IDENT.
ZR-95	8.370E-01	1.007E+00	1.076E+00	NOT IDENT.
NB-97	-1.000E+41	1.996E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.052E+41	0.000E+00	SHORT HLIF
MO-99	-3.870E+30	1.892E+31	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	3.611E+42	0.000E+00	SHORT HLIF
RH-101	3.778E-03	2.790E-02	2.795E-02	NOT IDENT.
RH-102	-3.628E-02	4.105E-02	4.419E-02	NOT IDENT.
RU-103	-1.015E+00	4.028E+00	4.054E+00	FAIL ABUN
RH-106	-3.191E-01	3.948E-01	4.202E-01	NOT IDENT.
RU-106	-3.191E-01	3.948E-01	4.202E-01	NOT IDENT.
AG-108M	-2.547E-05	2.128E-02	2.128E-02	NOT IDENT.
AG-110M	3.550E-02	7.731E-02	7.895E-02	FAIL ABUN
SN-113	-2.955E-05	1.553E-01	1.553E-01	NOT IDENT.
CD-115	2.784E+37	1.989E+38	0.000E+00	SHORT HLIF
SN-117M	1.238E+04	5.103E+04	5.133E+04	SHORT HLIF
TE-123M	2.728E-02	1.006E-01	1.013E-01	NOT IDENT.
SB-124	2.685E-01	1.046E+00	1.053E+00	NOT IDENT.
SB-125	2.614E-02	8.281E-02	8.364E-02	FAIL ABUN
TE-125M	-1.277E+02	2.023E+02	2.103E+02	NOT IDENT.
I-126	1.801E+05	5.252E+05	5.314E+05	SHORT HLIF
SB-126	2.980E+05	6.328E+05	6.469E+05	SHORT HLIF
SB-127	-3.301E+21	5.862E+21	0.000E+00	SHORT HLIF
I-131	7.324E+08	2.066E+09	2.092E+09	SHORT HLIF
I-132	1.000E+41	1.998E+42	0.000E+00	SHORT HLIF
TE-132	3.772E+24	5.096E+25	0.000E+00	SHORT HLIF
BA-133	7.916E-03	3.483E-02	3.501E-02	FAIL ABUN
I-133	-1.000E+41	3.059E+41	0.000E+00	SHORT HLIF
CS-134	6.643E-02	6.092E-02	6.788E-02	FAIL ABUN
CS-135	2.868E-02	1.188E-01	1.195E-01	NOT IDENT.
I-135	-1.000E+41	1.825E+42	0.000E+00	SHORT HLIF
CS-136	-3.901E+04	1.433E+05	1.444E+05	SHORT HLIF
BA-140	7.617E+05	6.676E+05	7.507E+05	SHORT HLIF
LA-140	-1.309E+05	2.155E+05	2.235E+05	SHORT HLIF
CE-141	-1.295E+01	1.807E+01	1.899E+01	NOT IDENT.
CE-143	1.000E+41	9.268E+40	0.000E+00	SHORT HLIF
CE-144	-2.495E-01	2.817E-01	3.033E-01	NOT IDENT.
PM-144	3.621E-02	4.314E-02	4.612E-02	NOT IDENT.
PR-144	3.123E+00	3.728E+00	3.985E+00	NOT IDENT.
PM-146	9.919E-03	3.423E-02	3.452E-02	NOT IDENT.
ND-147	7.832E+05	1.537E+07	1.538E+07	SHORT HLIF
PM-147	-7.533E+01	6.585E+02	6.594E+02	NOT IDENT.
PM-149	1.084E+39	2.813E+39	0.000E+00	SHORT HLIF
EU-150	5.816E-03	2.852E-02	2.864E-02	FAIL ABUN
EU-152	2.385E-02	8.201E-02	8.271E-02	NOT IDENT.
GD-153	5.877E-01	2.877E-01	3.911E-01	FAIL ABUN
EU-154	6.113E-02	1.034E-01	1.070E-01	NOT IDENT.
TB-160	1.267E-01	1.410E+00	1.411E+00	FAIL ABUN
HO-166M	-3.137E-02	4.277E-02	4.505E-02	NOT IDENT.
HF-172	-8.909E-02	1.982E-01	2.023E-01	FAIL ABUN
LU-172	4.267E-02	6.757E-02	7.026E-02	FAIL ABUN
LU-176	-1.803E-04	1.849E-02	1.849E-02	FAIL ABUN

HF-181	3.068E+00	3.183E+00	3.471E+00	NOT IDENT.
TA-182	-2.158E-01	7.474E-01	7.537E-01	FAIL ABUN
RE-183	5.465E-01	2.528E+00	2.540E+00	NOT IDENT.
RE-184	5.823E+00	1.676E+01	1.696E+01	NOT IDENT.
W-188	9.420E+00	8.270E+01	8.281E+01	FAIL ABUN
IR-192	-8.742E-02	3.320E-01	3.343E-01	FAIL ABUN
HG-203	-2.850E-01	1.735E+00	1.739E+00	NOT IDENT.
BI-207	1.454E-02	4.325E-02	4.375E-02	FAIL ABUN
PB-210	2.770E+00	4.423E+00	4.596E+00	NOT IDENT.
PB-211	1.805E-01	5.148E-01	5.212E-01	NOT IDENT.
BI-212	1.210E+00	6.882E-01	8.781E-01	FAIL ABUN
RN-219	-2.561E-02	2.714E-01	2.716E-01	NOT IDENT.
RA-223	1.134E-02	5.329E-01	5.330E-01	FAIL ABUN
AC-227	-7.758E-03	1.889E-01	1.889E-01	NOT IDENT.
TH-227	-7.758E-03	1.889E-01	1.889E-01	NOT IDENT.
PA-231	2.007E-01	3.780E-01	3.886E-01	NOT IDENT.
TH-231	1.134E-02	5.329E-01	5.330E-01	FAIL ABUN
PA-233	-2.676E-02	4.400E-02	4.562E-02	NOT IDENT.
PA-234	-1.247E-02	2.601E-01	2.602E-01	FAIL ABUN
PA-234M	-4.999E-01	3.162E+00	3.170E+00	NOT IDENT.
U-235	-5.600E-02	1.549E-01	1.569E-01	FAIL ABUN
NP-237	-2.676E-02	4.400E-02	4.562E-02	FAIL ABUN
NP-238	-7.812E+38	2.948E+40	0.000E+00	SHORT HLIF
NP-239	5.043E-02	1.882E-01	1.896E-01	FAIL ABUN
PU-239	3.616E+02	4.750E+02	5.022E+02	FAIL ABUN
AM-241	-3.858E-02	1.364E-01	1.375E-01	NOT IDENT.
CM-243	5.940E-03	7.980E-02	7.984E-02	FAIL ABUN
BK-247	-1.357E-02	5.679E-02	5.712E-02	FAIL ABUN
CM-247	-2.657E-02	2.656E-02	2.914E-02	FAIL ABUN
CF-249	1.658E-03	2.597E-02	2.598E-02	NOT IDENT.
CF-251	-4.537E-02	8.874E-02	9.107E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	65.8718	87.09	68.5842	136.47	72.9871
45.60	66.6366	87.57	68.6937	140.51	0.0000
46.54	63.6707	88.03	68.7978	143.76	90.1889
49.72	0.0000	88.34	68.8683	144.24	82.2854
51.35	62.7398	88.47	68.8977	145.44	98.5465
51.87	62.9030	89.96	69.2342	152.43	86.0864
52.39	63.0653	1093.63	69.3869	153.25	0.0000
52.97	64.9547	91.11	0.0000	323.87	60.7209
53.44	70.8146	92.59	69.8211	156.02	0.0000
54.07	65.3026	93.35	69.9888	158.56	0.0000
57.36	0.0000	94.56	70.2553	159.00	71.9414
57.53	61.1352	94.65	70.2750	162.33	64.9100
57.98	65.6367	94.67	70.2793	162.66	0.0000
59.27	70.4227	94.87	62.2862	163.33	69.0060
59.32	70.4385	97.43	49.9532	165.86	69.3538
59.54	77.5589	98.43	50.1049	176.31	75.6458
60.96	70.9540	98.44	50.1064	176.60	0.0000
61.17	71.0193	99.53	58.4234	177.52	73.3722
62.93	84.9819	100.11	51.0387	181.07	0.0000
63.29	85.1129	102.03	51.3298	181.52	81.3086
63.58	85.2182	103.18	74.1632	184.41	146.1388
64.28	85.1714	103.37	74.2044	143.76	78.2078
66.73	93.3158	105.21	74.5994	193.51	77.1954
67.24	96.5461	105.31	74.6208	197.03	85.2640
125.81	85.7698	106.12	74.7938	198.01	85.4068
67.75	85.7942	106.47	74.8680	201.83	84.2584
69.67	72.6618	109.28	72.6664	203.43	76.8036
70.83	89.9334	111.00	80.0327	205.31	71.9081
72.81	76.9702	111.76	0.0000	210.85	70.8349
72.87	76.9879	114.06	87.0718	215.65	69.9893
74.66	81.5758	116.30	0.0000	222.11	72.1095
74.82	81.6249	116.74	67.3754	227.09	70.0042
74.97	81.6707	119.76	74.3754	227.38	62.0561
77.11	82.3205	121.12	75.7176	228.16	0.0000
78.74	90.1071	121.22	75.7368	228.18	66.5695
79.69	85.3210	121.78	82.3463	116.74	66.5695
80.12	80.3503	122.06	78.0677	235.69	76.7451
80.19	0.0000	122.92	57.5919	235.96	79.4694
80.57	78.5629	123.07	64.1360	238.63	69.4139
81.00	89.5572	265.00	71.8557	238.98	0.0000
81.07	89.5793	125.81	81.7248	240.99	69.6520
81.75	73.1176	127.23	70.2952	242.00	69.7538
83.79	82.6797	127.91	76.2811	244.70	51.8366
84.00	82.7389	129.30	76.1710	252.40	0.0000
85.43	70.1516	131.20	63.5832	252.80	59.7890
86.55	68.4603	133.02	79.0820	254.15	0.0000
86.79	68.5148	133.52	88.0975	256.23	74.8602
86.94	68.5495	136.00	69.5428	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	69.1763	355.39	0.0000	584.27	32.0203
264.80	69.1883	356.01	45.2559	595.83	0.0000
265.00	66.4007	364.49	0.0000	427.87	57.1198
268.22	75.1383	366.42	0.0000	602.52	0.0000
269.46	79.9659	372.51	40.2010	604.72	48.8719
270.03	75.3174	375.05	44.5447	607.14	58.1281
271.23	74.4932	377.52	48.9059	609.32	46.9125
273.65	0.0000	356.01	31.0231	610.33	46.9424
276.40	56.9580	388.16	35.4492	614.28	41.4914
277.37	57.0288	388.63	0.0000	618.01	32.0913
277.60	51.3413	391.69	36.6466	620.36	34.7102
278.00	51.3677	264.66	35.8708	621.93	41.5001
279.20	57.1619	401.81	38.0854	630.19	0.0000
279.54	57.1875	402.40	50.0823	631.29	32.0372
279.70	52.9086	404.85	40.3754	633.25	32.0765
280.46	52.9605	410.95	47.1861	634.78	0.0000
283.69	56.5297	413.71	46.2050	635.95	25.3145
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	51.8511	423.72	0.0000	645.85	23.5100
285.90	0.0000	427.09	36.7410	657.76	28.4168
287.50	63.5387	427.87	40.1089	657.90	0.0000
290.67	50.7413	433.94	38.0826	661.66	29.6704
293.27	0.0000	439.40	55.1429	664.57	0.0000
351.93	56.3704	453.88	33.0392	666.33	0.0000
295.96	56.4211	463.37	32.1517	666.50	0.0000
879.38	73.1888	468.07	34.5807	667.71	0.0000
299.98	58.6499	473.00	0.0000	677.62	25.9579
300.09	46.9258	475.06	37.0957	685.70	0.0000
300.13	46.9287	476.78	32.5032	695.00	0.0000
301.36	61.0975	477.60	41.8176	696.49	27.2530
302.85	72.5833	482.18	32.6433	696.51	27.2530
256.23	59.9501	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	33.3243
306.78	53.2134	497.08	38.0390	697.49	28.2786
308.46	53.3177	505.52	31.3409	702.65	25.3227
311.90	55.5146	507.63	0.0000	706.68	27.4112
316.51	55.8109	511.00	38.4452	711.68	34.6143
319.41	0.0000	514.00	37.2772	720.70	0.0000
320.08	0.0000	514.00	37.2772	721.93	0.0000
321.04	61.3083	520.40	30.6133	722.78	40.9753
323.87	58.7904	520.69	0.0000	722.91	40.9778
325.23	56.3634	522.65	0.0000	723.31	40.9875
328.76	0.0000	527.90	0.0000	724.19	34.4459
333.37	51.7958	528.26	32.6019	727.33	24.6467
333.97	54.8789	529.59	37.1663	733.00	21.4271
334.37	61.0034	529.87	0.0000	735.93	23.7314
338.28	63.3043	531.02	0.0000	333.97	23.7510
338.32	63.3081	537.26	0.0000	739.50	0.0000
311.90	63.4556	546.56	0.0000	747.24	30.1054
340.48	63.4556	552.55	39.6249	748.06	28.0415
340.55	0.0000	563.25	34.3510	752.31	29.1467
344.28	49.3262	569.33	39.1571	753.82	0.0000
345.93	55.5897	946.00	37.2961	756.73	20.8679
351.06	47.6106	569.70	36.3685	756.80	19.8251
351.93	47.6546	583.19	31.9974	884.68	23.4609

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:55:45.11

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621361.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM24.CNF;330
Background date    : Z-OCT-2016 11:01:18.
Sample date       : 12-SEP-2016 00:00:00 Acquisition date : 3-OCT-2016 07:53:26.
Sample ID        : G1203621361 Sample quantity : 1.81483E+02 GRAM
Detector name     : GAM24 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:01.55 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 3.00000
Batch ID          : 1596252 Detector SN# :
Matrix Spike ID   : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.60*	14	31	0.91	93.26	89	8	3.93E-03	81.4	
2	3	63.13*	4	36	1.35	126.33	122	31	1.24E-03	261.2	3.68E+00
3	3	66.47*	7	27	1.02	133.00	122	31	1.89E-03	132.6	
4	3	73.06	12	36	1.38	146.17	122	31	3.25E-03	96.2	
5	3	75.07*	15	23	1.14	150.21	122	31	4.14E-03	59.1	
6	0	84.41*	22	47	0.64	168.88	164	10	6.00E-03	65.9	
7	0	181.10	10	12	1.19	362.32	361	4	2.83E-03	59.7	
8	1	191.50	19	27	1.33	383.12	366	21	5.33E-03	47.5	4.49E+00
9	0	211.96	16	32	1.39	424.05	418	9	4.32E-03	73.1	
10	0	306.90	18	43	3.21	613.97	605	17	4.86E-03	88.6	
11	0	331.10	25	17	0.95	662.39	657	11	7.03E-03	38.5	
12	0	337.70	29	8	4.44	675.60	668	15	7.92E-03	28.1	
13	0	409.56	10	12	1.75	819.37	813	8	2.71E-03	69.4	
14	0	569.81	18	3	1.56	1139.97	1135	10	5.13E-03	28.3	
15	0	641.91	7	10	0.86	1284.22	1277	9	2.03E-03	89.2	
16	0	781.57	9	2	1.41	1563.65	1558	9	2.40E-03	46.4	
17	0	1294.14	6	0	0.96	2589.33	2586	6	1.67E-03	40.8	

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

Configuration	: DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621361.CNF;1	
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4	
Sample title	: MXR1	
Sample date	: 12-SEP-2016 00:00:00	Acquisition date : 3-OCT-2016 07:53:26
Sample ID	: G1203621361	Sample quantity : 181.48 GRAM
Sample type	: SOLID	Sample geometry :
Detector name	: GAMMA24	Detector geometry: CAN
Elapsed live time:	0 01:00:00.00	Elapsed real time: 0 01:00:01.55 0.0%
Energy tolerance:	1.50 keV	Half life ratio : 10.00
Errors propagated:	No	Systematic Error : 0.00 %
Efficiency type	: Linear	Efficiencies at : Peak Energy
Abundance limit	: 75.00	

Interference Report

No interference correction performed

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PB-210	46.54	22	4.25*	2.450E+00	8.655E-01	8.671E-01	162.73
AM-243	43.53	-----	5.90	1.694E+00	-----	Line Not Found	-----
	74.66	22	67.20*	6.751E+00	1.985E-02	1.985E-02	118.19

Flag: "*" = Keyline

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621361.CNF;1
* Acquisition date   : 3-OCT-2016 07:53:26 Sensitivity      : 3.000
* Detector ID        : GAM24 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:01.55 Half life ratio : *****
* Sample date        : 12-SEP-2016 00:00:00 Analyst initials: MXR1
* Sample ID          : G1203621361 Sample Quantity : 1.8148E+02 GRAM
* Batch Number       : 1596252 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date    : 17-JUN-2016 07:45:20 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM24 CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
PB-210	8.671E-01	1.383E+00	1.139E+00
AM-243	1.985E-02	2.300E-02	2.924E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	5.083E-02		1.425E-01	3.198E-01	NOT IDENT.
NA-22	8.425E-04		1.088E-02	2.720E-02	NOT IDENT.
NA-24	0.000E+00		1.866E+08	0.000E+00	SHORT HLIF
AL-26	-1.587E-02		1.555E-02	1.019E-02	NOT IDENT.
K-40	-1.089E-01		1.708E-01	3.500E-01	NOT IDENT.
SC-46	-1.338E-02		1.742E-02	3.001E-02	NOT IDENT.
V-48	-2.147E-02		3.061E-02	5.669E-02	NOT IDENT.
CR-51	5.287E-02		1.805E-01	3.960E-01	NOT IDENT.
MN-54	-1.049E-02		1.623E-02	2.783E-02	NOT IDENT.
CO-56	1.008E-02		2.022E-02	4.496E-02	NOT IDENT.
MN-56	0.000E+00		1.528E+41	0.000E+00	SHORT HLIF
CO-57	-6.419E-03		8.602E-03	1.555E-02	NOT IDENT.
CO-58	7.859E-03		1.802E-02	4.075E-02	NOT IDENT.
FE-59	-1.580E-02		2.430E-02	4.506E-02	NOT IDENT.
CO-60	1.433E-02		1.469E-02	4.094E-02	NOT IDENT.
ZN-65	8.535E-03		3.984E-02	8.774E-02	NOT IDENT.
GE-68	2.552E-01		4.443E-01	1.130E+00	NOT IDENT.
AS-73	-4.145E-02		1.536E-01	3.019E-01	NOT IDENT.
AS-74	1.504E-03		5.796E-02	1.188E-01	NOT IDENT.
SE-75	1.002E-02		1.998E-02	4.448E-02	NOT IDENT.
BR-77	-2.546E+00		2.272E+01	4.783E+01	NOT IDENT.
SR-82	2.193E-02		1.853E-01	3.552E-01	NOT IDENT.
RB-83	7.944E-03		2.447E-02	5.750E-02	NOT IDENT.
KR-85	-1.077E+01		5.521E+00	8.373E+00	NOT IDENT.
SR-85	-6.100E-02		3.123E-02	4.735E-02	NOT IDENT.
RB-86	1.950E-01		3.453E-01	8.775E-01	NOT IDENT.
Y-88	3.774E-03		1.971E-02	4.743E-02	NOT IDENT.
Y-91	-1.230E+00		7.191E+00	1.541E+01	NOT IDENT.

NB-94	4.237E-03	1.744E-02	3.634E-02	NOT IDENT.
NB-95	-5.581E-03	1.674E-02	3.215E-02	NOT IDENT.
NB-95M	-1.053E-02	4.315E-02	9.025E-02	NOT IDENT.
ZR-95	4.166E-03	3.394E-02	7.166E-02	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.550E+08	0.000E+00	SHORT HLIF
MO-99	-7.767E+00	2.491E+01	4.798E+01	FAIL ABUN
TC-99M	0.000E+00	3.637E+23	0.000E+00	SHORT HLIF
RH-101	1.476E-03	1.077E-02	2.225E-02	NOT IDENT.
RH-102	5.533E-03	2.142E-02	4.788E-02	NOT IDENT.
RU-103	-1.478E-02	1.940E-02	3.474E-02	NOT IDENT.
RH-106	3.409E-02	1.318E-01	2.906E-01	NOT IDENT.
RU-106	3.409E-02	1.318E-01	2.906E-01	NOT IDENT.
AG-108M	6.198E-03	1.372E-02	3.041E-02	NOT IDENT.
CD-109	1.316E-03	2.225E-01	4.290E-01	NOT IDENT.
AG-110M	-3.511E-03	2.331E-02	4.581E-02	NOT IDENT.
SN-113	9.437E-03	1.982E-02	4.449E-02	NOT IDENT.
CD-115	1.772E+01	4.154E+01	9.000E+01	NOT IDENT.
SN-117M	-4.194E-03	2.848E-02	5.529E-02	NOT IDENT.
TE-123M	2.596E-03	1.046E-02	2.161E-02	NOT IDENT.
SB-124	-1.053E-02	4.213E-02	8.802E-02	NOT IDENT.
SB-125	-4.232E-02	3.698E-02	6.117E-02	NOT IDENT.
TE-125M	3.022E-01	3.727E+00	7.616E+00	NOT IDENT.
I-126	-4.795E-02	1.074E-01	2.039E-01	NOT IDENT.
SB-126	-3.335E-02	9.273E-02	1.752E-01	NOT IDENT.
SN-126	9.800E-03	2.013E-02	4.233E-02	FAIL ABUN
SB-127	-6.387E-01	1.336E+00	2.517E+00	NOT IDENT.
I-131	4.115E-02	7.123E-02	1.678E-01	NOT IDENT.
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	-1.025E-01	1.097E+00	2.102E+00	NOT IDENT.
BA-133	-6.204E-04	1.870E-02	3.895E-02	NOT IDENT.
I-133	0.000E+00	4.340E+05	0.000E+00	SHORT HLIF
CS-134	-8.249E-03	1.710E-02	3.159E-02	FAIL ABUN
CS-135	1.893E-03	5.851E-02	1.255E-01	NOT IDENT.
I-135	0.000E+00	1.148E+22	0.000E+00	SHORT HLIF
CS-136	-4.382E-02	5.679E-02	1.016E-01	NOT IDENT.
BA-137M	2.663E-03	1.359E-02	2.994E-02	NOT IDENT.
CS-137	2.814E-03	1.435E-02	3.163E-02	NOT IDENT.
CE-139	-1.022E-03	1.249E-02	2.426E-02	NOT IDENT.
BA-140	1.999E-01	1.786E-01	4.315E-01	NOT IDENT.
LA-140	-1.503E-02	5.703E-02	1.165E-01	NOT IDENT.
CE-141	-2.172E-02	2.514E-02	4.379E-02	NOT IDENT.
CE-143	0.000E+00	1.000E+03	0.000E+00	SHORT HLIF
CE-144	3.865E-02	6.539E-02	1.441E-01	NOT IDENT.
PM-144	-1.381E-03	1.695E-02	3.374E-02	NOT IDENT.
PR-144	-1.144E-01	1.270E+00	2.525E+00	NOT IDENT.
PM-146	-1.143E-02	1.823E-02	3.402E-02	NOT IDENT.
ND-147	2.901E-02	4.257E-01	8.797E-01	NOT IDENT.
PM-147	-1.922E+02	2.532E+02	4.572E+02	NOT IDENT.
PM-149	2.042E+02	2.830E+02	6.421E+02	NOT IDENT.
EU-150	7.724E-03	8.214E-03	1.898E-02	NOT IDENT.
EU-152	1.383E-02	4.045E-02	8.931E-02	NOT IDENT.
GD-153	-7.600E-03	3.074E-02	6.072E-02	NOT IDENT.
EU-154	3.944E-03	3.149E-02	7.928E-02	NOT IDENT.
EU-155	-1.714E-02	2.941E-02	5.559E-02	NOT IDENT.
TB-160	-9.336E-03	5.400E-02	1.086E-01	FAIL ABUN
HO-166M	-8.732E-04	2.717E-02	5.555E-02	FAIL ABUN
TM-171	-1.036E+00	2.947E+00	6.087E+00	FAIL ABUN
HF-172	1.749E-02	6.942E-02	1.445E-01	FAIL ABUN
LU-172	-5.810E-03	2.053E-02	4.350E-02	FAIL ABUN
LU-176	2.061E-02	3.580E-02	2.683E-02	FAIL ABUN
HF-181	-2.601E-03	2.072E-02	4.258E-02	NOT IDENT.
TA-182	1.301E-02	5.601E-02	1.361E-01	FAIL ABUN
RE-183	7.863E-03	3.921E-02	8.681E-02	FAIL ABUN
RE-184	-1.591E-02	6.839E-02	1.304E-01	NOT IDENT.
W-188	-3.575E-01	2.727E+00	5.766E+00	FAIL ABUN
IR-192	5.539E-03	1.303E-02	2.992E-02	NOT IDENT.
HG-203	1.574E-02	1.736E-02	4.043E-02	FAIL ABUN
BI-207	-1.265E-02	1.932E-02	3.591E-02	FAIL ABUN
TL-208	1.101E-02	2.031E-02	4.155E-02	NOT IDENT.
BI-211	-3.067E-02	9.367E-02	1.919E-01	FAIL ABUN
PB-211	5.158E-02	3.101E-01	6.124E-01	NOT IDENT.
BI-212	1.793E-02	2.377E-01	4.863E-01	NOT IDENT.
PB-212	4.675E-03	2.370E-02	5.148E-02	FAIL ABUN
BI-214	1.102E-02	3.905E-02	8.256E-02	NOT IDENT.
PB-214	-5.032E-03	3.503E-02	7.316E-02	FAIL ABUN
RN-219	-1.890E-02	1.356E-01	2.874E-01	NOT IDENT.
RN-222	1.102E-02	3.905E-02	8.256E-02	NOT IDENT.

RA-223	5.608E-02	2.687E-01	5.818E-01	FAIL ABUN
RA-224	-2.299E-01	2.271E-01	4.247E-01	NOT IDENT.
RA-226	1.102E-02	3.905E-02	8.256E-02	NOT IDENT.
AC-227	-2.798E-02	9.981E-02	2.056E-01	NOT IDENT.
TH-227	-2.798E-02	9.981E-02	2.056E-01	NOT IDENT.
AC-228	2.649E-03	6.232E-02	1.388E-01	FAIL ABUN
RA-228	2.649E-03	6.232E-02	1.388E-01	FAIL ABUN
TH-228	4.675E-03	2.370E-02	5.148E-02	FAIL ABUN
TH-229	-2.463E-02	2.048E-01	3.633E-01	FAIL ABUN
TH-230	1.102E-02	3.905E-02	8.256E-02	NOT IDENT.
PA-231	2.464E-02	1.735E-01	3.494E-01	NOT IDENT.
TH-231	5.608E-02	2.687E-01	5.818E-01	FAIL ABUN
TH-232	2.649E-03	6.232E-02	1.388E-01	FAIL ABUN
PA-233	1.142E-02	2.503E-02	5.313E-02	NOT IDENT.
PA-234	5.794E-02	1.336E-01	3.078E-01	FAIL ABUN
PA-234M	1.223E+00	2.026E+00	4.849E+00	NOT IDENT.
TH-234	1.346E-01	6.889E-01	7.164E-01	FAIL ABUN
U-234	1.102E-02	3.905E-02	8.256E-02	NOT IDENT.
U-235	-1.238E-02	6.765E-02	1.389E-01	NOT IDENT.
NP-237	1.142E-02	2.503E-02	5.313E-02	NOT IDENT.
NP-238	0.000E+00	5.014E+01	0.000E+00	SHORT HLIF
U-238	1.346E-01	6.889E-01	7.164E-01	FAIL ABUN
NP-239	2.474E-02	9.305E-02	1.957E-01	NOT IDENT.
PU-239	-7.617E+01	1.164E+02	2.128E+02	NOT IDENT.
AM-241	9.456E-03	2.924E-02	6.198E-02	NOT IDENT.
CM-243	2.281E-03	3.079E-02	6.483E-02	NOT IDENT.
BK-247	9.729E-03	3.420E-02	7.460E-02	FAIL ABUN
CM-247	1.879E-03	1.264E-02	2.818E-02	NOT IDENT.
CF-249	1.532E-03	1.453E-02	3.181E-02	NOT IDENT.
CF-251	6.146E-02	5.357E-02	1.195E-01	NOT IDENT.
ANH-511	-2.504E-02	3.025E-02	6.659E-02	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PB-210	46.54	22	4.25*	2.450E+00	8.655E-01	8.671E-01	162.73
AM-243	43.53	-----	5.90	1.694E+00	-----	Line Not Found	-----
	74.66	22	67.20*	6.751E+00	1.985E-02	1.985E-02	118.19

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1203621361

Page : 2
Acquisition date : 3-OCT-2016 07:53:26

Total number of lines in spectrum 17
Number of unidentified lines 5
Number of lines tentatively identified by NID 12 70.59%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
PB-210	22.20Y	1.00	8.655E-01	8.671E-01	14.11E-01	162.73	
AM-243	7370.00Y	1.00	1.985E-02	1.985E-02	2.347E-02	118.19	
Total Activity :			8.854E-01	8.870E-01			

Grand Total Activity : 8.854E-01 8.870E-01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	63.13	7	54	1.35	126.33	122	31	1.24E-03	****	5.51E+00	T
3	66.47	10	40	1.02	133.00	122	31	1.89E-03	****	5.92E+00	T
3	73.06	17	53	1.38	146.17	122	31	3.25E-03	****	6.58E+00	T
0	84.41	31	67	0.64	168.88	164	10	6.00E-03	****	7.36E+00	T
0	181.10	13	16	1.19	362.32	361	4	2.83E-03	****	6.81E+00	T
1	191.50	25	36	1.33	383.12	366	21	5.33E-03	95.0	6.57E+00	
0	211.96	20	42	1.39	424.05	418	9	4.32E-03	****	6.14E+00	T
0	306.90	22	53	3.21	613.97	605	17	4.86E-03	****	4.64E+00	T
0	331.10	31	20	0.95	662.39	657	11	7.03E-03	77.0	4.36E+00	
0	337.70	35	9	4.44	675.60	668	15	7.92E-03	56.2	4.30E+00	T
0	409.56	12	15	1.75	819.37	813	8	2.71E-03	****	3.68E+00	T
0	569.81	21	3	1.56	1139.97	1135	10	5.13E-03	56.5	2.84E+00	T
0	641.91	8	11	0.86	1284.22	1277	9	2.03E-03	****	2.59E+00	
0	781.57	9	3	1.41	1563.65	1558	9	2.40E-03	92.8	2.23E+00	
0	1294.14	6	0	0.96	2589.33	2586	6	1.67E-03	81.6	1.50E+00	

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                    *
*****
*
*                               DETECTOR AND SAMPLE DATA                      *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621361.CNF;1 *
* Acquisition date   : 3-OCT-2016 07:53:26 Sensitivity      : 3.000          *
* Detector ID        : GAM24 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:01.55 Half life ratio : *****      *
* Sample date        : 12-SEP-2016 00:00:00 Nuclide Library : SOLID      *
* Sample ID          : G1203621361 Analyst initials: MXR1         *
* Batch Number       : 1596252 Sample Quantity : 1.8148E+02 GRAM      *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000          *
*                                     Dry Weight      : 0.00000          *
*****
*
*                               CALIBRATION INFORMATION                      *
*
* Eff. Cal. date     : 17-JUN-2016 07:45:20 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM24 CAN.CNF;7          *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
PB-210	5.074E-01
AM-243	1.322E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.369E-01	NOT IDENT.
NA-22	9.778E-03	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	0.000E+00	NOT IDENT.
K-40	1.356E-01	NOT IDENT.
SC-46	1.159E-02	NOT IDENT.
V-48	2.054E-02	NOT IDENT.
CR-51	1.750E-01	NOT IDENT.
MN-54	1.105E-02	NOT IDENT.
CO-56	1.913E-02	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	6.812E-03	NOT IDENT.
CO-58	1.706E-02	NOT IDENT.
FE-59	1.424E-02	NOT IDENT.
CO-60	1.655E-02	NOT IDENT.
ZN-65	3.675E-02	NOT IDENT.
GE-68	4.566E-01	NOT IDENT.
AS-73	1.321E-01	NOT IDENT.
AS-74	5.106E-02	NOT IDENT.
SE-75	2.001E-02	NOT IDENT.
BR-77	2.156E+01	NOT IDENT.
SR-82	1.467E-01	NOT IDENT.
RB-83	2.363E-02	NOT IDENT.
KR-85	3.743E+00	NOT IDENT.
SR-85	2.116E-02	NOT IDENT.
RB-86	3.543E-01	NOT IDENT.
Y-88	1.775E-02	NOT IDENT.
Y-91	5.923E+00	NOT IDENT.
NB-94	1.575E-02	NOT IDENT.

NB-95	1.283E-02	NOT IDENT.
NB-95M	3.971E-02	NOT IDENT.
ZR-95	2.993E-02	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	1.948E+01	FAIL ABUN
TC-99M	0.000E+00	SHORT HLIF
RH-101	9.956E-03	NOT IDENT.
RH-102	1.991E-02	NOT IDENT.
RU-103	1.437E-02	NOT IDENT.
RH-106	1.221E-01	NOT IDENT.
RU-106	1.221E-01	NOT IDENT.
AG-108M	1.334E-02	NOT IDENT.
CD-109	1.913E-01	NOT IDENT.
AG-110M	1.874E-02	NOT IDENT.
SN-113	1.951E-02	NOT IDENT.
CD-115	3.954E+01	NOT IDENT.
SN-117M	2.476E-02	NOT IDENT.
TE-123M	9.671E-03	NOT IDENT.
SB-124	3.119E-02	NOT IDENT.
SB-125	2.488E-02	NOT IDENT.
TE-125M	3.434E+00	NOT IDENT.
I-126	7.976E-02	NOT IDENT.
SB-126	7.246E-02	NOT IDENT.
SN-126	1.891E-02	FAIL ABUN
SB-127	9.570E-01	NOT IDENT.
I-131	7.245E-02	NOT IDENT.
I-132	0.000E+00	SHORT HLIF
TE-132	9.302E-01	NOT IDENT.
BA-133	1.713E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	1.264E-02	FAIL ABUN
CS-135	5.542E-02	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	3.834E-02	NOT IDENT.
BA-137M	1.239E-02	NOT IDENT.
CS-137	1.309E-02	NOT IDENT.
CE-139	1.093E-02	NOT IDENT.
BA-140	1.898E-01	NOT IDENT.
LA-140	4.310E-02	NOT IDENT.
CE-141	1.924E-02	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	6.452E-02	NOT IDENT.
PM-144	1.436E-02	NOT IDENT.
PR-144	1.074E+00	NOT IDENT.
PM-146	1.430E-02	NOT IDENT.
ND-147	3.821E-01	NOT IDENT.
PM-147	2.008E+02	NOT IDENT.
PM-149	2.892E+02	NOT IDENT.
EU-150	8.046E-03	NOT IDENT.
EU-152	3.931E-02	NOT IDENT.
GD-153	2.743E-02	NOT IDENT.
EU-154	2.884E-02	NOT IDENT.
EU-155	2.404E-02	NOT IDENT.
TB-160	4.269E-02	FAIL ABUN
HO-166M	2.327E-02	FAIL ABUN
TM-171	2.673E+00	FAIL ABUN
HF-172	6.515E-02	FAIL ABUN
LU-172	1.633E-02	FAIL ABUN
LU-176	1.203E-02	FAIL ABUN
HF-181	1.807E-02	NOT IDENT.
TA-182	5.274E-02	FAIL ABUN
RE-183	3.859E-02	FAIL ABUN
RE-184	5.365E-02	NOT IDENT.
W-188	2.500E+00	FAIL ABUN
IR-192	1.300E-02	NOT IDENT.
HG-203	1.818E-02	FAIL ABUN
BI-207	1.356E-02	FAIL ABUN
TL-208	1.830E-02	NOT IDENT.
BI-211	8.483E-02	FAIL ABUN
PB-211	2.638E-01	NOT IDENT.
BI-212	2.060E-01	NOT IDENT.
PB-212	2.328E-02	FAIL ABUN
BI-214	3.650E-02	NOT IDENT.
PB-214	3.253E-02	FAIL ABUN
RN-219	1.195E-01	NOT IDENT.
RN-222	3.650E-02	NOT IDENT.
RA-223	2.570E-01	FAIL ABUN

RA-224	1.859E-01	NOT IDENT.
RA-226	3.650E-02	NOT IDENT.
AC-227	9.087E-02	NOT IDENT.
TH-227	9.087E-02	NOT IDENT.
AC-228	5.810E-02	FAIL ABUN
RA-228	5.810E-02	FAIL ABUN
TH-228	2.328E-02	FAIL ABUN
TH-229	1.604E-01	FAIL ABUN
TH-230	3.650E-02	NOT IDENT.
PA-231	1.508E-01	NOT IDENT.
TH-231	2.570E-01	FAIL ABUN
TH-232	5.810E-02	FAIL ABUN
PA-233	2.315E-02	NOT IDENT.
PA-234	1.289E-01	FAIL ABUN
PA-234M	2.053E+00	NOT IDENT.
TH-234	3.273E-01	FAIL ABUN
U-234	3.650E-02	NOT IDENT.
U-235	6.205E-02	NOT IDENT.
NP-237	2.315E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
U-238	3.273E-01	FAIL ABUN
NP-239	8.804E-02	NOT IDENT.
PU-239	9.392E+01	NOT IDENT.
AM-241	2.745E-02	NOT IDENT.
CM-243	2.864E-02	NOT IDENT.
BK-247	3.343E-02	FAIL ABUN
CM-247	1.187E-02	NOT IDENT.
CF-249	1.355E-02	NOT IDENT.
CF-251	5.463E-02	NOT IDENT.
ANH-511	3.139E-02	NOT IDENT.

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*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road      *
*               Charleston, SC 29407  *
*                                     *
*****
*               DETECTOR AND SAMPLE DATA               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621361.CNF;1 *
* Acquisition date   : 3-OCT-2016 07:53:26 Sensitivity      : 3.000          *
* Detector ID        : GAM24          Energy tolerance:    : 1.500          *
* Elapsed live time  : 0 01:00:00.00 Abundance limit :    : 75.000          *
* Elapsed real time  : 0 01:00:01.55 Half life ratio :    : *****          *
* Sample date        : 12-SEP-2016 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1203621361   Analyst initials:    : MXR1          *
* Batch Number       : 1596252       Sample Quantity :    : 1.8148E+02 GRAM *
*                                     Quantity Err(%) :    : 1.1020E-03 %   *
* Wet wt corr        : 1.00000       Wet Weight      :    : 0.00000          *
*                                     Dry Weight       :    : 0.00000          *
*****
*               CALIBRATION INFORMATION                 *
*
* Eff. Cal. date    : 17-JUN-2016 07:45:20 Eff. Geometry : CAN          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM24 CAN.CNF;7          *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
PB-210	8.671E-01	1.385E+00	1.385E+00
AM-243	1.985E-02	2.303E-02	2.303E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	5.083E-02	1.425E-01	1.443E-01	NOT IDENT.
NA-22	8.425E-04	1.088E-02	1.089E-02	NOT IDENT.
NA-24	5.683E+07	1.866E+08	1.883E+08	SHORT HLIF
AL-26	-1.587E-02	1.559E-02	1.715E-02	NOT IDENT.
K-40	-1.089E-01	1.709E-01	1.778E-01	NOT IDENT.
SC-46	-1.338E-02	1.743E-02	1.844E-02	NOT IDENT.
V-48	-2.147E-02	3.062E-02	3.211E-02	NOT IDENT.
CR-51	5.287E-02	1.806E-01	1.821E-01	NOT IDENT.
MN-54	-1.049E-02	1.624E-02	1.691E-02	NOT IDENT.
CO-56	1.008E-02	2.023E-02	2.073E-02	NOT IDENT.
MN-56	1.000E+41	1.529E+41	0.000E+00	SHORT HLIF
CO-57	-6.419E-03	8.608E-03	9.081E-03	NOT IDENT.
CO-58	7.859E-03	1.802E-02	1.836E-02	NOT IDENT.
FE-59	-1.580E-02	2.433E-02	2.535E-02	NOT IDENT.
CO-60	1.433E-02	1.470E-02	1.606E-02	NOT IDENT.
ZN-65	8.535E-03	3.984E-02	4.003E-02	NOT IDENT.
GE-68	2.552E-01	4.444E-01	4.591E-01	NOT IDENT.
AS-73	-4.145E-02	1.538E-01	1.550E-01	NOT IDENT.
AS-74	1.504E-03	5.796E-02	5.796E-02	NOT IDENT.
SE-75	1.002E-02	1.999E-02	2.049E-02	NOT IDENT.
BR-77	-2.546E+00	2.278E+01	2.281E+01	NOT IDENT.
SR-82	2.193E-02	1.853E-01	1.856E-01	NOT IDENT.
RB-83	7.944E-03	2.449E-02	2.475E-02	NOT IDENT.
KR-85	-1.077E+01	5.538E+00	7.365E+00	NOT IDENT.
SR-85	-6.100E-02	3.133E-02	4.168E-02	NOT IDENT.
RB-86	1.950E-01	3.454E-01	3.564E-01	NOT IDENT.
Y-88	3.774E-03	1.971E-02	1.978E-02	NOT IDENT.
Y-91	-1.230E+00	7.191E+00	7.212E+00	NOT IDENT.

NB-94	4.237E-03	1.744E-02	1.755E-02	NOT IDENT.
NB-95	-5.581E-03	1.674E-02	1.693E-02	NOT IDENT.
NB-95M	-1.053E-02	4.315E-02	4.341E-02	NOT IDENT.
ZR-95	4.166E-03	3.394E-02	3.400E-02	NOT IDENT.
NB-97	-1.000E+41	3.817E+41	0.000E+00	SHORT HLIF
ZR-97	-1.260E+09	5.573E+08	7.958E+08	SHORT HLIF
MO-99	-7.767E+00	2.491E+01	2.516E+01	FAIL ABUN
TC-99M	2.463E+23	3.645E+23	0.000E+00	SHORT HLIF
RH-101	1.476E-03	1.078E-02	1.080E-02	NOT IDENT.
RH-102	5.533E-03	2.143E-02	2.157E-02	NOT IDENT.
RU-103	-1.478E-02	1.942E-02	2.053E-02	NOT IDENT.
RH-106	3.409E-02	1.318E-01	1.327E-01	NOT IDENT.
RU-106	3.409E-02	1.318E-01	1.327E-01	NOT IDENT.
AG-108M	6.198E-03	1.372E-02	1.400E-02	NOT IDENT.
CD-109	1.316E-03	2.225E-01	2.225E-01	NOT IDENT.
AG-110M	-3.511E-03	2.331E-02	2.336E-02	NOT IDENT.
SN-113	9.437E-03	1.982E-02	2.027E-02	NOT IDENT.
CD-115	1.772E+01	4.155E+01	4.231E+01	NOT IDENT.
SN-117M	-4.194E-03	2.848E-02	2.855E-02	NOT IDENT.
TE-123M	2.596E-03	1.046E-02	1.053E-02	NOT IDENT.
SB-124	-1.053E-02	4.213E-02	4.240E-02	NOT IDENT.
SB-125	-4.232E-02	3.702E-02	4.165E-02	NOT IDENT.
TE-125M	3.022E-01	3.727E+00	3.729E+00	NOT IDENT.
I-126	-4.795E-02	1.074E-01	1.096E-01	NOT IDENT.
SB-126	-3.335E-02	9.279E-02	9.400E-02	NOT IDENT.
SN-126	9.800E-03	2.014E-02	2.062E-02	FAIL ABUN
SB-127	-6.387E-01	1.338E+00	1.369E+00	NOT IDENT.
I-131	4.115E-02	7.125E-02	7.363E-02	NOT IDENT.
I-132	-1.000E+41	7.291E+41	0.000E+00	SHORT HLIF
TE-132	-1.025E-01	1.097E+00	1.098E+00	NOT IDENT.
BA-133	-6.204E-04	1.870E-02	1.870E-02	NOT IDENT.
I-133	2.013E+05	4.350E+05	4.443E+05	SHORT HLIF
CS-134	-8.249E-03	1.710E-02	1.750E-02	FAIL ABUN
CS-135	1.893E-03	5.851E-02	5.852E-02	NOT IDENT.
I-135	-6.036E+21	1.185E+22	0.000E+00	SHORT HLIF
CS-136	-4.382E-02	5.690E-02	6.024E-02	NOT IDENT.
BA-137M	2.663E-03	1.359E-02	1.364E-02	NOT IDENT.
CS-137	2.814E-03	1.435E-02	1.441E-02	NOT IDENT.
CE-139	-1.022E-03	1.249E-02	1.250E-02	NOT IDENT.
BA-140	1.999E-01	1.788E-01	2.003E-01	NOT IDENT.
LA-140	-1.503E-02	5.703E-02	5.743E-02	NOT IDENT.
CE-141	-2.172E-02	2.516E-02	2.700E-02	NOT IDENT.
CE-143	1.540E+01	1.000E+03	1.000E+03	SHORT HLIF
CE-144	3.865E-02	6.543E-02	6.771E-02	NOT IDENT.
PM-144	-1.381E-03	1.695E-02	1.696E-02	NOT IDENT.
PR-144	-1.144E-01	1.270E+00	1.272E+00	NOT IDENT.
PM-146	-1.143E-02	1.824E-02	1.896E-02	NOT IDENT.
ND-147	2.901E-02	4.257E-01	4.259E-01	NOT IDENT.
PM-147	-1.922E+02	2.534E+02	2.678E+02	NOT IDENT.
PM-149	2.042E+02	2.844E+02	2.989E+02	NOT IDENT.
EU-150	7.724E-03	8.220E-03	8.927E-03	NOT IDENT.
EU-152	1.383E-02	4.046E-02	4.094E-02	NOT IDENT.
GD-153	-7.600E-03	3.074E-02	3.093E-02	NOT IDENT.
EU-154	3.944E-03	3.149E-02	3.154E-02	NOT IDENT.
EU-155	-1.714E-02	2.944E-02	3.044E-02	NOT IDENT.
TB-160	-9.336E-03	5.401E-02	5.417E-02	FAIL ABUN
HO-166M	-8.732E-04	2.717E-02	2.717E-02	FAIL ABUN
TM-171	-1.036E+00	2.949E+00	2.985E+00	FAIL ABUN
HF-172	1.749E-02	6.948E-02	6.992E-02	FAIL ABUN
LU-172	-5.810E-03	2.054E-02	2.071E-02	FAIL ABUN
LU-176	2.061E-02	3.581E-02	3.700E-02	FAIL ABUN
HF-181	-2.601E-03	2.072E-02	2.076E-02	NOT IDENT.
TA-182	1.301E-02	5.601E-02	5.632E-02	FAIL ABUN
RE-183	7.863E-03	3.922E-02	3.938E-02	FAIL ABUN
RE-184	-1.591E-02	6.840E-02	6.878E-02	NOT IDENT.
W-188	-3.575E-01	2.728E+00	2.732E+00	FAIL ABUN
IR-192	5.539E-03	1.304E-02	1.327E-02	NOT IDENT.
HG-203	1.574E-02	1.737E-02	1.877E-02	FAIL ABUN
BI-207	-1.265E-02	1.933E-02	2.015E-02	FAIL ABUN
TL-208	1.101E-02	2.032E-02	2.092E-02	NOT IDENT.
BI-211	-3.067E-02	9.368E-02	9.470E-02	FAIL ABUN
PB-211	5.158E-02	3.101E-01	3.110E-01	NOT IDENT.
BI-212	1.793E-02	2.377E-01	2.379E-01	NOT IDENT.
PB-212	4.675E-03	2.370E-02	2.380E-02	FAIL ABUN
BI-214	1.102E-02	3.905E-02	3.936E-02	NOT IDENT.
PB-214	-5.032E-03	3.503E-02	3.510E-02	FAIL ABUN
RN-219	-1.890E-02	1.356E-01	1.359E-01	NOT IDENT.
RN-222	1.102E-02	3.905E-02	3.936E-02	NOT IDENT.

RA-223	5.608E-02	2.688E-01	2.700E-01	FAIL ABUN
RA-224	-2.299E-01	2.274E-01	2.499E-01	NOT IDENT.
RA-226	1.102E-02	3.905E-02	3.936E-02	NOT IDENT.
AC-227	-2.798E-02	9.988E-02	1.007E-01	NOT IDENT.
TH-227	-2.798E-02	9.988E-02	1.007E-01	NOT IDENT.
AC-228	2.649E-03	6.232E-02	6.233E-02	FAIL ABUN
RA-228	2.649E-03	6.232E-02	6.233E-02	FAIL ABUN
TH-228	4.675E-03	2.370E-02	2.380E-02	FAIL ABUN
TH-229	-2.463E-02	2.048E-01	2.051E-01	FAIL ABUN
TH-230	1.102E-02	3.905E-02	3.936E-02	NOT IDENT.
PA-231	2.464E-02	1.736E-01	1.740E-01	NOT IDENT.
TH-231	5.608E-02	2.688E-01	2.700E-01	FAIL ABUN
TH-232	2.649E-03	6.232E-02	6.233E-02	FAIL ABUN
PA-233	1.142E-02	2.504E-02	2.556E-02	NOT IDENT.
PA-234	5.794E-02	1.492E-01	1.514E-01	FAIL ABUN
PA-234M	1.223E+00	2.027E+00	2.100E+00	NOT IDENT.
TH-234	1.346E-01	6.896E-01	6.922E-01	FAIL ABUN
U-234	1.102E-02	3.905E-02	3.936E-02	NOT IDENT.
U-235	-1.238E-02	6.765E-02	6.788E-02	NOT IDENT.
NP-237	1.142E-02	2.504E-02	2.556E-02	NOT IDENT.
NP-238	-2.515E+01	5.015E+01	5.141E+01	SHORT HLIF
U-238	1.346E-01	6.896E-01	6.922E-01	FAIL ABUN
NP-239	2.474E-02	9.307E-02	9.374E-02	NOT IDENT.
PU-239	-7.617E+01	1.164E+02	1.214E+02	NOT IDENT.
AM-241	9.456E-03	2.925E-02	2.956E-02	NOT IDENT.
CM-243	2.281E-03	3.079E-02	3.081E-02	NOT IDENT.
BK-247	9.729E-03	3.426E-02	3.454E-02	FAIL ABUN
CM-247	1.879E-03	1.264E-02	1.267E-02	NOT IDENT.
CF-249	1.532E-03	1.454E-02	1.455E-02	NOT IDENT.
CF-251	6.146E-02	5.401E-02	6.070E-02	NOT IDENT.
ANH-511	-2.504E-02	3.027E-02	3.230E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	23.3467	87.09	12.7275	136.47	17.0416
45.60	22.4884	87.57	16.9832	140.51	20.5491
46.54	22.5396	88.03	22.6610	143.76	18.3359
49.72	21.0634	88.34	21.2553	144.24	18.3462
51.35	17.8385	88.47	21.2598	145.44	29.8542
51.87	17.8594	89.96	21.3104	152.43	39.3530
52.39	21.8536	90.64	38.4002	153.25	22.0117
52.97	22.8766	91.11	59.7777	154.21	23.1952
53.44	17.9220	92.59	34.2383	156.02	27.8903
54.07	23.9291	93.35	22.4953	158.56	26.8029
57.36	0.0000	94.56	67.6123	159.00	20.9864
57.53	22.0989	94.65	60.1084	162.33	17.5518
57.98	19.1034	94.67	60.1101	162.66	30.4338
59.27	16.1303	94.87	51.5387	163.33	31.6274
59.32	16.1320	97.43	33.4155	165.86	29.3636
59.54	16.1393	98.43	17.2727	176.31	23.7476
60.96	21.5818	98.44	17.2729	176.60	21.3791
61.17	21.5910	99.53	34.6023	177.52	20.2103
62.93	29.4543	100.11	28.1386	181.07	14.3172
63.29	29.4754	102.03	18.4504	181.52	17.5066
63.58	29.4925	103.18	21.7429	184.41	19.1531
64.28	29.5332	103.37	18.4865	185.72	19.1780
66.73	29.6742	105.21	20.7165	193.51	20.9335
67.24	29.7031	105.31	20.7194	197.03	16.9644
67.68	29.7281	106.12	25.1105	198.01	24.2575
67.75	29.7321	106.47	26.2152	201.83	21.9098
69.67	29.8401	109.28	21.9330	203.43	23.1615
70.83	29.9045	111.00	25.2835	205.31	25.6437
72.81	30.0133	111.76	24.2097	210.85	18.4094
72.87	30.0167	114.06	27.5978	215.65	16.0235
74.66	30.1138	116.30	19.9308	222.11	18.5939
74.82	30.1224	116.74	23.2664	227.09	23.6537
74.97	30.1304	119.76	18.9105	227.38	23.6595
77.11	22.2490	121.12	27.8593	228.16	21.1831
78.74	28.2391	121.22	27.8629	228.18	21.1836
79.69	30.7296	121.78	24.5373	235.69	20.9002
80.12	25.1611	122.06	26.7779	235.96	23.4134
80.19	23.7660	122.92	18.9888	238.63	16.7611
80.57	22.3825	123.07	18.9926	238.98	19.2808
81.00	22.3989	123.68	26.8341	240.99	29.3888
81.07	22.4015	125.81	24.6654	242.00	22.6903
81.75	23.8291	127.23	22.4635	244.70	16.8447
83.79	26.3721	127.91	25.8554	252.40	16.1018
84.00	26.3813	129.30	28.1528	252.80	14.4114
85.43	26.4437	131.20	25.9620	254.15	0.0000
86.55	19.7809	133.02	18.1013	256.23	22.9510
86.79	12.7213	133.52	16.9805	260.90	23.0350
86.94	12.7244	136.00	22.7094	264.66	20.5352

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.80	20.5371	364.49	8.2449	600.60	14.4489
265.00	21.3964	366.42	10.0889	602.52	0.0000
268.22	18.8754	372.51	8.2852	604.72	19.6432
269.46	20.6104	375.05	17.5176	607.14	18.6284
270.03	23.1971	377.52	13.8501	609.32	10.3589
271.23	17.1985	383.85	8.3414	610.33	15.5444
273.65	15.5068	388.16	10.2207	614.28	6.2280
276.40	19.8555	388.63	10.2237	618.01	11.4360
277.37	21.5973	391.69	12.1039	620.36	5.2032
277.60	20.7373	400.66	8.4230	621.93	7.2891
278.00	16.4217	401.81	9.3652	630.19	0.0000
279.20	15.5713	402.40	8.4315	631.29	6.2720
279.54	22.4977	404.85	11.2576	633.25	10.4614
279.70	22.5003	410.95	11.2964	634.78	8.3743
280.46	26.8424	413.71	11.3140	635.95	7.8546
283.69	22.5664	414.70	16.0368	636.99	7.8580
284.31	27.7865	423.72	15.1689	645.85	8.4118
285.41	23.4641	427.09	15.1969	657.76	13.7342
285.90	18.2562	427.87	17.1039	657.90	0.0000
287.50	18.2774	433.94	12.3935	661.66	6.3486
290.67	15.7024	439.40	18.1666	664.57	0.0000
293.27	0.0000	453.88	15.4157	666.33	7.4204
295.22	14.0033	463.37	16.4598	666.50	8.4808
295.96	14.8861	468.07	11.6467	667.71	0.0000
298.58	17.5456	473.00	10.7030	677.62	8.5176
299.98	11.8551	475.06	11.6880	685.70	6.4082
300.09	6.5866	476.78	4.8743	695.00	10.7182
300.13	6.5868	477.60	8.7773	696.49	11.7967
301.36	11.8666	482.18	11.7300	696.51	11.7967
302.85	9.2392	487.02	12.7379	697.00	15.0168
304.50	13.2141	492.35	14.7363	697.30	13.9458
304.85	13.2172	497.08	14.7705	697.49	13.9469
306.78	13.2349	505.52	12.8537	702.65	11.8240
308.46	13.2504	507.63	0.0000	706.68	13.9950
311.90	10.6252	511.00	22.8007	711.68	6.4712
316.51	10.6587	514.00	58.5727	720.70	10.8215
319.41	15.1296	514.00	58.5727	721.93	0.0000
320.08	16.0269	520.40	4.9788	722.78	8.6641
321.04	14.2552	520.69	5.9756	722.91	5.4152
323.87	16.9601	522.65	0.0000	723.31	5.4161
325.23	18.7625	527.90	12.9905	724.19	9.7518
328.76	16.1195	528.26	10.9942	727.33	6.5088
333.37	2.6948	529.59	13.0011	733.00	7.6093
333.97	2.6958	529.87	0.0000	735.93	9.7939
334.37	2.6965	531.02	14.0103	737.46	8.7106
338.28	9.4618	537.26	7.0253	739.50	8.7168
338.32	9.4620	546.56	0.0000	747.24	3.2780
340.48	17.5969	552.55	10.1062	748.06	3.2789
340.55	17.5977	563.25	8.1240	752.31	4.3786
344.28	14.4736	569.33	6.1094	753.82	7.6665
345.93	14.4886	569.50	6.1099	756.73	7.6745
351.06	15.4443	569.70	6.1104	756.80	7.6748
351.93	15.4526	583.19	8.1953	763.94	4.3966
355.39	0.0000	584.27	8.1992	765.81	7.6993
356.01	18.2263	595.83	12.3599	766.42	12.1011

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 08:56:39.30

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621362.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM29.CNF;354
Background date    : 2-OCT-2016 11:01:41.
Sample date       : 30-NOV-2015 13:27:00 Acquisition date : 3-OCT-2016 07:54:00.
Sample ID        : G1203621362 Sample quantity   : 1.81483E+02 GRAM
Detector name     : GAM29 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:01.45 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity        : 3.00000
Batch ID          : 1596252 Detector SN#       :
Matrix Spike ID   : LCS ID                   : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	74.86*	121	162	1.08	149.65	145	16	3.35E-02	18.8	1.15E+00
2	2	77.22*	181	163	1.22	154.37	145	16	5.02E-02	14.6	
3	0	84.04*	36	146	1.16	167.99	165	7	1.01E-02	58.6	
4	3	86.89	92	125	1.36	173.68	171	32	2.56E-02	21.4	1.65E+00
5	3	90.20	44	159	1.35	180.29	171	32	1.23E-02	51.6	
6	3	92.91*	95	113	1.08	185.69	171	32	2.63E-02	22.4	
7	0	128.29	62	170	1.37	256.36	251	11	1.71E-02	43.3	
8	0	159.92	49	234	3.84	319.53	314	16	1.36E-02	71.2	
9	0	186.23*	53	139	1.26	372.08	367	9	1.47E-02	45.2	
10	0	194.46	31	116	1.33	388.54	383	10	8.61E-03	69.6	
11	3	207.21	28	31	1.23	414.00	412	12	7.66E-03	31.6	3.06E+00
12	3	209.20	54	99	1.55	417.97	412	12	1.51E-02	37.0	
13	5	238.64*	334	85	1.02	476.79	472	15	9.29E-02	7.1	1.89E+00
14	5	241.48	84	103	1.75	482.45	472	15	2.33E-02	27.6	
15	0	295.24*	165	78	1.13	589.85	584	10	4.57E-02	12.8	
16	0	329.40	12	69	0.49	658.10	652	8	3.28E-03	126.0	
17	0	334.02	19	38	1.24	667.34	665	7	5.28E-03	59.4	
18	0	338.38*	89	56	0.94	676.04	672	10	2.46E-02	19.2	
19	0	351.93*	271	64	1.31	703.12	698	12	7.52E-02	8.6	
20	0	397.75	7	29	1.24	794.65	790	7	1.82E-03	140.4	
21	0	400.82	17	34	3.16	800.79	796	9	4.62E-03	67.8	
22	0	405.54	18	45	0.67	810.22	805	10	5.00E-03	73.6	
23	0	463.19	32	33	2.50	925.42	922	9	8.81E-03	37.5	
24	0	510.81*	13	70	1.23	1020.60	1014	14	3.72E-03	156.3	
25	0	547.02*	11	29	0.74	1092.97	1089	9	2.95E-03	99.4	
26	0	583.62*	116	49	1.03	1166.13	1160	12	3.21E-02	15.7	
27	0	609.36*	172	49	1.14	1217.57	1213	9	4.77E-02	10.8	
28	0	662.86	25	41	1.13	1324.51	1318	13	6.94E-03	57.1	
29	0	684.20	11	15	1.02	1367.17	1363	8	3.18E-03	66.4	
30	3	709.15	11	5	1.40	1417.06	1415	22	3.18E-03	40.0	1.01E+00
31	3	712.16	13	18	1.80	1423.06	1415	22	3.70E-03	72.4	
32	0	727.66	27	44	0.78	1454.05	1446	16	7.44E-03	58.7	
33	0	750.81	15	9	1.16	1500.33	1496	8	4.10E-03	45.0	
34	0	757.59	11	16	0.52	1513.91	1506	11	3.07E-03	77.1	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	768.46	19	30	3.80	1535.63	1528	12	5.23E-03	62.7	
36	0	795.83	27	25	3.40	1590.35	1585	13	7.58E-03	42.8	
37	0	860.59	23	25	4.07	1719.85	1712	14	6.50E-03	49.5	
38	0	894.62	15	12	1.44	1787.89	1782	11	4.06E-03	55.1	
39	0	911.51*	62	31	1.57	1821.68	1817	11	1.71E-02	22.0	
40	0	915.66	15	5	1.47	1829.98	1827	8	4.06E-03	38.7	
41	0	934.11*	20	11	2.04	1866.87	1860	11	5.68E-03	40.5	
42	0	955.28	8	9	0.69	1909.21	1902	9	2.23E-03	76.0	
43	2	964.83	22	11	1.94	1928.33	1924	24	6.14E-03	38.4	3.59E-01
44	2	968.70*	46	15	1.95	1936.06	1924	24	1.29E-02	24.1	
45	0	984.31	28	41	7.88	1967.27	1951	26	7.65E-03	69.3	
46	0	1000.59*	9	10	0.87	1999.84	1994	10	2.48E-03	79.2	
47	0	1120.76*	51	20	1.49	2240.22	2235	13	1.42E-02	23.2	
48	0	1170.26	9	17	1.84	2339.27	2333	10	2.48E-03	93.6	
49	0	1238.99*	16	32	1.39	2476.79	2469	13	4.39E-03	79.8	
50	0	1327.38	6	10	0.56	2653.67	2647	10	1.61E-03	110.2	
51	0	1377.71*	15	2	0.98	2754.40	2750	9	4.05E-03	34.8	
52	0	1395.69	7	5	0.64	2790.38	2785	9	1.81E-03	70.7	
53	0	1408.25	7	10	1.19	2815.51	2810	10	2.08E-03	86.8	
54	0	1460.91*	473	11	1.85	2920.93	2913	14	1.31E-01	4.9	
55	0	1593.69	4	7	0.95	3186.75	3181	7	1.11E-03	120.5	
56	0	1730.19	14	3	1.12	3460.08	3454	9	3.98E-03	32.8	
57	0	1764.63*	32	0	2.25	3529.05	3523	11	8.89E-03	19.7	
58	0	1846.28	10	0	1.05	3692.60	3686	11	2.78E-03	31.6	

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

VMS Nuclide Identification Report V3.1 Generated 3-OCT-2016 08:56:41

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621362.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 30-NOV-2015 13:27:00 Acquisition date : 3-OCT-2016 07:54:00
 Sample ID : G1203621362 Sample quantity : 181.48 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA29 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.45 0.0%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.347E+00	1.339E+01	1.339E+01	9.73	OK
CD-109	88.03	3.70*	6.242E+00	1.468E+00	2.330E+00	70.96	OK
TE-123M	159.00	84.00*	6.985E+00	4.621E-02	2.767E-01	142.35	OK
SN-126	64.28	9.60	3.737E+00	----- Line	Not Found	-----	Absent
	86.94	8.90	6.242E+00	6.102E-01	6.102E-01	70.96	OK
	87.57	37.00*	6.242E+00	1.468E-01	1.468E-01	70.96	OK
BA-137M	661.66	89.90*	2.518E+00	5.071E-02	5.170E-02	114.17	OK
CS-137	661.66	85.10*	2.518E+00	5.357E-02	5.462E-02	114.17	OK
TL-208	277.37	6.60	4.914E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.771E+00	2.297E-01	2.297E-01	31.44	OK
	860.56	12.50	2.069E+00	3.998E-01	3.998E-01	98.91	OK
PB-212	74.82	10.28	5.108E+00	8.367E-01	8.367E-01	64.85	OK
	77.11	17.10	5.368E+00	1.187E+00	1.187E+00	29.14	OK
	238.63	43.60*	5.496E+00	7.363E-01	7.363E-01	14.13	OK
	300.09	3.30	4.626E+00	----- Line	Not Found	-----	Absent
BI-214	609.32	45.49*	2.683E+00	6.541E-01	6.544E-01	21.56	OK
	1120.29	14.92	1.685E+00	8.658E-01	8.661E-01	46.46	OK
	1764.49	15.30	1.129E+00	7.309E-01	7.311E-01	39.34	OK
PB-214	74.82	5.80	5.103E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	5.368E+00	2.092E+00	2.093E+00	29.14	OK
	87.09	3.41	6.257E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	5.441E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.685E+00	9.801E-01	9.805E-01	25.67	OK
	351.93	35.60*	4.087E+00	9.335E-01	9.338E-01	17.17	OK
RN-222	609.32	45.49*	2.683E+00	6.541E-01	6.544E-01	21.56	OK
	1120.29	14.92	1.685E+00	8.658E-01	8.661E-01	46.46	OK
	1764.49	15.30	1.129E+00	7.309E-01	7.311E-01	39.34	OK
RA-224	240.99	4.10*	5.449E+00	2.414E-01	2.414E-01	487.99	OK
RA-226	609.32	45.49*	2.683E+00	6.541E-01	6.544E-01	21.56	OK
	1120.29	14.92	1.685E+00	8.658E-01	8.661E-01	46.46	OK
	1764.49	15.30	1.129E+00	7.309E-01	7.311E-01	39.34	OK
AC-228	105.21	1.10	7.155E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.214E+00	9.416E-01	9.416E-01	38.45	OK
	794.95	4.25	2.196E+00	1.309E+00	1.309E+00	85.63	OK
	835.71	1.61	2.116E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.981E+00	5.294E-01	5.294E-01	43.94	OK
	968.97	15.80	1.890E+00	6.731E-01	6.731E-01	48.20	OK
RA-228	105.21	1.10	7.155E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.214E+00	9.416E-01	9.416E-01	38.45	OK
	794.95	4.25	2.196E+00	1.309E+00	1.309E+00	85.63	OK
	835.71	1.61	2.116E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.981E+00	5.294E-01	5.294E-01	43.94	OK
	968.97	15.80	1.890E+00	6.731E-01	6.731E-01	48.20	OK
TH-228	74.82	10.28	5.108E+00	8.367E-01	8.367E-01	64.85	OK
	77.11	17.10	5.368E+00	1.187E+00	1.187E+00	29.14	OK
	238.63	43.60*	5.496E+00	7.363E-01	7.363E-01	14.13	OK
	300.09	3.30	4.626E+00	----- Line	Not Found	-----	Absent
TH-230	609.32	45.49*	2.683E+00	6.541E-01	6.541E-01	21.56	OK
	1120.29	14.92	1.685E+00	8.658E-01	8.658E-01	46.46	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-232	1764.49	15.30	1.129E+00	7.309E-01	7.309E-01	39.34	OK
	105.21	1.10	7.155E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.214E+00	9.416E-01	9.416E-01	38.45	OK
	835.71	1.61	2.116E+00	-----	Line Not Found	-----	Absent
U-234	911.20	25.80*	1.981E+00	5.294E-01	5.294E-01	43.94	OK
	968.97	15.80	1.890E+00	6.731E-01	6.731E-01	48.20	OK
	609.32	45.49*	2.683E+00	6.541E-01	6.541E-01	21.56	OK
	1120.29	14.92	1.685E+00	8.658E-01	8.658E-01	46.46	OK
U-235	1764.49	15.30	1.129E+00	7.309E-01	7.309E-01	39.34	OK
	89.96	3.47	6.473E+00	1.167E+00	1.167E+00	103.23	OK
	93.35	5.60	6.639E+00	1.505E+00	1.505E+00	44.72	OK
	143.76	10.96*	7.247E+00	-----	Line Not Found	-----	Absent
AM-243	163.33	5.08	6.922E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	6.471E+00	7.775E-02	7.775E-02	90.32	OK
	205.31	5.01	6.095E+00	-----	Line Not Found	-----	Absent
	43.53	5.90	7.707E-01	-----	Line Not Found	-----	Absent
ANH-511	74.66	67.20*	5.108E+00	1.280E-01	1.280E-01	64.85	OK
	511.00	100.00*	3.065E+00	2.085E-02	2.085E-02	312.60	OK

Flag: "*" = Keyline

```

*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                         *
*                               Charleston, SC 29407                     *
*                               *****                                *
*                               *                                     *
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                     *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621362.CNF;1 *
* Acquisition date   : 3-OCT-2016 07:54:00 Sensitivity      : 3.000      *
* Detector ID        : GAM29 Energy tolerance: 1.500      *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:01.45 Half life ratio : *****      *
* Sample date        : 30-NOV-2015 13:27:00 Analyst initials: MXR1      *
* Sample ID          : G1203621362 Sample Quantity : 1.8148E+02 GRAM      *
* Batch Number       : 1596252 Wet Weight : 0.00000      *
* Wet wt corr        : 1.00000 Dry Weight : 0.00000      *
* Nuclide Library    : SOLID.NLB;6 *****                                *
*                               *                                     *
*                               CALIBRATION INFORMATION                   *
*                               *                                     *
* Eff. Cal. date     : 25-JUN-2016 09:55:57 Eff. Geometry : CAN      *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM29 CAN.CNF;10      *
*                               *****                                *

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.339E+01	1.276E+00	5.070E-01
CD-109	2.330E+00	1.621E+00	1.436E+00
TE-123M	2.767E-01	3.860E-01	1.844E-01
SN-126	1.468E-01	1.021E-01	9.090E-02
BA-137M	5.170E-02	5.785E-02	4.530E-02
CS-137	5.462E-02	6.111E-02	4.785E-02
TL-208	2.297E-01	7.078E-02	5.229E-02
PB-212	7.363E-01	1.020E-01	7.430E-02
BI-214	6.544E-01	1.383E-01	9.840E-02
PB-214	9.338E-01	1.572E-01	8.672E-02
RN-222	6.544E-01	1.383E-01	9.840E-02
RA-224	2.414E-01	1.154E+00	7.961E-01
RA-226	6.544E-01	1.383E-01	9.840E-02
AC-228	5.294E-01	2.280E-01	2.060E-01
RA-228	5.294E-01	2.280E-01	2.060E-01
TH-228	7.363E-01	1.020E-01	7.430E-02
TH-230	6.541E-01	1.382E-01	9.837E-02
TH-232	5.294E-01	2.280E-01	2.060E-01
U-234	6.541E-01	1.382E-01	9.837E-02
U-235	-2.847E-02	1.491E-01	2.793E-01
AM-243	1.280E-01	8.136E-02	6.750E-02
ANH-511	2.085E-02	6.386E-02	3.988E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	9.094E-01	9.337E+00	1.918E+01	NOT IDENT.
NA-22	-1.468E-02	2.842E-02	4.947E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	6.821E-04	2.041E-02	4.558E-02	NOT IDENT.
SC-46	2.276E-01	2.941E-01	6.100E-01	FAIL ABUN
V-48	0.000E+00	5.505E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.635E+02	0.000E+00	SHORT HLIF
MN-54	4.316E-02	4.434E-02	9.957E-02	NOT IDENT.

CO-56	1.033E-01	3.510E-01	7.251E-01	FAIL ABUN
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	4.277E-03	3.403E-02	6.743E-02	NOT IDENT.
CO-58	5.487E-02	3.594E-01	7.535E-01	NOT IDENT.
FE-59	-2.740E+00	5.065E+00	8.886E+00	NOT IDENT.
CO-60	-7.006E-03	3.288E-02	6.029E-02	NOT IDENT.
ZN-65	2.254E-02	1.305E-01	2.364E-01	NOT IDENT.
GE-68	-4.440E-01	1.798E+00	3.335E+00	NOT IDENT.
AS-73	4.681E+00	6.756E+00	1.454E+01	NOT IDENT.
AS-74	0.000E+00	5.841E+03	0.000E+00	SHORT HLIF
SE-75	1.286E-01	1.656E-01	3.349E-01	FAIL ABUN
BR-77	0.000E+00	1.859E+38	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.413E+02	0.000E+00	SHORT HLIF
RB-83	1.582E-01	4.759E-01	1.002E+00	NOT IDENT.
KR-85	3.418E-01	5.153E+00	9.424E+00	NOT IDENT.
SR-85	3.880E-02	5.918E-01	1.082E+00	NOT IDENT.
RB-86	0.000E+00	2.904E+04	0.000E+00	SHORT HLIF
Y-88	1.079E-02	1.566E-01	3.510E-01	NOT IDENT.
Y-91	-1.819E+02	4.831E+02	8.560E+02	NOT IDENT.
NB-94	6.682E-03	2.111E-02	4.379E-02	NOT IDENT.
NB-95	-2.330E-01	7.290E-01	1.205E+00	NOT IDENT.
NB-95M	1.479E+00	2.217E+00	4.075E+00	NOT IDENT.
ZR-95	1.124E+00	1.698E+00	2.308E+00	FAIL ABUN
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	8.295E+32	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.480E+41	0.000E+00	SHORT HLIF
RH-101	0.000E+00	7.055E-02	5.013E-02	FAIL ABUN
RH-102	4.599E-02	3.920E-02	9.085E-02	NOT IDENT.
RU-103	-3.314E+00	4.665E+00	8.641E+00	FAIL ABUN
RH-106	4.064E-02	3.430E-01	7.010E-01	NOT IDENT.
RU-106	4.064E-02	3.430E-01	7.010E-01	NOT IDENT.
AG-108M	8.960E-03	1.862E-02	3.996E-02	NOT IDENT.
AG-110M	-1.036E-02	7.142E-02	1.380E-01	NOT IDENT.
SN-113	1.274E-01	1.557E-01	3.462E-01	NOT IDENT.
CD-115	0.000E+00	2.181E+40	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	4.072E+05	0.000E+00	SHORT HLIF
SB-124	-5.048E-01	1.334E+00	2.677E+00	NOT IDENT.
SB-125	1.686E-03	7.121E-02	1.455E-01	FAIL ABUN
TE-125M	1.314E+01	2.277E+02	4.490E+02	NOT IDENT.
I-126	0.000E+00	9.963E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	1.227E+06	0.000E+00	SHORT HLIF
SB-127	0.000E+00	8.784E+22	0.000E+00	SHORT HLIF
I-131	0.000E+00	6.253E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.650E+27	0.000E+00	SHORT HLIF
BA-133	-1.667E-03	2.947E-02	5.432E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	8.629E-02	7.241E-02	9.031E-02	FAIL ABUN
CS-135	-7.265E-02	1.100E-01	1.910E-01	NOT IDENT.
I-135	0.000E+00	7.372E+40	0.000E+00	SHORT HLIF
CS-136	0.000E+00	3.324E+05	0.000E+00	SHORT HLIF
CE-139	-6.776E-03	9.510E-02	1.668E-01	NOT IDENT.
BA-140	0.000E+00	1.469E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.049E+05	0.000E+00	SHORT HLIF
CE-141	3.839E+00	2.286E+01	4.447E+01	NOT IDENT.
CE-143	0.000E+00	1.806E+41	0.000E+00	SHORT HLIF
CE-144	-4.504E-02	2.679E-01	5.138E-01	NOT IDENT.
PM-144	-6.136E-04	4.134E-02	8.140E-02	NOT IDENT.
PR-144	-6.429E-02	3.605E+00	7.094E+00	NOT IDENT.
PM-146	-2.209E-02	2.514E-02	4.586E-02	NOT IDENT.
ND-147	0.000E+00	3.356E+07	0.000E+00	SHORT HLIF
PM-147	-5.927E-01	6.148E+02	1.202E+03	NOT IDENT.
PM-149	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
EU-150	2.388E-02	2.780E-02	3.802E-02	FAIL ABUN
EU-152	1.248E-02	6.054E-02	1.272E-01	FAIL ABUN
GD-153	-1.710E-02	1.401E-01	2.538E-01	NOT IDENT.
EU-154	-3.249E-02	7.015E-02	1.240E-01	FAIL ABUN
EU-155	4.094E-02	8.398E-02	1.705E-01	FAIL ABUN
TB-160	-8.481E-01	1.164E+00	2.009E+00	FAIL ABUN
HO-166M	4.695E-02	6.660E-02	8.460E-02	FAIL ABUN
TM-171	1.623E+00	1.449E+01	3.014E+01	NOT IDENT.
HF-172	1.635E-01	1.695E-01	3.358E-01	FAIL ABUN
LU-172	1.780E-02	5.510E-02	1.130E-01	FAIL ABUN
LU-176	-2.430E-02	1.933E-02	3.043E-02	FAIL ABUN
HF-181	-8.918E-01	3.035E+00	6.002E+00	NOT IDENT.
TA-182	-5.704E-01	7.761E-01	1.283E+00	FAIL ABUN
RE-183	7.041E-01	2.223E+00	4.656E+00	NOT IDENT.

RE-184	-1.718E+01	2.791E+01	4.908E+01	FAIL ABUN
W-188	9.367E+00	8.920E+01	1.566E+02	NOT IDENT.
IR-192	1.371E-01	3.548E-01	6.946E-01	FAIL ABUN
HG-203	2.471E-01	2.085E+00	3.934E+00	NOT IDENT.
BI-207	4.148E-03	2.953E-02	6.034E-02	FAIL ABUN
PB-210	-1.075E+00	2.373E+00	4.790E+00	NOT IDENT.
BI-211	0.000E+00	4.329E-01	6.209E-01	FAIL ABUN
PB-211	6.406E-01	9.241E-01	1.076E+00	FAIL ABUN
BI-212	7.755E-01	8.917E-01	9.038E-01	FAIL ABUN
RN-219	3.362E-01	4.468E-01	4.997E-01	FAIL ABUN
RA-223	-1.952E-01	4.837E-01	8.512E-01	FAIL ABUN
AC-227	4.606E-02	1.642E-01	3.185E-01	FAIL ABUN
TH-227	4.606E-02	1.642E-01	3.185E-01	FAIL ABUN
TH-229	6.036E-01	8.236E-01	6.840E-01	FAIL ABUN
PA-231	-1.822E-01	3.419E-01	5.962E-01	NOT IDENT.
TH-231	-1.952E-01	4.837E-01	8.512E-01	FAIL ABUN
PA-233	2.428E-02	4.514E-02	8.861E-02	NOT IDENT.
PA-234	-2.679E-02	1.968E-01	3.775E-01	NOT IDENT.
PA-234M	2.492E+00	3.870E+00	6.166E+00	FAIL ABUN
TH-234	8.227E-01	9.835E-01	2.126E+00	FAIL ABUN
NP-237	2.428E-02	4.514E-02	8.861E-02	NOT IDENT.
NP-238	0.000E+00	1.358E+41	0.000E+00	SHORT HLIF
U-238	8.227E-01	9.835E-01	2.126E+00	FAIL ABUN
NP-239	-3.416E-02	1.776E-01	3.430E-01	NOT IDENT.
PU-239	0.000E+00	6.370E+02	4.999E+02	FAIL ABUN
AM-241	-6.995E-02	9.698E-02	1.877E-01	NOT IDENT.
CM-243	-6.220E-02	7.506E-02	1.388E-01	NOT IDENT.
BK-247	2.966E-02	5.635E-02	1.110E-01	FAIL ABUN
CM-247	3.387E-03	2.860E-02	4.380E-02	NOT IDENT.
CF-249	-2.697E-02	2.478E-02	4.482E-02	FAIL ABUN
CF-251	4.046E-02	8.095E-02	1.621E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn.	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	465	10.66*	1.347E+00	1.339E+01	1.339E+01	9.73
CD-109	88.03	132	3.70*	6.242E+00	2.371E+00	3.765E+00	42.83
TE-123M	159.00	66	84.00*	6.985E+00	4.621E-02	2.767E-01	142.35
SN-126	64.28	-----	9.60	3.737E+00	-----	Line Not Found	-----
	86.94	132	8.90	6.242E+00	9.857E-01	9.857E-01	42.83
	87.57	132	37.00*	6.242E+00	2.371E-01	2.371E-01	42.83
BA-137M	661.66	28	89.90*	2.518E+00	5.071E-02	5.170E-02	114.17
CS-137	661.66	28	85.10*	2.518E+00	5.357E-02	5.462E-02	114.17
TL-208	277.37	-----	6.60	4.914E+00	-----	Line Not Found	-----
	583.19	131	85.00*	2.771E+00	2.297E-01	2.297E-01	31.44
	860.56	25	12.50	2.069E+00	3.998E-01	3.998E-01	98.91
BI-211	72.87	-----	1.23	4.875E+00	-----	Line Not Found	-----
	351.06	328	12.92*	4.087E+00	2.572E+00	2.572E+00	17.17
PB-212	74.82	176	10.28	5.108E+00	1.390E+00	1.390E+00	37.69
	77.11	263	17.10	5.368E+00	1.187E+00	1.187E+00	29.14
	238.63	426	43.60*	5.496E+00	7.363E-01	7.363E-01	14.13
	300.09	-----	3.30	4.626E+00	-----	Line Not Found	-----
BI-214	609.32	193	45.49*	2.683E+00	6.541E-01	6.544E-01	21.56
	1120.29	53	14.92	1.685E+00	8.658E-01	8.661E-01	46.46
	1764.49	31	15.30	1.129E+00	7.309E-01	7.311E-01	39.34
PB-214	74.82	176	5.80	5.108E+00	2.463E+00	2.464E+00	37.69
	77.11	263	9.70	5.368E+00	2.092E+00	2.093E+00	29.14
	87.09	132	3.41	6.242E+00	2.573E+00	2.574E+00	42.83
	242.00	107	7.25	5.449E+00	1.117E+00	1.117E+00	55.24
	295.22	204	18.42	4.685E+00	9.801E-01	9.805E-01	25.67
	351.93	328	35.60*	4.087E+00	9.335E-01	9.338E-01	17.17
RN-222	609.32	193	45.49*	2.683E+00	6.541E-01	6.544E-01	21.56
	1120.29	53	14.92	1.685E+00	8.658E-01	8.661E-01	46.46
	1764.49	31	15.30	1.129E+00	7.309E-01	7.311E-01	39.34
RA-224	240.99	107	4.10*	5.449E+00	1.974E+00	1.974E+00	55.24
RA-226	609.32	193	45.49*	2.683E+00	6.541E-01	6.544E-01	21.56
	1120.29	53	14.92	1.685E+00	8.658E-01	8.661E-01	46.46
	1764.49	31	15.30	1.129E+00	7.309E-01	7.311E-01	39.34
AC-228	105.21	-----	1.10	7.155E+00	-----	Line Not Found	-----
	338.32	108	11.27	4.214E+00	9.416E-01	9.416E-01	38.45
	794.95	30	4.25	2.196E+00	1.309E+00	1.309E+00	85.63
	835.71	-----	1.61	2.116E+00	-----	Line Not Found	-----
	911.20	65	25.80*	1.981E+00	5.294E-01	5.294E-01	43.94
	968.97	49	15.80	1.890E+00	6.731E-01	6.731E-01	48.20
RA-228	105.21	-----	1.10	7.155E+00	-----	Line Not Found	-----
	338.32	108	11.27	4.214E+00	9.416E-01	9.416E-01	38.45
	794.95	30	4.25	2.196E+00	1.309E+00	1.309E+00	85.63
	835.71	-----	1.61	2.116E+00	-----	Line Not Found	-----
	911.20	65	25.80*	1.981E+00	5.294E-01	5.294E-01	43.94
	968.97	49	15.80	1.890E+00	6.731E-01	6.731E-01	48.20
TH-228	74.82	176	10.28	5.108E+00	1.390E+00	1.390E+00	37.69
	77.11	263	17.10	5.368E+00	1.187E+00	1.187E+00	29.14

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	238.63	426	43.60*	5.496E+00	7.363E-01	7.363E-01	14.13
	300.09	-----	3.30	4.626E+00	-----	Line Not Found	-----
TH-230	609.32	193	45.49*	2.683E+00	6.541E-01	6.541E-01	21.56
	1120.29	53	14.92	1.685E+00	8.658E-01	8.658E-01	46.46
	1764.49	31	15.30	1.129E+00	7.309E-01	7.309E-01	39.34
TH-232	105.21	-----	1.10	7.155E+00	-----	Line Not Found	-----
	338.32	108	11.27	4.214E+00	9.416E-01	9.416E-01	38.45
	835.71	-----	1.61	2.116E+00	-----	Line Not Found	-----
	911.20	65	25.80*	1.981E+00	5.294E-01	5.294E-01	43.94
	968.97	49	15.80	1.890E+00	6.731E-01	6.731E-01	48.20
U-234	609.32	193	45.49*	2.683E+00	6.541E-01	6.541E-01	21.56
	1120.29	53	14.92	1.685E+00	8.658E-01	8.658E-01	46.46
	1764.49	31	15.30	1.129E+00	7.309E-01	7.309E-01	39.34
U-235	89.96	63	3.47	6.473E+00	1.167E+00	1.167E+00	103.23
	93.35	135	5.60	6.639E+00	1.505E+00	1.505E+00	44.72
	143.76	-----	10.96*	7.247E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.922E+00	-----	Line Not Found	-----
	185.72	70	57.20	6.471E+00	7.775E-02	7.775E-02	90.32
	205.31	-----	5.01	6.095E+00	-----	Line Not Found	-----
AM-243	43.53	-----	5.90	7.707E-01	-----	Line Not Found	-----
	74.66	176	67.20*	5.108E+00	2.126E-01	2.126E-01	37.69
ANH-511	511.00	15	100.00*	3.065E+00	2.085E-02	2.085E-02	312.60

Flag: "*" = Keyline

Total number of lines in spectrum 58
Number of unidentified lines 15
Number of lines tentatively identified by NID 43 74.14%

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	1.339E+01	1.339E+01	0.130E+01	9.73	
CD-109	461.40D	1.59	2.371E+00	3.765E+00	1.612E+00	42.83	
TE-123M	119.20D	5.99	4.621E-02	2.767E-01	3.939E-01	142.35	
SN-126	2.30E+05Y	1.00	2.371E-01	2.371E-01	1.015E-01	42.83	
BA-137M	30.08Y	1.02	5.071E-02	5.170E-02	5.903E-02	114.17	
CS-137	30.08Y	1.02	5.357E-02	5.462E-02	6.236E-02	114.17	
TL-208	1.41E+10Y	1.00	2.297E-01	2.297E-01	0.722E-01	31.44	
BI-211	7.04E+08Y	1.00	2.572E+00	2.572E+00	0.442E+00	17.17	
PB-212	1.41E+10Y	1.00	7.363E-01	7.363E-01	1.041E-01	14.13	
BI-214	1600.00Y	1.00	6.541E-01	6.544E-01	1.411E-01	21.56	
PB-214	1600.00Y	1.00	9.335E-01	9.338E-01	1.604E-01	17.17	
RN-222	1600.00Y	1.00	6.541E-01	6.544E-01	1.411E-01	21.56	
RA-224	1.41E+10Y	1.00	1.974E+00	1.974E+00	1.091E+00	55.24	
RA-226	1600.00Y	1.00	6.541E-01	6.544E-01	1.411E-01	21.56	
AC-228	1.41E+10Y	1.00	5.294E-01	5.294E-01	2.327E-01	43.94	
RA-228	1.41E+10Y	1.00	5.294E-01	5.294E-01	2.327E-01	43.94	
TH-228	1.41E+10Y	1.00	7.363E-01	7.363E-01	1.041E-01	14.13	
TH-230	7.54E+04Y	1.00	6.541E-01	6.541E-01	1.410E-01	21.56	
TH-232	1.41E+10Y	1.00	5.294E-01	5.294E-01	2.327E-01	43.94	
U-234	2.45E+05Y	1.00	6.541E-01	6.541E-01	1.410E-01	21.56	
U-235	7.04E+08Y	1.00	7.775E-02	7.775E-02	7.022E-02	90.32	K
AM-243	7370.00Y	1.00	2.126E-01	2.126E-01	0.801E-01	37.69	
ANH-511	1.00E+09Y	1.00	2.085E-02	2.085E-02	6.516E-02	312.60	
Total Activity :			2.850E+01	3.013E+01			

Grand Total Activity : 2.850E+01 3.013E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	84.04	53	211	1.16	167.99	165	7	1.01E-02	****	6.02E+00	T
0	128.29	85	235	1.37	256.36	251	11	1.71E-02	86.6	7.39E+00	T
0	194.46	41	152	1.33	388.54	383	10	8.61E-03	****	6.31E+00	T
3	207.21	36	40	1.23	414.00	412	12	7.66E-03	63.2	6.06E+00	
3	209.20	70	129	1.55	417.97	412	12	1.51E-02	74.0	6.02E+00	
0	329.40	14	85	0.49	658.10	652	8	3.28E-03	****	4.30E+00	T
0	334.02	23	46	1.24	667.34	665	7	5.28E-03	****	4.26E+00	T
0	397.75	8	35	1.24	794.65	790	7	1.82E-03	****	3.72E+00	
0	400.82	20	41	3.16	800.79	796	9	4.62E-03	****	3.69E+00	T
0	405.54	21	54	0.67	810.22	805	10	5.00E-03	****	3.66E+00	T
0	463.19	37	39	2.50	925.42	922	9	8.81E-03	74.9	3.30E+00	T
0	547.02	12	33	0.74	1092.97	1089	9	2.95E-03	****	2.91E+00	T
0	684.20	13	16	1.02	1367.17	1363	8	3.18E-03	****	2.46E+00	T
3	709.15	13	5	1.40	1417.06	1415	22	3.18E-03	80.1	2.39E+00	
3	712.16	15	20	1.80	1423.06	1415	22	3.70E-03	****	2.39E+00	T
0	727.66	29	48	0.78	1454.05	1446	16	7.44E-03	****	2.35E+00	T
0	750.81	16	10	1.16	1500.33	1496	8	4.10E-03	89.9	2.29E+00	
0	757.59	12	17	0.52	1513.91	1506	11	3.07E-03	****	2.28E+00	T
0	768.46	20	33	3.80	1535.63	1528	12	5.23E-03	****	2.25E+00	
0	894.62	16	13	1.44	1787.89	1782	11	4.06E-03	****	2.01E+00	T
0	915.66	15	6	1.47	1829.98	1827	8	4.06E-03	77.5	1.97E+00	
0	934.11	22	12	2.04	1866.87	1860	11	5.68E-03	81.0	1.94E+00	
0	955.28	8	9	0.69	1909.21	1902	9	2.23E-03	****	1.91E+00	T
2	964.83	23	11	1.94	1928.33	1924	24	6.14E-03	76.8	1.90E+00	T
0	984.31	29	43	7.88	1967.27	1951	26	7.65E-03	****	1.87E+00	T
0	1000.59	9	10	0.87	1999.84	1994	10	2.48E-03	****	1.84E+00	T
0	1170.26	9	17	1.84	2339.27	2333	10	2.48E-03	****	1.63E+00	
0	1238.99	16	33	1.39	2476.79	2469	13	4.39E-03	****	1.55E+00	T
0	1327.38	6	10	0.56	2653.67	2647	10	1.61E-03	****	1.46E+00	
0	1377.71	14	2	0.98	2754.40	2750	9	4.05E-03	69.5	1.42E+00	
0	1395.69	6	4	0.64	2790.38	2785	9	1.81E-03	****	1.40E+00	
0	1408.25	7	9	1.19	2815.51	2810	10	2.08E-03	****	1.39E+00	T
0	1593.69	4	7	0.95	3186.75	3181	7	1.11E-03	****	1.24E+00	
0	1730.19	14	3	1.12	3460.08	3454	9	3.98E-03	65.6	1.15E+00	
0	1846.28	9	0	1.05	3692.60	3686	11	2.78E-03	63.2	1.08E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621362.CNF;1  *
* Acquisition date   : 3-OCT-2016 07:54:00 Sensitivity      : 3.000           *
* Detector ID        : GAM29 Energy tolerance: 1.500       *
* Elapsed live time  : 0 01:00:00.00 Abundance limit: 75.000  *
* Elapsed real time  : 0 01:00:01.45 Half life ratio: ***** *
* Sample date        : 30-NOV-2015 13:27:00 Nuclide Library : SOLID          *
* Sample ID          : G1203621362 Analyst initials: MXR1      *
* Batch Number       : 1596252 Sample Quantity: 1.8148E+02 GRAM *
* Wet wt corr        : 1.00000 Wet Weight: 0.00000          *
*                               Dry Weight: 0.00000           *
*****
*                               CALIBRATION INFORMATION                       *
*
* Eff. Cal. date     : 25-JUN-2016 09:55:57 Eff. Geometry  : CAN           *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM29 CAN.CNF;10          *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.140E-01
CD-109	6.756E-01
TE-123M	8.596E-02
SN-126	4.277E-02
BA-137M	2.002E-02
CS-137	2.115E-02
TL-208	2.365E-02
PB-212	3.463E-02
BI-214	4.440E-02
PB-214	3.925E-02
RN-222	4.440E-02
RA-224	3.711E-01
RA-226	4.440E-02
AC-228	9.169E-02
RA-228	9.169E-02
TH-228	3.463E-02
TH-230	4.438E-02
TH-232	9.169E-02
U-234	4.438E-02
U-235	1.319E-01
AM-243	3.191E-02
ANH-511	1.801E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	8.621E+00	NOT IDENT.
NA-22	2.001E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.766E-02	NOT IDENT.
SC-46	2.684E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	4.436E-02	NOT IDENT.
CO-56	3.187E-01	FAIL ABUN

MN-56	0.000E+00	SHORT HLIF
CO-57	3.157E-02	NOT IDENT.
CO-58	3.219E-01	NOT IDENT.
FE-59	3.725E+00	NOT IDENT.
CO-60	2.579E-02	NOT IDENT.
ZN-65	1.021E-01	NOT IDENT.
GE-68	1.442E+00	NOT IDENT.
AS-73	6.857E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.555E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.497E-01	NOT IDENT.
KR-85	4.241E+00	NOT IDENT.
SR-85	4.871E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.368E-01	NOT IDENT.
Y-91	3.749E+02	NOT IDENT.
NB-94	1.947E-02	NOT IDENT.
NB-95	5.304E-01	NOT IDENT.
NB-95M	1.914E+00	NOT IDENT.
ZR-95	1.023E+00	FAIL ABUN
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.360E-02	FAIL ABUN
RH-102	4.075E-02	NOT IDENT.
RU-103	3.845E+00	FAIL ABUN
RH-106	3.108E-01	NOT IDENT.
RU-106	3.108E-01	NOT IDENT.
AG-108M	1.809E-02	NOT IDENT.
AG-110M	5.977E-02	NOT IDENT.
SN-113	1.575E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
SB-124	9.889E-01	NOT IDENT.
SB-125	6.576E-02	FAIL ABUN
TE-125M	2.115E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	2.465E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	4.106E-02	FAIL ABUN
CS-135	8.801E-02	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	7.815E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	2.099E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.409E-01	NOT IDENT.
PM-144	3.635E-02	NOT IDENT.
PR-144	3.168E+00	NOT IDENT.
PM-146	1.991E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	5.646E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.753E-02	FAIL ABUN
EU-152	5.798E-02	FAIL ABUN
GD-153	1.193E-01	NOT IDENT.
EU-154	5.045E-02	FAIL ABUN
EU-155	8.062E-02	FAIL ABUN
TB-160	8.238E-01	FAIL ABUN
HO-166M	3.779E-02	FAIL ABUN
TM-171	1.413E+01	NOT IDENT.
HF-172	1.578E-01	FAIL ABUN
LU-172	4.927E-02	FAIL ABUN
LU-176	1.381E-02	FAIL ABUN
HF-181	2.649E+00	NOT IDENT.
TA-182	5.546E-01	FAIL ABUN
RE-183	2.189E+00	NOT IDENT.
RE-184	2.139E+01	FAIL ABUN

W-188	7.157E+01	NOT IDENT.
IR-192	3.179E-01	FAIL ABUN
HG-203	1.820E+00	NOT IDENT.
BI-207	2.570E-02	FAIL ABUN
PB-210	2.260E+00	NOT IDENT.
BI-211	2.993E-01	FAIL ABUN
PB-211	4.950E-01	FAIL ABUN
BI-212	4.148E-01	FAIL ABUN
RN-219	2.254E-01	FAIL ABUN
RA-223	3.912E-01	FAIL ABUN
AC-227	1.471E-01	FAIL ABUN
TH-227	1.471E-01	FAIL ABUN
TH-229	3.202E-01	FAIL ABUN
PA-231	2.738E-01	NOT IDENT.
TH-231	3.912E-01	FAIL ABUN
PA-233	4.084E-02	NOT IDENT.
PA-234	1.638E-01	NOT IDENT.
PA-234M	2.711E+00	FAIL ABUN
TH-234	1.016E+00	FAIL ABUN
NP-237	4.084E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
U-238	1.016E+00	FAIL ABUN
NP-239	1.609E-01	NOT IDENT.
PU-239	2.367E+02	FAIL ABUN
AM-241	8.805E-02	NOT IDENT.
CM-243	6.513E-02	NOT IDENT.
BK-247	5.154E-02	FAIL ABUN
CM-247	1.966E-02	NOT IDENT.
CF-249	2.002E-02	FAIL ABUN
CF-251	7.572E-02	NOT IDENT.

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*                                     DETECTOR AND SAMPLE DATA                *
*                                     *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621362.CNF;1 *
* Acquisition date   : 3-OCT-2016 07:54:00 Sensitivity      : 3.000          *
* Detector ID        : GAM29 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:01.45 Half life ratio : *****      *
* Sample date        : 30-NOV-2015 13:27:00 Nuclide Library : SOLID      *
* Sample ID          : G1203621362 Analyst initials: MXR1         *
* Batch Number       : 1596252 Sample Quantity : 1.8148E+02 GRAM      *
*                                     Quantity Err(%) : 1.1020E-03 %      *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000            *
*                                     Dry Weight : 0.00000          *
*****
*                                     CALIBRATION INFORMATION                  *
*                                     *                                       *
* Eff. Cal. date     : 25-JUN-2016 09:55:57 Eff. Geometry : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF.GAM29 CAN.CNF;10      *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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----- Identified Nuclides -----
Nuclide      Activity      Act Error      TPU
              (pCi/GRAM )    (1.96-sigma)  (1.96-sigma)
K-40         1.339E+01      1.456E+00      1.456E+00
CD-109       2.330E+00      1.642E+00      1.642E+00
TE-123M      2.767E-01      3.862E-01      3.862E-01
SN-126       1.468E-01      1.031E-01      1.031E-01
BA-137M      5.170E-02      5.789E-02      5.789E-02
CS-137       5.462E-02      6.116E-02      6.116E-02
TL-208       2.297E-01      7.146E-02      7.146E-02
PB-212       7.363E-01      1.092E-01      1.092E-01
BI-214       6.544E-01      1.411E-01      1.411E-01
PB-214       9.338E-01      1.619E-01      1.619E-01
RN-222       6.544E-01      1.411E-01      1.411E-01
RA-224       2.414E-01      1.160E+00      1.160E+00
RA-226       6.544E-01      1.411E-01      1.411E-01
AC-228       5.294E-01      2.296E-01      2.296E-01
RA-228       5.294E-01      2.296E-01      2.296E-01
TH-228       7.363E-01      1.092E-01      1.092E-01
TH-230       6.541E-01      1.411E-01      1.411E-01
TH-232       5.294E-01      2.296E-01      2.296E-01
U-234        6.541E-01      1.411E-01      1.411E-01
U-235       -2.847E-02      1.491E-01      1.491E-01
AM-243       1.280E-01      8.244E-02      8.244E-02
ANH-511      2.085E-02      6.387E-02      6.387E-02

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

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Nuclide      Key-Line
              Activity      K.L Act error      TPU
              (pCi/GRAM )    (1.96-sigma)  (1.96-sigma)
BE-7         9.094E-01      9.338E+00      9.347E+00 NOT IDENT.
NA-22       -1.468E-02      2.842E-02      2.918E-02 NOT IDENT.
NA-24        1.000E+41      3.468E+41      0.000E+00 SHORT HLIF
AL-26        6.821E-04      2.041E-02      2.041E-02 NOT IDENT.
SC-46        2.276E-01      2.942E-01      3.116E-01 FAIL ABUN
V-48         4.053E+04      5.507E+04      5.803E+04 SHORT HLIF
CR-51        9.687E+01      3.635E+02      3.661E+02 SHORT HLIF
MN-54        4.316E-02      4.438E-02      4.846E-02 NOT IDENT.

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CO-56	1.033E-01	3.510E-01	3.541E-01	FAIL ABUN
MN-56	1.000E+41	3.321E+41	0.000E+00	SHORT HLIF
CO-57	4.277E-03	3.403E-02	3.409E-02	NOT IDENT.
CO-58	5.487E-02	3.594E-01	3.603E-01	NOT IDENT.
FE-59	-2.740E+00	5.069E+00	5.217E+00	NOT IDENT.
CO-60	-7.006E-03	3.288E-02	3.304E-02	NOT IDENT.
ZN-65	2.254E-02	1.305E-01	1.309E-01	NOT IDENT.
GE-68	-4.440E-01	1.798E+00	1.809E+00	NOT IDENT.
AS-73	4.681E+00	6.824E+00	7.143E+00	NOT IDENT.
AS-74	1.611E+03	5.843E+03	5.887E+03	SHORT HLIF
SE-75	1.286E-01	1.657E-01	1.755E-01	FAIL ABUN
BR-77	1.342E+39	1.192E+40	0.000E+00	SHORT HLIF
SR-82	1.332E+01	6.413E+02	6.413E+02	SHORT HLIF
RE-83	1.582E-01	4.764E-01	4.817E-01	NOT IDENT.
KR-85	3.418E-01	5.153E+00	5.155E+00	NOT IDENT.
SR-85	3.880E-02	5.918E-01	5.920E-01	NOT IDENT.
RB-86	-1.577E+04	2.904E+04	2.990E+04	SHORT HLIF
Y-88	1.079E-02	1.566E-01	1.566E-01	NOT IDENT.
Y-91	-1.819E+02	4.831E+02	4.900E+02	NOT IDENT.
NB-94	6.682E-03	2.111E-02	2.132E-02	NOT IDENT.
NB-95	-2.330E-01	7.290E-01	7.366E-01	NOT IDENT.
NB-95M	1.479E+00	2.220E+00	2.318E+00	NOT IDENT.
ZR-95	1.124E+00	1.699E+00	1.773E+00	FAIL ABUN
NB-97	1.000E+41	7.605E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	2.077E+41	0.000E+00	SHORT HLIF
MO-99	4.417E+32	8.301E+32	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.483E+41	0.000E+00	SHORT HLIF
RH-101	8.318E-02	7.214E-02	8.131E-02	FAIL ABUN
RH-102	4.599E-02	3.938E-02	4.450E-02	NOT IDENT.
RU-103	-3.314E+00	4.668E+00	4.901E+00	FAIL ABUN
RH-106	4.064E-02	3.430E-01	3.435E-01	NOT IDENT.
RU-106	4.064E-02	3.430E-01	3.435E-01	NOT IDENT.
AG-108M	8.960E-03	1.862E-02	1.906E-02	NOT IDENT.
AG-110M	-1.036E-02	7.142E-02	7.157E-02	NOT IDENT.
SN-113	1.274E-01	1.558E-01	1.660E-01	NOT IDENT.
CD-115	-1.050E+39	2.181E+40	0.000E+00	SHORT HLIF
SN-117M	2.919E+05	4.088E+05	4.294E+05	SHORT HLIF
SB-124	-5.048E-01	1.334E+00	1.354E+00	NOT IDENT.
SB-125	1.686E-03	7.122E-02	7.122E-02	FAIL ABUN
TE-125M	1.314E+01	2.277E+02	2.278E+02	NOT IDENT.
I-126	3.437E+05	9.975E+05	1.009E+06	SHORT HLIF
SB-126	1.948E+06	1.282E+06	1.554E+06	SHORT HLIF
SB-127	6.744E+22	1.295E+23	0.000E+00	SHORT HLIF
I-131	2.067E+09	6.253E+09	6.322E+09	SHORT HLIF
I-132	1.000E+41	1.931E+42	0.000E+00	SHORT HLIF
TE-132	8.806E+25	1.651E+27	0.000E+00	SHORT HLIF
BA-133	-1.667E-03	2.947E-02	2.948E-02	NOT IDENT.
I-133	1.000E+41	3.076E+41	0.000E+00	SHORT HLIF
CS-134	8.629E-02	7.251E-02	8.228E-02	FAIL ABUN
CS-135	-7.265E-02	1.101E-01	1.149E-01	NOT IDENT.
I-135	-1.000E+41	6.993E+41	0.000E+00	SHORT HLIF
CS-136	-1.218E+05	3.326E+05	3.371E+05	SHORT HLIF
CE-139	-6.776E-03	9.511E-02	9.516E-02	NOT IDENT.
BA-140	5.208E+05	1.469E+06	1.487E+06	SHORT HLIF
LA-140	-1.579E+05	4.049E+05	4.112E+05	SHORT HLIF
CE-141	3.839E+00	2.286E+01	2.292E+01	NOT IDENT.
CE-143	1.000E+41	1.809E+41	0.000E+00	SHORT HLIF
CE-144	-4.504E-02	2.679E-01	2.687E-01	NOT IDENT.
PM-144	-6.136E-04	4.134E-02	4.134E-02	NOT IDENT.
PR-144	-6.429E-02	3.605E+00	3.605E+00	NOT IDENT.
PM-146	-2.209E-02	2.519E-02	2.709E-02	NOT IDENT.
ND-147	2.020E+06	3.356E+07	3.358E+07	SHORT HLIF
PM-147	-5.927E-01	6.148E+02	6.148E+02	NOT IDENT.
PM-149	-1.993E+40	4.142E+41	0.000E+00	SHORT HLIF
EU-150	2.388E-02	2.782E-02	2.983E-02	FAIL ABUN
EU-152	1.248E-02	6.055E-02	6.081E-02	FAIL ABUN
GD-153	-1.710E-02	1.401E-01	1.404E-01	NOT IDENT.
EU-154	-3.249E-02	7.016E-02	7.167E-02	FAIL ABUN
EU-155	4.094E-02	8.403E-02	8.603E-02	FAIL ABUN
TB-160	-8.481E-01	1.165E+00	1.226E+00	FAIL ABUN
HO-166M	4.695E-02	6.665E-02	6.993E-02	FAIL ABUN
TM-171	1.623E+00	1.449E+01	1.450E+01	NOT IDENT.
HF-172	1.635E-01	1.716E-01	1.867E-01	FAIL ABUN
LU-172	1.780E-02	5.513E-02	5.571E-02	FAIL ABUN
LU-176	-2.430E-02	1.936E-02	2.225E-02	FAIL ABUN
HF-181	-8.918E-01	3.035E+00	3.062E+00	NOT IDENT.
TA-182	-5.704E-01	7.764E-01	8.179E-01	FAIL ABUN
RE-183	7.041E-01	2.226E+00	2.248E+00	NOT IDENT.

RE-184	-1.718E+01	2.822E+01	2.927E+01	FAIL ABUN
W-188	9.367E+00	8.921E+01	8.931E+01	NOT IDENT.
IR-192	1.371E-01	3.549E-01	3.602E-01	FAIL ABUN
HG-203	2.471E-01	2.085E+00	2.088E+00	NOT IDENT.
BI-207	4.148E-03	2.953E-02	2.959E-02	FAIL ABUN
PB-210	-1.075E+00	2.375E+00	2.424E+00	NOT IDENT.
BI-211	2.572E+00	4.479E-01	1.243E+00	FAIL ABUN
PB-211	6.406E-01	9.247E-01	9.687E-01	FAIL ABUN
BI-212	7.755E-01	8.926E-01	9.586E-01	FAIL ABUN
RN-219	3.362E-01	4.487E-01	4.736E-01	FAIL ABUN
RA-223	-1.952E-01	4.839E-01	4.918E-01	FAIL ABUN
AC-227	4.606E-02	1.643E-01	1.656E-01	FAIL ABUN
TH-227	4.606E-02	1.643E-01	1.656E-01	FAIL ABUN
TH-229	6.036E-01	8.241E-01	8.679E-01	FAIL ABUN
PA-231	-1.822E-01	3.441E-01	3.537E-01	NOT IDENT.
TH-231	-1.952E-01	4.839E-01	4.918E-01	FAIL ABUN
PA-233	2.428E-02	4.515E-02	4.646E-02	NOT IDENT.
PA-234	-2.679E-02	1.991E-01	1.995E-01	NOT IDENT.
PA-234M	2.492E+00	3.871E+00	4.031E+00	FAIL ABUN
TH-234	8.227E-01	1.000E+00	1.067E+00	FAIL ABUN
NP-237	2.428E-02	4.515E-02	4.646E-02	NOT IDENT.
NP-238	1.000E+41	1.359E+41	0.000E+00	SHORT HLIF
U-238	8.227E-01	1.000E+00	1.067E+00	FAIL ABUN
NP-239	-3.416E-02	1.776E-01	1.783E-01	NOT IDENT.
PU-239	7.510E+02	6.378E+02	7.221E+02	FAIL ABUN
AM-241	-6.995E-02	9.712E-02	1.021E-01	NOT IDENT.
CM-243	-6.220E-02	7.529E-02	8.034E-02	NOT IDENT.
BK-247	2.966E-02	5.666E-02	5.822E-02	FAIL ABUN
CM-247	3.387E-03	2.861E-02	2.865E-02	NOT IDENT.
CF-249	-2.697E-02	2.488E-02	2.769E-02	FAIL ABUN
CF-251	4.046E-02	8.107E-02	8.310E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	79.8228	87.09	84.5897	136.47	72.7609
45.60	90.6690	87.57	84.6464	140.51	0.0000
46.54	87.9756	88.03	84.7007	143.76	94.1019
49.72	0.0000	88.34	84.7372	144.24	81.0109
51.35	81.0969	88.47	84.7524	145.44	89.8777
51.87	83.1107	89.96	84.9265	152.43	77.2600
52.39	73.5198	1093.63	85.0053	153.25	0.0000
52.97	80.3800	91.11	0.0000	323.87	70.7607
53.44	73.6662	92.59	85.2301	156.02	0.0000
54.07	78.6056	93.35	85.3168	158.56	0.0000
57.36	0.0000	94.56	85.4550	159.00	63.3127
57.53	76.1766	94.65	85.4651	162.33	63.5127
57.98	75.2608	94.67	85.4676	162.66	0.0000
59.27	87.1897	94.87	85.4897	163.33	63.5718
59.32	95.0355	97.43	85.7779	165.86	76.0196
59.54	95.0725	98.43	85.8895	176.31	72.2305
60.96	103.1699	98.44	85.8908	176.60	0.0000
61.17	103.2076	99.53	86.0112	177.52	56.4903
62.93	110.4218	100.11	86.0756	181.07	0.0000
63.29	99.6382	102.03	75.1525	181.52	72.5625
63.58	99.6871	103.18	89.1992	184.41	86.3848
64.28	129.4501	103.37	99.3270	143.76	85.3443
66.73	102.1977	105.21	82.7887	193.51	56.1284
67.24	109.2346	105.31	86.9913	197.03	59.7402
125.81	121.2386	106.12	84.9798	198.01	62.8547
67.75	121.2516	106.47	90.2648	201.83	71.5096
69.67	97.7024	109.28	86.3624	203.43	69.2926
70.83	103.8762	111.00	89.7081	205.31	60.1448
72.81	112.2162	111.76	0.0000	210.85	74.3525
72.87	112.2264	114.06	78.3836	215.65	64.1384
74.66	100.4807	116.30	0.0000	222.11	65.6310
74.82	100.5051	116.74	81.8178	227.09	62.3496
74.97	100.5280	119.76	78.9045	227.38	57.6566
77.11	100.8560	121.12	79.0270	228.16	0.0000
78.74	101.1024	121.22	79.0354	228.18	52.9823
79.69	95.8447	121.78	79.0857	116.74	52.9823
80.12	91.8530	122.06	69.4895	235.69	63.1445
80.19	0.0000	122.92	94.1694	235.96	63.1567
80.57	83.1280	123.07	87.7631	238.63	62.8849
81.00	79.1229	265.00	62.8328	238.98	0.0000
81.07	79.1313	125.81	57.2567	240.99	62.9925
81.75	93.4263	127.23	90.3203	242.00	63.0386
83.79	96.4181	127.91	90.3882	244.70	54.0243
84.00	96.4470	129.30	90.5253	252.40	0.0000
85.43	77.5870	131.20	76.3137	252.80	47.9431
86.55	80.4360	133.02	76.8231	254.15	0.0000
86.79	80.4630	133.52	80.1121	256.23	43.2521
86.94	84.5720	136.00	68.3833	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	41.0858	355.39	0.0000	584.27	30.2799
264.80	49.5496	356.01	33.2228	595.83	0.0000
265.00	45.9298	364.49	0.0000	427.87	19.0446
268.22	60.5667	366.42	0.0000	602.52	0.0000
269.46	56.9800	372.51	32.6640	604.72	28.6121
270.03	44.8736	375.05	28.4044	607.14	31.5015
271.23	57.0475	377.52	40.5082	609.32	28.6609
273.65	0.0000	356.01	38.0497	610.33	25.8047
276.40	41.4105	388.16	39.8682	614.28	25.8431
277.37	49.9675	388.63	0.0000	618.01	21.0869
277.60	49.9750	391.69	22.5760	620.36	18.2277
278.00	54.8657	264.66	26.1694	621.93	19.1984
279.20	48.8074	401.81	23.5662	630.19	0.0000
279.54	63.4639	402.40	23.5734	631.29	11.5586
279.70	63.4702	404.85	28.8475	633.25	23.1338
280.46	41.5205	410.95	36.8278	634.78	0.0000
283.69	44.0552	413.71	32.4887	635.95	12.5435
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	52.6805	423.72	0.0000	645.85	15.4935
285.90	0.0000	427.09	33.5871	657.76	21.8811
287.50	39.2568	427.87	29.1791	657.90	0.0000
290.67	36.0579	433.94	23.9436	661.66	19.4767
293.27	0.0000	439.40	32.0090	664.57	0.0000
351.93	39.4492	453.88	25.0662	666.33	0.0000
295.96	32.8898	463.37	31.4709	666.50	0.0000
879.38	39.5332	468.07	20.2748	667.71	0.0000
299.98	37.0944	473.00	0.0000	677.62	12.7313
300.09	37.0972	475.06	25.3112	685.70	0.0000
300.13	37.0981	476.78	20.8077	695.00	0.0000
301.36	53.2146	477.60	25.3403	696.49	23.6582
302.85	43.3537	482.18	22.6720	696.51	23.6582
256.23	27.2791	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	20.7069
306.78	57.1182	497.08	31.9502	697.49	18.7356
308.46	27.3456	505.52	19.2406	702.65	17.7810
311.90	33.6305	507.63	0.0000	706.68	10.3864
316.51	32.4754	511.00	29.3880	711.68	20.8077
319.41	0.0000	514.00	26.2073	720.70	0.0000
320.08	0.0000	514.00	26.2073	721.93	0.0000
321.04	40.0781	520.40	21.2078	722.78	19.3937
323.87	51.4364	520.69	0.0000	722.91	20.8864
325.23	43.9444	522.65	0.0000	723.31	20.8889
328.76	0.0000	527.90	0.0000	724.19	23.8799
333.37	42.8922	528.26	17.5775	727.33	18.9250
333.97	40.3828	529.59	14.8099	733.00	16.4651
334.37	40.3926	529.87	0.0000	735.93	15.9818
338.28	32.8928	531.02	0.0000	333.97	18.9876
338.32	32.8936	537.26	0.0000	739.50	0.0000
311.90	32.9340	546.56	0.0000	747.24	15.0385
340.48	32.9340	552.55	26.1634	748.06	13.5379
340.55	0.0000	563.25	17.8303	752.31	9.0377
344.28	32.1591	569.33	31.0436	753.82	0.0000
345.93	33.0364	946.00	31.9871	756.73	15.6882
351.06	30.5830	569.70	31.9884	756.80	15.6882
351.93	30.5984	583.19	30.2669	884.68	12.0957

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	22.6932	1274.44	21.0171	1620.50	6.4706
766.42	22.1925	1001.03	14.5684	1621.92	5.5477
766.84	22.1960	1002.74	16.1945	1678.03	0.0000
772.60	0.0000	1004.73	19.4436	1690.97	4.6796
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	4.7385
778.90	21.2683	1028.54	0.0000	1063.66	1.2648
783.70	0.0000	1037.84	11.9838	1771.35	3.7952
785.37	14.2074	1038.76	0.0000	1791.20	0.0000
792.07	19.8301	631.29	16.3770	1808.65	3.8188
794.95	18.3215	1048.07	0.0000	1810.72	0.0000
795.86	18.3267	1049.04	18.5716	1836.06	3.8359
810.06	15.3387	1050.41	4.3714		
810.29	15.3400	1063.66	9.8687		
344.28	10.2271	1077.00	0.0000		
810.76	10.2283	1077.34	16.5027		
815.77	0.0000	1085.87	12.1279		
1048.07	0.0000	1093.63	12.1503		
832.01	22.6472	1099.45	14.3806		
834.85	11.3330	1112.07	15.5335		
835.71	12.3667	1112.84	15.5369		
836.80	0.0000	1115.54	11.6595		
846.75	0.0000	1120.29	16.6760		
846.77	14.4751	1120.55	16.6772		
856.80	0.0000	1221.41	16.6797		
860.56	14.5338	1129.67	13.3711		
871.09	14.5788	1131.51	0.0000		
873.19	13.5454	1147.95	0.0000		
875.33	0.0000	1173.23	20.2617		
879.38	13.5697	1177.95	19.1568		
880.51	10.4415	1189.05	19.2052		
883.24	7.3147	1204.77	21.5420		
884.68	15.6812	1221.41	22.7604		
889.28	9.4211	1231.02	20.5283		
894.76	23.0653	1235.36	0.0000		
898.04	15.7410	1238.28	18.2773		
900.72	25.2041	1260.41	0.0000		
903.28	22.0698	1271.87	8.0550		
911.20	22.1194	1274.44	10.3623		
912.08	22.1245	1274.54	10.3630		
923.98	0.0000	1291.59	12.7125		
926.50	11.6356	1298.22	0.0000		
929.11	19.0540	1312.11	0.0000		
937.49	11.1404	1332.49	13.9883		
944.13	0.0000	1362.66	0.0000		
946.00	15.9515	1365.19	7.9222		
949.00	12.7720	1368.63	0.0000		
667.71	0.0000	1384.29	6.1857		
962.31	11.2156	1408.01	8.8788		
964.08	17.0983	1457.56	0.0000		
966.17	17.1081	1460.82	9.8694		
911.20	17.1211	1489.16	9.9231		
968.97	17.1211	1505.03	4.5242		
983.53	0.0000	1584.12	3.6731		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 06:01:10.66

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621363.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM11.CNF;517
Background date  : 2-OCT-2016 11:00:34.
Sample date      : 12-SEP-2016 00:00:00 Acquisition date : 3-OCT-2016 05:45:34.
Sample ID        : G1203621363 Sample quantity : 1.15000E+02 GRAM
Detector name     : GAM11 Detector geometry: CAN
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:06.48 0.7%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID         : 1596252 Detector SN# :
Matrix Spike ID  : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.43*	11869	6185	0.84	92.73	88	9	1.32E+01	1.5	
2	5	58.09	828	4025	1.41	116.07	113	12	9.20E-01	15.0	1.37E+01
3	5	59.50	23283	2291	0.88	118.90	113	12	2.59E+01	0.7	
4	0	79.25	191	1329	1.39	158.42	155	8	2.12E-01	33.9	
5	0	83.11*	164	1277	1.78	166.16	163	8	1.82E-01	38.6	
6	0	87.94	3417	1521	0.83	175.82	171	10	3.80E+00	2.7	
7	0	122.04	207	982	0.74	244.06	241	8	2.30E-01	27.1	
8	0	279.02*	95	512	1.69	558.24	555	7	1.06E-01	41.0	
9	0	346.35	90	554	1.26	692.98	689	8	9.98E-02	46.9	
10	0	351.38*	72	611	2.18	703.04	700	9	8.05E-02	62.6	
11	0	484.34	47	493	1.68	969.09	966	8	5.26E-02	82.2	
12	0	523.51	93	318	1.14	1047.47	1044	8	1.03E-01	35.0	
13	0	661.65*	14716	578	1.39	1323.87	1317	15	1.64E+01	0.9	
14	0	747.77	67	337	0.83	1496.19	1490	12	7.41E-02	56.5	
15	0	754.57	53	257	1.47	1509.78	1505	8	5.85E-02	55.0	
16	0	812.46	29	384	1.80	1625.61	1618	11	3.23E-02	132.5	
17	0	950.54	56	457	1.94	1901.83	1895	10	6.17E-02	73.4	
18	0	962.27*	28	368	0.94	1925.31	1923	8	3.14E-02	118.8	
19	0	1116.17	117	334	1.16	2233.16	2228	12	1.30E-01	33.1	
20	0	1121.69*	12	194	0.97	2244.20	2243	8	1.29E-02	209.7	
21	0	1173.30	9325	342	1.78	2347.45	2338	17	1.04E+01	1.1	
22	0	1248.71	6	33	0.51	2498.28	2493	8	7.14E-03	161.0	
23	0	1332.59*	8448	127	1.84	2666.03	2657	19	9.39E+00	1.1	
24	0	1529.97	11	12	1.19	3060.79	3053	13	1.22E-02	73.6	
25	0	1609.64	15	9	3.90	3220.12	3214	12	1.65E-02	48.1	
26	0	1647.87	8	14	3.49	3296.57	3289	11	9.09E-03	94.5	
27	0	1795.57	7	14	1.34	3591.92	3587	9	7.22E-03	109.2	
28	0	1916.83	8	7	0.64	3834.38	3825	14	8.89E-03	78.6	
29	0	1928.89	19	3	0.75	3858.50	3851	14	2.07E-02	31.4	

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

VMS Nuclide Identification Report V3.1 Generated 3-OCT-2016 06:01:12

Configuration	: DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621363.CNF;1		
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4		
Sample title	: MXR1		
Sample date	: 12-SEP-2016 00:00:00	Acquisition date	: 3-OCT-2016 05:45:34
Sample ID	: G1203621363	Sample quantity	: 115.00 GRAM
Sample type	: SOLID	Sample geometry	:
Detector name	: GAMMA11	Detector geometry	: CAN
Elapsed live time	: 0 00:15:00.00	Elapsed real time	: 0 00:15:06.48 0.7%
Energy tolerance	: 1.50 keV	Half life ratio	: 10.00
Errors propagated	: No	Systematic Error	: 0.00 %
Efficiency type	: Linear	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Interference Report

No interference correction performed

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
CO-57	122.06	217	85.60*	7.219E+00	9.181E-01	9.692E-01	54.18
	136.47	-----	10.68	7.146E+00	-----	Line Not Found	-----
CO-60	1173.23	8882	99.85	1.491E+00	1.558E+02	1.570E+02	2.26
	1332.49	8001	99.98*	1.340E+00	1.559E+02	1.571E+02	2.27
ZN-65	1115.54	112	50.60*	1.552E+00	3.724E+00	3.955E+00	66.10
CD-109	88.03	3628	3.70*	6.296E+00	4.067E+02	4.199E+02	5.48
SN-126	64.28	-----	9.60	4.012E+00	-----	Line Not Found	-----
	86.94	3628	8.90	6.296E+00	1.691E+02	1.691E+02	5.48
	87.57	3628	37.00*	6.296E+00	4.067E+01	4.067E+01	5.48
BA-137M	661.66	14372	89.90*	2.339E+00	1.785E+02	1.787E+02	1.80
CS-137	661.66	14372	85.10*	2.339E+00	1.886E+02	1.888E+02	1.80
PM-147	121.22	217	0.00*	7.219E+00	2.758E+04	2.800E+04	54.18
HG-203	70.83	-----	3.69	4.810E+00	-----	Line Not Found	-----
	72.87	-----	6.19	5.033E+00	-----	Line Not Found	-----
	279.20	96	81.56*	4.692E+00	6.570E-01	9.012E-01	82.00
PB-210	46.54	12924	4.25*	1.359E+00	5.843E+03	5.854E+03	3.02
BI-211	72.87	-----	1.23	5.033E+00	-----	Line Not Found	-----
	351.06	73	12.92*	3.889E+00	3.777E+00	3.777E+00	125.27
AM-241	59.54	25108	35.90*	3.356E+00	5.441E+02	5.442E+02	1.46

Flag: "*" = Keyline


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*****
*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                          *
*                               Charleston, SC 29407                      *
*                               *                                           *
*****
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                           *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621363.CNF;1 *
* Acquisition date   : 3-OCT-2016 05:45:34 Sensitivity      : 3.000          *
* Detector ID        : GAM11 Energy tolerance: 1.500        *
* Elapsed live time  : 0 00:15:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:15:06.48 Half life ratio : *****      *
* Sample date       : 12-SEP-2016 00:00:00 Analyst initials: MXR1      *
* Sample ID         : G1203621363 Sample Quantity : 1.1500E+02 GRAM *
* Batch Number      : 1596252 Wet Weight      : 0.00000      *
* Wet wt corr       : 1.00000 Dry Weight      : 0.00000      *
* Nuclide Library    : SOLID.NLB;6                                         *
*****
*                               CALIBRATION INFORMATION                   *
*                               *                                           *
* Eff. Cal. date    : 2-AUG-2016 10:31:39 Eff. Geometry   : CAN          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM11 CAN.CNF;14        *
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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
CO-57	9.692E-01	5.146E-01	4.902E-01
CO-60	1.571E+02	3.493E+00	7.217E-01
ZN-65	3.955E+00	2.562E+00	2.638E+00
CD-109	4.199E+02	2.253E+01	1.295E+01
SN-126	4.067E+01	2.182E+00	1.260E+00
BA-137M	1.787E+02	3.146E+00	9.642E-01
CS-137	1.888E+02	3.323E+00	1.019E+00
PM-147	2.800E+04	1.487E+04	1.400E+04
HG-203	9.012E-01	7.241E-01	8.785E-01
PB-210	5.854E+03	1.732E+02	1.041E+02
BI-211	3.777E+00	4.636E+00	4.860E+00
AM-241	5.442E+02	7.766E+00	4.131E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	2.361E+00	6.023E+00	1.078E+01	NOT IDENT.
NA-22	-1.262E-01	3.311E-01	5.897E-01	NOT IDENT.
NA-24	0.000E+00	4.671E+09	0.000E+00	SHORT HLIF
AL-26	3.251E-01	2.787E-01	6.182E-01	NOT IDENT.
K-40	-1.005E+00	2.190E+00	3.961E+00	NOT IDENT.
SC-46	6.565E-01	8.353E-01	1.452E+00	FAIL ABUN
V-48	-2.380E-01	1.841E+00	3.056E+00	NOT IDENT.
CR-51	1.364E-01	5.498E+00	1.003E+01	NOT IDENT.
MN-54	8.471E-03	6.506E-01	1.105E+00	NOT IDENT.
CO-56	6.011E-01	7.259E-01	1.279E+00	NOT IDENT.
MN-56	0.000E+00	1.223E+41	0.000E+00	SHORT HLIF
CO-58	1.392E-01	7.196E-01	1.237E+00	NOT IDENT.
FE-59	7.674E-01	1.801E+00	3.255E+00	NOT IDENT.
GE-68	7.808E+00	2.304E+01	4.163E+01	NOT IDENT.
AS-73	-1.905E+01	1.565E+01	2.782E+01	NOT IDENT.
AS-74	-4.548E-01	1.701E+00	2.948E+00	NOT IDENT.
SE-75	2.961E-01	6.057E-01	1.029E+00	FAIL ABUN
BR-77	8.649E+01	6.523E+02	1.102E+03	NOT IDENT.

SR-82	-3.962E+00	6.319E+00	1.051E+01	NOT IDENT.
RB-83	-1.573E-01	1.275E+00	2.005E+00	NOT IDENT.
KR-85	-1.076E+01	1.029E+02	1.809E+02	NOT IDENT.
SR-85	-6.062E-02	5.815E-01	1.023E+00	NOT IDENT.
RB-86	1.005E+00	1.787E+01	3.196E+01	NOT IDENT.
Y-88	-7.479E-02	3.186E-01	5.777E-01	NOT IDENT.
Y-91	4.385E+01	2.053E+02	3.793E+02	NOT IDENT.
NB-94	-4.242E-02	4.528E-01	7.821E-01	NOT IDENT.
NB-95	-3.273E-01	6.407E-01	1.074E+00	NOT IDENT.
NB-95M	7.626E-01	1.537E+00	2.627E+00	NOT IDENT.
ZR-95	2.396E-01	1.267E+00	1.971E+00	NOT IDENT.
NB-97	0.000E+00	1.088E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	9.912E+09	0.000E+00	SHORT HLIF
MO-99	6.896E+01	8.901E+02	1.539E+03	NOT IDENT.
TC-99M	0.000E+00	7.650E+24	0.000E+00	SHORT HLIF
RH-101	-1.543E-01	3.223E-01	5.560E-01	NOT IDENT.
RH-102	3.538E-02	8.329E-01	1.455E+00	NOT IDENT.
RU-103	4.764E-01	7.050E-01	1.277E+00	NOT IDENT.
RH-106	2.461E+00	4.742E+00	8.469E+00	NOT IDENT.
RU-106	2.461E+00	4.742E+00	8.469E+00	NOT IDENT.
AG-108M	4.979E-01	5.191E-01	9.483E-01	NOT IDENT.
AG-110M	-1.126E+00	9.986E-01	1.600E+00	NOT IDENT.
SN-113	-1.261E-01	6.918E-01	1.235E+00	NOT IDENT.
CD-115	1.159E+03	1.191E+03	1.992E+03	NOT IDENT.
SN-117M	1.978E-02	7.636E-01	1.322E+00	NOT IDENT.
TE-123M	-9.382E-02	3.048E-01	5.213E-01	NOT IDENT.
SB-124	1.480E-01	6.182E-01	1.244E+00	NOT IDENT.
SB-125	5.573E-01	1.533E+00	2.760E+00	NOT IDENT.
TE-125M	-7.839E+01	1.070E+02	1.848E+02	NOT IDENT.
I-126	-1.379E+00	5.035E+00	7.683E+00	FAIL ABUN
SB-126	2.324E+00	3.009E+00	5.384E+00	NOT IDENT.
SB-127	-1.079E+00	5.496E+01	9.550E+01	NOT IDENT.
I-131	-5.030E-01	2.815E+00	5.056E+00	FAIL ABUN
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	-2.361E+01	3.447E+01	5.667E+01	NOT IDENT.
BA-133	2.451E-01	6.569E-01	1.086E+00	NOT IDENT.
I-133	0.000E+00	1.131E+07	0.000E+00	SHORT HLIF
CS-134	-1.715E-01	6.811E-01	1.150E+00	NOT IDENT.
CS-135	1.285E+00	2.010E+00	3.430E+00	NOT IDENT.
I-135	0.000E+00	2.400E+23	0.000E+00	SHORT HLIF
CS-136	1.699E+00	2.537E+00	4.662E+00	NOT IDENT.
CE-139	9.897E-03	3.140E-01	5.423E-01	NOT IDENT.
BA-140	6.420E-01	5.536E+00	9.809E+00	NOT IDENT.
LA-140	-1.362E-01	7.487E-01	1.401E+00	NOT IDENT.
CE-141	4.788E-01	7.126E-01	1.266E+00	NOT IDENT.
CE-143	0.000E+00	3.547E+04	0.000E+00	SHORT HLIF
CE-144	1.131E-01	2.024E+00	3.544E+00	FAIL ABUN
PM-144	-6.812E-02	4.903E-01	8.444E-01	NOT IDENT.
PR-144	-5.151E+00	3.681E+01	6.339E+01	NOT IDENT.
PM-146	1.784E-01	7.527E-01	1.343E+00	FAIL ABUN
ND-147	-1.611E+00	1.189E+01	2.090E+01	NOT IDENT.
PM-149	8.191E+03	8.289E+03	1.428E+04	NOT IDENT.
EU-150	-4.957E-02	3.460E-01	6.263E-01	FAIL ABUN
EU-152	-1.397E-01	1.476E+00	2.403E+00	FAIL ABUN
GD-153	2.539E-01	8.941E-01	1.600E+00	NOT IDENT.
EU-154	-3.241E-01	9.387E-01	1.678E+00	FAIL ABUN
EU-155	1.291E-01	1.072E+00	1.904E+00	FAIL ABUN
TB-160	-1.035E+00	2.836E+00	4.706E+00	FAIL ABUN
HO-166M	-3.273E-01	8.291E-01	1.409E+00	FAIL ABUN
TM-171	-1.563E+01	3.027E+02	5.472E+02	NOT IDENT.
HF-172	-9.408E-01	2.096E+00	3.341E+00	FAIL ABUN
LU-172	-2.990E-01	1.151E+00	2.030E+00	FAIL ABUN
LU-176	1.367E-01	3.732E-01	6.249E-01	FAIL ABUN
HF-181	9.245E-02	8.533E-01	1.364E+00	FAIL ABUN
TA-182	7.318E-02	1.689E+00	3.091E+00	FAIL ABUN
RE-183	0.000E+00	7.846E+00	9.511E+00	FAIL ABUN
RE-184	1.196E+00	2.803E+00	4.798E+00	NOT IDENT.
W-188	-7.911E+01	1.058E+02	1.702E+02	NOT IDENT.
IR-192	-3.021E-01	5.300E-01	8.525E-01	NOT IDENT.
BI-207	5.956E-01	9.396E-01	1.718E+00	NOT IDENT.
TL-208	-4.315E-01	5.089E-01	8.616E-01	NOT IDENT.
PB-211	3.525E+00	1.102E+01	1.992E+01	NOT IDENT.
BI-212	-1.371E+00	7.064E+00	1.210E+01	NOT IDENT.
PB-212	-2.450E-02	7.074E-01	1.188E+00	NOT IDENT.
BI-214	1.150E-01	9.607E-01	1.693E+00	FAIL ABUN
PB-214	1.371E+00	1.683E+00	1.880E+00	FAIL ABUN
RN-219	4.541E-01	6.367E+00	1.143E+01	NOT IDENT.
RN-222	1.150E-01	9.607E-01	1.693E+00	FAIL ABUN

RA-223	2.893E+00	8.439E+00	1.551E+01	FAIL ABUN
RA-224	-1.636E+00	7.647E+00	1.273E+01	NOT IDENT.
RA-226	1.150E-01	9.607E-01	1.693E+00	FAIL ABUN
AC-227	1.333E+00	3.421E+00	5.792E+00	FAIL ABUN
TH-227	1.333E+00	3.421E+00	5.792E+00	FAIL ABUN
AC-228	-2.568E+00	2.820E+00	4.559E+00	NOT IDENT.
RA-228	-2.568E+00	2.820E+00	4.559E+00	NOT IDENT.
TH-228	-2.450E-02	7.074E-01	1.188E+00	NOT IDENT.
TH-229	-8.972E-01	6.039E+00	1.024E+01	FAIL ABUN
TH-230	1.150E-01	9.607E-01	1.693E+00	FAIL ABUN
PA-231	-7.880E-01	6.409E+00	1.054E+01	NOT IDENT.
TH-231	2.893E+00	8.439E+00	1.551E+01	FAIL ABUN
TH-232	-2.568E+00	2.820E+00	4.559E+00	NOT IDENT.
PA-233	1.358E-01	9.376E-01	1.553E+00	NOT IDENT.
PA-234	-3.540E+00	7.560E+00	1.094E+01	NOT IDENT.
PA-234M	1.182E+02	8.249E+01	1.553E+02	NOT IDENT.
TH-234	2.714E+00	1.268E+01	2.156E+01	NOT IDENT.
U-234	1.150E-01	9.607E-01	1.693E+00	FAIL ABUN
U-235	6.448E-01	2.040E+00	3.586E+00	NOT IDENT.
NP-237	1.358E-01	9.376E-01	1.553E+00	NOT IDENT.
NP-238	0.000E+00	3.044E+03	0.000E+00	SHORT HLIF
U-238	2.714E+00	1.268E+01	2.156E+01	NOT IDENT.
NP-239	-1.961E-01	2.712E+00	4.764E+00	FAIL ABUN
PU-239	2.654E+03	3.394E+03	6.089E+03	NOT IDENT.
AM-243	-3.661E-01	5.147E-01	9.083E-01	NOT IDENT.
CM-243	-3.044E-01	1.095E+00	1.923E+00	FAIL ABUN
BK-247	3.790E-01	1.055E+00	1.783E+00	FAIL ABUN
CM-247	2.140E-01	5.785E-01	1.047E+00	FAIL ABUN
CF-249	3.677E-02	5.769E-01	1.040E+00	NOT IDENT.
CF-251	2.301E-01	1.383E+00	2.387E+00	NOT IDENT.
ANH-511	-1.054E-01	4.336E-01	7.712E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
CO-57	122.06	217	85.60*	7.219E+00	9.181E-01	9.692E-01	54.18
	136.47	-----	10.68	7.146E+00	-----	Line Not Found	-----
CO-60	1173.23	8882	99.85	1.491E+00	1.558E+02	1.570E+02	2.26
	1332.49	8001	99.98*	1.340E+00	1.559E+02	1.571E+02	2.27
ZN-65	1115.54	112	50.60*	1.552E+00	3.724E+00	3.955E+00	66.10
CD-109	88.03	3628	3.70*	6.296E+00	4.067E+02	4.199E+02	5.48
SN-126	64.28	-----	9.60	4.012E+00	-----	Line Not Found	-----
	86.94	3628	8.90	6.296E+00	1.691E+02	1.691E+02	5.48
	87.57	3628	37.00*	6.296E+00	4.067E+01	4.067E+01	5.48
BA-137M	661.66	14372	89.90*	2.339E+00	1.785E+02	1.787E+02	1.80
CS-137	661.66	14372	85.10*	2.339E+00	1.886E+02	1.888E+02	1.80
PM-147	121.22	217	0.00*	7.219E+00	2.758E+04	2.800E+04	54.18
HG-203	70.83	-----	3.69	4.810E+00	-----	Line Not Found	-----
	72.87	-----	6.19	5.033E+00	-----	Line Not Found	-----
	279.20	96	81.56*	4.692E+00	6.570E-01	9.012E-01	82.00
PB-210	46.54	12924	4.25*	1.359E+00	5.843E+03	5.854E+03	3.02
BI-211	72.87	-----	1.23	5.033E+00	-----	Line Not Found	-----
	351.06	73	12.92*	3.889E+00	3.777E+00	3.777E+00	125.27
AM-241	59.54	25108	35.90*	3.356E+00	5.441E+02	5.442E+02	1.46

Flag: "*" = Keyline

Total number of lines in spectrum 29
Number of unidentified lines 10
Number of lines tentatively identified by NID 19 65.52%

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	9.181E-01	9.692E-01	5.251E-01	54.18	
CO-60	5.27Y	1.01	1.559E+02	1.571E+02	0.036E+02	2.27	
ZN-65	244.06D	1.06	3.724E+00	3.955E+00	2.614E+00	66.10	
CD-109	461.40D	1.03	4.067E+02	4.199E+02	0.230E+02	5.48	
SN-126	2.30E+05Y	1.00	4.067E+01	4.067E+01	0.223E+01	5.48	
BA-137M	30.08Y	1.00	1.785E+02	1.787E+02	0.032E+02	1.80	
CS-137	30.08Y	1.00	1.886E+02	1.888E+02	0.034E+02	1.80	
PM-147	2.62Y	1.02	2.758E+04	2.800E+04	1.517E+04	54.18	
HG-203	46.59D	1.37	6.570E-01	9.012E-01	7.389E-01	82.00	
PB-210	22.20Y	1.00	5.843E+03	5.854E+03	0.177E+03	3.02	
BI-211	7.04E+08Y	1.00	3.777E+00	3.777E+00	4.731E+00	125.27	
AM-241	432.60Y	1.00	5.441E+02	5.442E+02	0.079E+02	1.46	

Total Activity : 3.494E+04 3.540E+04

Grand Total Activity : 3.494E+04 3.540E+04

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	58.09	894	4344	1.41	116.07	113	12	9.20E-01	30.0	3.15E+00	T
0	79.25	204	1417	1.39	158.42	155	8	2.12E-01	67.7	5.65E+00	T
0	83.11	174	1359	1.78	166.16	163	8	1.82E-01	77.2	5.96E+00	T
0	346.35	90	556	1.26	692.98	689	8	9.98E-02	93.8	3.94E+00	T
0	484.34	47	488	1.68	969.09	966	8	5.26E-02	****	2.99E+00	
0	523.51	92	314	1.14	1047.47	1044	8	1.03E-01	70.0	2.81E+00	T
0	747.77	65	328	0.83	1496.19	1490	12	7.41E-02	****	2.13E+00	T
0	754.57	51	250	1.47	1509.78	1505	8	5.85E-02	****	2.11E+00	T
0	812.46	28	372	1.80	1625.61	1618	11	3.23E-02	****	1.99E+00	
0	950.54	53	440	1.94	1901.83	1895	10	6.17E-02	****	1.76E+00	
0	962.27	27	353	0.94	1925.31	1923	8	3.14E-02	****	1.75E+00	T
0	1121.69	11	185	0.97	2244.20	2243	8	1.29E-02	****	1.55E+00	T
0	1248.71	6	31	0.51	2498.28	2493	8	7.14E-03	****	1.42E+00	
0	1529.97	10	11	1.19	3060.79	3053	13	1.22E-02	****	1.19E+00	
0	1609.64	14	9	3.90	3220.12	3214	12	1.65E-02	96.2	1.13E+00	
0	1647.87	8	13	3.49	3296.57	3289	11	9.09E-03	****	1.11E+00	
0	1795.57	6	13	1.34	3591.92	3587	9	7.22E-03	****	1.02E+00	
0	1916.83	7	7	0.64	3834.38	3825	14	8.89E-03	****	9.58E-01	
0	1928.89	17	3	0.75	3858.50	3851	14	2.07E-02	62.7	9.52E-01	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1203621363.CNF;1  *
* Acquisition date   : 3-OCT-2016 05:45:34 Sensitivity      : 3.000          *
* Detector ID        : GAM11 Energy tolerance: 1.500        *
* Elapsed live time  : 0 00:15:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 00:15:06.48 Half life ratio  : *****      *
* Sample date        : 12-SEP-2016 00:00:00 Nuclide Library : SOLID      *
* Sample ID          : G1203621363 Analyst initials: MXR1        *
* Batch Number       : 1596252 Sample Quantity : 1.1500E+02 GRAM  *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000        *
*                               Dry Weight      : 0.00000        *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 2-AUG-2016 10:31:39 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM11 CAN.CNF;14      *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
CO-57	2.391E-01
CO-60	3.345E-01
ZN-65	1.272E+00
CD-109	6.319E+00
SN-126	6.146E-01
BA-137M	4.655E-01
CS-137	4.917E-01
PM-147	6.825E+03
HG-203	4.267E-01
PB-210	5.148E+01
BI-211	2.360E+00
AM-241	2.036E+00

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

Nuclide	Lc (pCi/GRAM)	
BE-7	5.246E+00	NOT IDENT.
NA-22	2.692E-01	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.745E-01	NOT IDENT.
K-40	1.714E+00	NOT IDENT.
SC-46	7.038E-01	FAIL ABUN
V-48	1.477E+00	NOT IDENT.
CR-51	4.873E+00	NOT IDENT.
MN-54	5.338E-01	NOT IDENT.
CO-56	6.177E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-58	5.971E-01	NOT IDENT.
FE-59	1.573E+00	NOT IDENT.
GE-68	2.010E+01	NOT IDENT.
AS-73	1.375E+01	NOT IDENT.
AS-74	1.420E+00	NOT IDENT.
SE-75	5.008E-01	FAIL ABUN
BR-77	5.371E+02	NOT IDENT.
SR-82	5.054E+00	NOT IDENT.

RB-83	9.700E-01	NOT IDENT.
KR-85	8.764E+01	NOT IDENT.
SR-85	4.954E-01	NOT IDENT.
RB-86	1.542E+01	NOT IDENT.
Y-88	2.483E-01	NOT IDENT.
Y-91	1.778E+02	NOT IDENT.
NB-94	3.753E-01	NOT IDENT.
NB-95	5.158E-01	NOT IDENT.
NB-95M	1.280E+00	NOT IDENT.
ZR-95	9.469E-01	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	7.409E+02	NOT IDENT.
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.707E-01	NOT IDENT.
RH-102	7.016E-01	NOT IDENT.
RU-103	6.192E-01	NOT IDENT.
RH-106	4.085E+00	NOT IDENT.
RU-106	4.085E+00	NOT IDENT.
AG-108M	4.624E-01	NOT IDENT.
AG-110M	7.730E-01	NOT IDENT.
SN-113	6.005E-01	NOT IDENT.
CD-115	9.620E+02	NOT IDENT.
SN-117M	6.433E-01	NOT IDENT.
TE-123M	2.537E-01	NOT IDENT.
SB-124	5.351E-01	NOT IDENT.
SB-125	1.344E+00	NOT IDENT.
TE-125M	9.002E+01	NOT IDENT.
I-126	3.699E+00	FAIL ABUN
SB-126	2.594E+00	NOT IDENT.
SB-127	4.583E+01	NOT IDENT.
I-131	2.457E+00	FAIL ABUN
I-132	0.000E+00	SHORT HLIF
TE-132	2.761E+01	NOT IDENT.
BA-133	5.285E-01	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.544E-01	NOT IDENT.
CS-135	1.670E+00	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	2.249E+00	NOT IDENT.
CE-139	2.638E-01	NOT IDENT.
BA-140	4.739E+00	NOT IDENT.
LA-140	5.982E-01	NOT IDENT.
CE-141	6.166E-01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	1.725E+00	FAIL ABUN
PM-144	4.059E-01	NOT IDENT.
PR-144	3.047E+01	NOT IDENT.
PM-146	6.546E-01	FAIL ABUN
ND-147	1.008E+01	NOT IDENT.
PM-149	6.947E+03	NOT IDENT.
EU-150	3.041E-01	FAIL ABUN
EU-152	1.168E+00	FAIL ABUN
GD-153	7.811E-01	NOT IDENT.
EU-154	7.666E-01	FAIL ABUN
EU-155	9.281E-01	FAIL ABUN
TB-160	2.278E+00	FAIL ABUN
HO-166M	6.753E-01	FAIL ABUN
TM-171	2.703E+02	NOT IDENT.
HF-172	1.626E+00	FAIL ABUN
LU-172	9.793E-01	FAIL ABUN
LU-176	3.038E-01	FAIL ABUN
HF-181	6.617E-01	FAIL ABUN
TA-182	1.443E+00	FAIL ABUN
RE-183	4.717E+00	FAIL ABUN
RE-184	2.324E+00	NOT IDENT.
W-188	8.272E+01	NOT IDENT.
IR-192	4.141E-01	NOT IDENT.
BI-207	8.299E-01	NOT IDENT.
TL-208	4.148E-01	NOT IDENT.
PB-211	9.694E+00	NOT IDENT.
BI-212	5.810E+00	NOT IDENT.
PB-212	5.790E-01	NOT IDENT.
BI-214	8.155E-01	FAIL ABUN
PB-214	9.149E-01	FAIL ABUN
RN-219	5.561E+00	NOT IDENT.
RN-222	8.155E-01	FAIL ABUN
RA-223	7.545E+00	FAIL ABUN

RA-224	6.203E+00	NOT IDENT.
RA-226	8.155E-01	FAIL ABUN
AC-227	2.823E+00	FAIL ABUN
TH-227	2.823E+00	FAIL ABUN
AC-228	2.205E+00	NOT IDENT.
RA-228	2.205E+00	NOT IDENT.
TH-228	5.790E-01	NOT IDENT.
TH-229	4.989E+00	FAIL ABUN
TH-230	8.155E-01	FAIL ABUN
PA-231	5.123E+00	NOT IDENT.
TH-231	7.545E+00	FAIL ABUN
TH-232	2.205E+00	NOT IDENT.
PA-233	7.555E-01	NOT IDENT.
PA-234	5.305E+00	NOT IDENT.
PA-234M	7.521E+01	NOT IDENT.
TH-234	1.053E+01	NOT IDENT.
U-234	8.155E-01	FAIL ABUN
U-235	1.747E+00	NOT IDENT.
NP-237	7.555E-01	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
U-238	1.053E+01	NOT IDENT.
NP-239	2.320E+00	FAIL ABUN
PU-239	2.967E+03	NOT IDENT.
AM-243	4.441E-01	NOT IDENT.
CM-243	9.374E-01	FAIL ABUN
BK-247	8.676E-01	FAIL ABUN
CM-247	5.098E-01	FAIL ABUN
CF-249	5.051E-01	NOT IDENT.
CF-251	1.162E+00	NOT IDENT.
ANH-511	3.734E-01	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
CO-57	9.692E-01	5.165E-01	5.165E-01
CO-60	1.571E+02	6.753E+00	6.753E+00
ZN-65	3.955E+00	2.566E+00	2.566E+00
CD-109	4.199E+02	4.101E+01	4.101E+01
SN-126	4.067E+01	3.337E+00	3.337E+00
BA-137M	1.787E+02	8.302E+00	8.302E+00
CS-137	1.888E+02	8.751E+00	8.751E+00
PM-147	2.800E+04	1.492E+04	1.492E+04
HG-203	9.012E-01	7.253E-01	7.253E-01
PB-210	5.854E+03	5.374E+02	5.374E+02
BI-211	3.777E+00	4.639E+00	4.639E+00
AM-241	5.442E+02	4.078E+01	4.078E+01

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	2.361E+00	6.024E+00	6.117E+00	NOT IDENT.
NA-22	-1.262E-01	3.311E-01	3.359E-01	NOT IDENT.
NA-24	-3.221E+08	4.671E+09	4.673E+09	SHORT HLIF
AL-26	3.251E-01	2.795E-01	3.156E-01	NOT IDENT.
K-40	-1.005E+00	2.191E+00	2.237E+00	NOT IDENT.
SC-46	6.565E-01	8.358E-01	8.866E-01	FAIL ABUN
V-48	-2.380E-01	1.841E+00	1.844E+00	NOT IDENT.
CR-51	1.364E-01	5.498E+00	5.498E+00	NOT IDENT.
MN-54	8.471E-03	6.506E-01	6.506E-01	NOT IDENT.
CO-56	6.011E-01	7.264E-01	7.753E-01	NOT IDENT.
MN-56	1.000E+41	1.224E+41	0.000E+00	SHORT HLIF
CO-58	1.392E-01	7.197E-01	7.224E-01	NOT IDENT.
FE-59	7.674E-01	1.801E+00	1.834E+00	NOT IDENT.
GE-68	7.808E+00	2.304E+01	2.331E+01	NOT IDENT.
AS-73	-1.905E+01	1.613E+01	1.828E+01	NOT IDENT.
AS-74	-4.548E-01	1.702E+00	1.714E+00	NOT IDENT.
SE-75	2.961E-01	6.058E-01	6.204E-01	FAIL ABUN
BR-77	8.649E+01	6.544E+02	6.556E+02	NOT IDENT.

SR-82	-3.962E+00	6.321E+00	6.568E+00	NOT IDENT.
RB-83	-1.573E-01	1.275E+00	1.277E+00	NOT IDENT.
KR-85	-1.076E+01	1.029E+02	1.030E+02	NOT IDENT.
SR-85	-6.062E-02	5.815E-01	5.822E-01	NOT IDENT.
RB-86	1.005E+00	1.787E+01	1.788E+01	NOT IDENT.
Y-88	-7.479E-02	3.186E-01	3.204E-01	NOT IDENT.
Y-91	4.385E+01	2.053E+02	2.062E+02	NOT IDENT.
NB-94	-4.242E-02	4.528E-01	4.532E-01	NOT IDENT.
NB-95	-3.273E-01	6.409E-01	6.577E-01	NOT IDENT.
NB-95M	7.626E-01	1.538E+00	1.576E+00	NOT IDENT.
ZR-95	2.396E-01	1.267E+00	1.272E+00	NOT IDENT.
NB-97	1.000E+41	1.089E+41	0.000E+00	SHORT HLIF
ZR-97	-2.917E+09	9.913E+09	1.000E+10	SHORT HLIF
MO-99	6.896E+01	8.901E+02	8.907E+02	NOT IDENT.
TC-99M	-5.812E+23	7.650E+24	0.000E+00	SHORT HLIF
RH-101	-1.543E-01	3.235E-01	3.309E-01	NOT IDENT.
RH-102	3.538E-02	8.329E-01	8.330E-01	NOT IDENT.
RU-103	4.764E-01	7.054E-01	7.374E-01	NOT IDENT.
RH-106	2.461E+00	4.745E+00	4.873E+00	NOT IDENT.
RU-106	2.461E+00	4.745E+00	4.873E+00	NOT IDENT.
AG-108M	4.979E-01	5.195E-01	5.659E-01	NOT IDENT.
AG-110M	-1.126E+00	1.000E+00	1.122E+00	NOT IDENT.
SN-113	-1.261E-01	6.918E-01	6.941E-01	NOT IDENT.
CD-115	1.159E+03	1.193E+03	1.302E+03	NOT IDENT.
SN-117M	1.978E-02	7.636E-01	7.637E-01	NOT IDENT.
TE-123M	-9.382E-02	3.048E-01	3.077E-01	NOT IDENT.
SB-124	1.480E-01	6.183E-01	6.218E-01	NOT IDENT.
SB-125	5.573E-01	1.533E+00	1.554E+00	NOT IDENT.
TE-125M	-7.839E+01	1.071E+02	1.128E+02	NOT IDENT.
I-126	-1.379E+00	5.036E+00	5.074E+00	FAIL ABUN
SB-126	2.324E+00	3.018E+00	3.195E+00	NOT IDENT.
SB-127	-1.079E+00	5.496E+01	5.496E+01	NOT IDENT.
I-131	-5.030E-01	2.815E+00	2.824E+00	FAIL ABUN
I-132	1.000E+41	3.210E+41	0.000E+00	SHORT HLIF
TE-132	-2.361E+01	3.453E+01	3.613E+01	NOT IDENT.
BA-133	2.451E-01	6.569E-01	6.662E-01	NOT IDENT.
I-133	-9.551E+06	1.139E+07	1.218E+07	SHORT HLIF
CS-134	-1.715E-01	6.812E-01	6.856E-01	NOT IDENT.
CS-135	1.285E+00	2.012E+00	2.094E+00	NOT IDENT.
I-135	1.294E+23	2.480E+23	0.000E+00	SHORT HLIF
CS-136	1.699E+00	2.541E+00	2.654E+00	NOT IDENT.
CE-139	9.897E-03	3.140E-01	3.141E-01	NOT IDENT.
BA-140	6.420E-01	5.536E+00	5.543E+00	NOT IDENT.
LA-140	-1.362E-01	7.487E-01	7.513E-01	NOT IDENT.
CE-141	4.788E-01	7.129E-01	7.449E-01	NOT IDENT.
CE-143	9.974E+03	3.547E+04	3.575E+04	SHORT HLIF
CE-144	1.131E-01	2.024E+00	2.025E+00	FAIL ABUN
PM-144	-6.812E-02	4.903E-01	4.913E-01	NOT IDENT.
PR-144	-5.151E+00	3.681E+01	3.688E+01	NOT IDENT.
PM-146	1.784E-01	7.528E-01	7.570E-01	FAIL ABUN
ND-147	-1.611E+00	1.189E+01	1.191E+01	NOT IDENT.
PM-149	8.191E+03	8.362E+03	9.141E+03	NOT IDENT.
EU-150	-4.957E-02	3.460E-01	3.467E-01	FAIL ABUN
EU-152	-1.397E-01	1.476E+00	1.477E+00	FAIL ABUN
GD-153	2.539E-01	8.943E-01	9.016E-01	NOT IDENT.
EU-154	-3.241E-01	9.388E-01	9.501E-01	FAIL ABUN
EU-155	1.291E-01	1.072E+00	1.073E+00	FAIL ABUN
TB-160	-1.035E+00	2.836E+00	2.874E+00	FAIL ABUN
HO-166M	-3.273E-01	8.293E-01	8.423E-01	FAIL ABUN
TM-171	-1.563E+01	3.027E+02	3.028E+02	NOT IDENT.
HF-172	-9.408E-01	2.102E+00	2.144E+00	FAIL ABUN
LU-172	-2.990E-01	1.152E+00	1.159E+00	FAIL ABUN
LU-176	1.367E-01	3.732E-01	3.783E-01	FAIL ABUN
HF-181	9.245E-02	8.533E-01	8.543E-01	FAIL ABUN
TA-182	7.318E-02	1.689E+00	1.690E+00	FAIL ABUN
RE-183	2.665E+01	8.325E+00	1.462E+01	FAIL ABUN
RE-184	1.196E+00	2.804E+00	2.856E+00	NOT IDENT.
W-188	-7.911E+01	1.062E+02	1.120E+02	NOT IDENT.
IR-192	-3.021E-01	5.302E-01	5.474E-01	NOT IDENT.
BI-207	5.956E-01	9.399E-01	9.775E-01	NOT IDENT.
TL-208	-4.315E-01	5.093E-01	5.452E-01	NOT IDENT.
PB-211	3.525E+00	1.102E+01	1.114E+01	NOT IDENT.
BI-212	-1.371E+00	7.065E+00	7.092E+00	NOT IDENT.
PB-212	-2.450E-02	7.074E-01	7.074E-01	NOT IDENT.
BI-214	1.150E-01	9.607E-01	9.621E-01	FAIL ABUN
PB-214	1.371E+00	1.684E+00	1.793E+00	FAIL ABUN
RN-219	4.541E-01	6.368E+00	6.371E+00	NOT IDENT.
RN-222	1.150E-01	9.607E-01	9.621E-01	FAIL ABUN

RA-223	2.893E+00	8.441E+00	8.541E+00	FAIL ABUN
RA-224	-1.636E+00	7.647E+00	7.683E+00	NOT IDENT.
RA-226	1.150E-01	9.607E-01	9.621E-01	FAIL ABUN
AC-227	1.333E+00	3.426E+00	3.478E+00	FAIL ABUN
TH-227	1.333E+00	3.426E+00	3.478E+00	FAIL ABUN
AC-228	-2.568E+00	2.823E+00	3.052E+00	NOT IDENT.
RA-228	-2.568E+00	2.823E+00	3.052E+00	NOT IDENT.
TH-228	-2.450E-02	7.074E-01	7.074E-01	NOT IDENT.
TH-229	-8.972E-01	6.039E+00	6.053E+00	FAIL ABUN
TH-230	1.150E-01	9.607E-01	9.621E-01	FAIL ABUN
PA-231	-7.880E-01	6.411E+00	6.421E+00	NOT IDENT.
TH-231	2.893E+00	8.441E+00	8.541E+00	FAIL ABUN
TH-232	-2.568E+00	2.823E+00	3.052E+00	NOT IDENT.
PA-233	1.358E-01	9.376E-01	9.396E-01	NOT IDENT.
PA-234	-3.540E+00	8.577E+00	8.724E+00	NOT IDENT.
PA-234M	1.182E+02	8.265E+01	9.835E+01	NOT IDENT.
TH-234	2.714E+00	1.269E+01	1.275E+01	NOT IDENT.
U-234	1.150E-01	9.607E-01	9.621E-01	FAIL ABUN
U-235	6.448E-01	2.040E+00	2.061E+00	NOT IDENT.
NP-237	1.358E-01	9.376E-01	9.396E-01	NOT IDENT.
NP-238	-2.836E+03	3.046E+03	3.304E+03	SHORT HLIF
U-238	2.714E+00	1.269E+01	1.275E+01	NOT IDENT.
NP-239	-1.961E-01	2.712E+00	2.713E+00	FAIL ABUN
PU-239	2.654E+03	3.396E+03	3.600E+03	NOT IDENT.
AM-243	-3.661E-01	5.152E-01	5.410E-01	NOT IDENT.
CM-243	-3.044E-01	1.095E+00	1.104E+00	FAIL ABUN
BK-247	3.790E-01	1.057E+00	1.071E+00	FAIL ABUN
CM-247	2.140E-01	5.796E-01	5.876E-01	FAIL ABUN
CF-249	3.677E-02	5.770E-01	5.772E-01	NOT IDENT.
CF-251	2.301E-01	1.383E+00	1.387E+00	NOT IDENT.
ANH-511	-1.054E-01	4.336E-01	4.362E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	2607.1199	87.09	526.4185	136.47	462.4787
45.60	2305.2644	87.57	526.9440	140.51	447.7479
46.54	2312.1226	88.03	527.4438	143.76	456.1200
49.72	1998.8229	88.34	527.7771	144.24	464.7412
51.35	2036.0985	88.47	527.9181	145.44	423.9873
51.87	2091.8289	89.96	598.8670	152.43	487.0103
52.39	2084.6348	90.64	558.0259	153.25	478.1124
52.97	2249.9666	91.11	535.8098	154.21	441.9241
53.44	2294.6055	92.59	485.7486	156.02	460.9651
54.07	2239.7058	93.35	575.0147	158.56	429.7643
57.36	0.0000	94.56	518.1766	159.00	449.0831
57.53	1544.4453	94.65	518.2677	162.33	436.2131
57.98	1546.3274	94.67	518.2885	162.66	436.4070
59.27	1551.7247	94.87	531.8596	163.33	443.1870
59.32	1551.9331	97.43	522.9874	165.86	419.0242
59.54	1552.8472	98.43	507.6409	176.31	455.0555
60.96	1558.7084	98.44	507.6530	176.60	455.2222
61.17	1559.5687	99.53	516.4120	177.52	431.8752
62.93	636.6469	100.11	537.2310	181.07	416.3553
63.29	569.5972	102.03	474.3099	181.52	443.8521
63.58	561.7068	103.18	481.1395	184.41	467.3179
64.28	596.0218	103.37	500.7175	185.72	471.3557
66.73	617.6526	105.21	494.6171	193.51	487.9491
67.24	625.6205	105.31	476.2035	197.03	496.6341
67.68	634.3989	106.12	486.6575	198.01	472.7295
67.75	652.5067	106.47	501.6041	201.83	432.3575
69.67	594.0779	109.28	509.0335	203.43	477.9187
70.83	641.0640	111.00	462.3766	205.31	458.7520
72.81	629.4874	111.76	499.4379	210.85	510.1346
72.87	629.5770	114.06	468.7961	215.65	553.6837
74.66	674.2770	116.30	461.6581	222.11	524.4224
74.82	669.9482	116.74	462.0022	227.09	501.9272
74.97	661.9428	119.76	495.3075	227.38	490.5913
77.11	588.8037	121.12	497.7583	228.16	513.9859
78.74	658.6654	121.22	497.8380	228.18	513.9995
79.69	660.0477	121.78	509.9864	235.69	449.6315
80.12	660.6736	122.06	510.2233	235.96	448.5966
80.19	660.7770	122.92	510.9417	238.63	470.7408
80.57	595.1940	123.07	511.0659	238.98	460.4400
81.00	595.7524	123.68	490.4684	240.99	485.8404
81.07	595.8406	125.81	467.9542	242.00	456.0076
81.75	596.7222	127.23	477.1027	244.70	495.8334
83.79	591.8694	127.91	436.1330	252.40	461.8872
84.00	592.1306	129.30	427.9627	252.80	464.4241
85.43	595.7939	131.20	484.1711	254.15	0.0000
86.55	525.8289	133.02	433.5213	256.23	454.1367
86.79	526.0895	133.52	439.9770	260.90	416.9625
86.94	526.2561	136.00	429.3574	264.66	401.7507

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.80	401.8022	364.49	397.0626	600.60	234.6748
265.00	406.6546	366.42	382.0649	602.52	0.0000
268.22	404.2838	372.51	385.5010	604.72	224.1943
269.46	435.8824	375.05	380.9866	607.14	250.4076
270.03	467.2668	1093.63	394.7345	609.32	223.7083
271.23	429.3968	383.85	402.6404	610.33	218.8218
273.65	438.7730	388.16	376.6493	614.28	237.2700
276.40	425.8051	388.63	402.2409	618.01	220.6445
277.37	443.8730	391.69	406.6187	620.36	235.9658
277.60	443.9629	400.66	415.3367	621.93	224.0798
278.00	428.0396	401.81	431.6240	630.19	0.0000
279.20	374.5297	402.40	414.0597	631.29	237.2089
279.54	380.2926	404.85	411.2007	633.25	244.5011
279.70	380.3406	410.95	436.9745	634.78	218.3906
280.46	362.8601	413.71	379.7089	635.95	230.6533
283.69	395.4521	414.70	444.3293	636.99	224.6919
284.31	428.4413	423.72	423.5953	645.85	219.5332
285.41	379.0503	427.09	439.8474	657.76	240.6841
285.90	370.7042	427.87	434.6649	657.90	0.0000
287.50	377.3111	433.94	443.6139	661.66	256.9849
290.67	440.6077	439.40	432.4403	664.57	0.0000
293.27	0.0000	453.88	460.2279	666.33	233.9375
295.22	410.4895	463.37	501.6549	666.50	204.7115
295.96	409.5292	468.07	482.7480	667.71	0.0000
298.58	376.0472	473.00	477.6889	677.62	200.0783
299.98	394.9511	475.06	469.9277	685.70	189.4187
300.09	394.9805	476.78	396.9679	695.00	183.9717
300.13	395.0001	477.60	400.8795	696.49	210.0879
301.36	394.1797	482.18	335.7568	696.51	210.0961
302.85	377.4106	487.02	378.7976	697.00	202.8552
304.50	410.0557	492.35	327.4431	697.30	195.6039
304.85	410.1671	497.08	311.4102	697.49	190.4165
306.78	383.6118	505.52	318.5909	702.65	191.8913
308.46	421.3269	507.63	0.0000	706.68	196.4071
311.90	403.8994	511.00	297.7704	711.68	190.5535
316.51	407.9217	514.00	318.2200	720.70	199.7025
319.41	388.4661	514.00	318.2200	721.93	0.0000
320.08	375.3296	520.40	296.0085	722.78	232.4924
321.04	376.4664	520.69	290.3381	722.91	226.1979
323.87	397.3989	522.65	0.0000	723.31	232.5464
325.23	409.5594	527.90	218.2681	724.19	202.1094
328.76	367.8872	528.26	244.7316	727.33	198.1665
333.37	369.2239	529.59	274.0484	733.00	204.9804
333.97	378.6793	529.87	0.0000	735.93	231.6805
334.37	396.5147	531.02	253.1611	737.46	211.7187
338.28	365.5723	537.26	264.6047	739.50	218.2547
338.32	365.5811	546.56	0.0000	747.24	214.7154
340.48	418.7523	552.55	247.3840	748.06	214.7894
340.55	418.7723	563.25	248.7848	752.31	204.5156
344.28	404.2505	569.33	238.8075	753.82	208.9040
345.93	382.2054	569.50	241.7738	756.73	192.0850
351.06	374.3032	569.70	250.6042	756.80	192.0923
351.93	374.5527	583.19	257.2723	763.94	195.8672
355.39	0.0000	584.27	246.5719	765.81	217.4386
356.01	397.5753	595.83	243.0461	766.42	201.4253

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
766.84	221.8158	1002.74	307.4464	1678.03	0.0000
772.60	0.0000	1004.73	294.4922	1690.97	10.4773
776.52	235.6014	1021.30	0.0000	1750.46	0.0000
777.92	234.6587	1025.87	0.0000	1764.49	17.0215
778.90	218.5950	1028.54	0.0000	1770.23	10.6506
783.70	217.9374	1037.84	240.0692	1771.35	20.2408
785.37	233.2002	1038.76	0.0000	1791.20	0.0000
792.07	238.1543	1046.59	253.1845	1808.65	8.5864
794.95	251.4372	1048.07	222.1985	1810.72	0.0000
795.86	250.4380	1049.04	215.1472	1836.06	15.1083
801.95	241.2588	1050.41	245.4756		
810.06	242.0266	1063.66	242.9307		
810.29	242.0537	1077.00	251.1182		
810.45	242.0627	1077.34	245.7538		
810.76	242.0989	1085.87	227.5209		
815.77	240.9296	1093.63	257.8085		
818.51	241.7367	1099.45	254.6503		
832.01	257.2800	1112.07	259.6199		
834.85	266.3713	1112.84	259.6724		
835.71	251.0449	1115.54	240.5932		
836.80	0.0000	1120.29	185.3730		
846.75	0.0000	1120.55	185.3855		
846.77	225.5571	1121.30	134.5315		
856.80	258.5934	1129.67	180.4285		
860.56	257.8470	1131.51	0.0000		
871.09	280.0464	1147.95	0.0000		
873.19	255.6962	1173.23	134.7452		
875.33	0.0000	1177.95	134.5538		
879.38	315.5977	1189.05	90.8582		
880.51	301.1692	1204.77	69.8410		
883.24	267.8441	1221.41	65.4883		
884.68	319.5697	1231.02	49.7166		
889.28	286.4081	1235.36	63.8662		
894.76	319.6040	1238.28	46.0571		
898.04	282.8040	1260.41	0.0000		
900.72	321.4252	1271.87	40.7875		
903.28	290.1080	1274.44	43.6641		
911.20	336.2036	1274.54	43.6641		
912.08	297.8120	1291.59	39.0956		
923.98	0.0000	1298.22	0.0000		
926.50	343.7191	1312.11	38.3496		
929.11	323.5215	1332.49	53.9731		
937.49	325.6116	1362.66	0.0000		
944.13	336.6597	1365.19	27.2139		
946.00	372.9688	1368.63	0.0000		
949.00	330.3398	1384.29	25.3906		
954.55	0.0000	1408.01	22.5943		
962.31	337.0367	1457.56	0.0000		
964.08	314.7565	1460.82	17.9110		
966.17	299.4028	1489.16	20.0342		
968.97	296.7902	1505.03	22.1195		
983.53	281.9971	1584.12	17.4036		
984.45	0.0000	1596.21	13.3444		
996.26	282.0281	1620.50	12.3838		
1001.03	245.9951	1621.92	10.3235		

26-Sep-2016

Batch# 1596254 Product: Gamma ^{MSWC} Date: 10/3/16

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.	NA		
Samples have been blank corrected (If required). Blank correction reported included (If required).	NA		
If activity less than 10x MDA/MDC, error is less than or equal to 150% of sample activity. If greater than 10x 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.	✓		SEE NARRATIVE
Tracer yield is 15-125% . Carrier yield 25-125%. (Or meets the client's contract acceptance criteria).	NA		
Method blank is less than the RDL/ LLD. (If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.		✓	DER# - 1563729
Sample was correctly preserved if required.	NA		
Smears Taken for Radioactive batches.	NA		
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.	NA		
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)	NA		
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.	✓		DER# - 1563729
Batch Data Exception Reports (DER) second reviewed. Disposition verified to be completed.	✓		
Aliquot Correction completed if required.	NA		
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	NA		

Primary Review Performed By:

[Signature] 10/3/16

Secondary Review Performed By:

[Signature] 10/3/16
10/3/16

10/4

DATA EXCEPTION REPORT

Mo.Day Yr. 03-OCT-16	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process
Instrument Type: GAMMA SPECTROMETER	Test / Method: DOE HASL 300, 4.5.2.3/Ga-01-R	Matrix Type: Solid	Client Code: MJWC
Batch ID: 1596254	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 405235			
Application Issues: Sample received out of holding			
Specification and Requirements Exception Description:		DER Disposition:	
1. Sample received and analyzed out of holding: 405235061,062,063,064,065,066,067,068,069, 070,071,072,073,074,075,076,077,078, 1203621365DUP		1. Reporting Results	

Originator's Name:

Tim Winters

03-OCT-16

Data Validator/Group Leader:

Bryan Williams

03-OCT-16

Gamma Spec Queue Sheet

1.G.- 10/3/16

09/16/2016

Batch #:1596254

Analyst: MXR1

First Client Due Date: 10/04/2016

Internal Due Date: 09/30/2016

Gamma LCS Isotope: Mixed Gamma

LCS Code: 1556

Expiration Date: 4/1/37

Vol: 1.0 mL

Initials: MS

Prep Date: 9/12/16

Library: SOLID

Balance ID: N/A

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry	Wet/Dry Aliquot (1/g F)	Detector	Sealing Date/Time (if Applicable)
405235061-1	5.1B.R.2.2	SAMPLE		MJWC001	SOIL	14-DEC-15 13:47:00	RF CAN	144.233 g	20	9/12/16
405235062-1	5.2.A.R.1.2	SAMPLE		MJWC001	SOIL	14-DEC-15 13:10:00	RF	146.441 g	36	
405235063-1	5.2.A.R.1.3	SAMPLE		MJWC001	SOIL	14-DEC-15 13:15:00	RF	147.883 g	44	
405235064-1	5.2.A.R.1.4	SAMPLE		MJWC001	SOIL	14-DEC-15 13:25:00	RF	174.637 g	2	
405235065-1	5.2.A.R.2.3	SAMPLE		MJWC001	SOIL	14-DEC-15 13:56:00	RF	147.836 g	25	
405235066-1	5.2.A.R.2.4	SAMPLE		MJWC001	SOIL	14-DEC-15 14:00:00	RF	157.422 g	33	
405235067-1	5.2.A.R.6.2	SAMPLE		MJWC001	SOIL	11-DEC-15 11:30:00	RF	158.21 g	41	
405235068-1	5.2.A.R.4.2	SAMPLE		MJWC001	SOIL	11-DEC-15 10:27:00	RF	140.907 g	31	
405235069-1	5.2.B.R.1.4	SAMPLE		MJWC001	SOIL	16-DEC-15 12:45:00	RF	156.084 g	43	
405235070-1	5.2.B.R.3.2	SAMPLE		MJWC001	SOIL	11-DEC-15 10:10:00	RF	145.32 g	11	
405235071-1	5.2.B.R.4.2	SAMPLE		MJWC001	SOIL	11-DEC-15 10:25:00	RF	149.695 g	1	
405235072-1	5.2.B.R.2.4	SAMPLE		MJWC001	SOIL	15-DEC-15 13:35:00	RF	166.107 g	5	
405235073-1	5.2.B.R.8.2	SAMPLE		MJWC001	SOIL	11-DEC-15 11:35:00	RF	147.132 g	6	
405235074-1	5.3.A.R.1.3	SAMPLE		MJWC001	SOIL	15-DEC-15 14:10:00	RF	169.068 g	7	
405235075-1	5.4.A.R.1.3	SAMPLE		MJWC001	SOIL	16-DEC-15 09:31:00	RF	151.411 g	18	
405235076-1	5.4.A.R.4.2	SAMPLE		MJWC001	SOIL	11-DEC-15 14:19:00	RF	144.47 g	24	
405235077-1	5.5.A.R.1.3	SAMPLE		MJWC001	SOIL	17-DEC-15 13:30:00	RF	172.799 g	29	
405235078-1	5.6.A.R.1.3	SAMPLE		MJWC001	SOIL	17-DEC-15 12:40:00	RF	156.072 g	30	
1203621364-1	MB	MB		QC ACCOUNT	SOIL	9/12/16	RF	174.637	2	
1203621365-1	DUP 5.1B.R.2.2(405235061)	DUP		QC ACCOUNT	SOIL	14-DEC-15 13:47:00	RF	144.233	19	
1203621366-1	LCS	LCS		QC ACCOUNT	SOIL	9/12/16	RF	115	11	

 10/3/16

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 06:54:36.57

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235061.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM20.CNF;515
Background date    : Z-OCT-2016 11:01:13.
Sample date       : 14-DEC-2015 13:47:00 Acquisition date : 3-OCT-2016 05:52:51.
Sample ID        : G405235061 Sample quantity : 1.44233E+02 GRAM
Detector name    : GAM20 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:14.55 0.4%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596254 Detector SN# :
Matrix Spike ID : LCS ID : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	47.05*	34	141	1.86	94.29	88	10	9.48E-03	68.7	
2	0	63.50*	10	165	0.72	127.15	124	8	2.88E-03	224.3	
3	2	74.92	168	176	1.23	149.98	146	14	4.67E-02	15.0	2.03E-01
4	2	77.15	242	142	0.98	154.43	146	14	6.73E-02	10.6	
5	5	87.37	56	225	1.29	174.87	170	22	1.56E-02	44.6	4.08E+00
6	5	92.64*	75	225	1.85	185.40	170	22	2.09E-02	44.6	
7	0	129.70	19	117	1.40	259.47	253	8	5.17E-03	104.1	
8	0	144.40*	29	125	1.38	288.84	283	10	8.03E-03	75.5	
9	0	186.06*	86	116	0.97	372.12	367	10	2.38E-02	27.2	
10	0	209.70	21	89	1.39	419.38	415	8	5.92E-03	79.9	
11	4	238.52*	330	77	1.17	476.98	473	14	9.16E-02	7.1	4.51E+00
12	4	241.49	70	71	1.43	482.93	473	14	1.96E-02	23.7	
13	0	270.20	43	71	1.58	540.33	535	9	1.20E-02	38.6	
14	0	295.09*	194	30	1.17	590.08	585	10	5.40E-02	9.0	
15	4	299.97	43	25	2.01	599.84	595	21	1.20E-02	28.1	1.97E+00
16	4	304.96	23	21	2.01	609.83	595	21	6.44E-03	53.2	
17	2	351.90*	302	38	1.30	703.68	697	19	8.39E-02	6.8	2.90E+00
18	2	356.36*	19	29	1.71	712.60	697	19	5.26E-03	58.2	
19	0	510.90*	56	24	1.74	1021.62	1016	13	1.56E-02	28.2	
20	0	583.44*	112	29	1.29	1166.72	1161	13	3.11E-02	14.2	
21	0	609.37*	203	29	1.26	1218.58	1212	13	5.64E-02	9.0	
22	0	623.21	33	31	5.67	1246.28	1237	18	9.16E-03	43.5	
23	0	723.27	67	42	11.05	1446.45	1431	31	1.85E-02	32.5	
24	1	763.00	19	30	1.83	1525.94	1518	23	5.18E-03	55.1	3.60E+00
25	1	768.40	38	20	1.84	1536.75	1518	23	1.06E-02	25.5	
26	0	796.11	32	14	3.96	1592.18	1583	18	9.02E-03	31.8	
27	0	861.13	19	11	2.54	1722.29	1716	12	5.20E-03	43.4	
28	0	911.42*	85	8	1.78	1822.93	1818	11	2.35E-02	12.9	
29	0	1001.94*	19	8	3.13	2004.11	1994	16	5.34E-03	41.7	
30	0	1120.51	58	17	2.04	2241.46	2232	17	1.61E-02	21.0	
31	0	1156.21	21	4	2.57	2312.95	2308	11	5.70E-03	30.9	
32	0	1305.58	17	2	3.63	2612.04	2608	10	4.74E-03	29.4	
33	0	1320.12	5	5	1.29	2641.15	2636	7	1.49E-03	81.9	
34	0	1332.48	6	3	1.23	2665.90	2661	7	1.57E-03	68.6	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1460.95*	293	16	1.97	2923.21	2916	16	8.15E-02	6.6	
36	0	1587.68	19	0	2.16	3177.11	3172	11	5.28E-03	22.9	
37	0	1764.42	39	0	2.10	3531.26	3525	13	1.08E-02	16.0	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235061.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 14-DEC-2015 13:47:00 Acquisition date : 3-OCT-2016 05:52:51
Sample ID : G405235061 Sample quantity : 144.23 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA20 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:14.55 0.4%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
U-235	143.76	CE-141	145.44
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.312E+00	1.049E+01	1.049E+01	13.27	OK
RH-106	621.93	9.93*	2.582E+00	6.971E-01	1.205E+00	87.04	OK
	1050.41	1.56	1.721E+00	----- Line	Not Found	-----	Absent
RU-106	621.93	9.93*	2.582E+00	6.971E-01	1.205E+00	87.04	OK
	1050.41	1.56	1.721E+00	----- Line	Not Found	-----	Absent
CD-109	88.03	3.70*	6.851E+00	2.608E-01	4.055E-01	488.47	OK
SN-126	64.28	9.60	4.813E+00	1.467E-01	1.467E-01	448.65	OK
	86.94	8.90	6.851E+00	1.084E-01	1.084E-01	488.47	OK
	87.57	37.00*	6.851E+00	2.608E-02	2.608E-02	488.47	OK
CE-141	145.44	48.29*	7.360E+00	1.879E-02	9.847E+00	411.67	OK
TL-208	277.37	6.60	4.947E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.719E+00	2.641E-01	2.641E-01	28.47	OK
	860.56	12.50	2.010E+00	3.924E-01	3.924E-01	86.73	OK
PB-210	46.54	4.25*	2.063E+00	2.605E+00	2.671E+00	137.44	OK
PB-212	74.82	10.28	6.005E+00	1.057E+00	1.057E+00	51.32	OK
	77.11	17.10	6.187E+00	1.477E+00	1.477E+00	21.12	OK
	238.63	43.60*	5.554E+00	8.023E-01	8.023E-01	14.23	OK
	300.09	3.30	4.648E+00	1.625E+00	1.625E+00	56.28	OK
BI-214	609.32	45.49*	2.627E+00	9.221E-01	9.224E-01	18.09	OK
	1120.29	14.92	1.635E+00	1.218E+00	1.218E+00	41.93	OK
	1764.49	15.30	1.106E+00	1.131E+00	1.132E+00	32.03	OK
PB-214	74.82	5.80	5.996E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	6.187E+00	2.603E+00	2.604E+00	21.12	OK
	87.09	3.41	6.836E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	5.503E+00	1.040E+00	1.040E+00	47.31	OK
	295.22	18.42	4.710E+00	1.296E+00	1.297E+00	18.01	OK
	351.93	35.60*	4.084E+00	1.185E+00	1.185E+00	13.60	OK
RN-222	609.32	45.49*	2.627E+00	9.221E-01	9.224E-01	18.09	OK
	1120.29	14.92	1.635E+00	1.218E+00	1.218E+00	41.93	OK
	1764.49	15.30	1.106E+00	1.131E+00	1.132E+00	32.03	OK
RA-226	609.32	45.49*	2.627E+00	9.221E-01	9.224E-01	18.09	OK
	1120.29	14.92	1.635E+00	1.218E+00	1.218E+00	41.93	OK
	1764.49	15.30	1.106E+00	1.131E+00	1.132E+00	32.03	OK
TH-228	74.82	10.28	6.005E+00	1.057E+00	1.057E+00	51.32	OK
	77.11	17.10	6.187E+00	1.477E+00	1.477E+00	21.12	OK
	238.63	43.60*	5.554E+00	8.023E-01	8.023E-01	14.23	OK
	300.09	3.30	4.648E+00	1.625E+00	1.625E+00	56.28	OK
TH-230	609.32	45.49*	2.627E+00	9.221E-01	9.221E-01	18.09	OK
	1120.29	14.92	1.635E+00	1.218E+00	1.218E+00	41.93	OK
	1764.49	15.30	1.106E+00	1.131E+00	1.131E+00	32.03	OK
PA-231	283.69	1.70	4.860E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	4.648E+00	1.003E+00	1.003E+00	56.28	OK
TH-234	63.29	3.70*	4.813E+00	3.806E-01	3.806E-01	448.65	OK
	92.59	4.23	7.094E+00	1.596E+00	1.596E+00	89.29	OK
U-234	609.32	45.49*	2.627E+00	9.221E-01	9.221E-01	18.09	OK
	1120.29	14.92	1.635E+00	1.218E+00	1.218E+00	41.93	OK
	1764.49	15.30	1.106E+00	1.131E+00	1.131E+00	32.03	OK
U-235	89.96	3.47	6.978E+00	----- Line	Not Found	-----	Absent
	93.35	5.60	7.094E+00	1.205E+00	1.205E+00	89.29	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	143.76	10.96*	7.370E+00	----- Line Not Found	-----	-----	<<INT Reject
	163.33	5.08	7.024E+00	----- Line Not Found	-----	-----	Absent
	185.72	57.20	6.562E+00	1.374E-01	1.374E-01	54.37	OK
	205.31	5.01	6.171E+00	----- Line Not Found	-----	-----	Absent
U-238	63.29	3.70*	4.813E+00	3.806E-01	3.806E-01	448.65	OK
	92.59	4.23	7.094E+00	1.596E+00	1.596E+00	89.29	OK
AM-243	43.53	5.90	1.315E+00	----- Line Not Found	-----	-----	Absent
	74.66	67.20*	6.005E+00	1.618E-01	1.618E-01	51.32	OK
ANH-511	511.00	100.00*	3.020E+00	1.028E-01	1.028E-01	56.43	OK

Flag: "*" = Keyline

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235061.CNF;1
* Acquisition date   : 3-OCT-2016 05:52:51 Sensitivity      : 3.000
* Detector ID        : GAM20 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:14.55 Half life ratio : *****
* Sample date        : 14-DEC-2015 13:47:00 Analyst initials: MXR1
* Sample ID          : G405235061 Sample Quantity : 1.4423E+02 GRAM
* Batch Number       : 1596254 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library     : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date     : 30-JUN-2016 06:52:39 Eff. Geometry : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM20 CAN.CNF;15
*****

```

Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.049E+01	1.365E+00	6.736E-01
RH-106	1.205E+00	1.028E+00	8.265E-01
RU-106	1.205E+00	1.028E+00	8.265E-01
CD-109	4.055E-01	1.941E+00	1.693E+00
SN-126	2.608E-02	1.249E-01	1.092E-01
CE-141	9.847E+00	3.973E+01	3.272E+01
TL-208	2.641E-01	7.368E-02	5.153E-02
PB-210	2.671E+00	3.598E+00	2.670E+00
PB-212	8.023E-01	1.119E-01	9.156E-02
BI-214	9.224E-01	1.635E-01	1.144E-01
PB-214	1.185E+00	1.580E-01	1.019E-01
RN-222	9.224E-01	1.635E-01	1.144E-01
RA-226	9.224E-01	1.635E-01	1.144E-01
TH-228	8.023E-01	1.119E-01	9.156E-02
TH-230	9.221E-01	1.635E-01	1.143E-01
PA-231	1.003E+00	5.530E-01	5.207E-01
TH-234	3.806E-01	1.673E+00	1.517E+00
U-234	9.221E-01	1.635E-01	1.143E-01
U-235	2.202E-01	3.258E-01	3.296E-01
U-238	3.806E-01	1.673E+00	1.517E+00
AM-243	1.618E-01	8.137E-02	7.110E-02
ANH-511	1.028E-01	5.685E-02	4.379E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	2.103E+00	8.541E+00	1.735E+01	NOT IDENT.
NA-22	2.263E-02	3.835E-02	8.532E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	3.341E-03	2.110E-02	5.056E-02	NOT IDENT.
SC-46	1.455E-01	3.348E-01	6.793E-01	FAIL ABUN
V-48	0.000E+00	1.073E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	2.904E+02	0.000E+00	SHORT HLIF
MN-54	1.118E-02	5.531E-02	1.083E-01	NOT IDENT.

CO-56	1.252E-01	4.148E-01	8.212E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	-1.944E-02	4.150E-02	7.234E-02	NOT IDENT.
CO-58	-1.763E-01	4.682E-01	8.355E-01	NOT IDENT.
FE-59	1.482E+00	6.619E+00	1.333E+01	NOT IDENT.
CO-60	2.241E-02	3.014E-02	7.007E-02	FAIL ABUN
ZN-65	5.364E-02	1.523E-01	2.933E-01	NOT IDENT.
GE-68	-1.261E-01	1.861E+00	3.752E+00	NOT IDENT.
AS-73	-5.461E-01	4.568E+00	8.583E+00	NOT IDENT.
AS-74	0.000E+00	4.121E+03	0.000E+00	SHORT HLIF
SE-75	-7.514E-03	1.710E-01	3.196E-01	NOT IDENT.
BR-77	0.000E+00	3.342E+36	0.000E+00	SHORT HLIF
SR-82	0.000E+00	4.979E+02	0.000E+00	SHORT HLIF
RB-83	-2.305E-01	5.087E-01	9.239E-01	NOT IDENT.
KR-85	5.112E+00	5.638E+00	1.141E+01	NOT IDENT.
SR-85	5.040E-01	5.581E-01	1.129E+00	NOT IDENT.
RB-86	0.000E+00	1.716E+04	0.000E+00	SHORT HLIF
Y-88	3.545E-02	2.028E-01	4.448E-01	NOT IDENT.
Y-91	2.840E+02	4.399E+02	9.527E+02	NOT IDENT.
NB-94	1.661E-02	3.025E-02	6.099E-02	NOT IDENT.
NB-95	2.592E-02	7.292E-01	1.379E+00	NOT IDENT.
NB-95M	8.731E-01	2.068E+00	3.784E+00	NOT IDENT.
ZR-95	9.818E-01	1.218E+00	2.454E+00	FAIL ABUN
NB-97	0.000E+00	1.259E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.689E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	3.388E+31	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	2.804E-03	3.232E-02	5.442E-02	NOT IDENT.
RH-102	-2.559E-02	5.229E-02	9.278E-02	NOT IDENT.
RU-103	-2.462E-02	4.020E+00	7.849E+00	FAIL ABUN
AG-108M	7.692E-04	2.295E-02	4.483E-02	FAIL ABUN
AG-110M	-3.411E-02	8.526E-02	1.504E-01	FAIL ABUN
SN-113	6.533E-02	1.539E-01	3.220E-01	NOT IDENT.
CD-115	0.000E+00	3.473E+38	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	6.443E+04	0.000E+00	SHORT HLIF
TE-123M	-3.991E-02	1.152E-01	2.000E-01	NOT IDENT.
SB-124	-8.677E-01	1.251E+00	2.061E+00	FAIL ABUN
SB-125	6.802E-02	8.319E-02	1.778E-01	NOT IDENT.
TE-125M	3.041E+01	2.320E+02	4.273E+02	NOT IDENT.
I-126	0.000E+00	5.188E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	6.290E+05	0.000E+00	SHORT HLIF
SB-127	0.000E+00	6.595E+21	0.000E+00	SHORT HLIF
I-131	0.000E+00	2.524E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.028E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	8.026E+25	0.000E+00	SHORT HLIF
BA-133	4.539E-02	5.178E-02	6.865E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.700E-02	9.666E-02	FAIL ABUN
CS-135	4.088E-02	1.409E-01	2.537E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	1.572E+05	0.000E+00	SHORT HLIF
BA-137M	2.377E-02	3.696E-02	7.412E-02	NOT IDENT.
CS-137	2.511E-02	3.904E-02	7.830E-02	NOT IDENT.
CE-139	-6.957E-03	9.511E-02	1.694E-01	NOT IDENT.
BA-140	0.000E+00	6.666E+05	0.000E+00	SHORT HLIF
LA-140	0.000E+00	2.283E+05	0.000E+00	SHORT HLIF
CE-143	0.000E+00	1.281E+41	0.000E+00	SHORT HLIF
CE-144	-2.494E-02	2.867E-01	5.177E-01	NOT IDENT.
PM-144	-4.298E-03	4.781E-02	8.976E-02	NOT IDENT.
PR-144	-3.856E-01	4.137E+00	7.764E+00	NOT IDENT.
PM-146	-3.211E-03	3.908E-02	7.458E-02	NOT IDENT.
ND-147	0.000E+00	1.810E+07	0.000E+00	SHORT HLIF
PM-147	1.414E+02	7.047E+02	1.308E+03	NOT IDENT.
PM-149	0.000E+00	5.532E+39	0.000E+00	SHORT HLIF
EU-150	-1.318E-02	2.075E-02	3.774E-02	FAIL ABUN
EU-152	3.094E-02	7.822E-02	1.583E-01	NOT IDENT.
GD-153	-5.501E-02	1.629E-01	2.674E-01	NOT IDENT.
EU-154	3.306E-02	9.801E-02	2.084E-01	FAIL ABUN
EU-155	7.278E-02	9.118E-02	1.782E-01	FAIL ABUN
TB-160	4.628E-01	1.511E+00	3.047E+00	FAIL ABUN
HO-166M	-7.262E-03	4.619E-02	8.655E-02	NOT IDENT.
TM-171	-3.157E+00	1.160E+01	2.151E+01	NOT IDENT.
HF-172	-2.114E-02	2.275E-01	3.755E-01	FAIL ABUN
LU-172	1.170E-02	8.097E-02	1.618E-01	FAIL ABUN
LU-176	-1.219E-03	1.764E-02	3.133E-02	FAIL ABUN
HF-181	1.071E+00	3.102E+00	6.336E+00	NOT IDENT.
TA-182	-2.480E-01	7.955E-01	1.499E+00	FAIL ABUN
RE-183	6.950E-01	1.742E+00	3.381E+00	NOT IDENT.

RE-184	1.265E+01	2.306E+01	4.817E+01	NOT IDENT.
W-188	2.977E+01	8.254E+01	1.544E+02	FAIL ABUN
IR-192	9.261E-02	3.407E-01	6.881E-01	FAIL ABUN
HG-203	-1.126E+00	1.852E+00	3.412E+00	NOT IDENT.
BI-207	9.041E-03	4.043E-02	8.457E-02	FAIL ABUN
BI-211	0.000E+00	4.353E-01	8.295E-01	FAIL ABUN
PB-211	-6.994E-02	5.213E-01	1.002E+00	NOT IDENT.
BI-212	8.436E-01	5.042E-01	1.119E+00	NOT IDENT.
RN-219	4.697E-02	3.294E-01	6.471E-01	FAIL ABUN
RA-223	-1.475E-01	4.706E-01	8.903E-01	FAIL ABUN
RA-224	0.000E+00	8.524E-01	1.364E+00	FAIL ABUN
AC-227	-1.198E-01	1.890E-01	3.496E-01	FAIL ABUN
TH-227	-1.198E-01	1.890E-01	3.496E-01	FAIL ABUN
AC-228	0.000E+00	2.267E-01	4.972E-01	FAIL ABUN
RA-228	0.000E+00	2.267E-01	4.972E-01	FAIL ABUN
TH-229	-1.695E-01	3.839E-01	7.320E-01	FAIL ABUN
TH-231	-1.475E-01	4.706E-01	8.903E-01	FAIL ABUN
TH-232	0.000E+00	2.267E-01	4.972E-01	FAIL ABUN
PA-233	-1.104E-02	4.417E-02	8.476E-02	FAIL ABUN
PA-234	2.651E-02	1.818E-01	3.933E-01	FAIL ABUN
PA-234M	6.646E+00	5.427E+00	7.908E+00	FAIL ABUN
NP-237	-1.104E-02	4.417E-02	8.476E-02	FAIL ABUN
NP-238	0.000E+00	6.108E+40	0.000E+00	SHORT HLIF
NP-239	-7.460E-02	2.160E-01	3.816E-01	NOT IDENT.
PU-239	2.427E+02	4.952E+02	5.470E+02	FAIL ABUN
AM-241	1.781E-02	9.076E-02	1.726E-01	NOT IDENT.
CM-243	-9.227E-03	8.586E-02	1.559E-01	NOT IDENT.
BK-247	-3.439E-03	6.820E-02	1.193E-01	NOT IDENT.
CM-247	9.215E-03	2.991E-02	5.985E-02	NOT IDENT.
CF-249	-7.496E-03	2.820E-02	5.354E-02	NOT IDENT.
CF-251	5.177E-03	9.199E-02	1.831E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	282	10.66*	1.312E+00	1.049E+01	1.049E+01	13.27
RH-106	621.93	34	9.93*	2.582E+00	6.971E-01	1.205E+00	87.04
	1050.41	-----	1.56	1.721E+00	-----	Line Not Found	-----
RU-106	621.93	34	9.93*	2.582E+00	6.971E-01	1.205E+00	87.04
	1050.41	-----	1.56	1.721E+00	-----	Line Not Found	-----
CD-109	88.03	69	3.70*	6.851E+00	1.412E+00	2.195E+00	89.18
SN-126	64.28	13	9.60	4.813E+00	1.467E-01	1.467E-01	448.65
	86.94	69	8.90	6.851E+00	5.870E-01	5.870E-01	89.18
	87.57	69	37.00*	6.851E+00	1.412E-01	1.412E-01	89.18
CE-141	145.44	34	48.29*	7.360E+00	4.997E-02	2.619E+01	151.00
TL-208	277.37	-----	6.60	4.947E+00	-----	Line Not Found	-----
	583.19	117	85.00*	2.719E+00	2.641E-01	2.641E-01	28.47
	860.56	19	12.50	2.010E+00	3.924E-01	3.924E-01	86.73
PB-210	46.54	44	4.25*	2.063E+00	2.605E+00	2.671E+00	137.44
BI-211	72.87	-----	1.23	5.823E+00	-----	Line Not Found	-----
	351.06	331	12.92*	4.084E+00	3.265E+00	3.265E+00	13.60
PB-212	74.82	209	10.28	6.005E+00	1.762E+00	1.762E+00	30.05
	77.11	300	17.10	6.187E+00	1.477E+00	1.477E+00	21.12
	238.63	373	43.60*	5.554E+00	8.023E-01	8.023E-01	14.23
	300.09	48	3.30	4.648E+00	1.625E+00	1.625E+00	56.28
BI-214	609.32	212	45.49*	2.627E+00	9.221E-01	9.224E-01	18.09
	1120.29	57	14.92	1.635E+00	1.218E+00	1.218E+00	41.93
	1764.49	37	15.30	1.106E+00	1.131E+00	1.132E+00	32.03
PB-214	74.82	209	5.80	6.005E+00	3.123E+00	3.124E+00	30.05
	77.11	300	9.70	6.187E+00	2.603E+00	2.604E+00	21.12
	87.09	69	3.41	6.851E+00	1.532E+00	1.533E+00	89.18
	242.00	80	7.25	5.503E+00	1.040E+00	1.040E+00	47.31
	295.22	216	18.42	4.710E+00	1.296E+00	1.297E+00	18.01
	351.93	331	35.60*	4.084E+00	1.185E+00	1.185E+00	13.60
RN-222	609.32	212	45.49*	2.627E+00	9.221E-01	9.224E-01	18.09
	1120.29	57	14.92	1.635E+00	1.218E+00	1.218E+00	41.93
	1764.49	37	15.30	1.106E+00	1.131E+00	1.132E+00	32.03
RA-224	240.99	80	4.10*	5.503E+00	1.838E+00	1.838E+00	47.31
RA-226	609.32	212	45.49*	2.627E+00	9.221E-01	9.224E-01	18.09
	1120.29	57	14.92	1.635E+00	1.218E+00	1.218E+00	41.93
	1764.49	37	15.30	1.106E+00	1.131E+00	1.132E+00	32.03
TH-228	74.82	209	10.28	6.005E+00	1.762E+00	1.762E+00	30.05
	77.11	300	17.10	6.187E+00	1.477E+00	1.477E+00	21.12
	238.63	373	43.60*	5.554E+00	8.023E-01	8.023E-01	14.23
	300.09	48	3.30	4.648E+00	1.625E+00	1.625E+00	56.28
TH-230	609.32	212	45.49*	2.627E+00	9.221E-01	9.221E-01	18.09
	1120.29	57	14.92	1.635E+00	1.218E+00	1.218E+00	41.93
	1764.49	37	15.30	1.106E+00	1.131E+00	1.131E+00	32.03
PA-231	283.69	-----	1.70	4.860E+00	-----	Line Not Found	-----
	301.36	48	5.35*	4.648E+00	1.003E+00	1.003E+00	56.28
TH-234	63.29	13	3.70*	4.813E+00	3.806E-01	3.806E-01	448.65
	92.59	92	4.23	7.094E+00	1.596E+00	1.596E+00	89.29

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
U-234	609.32	212	45.49*	2.627E+00	9.221E-01	9.221E-01	18.09
	1120.29	57	14.92	1.635E+00	1.218E+00	1.218E+00	41.93
	1764.49	37	15.30	1.106E+00	1.131E+00	1.131E+00	32.03
U-235	89.96	-----	3.47	6.978E+00	-----	Line Not Found	-----
	93.35	92	5.60	7.094E+00	1.205E+00	1.205E+00	89.29
	143.76	34	10.96*	7.360E+00	2.202E-01	2.202E-01	151.00
	163.33	-----	5.08	7.024E+00	-----	Line Not Found	-----
	185.72	99	57.20	6.562E+00	1.374E-01	1.374E-01	54.37
U-238	205.31	-----	5.01	6.171E+00	-----	Line Not Found	-----
	63.29	13	3.70*	4.813E+00	3.806E-01	3.806E-01	448.65
	92.59	92	4.23	7.094E+00	1.596E+00	1.596E+00	89.29
AM-243	43.53	-----	5.90	1.315E+00	-----	Line Not Found	-----
	74.66	209	67.20*	6.005E+00	2.696E-01	2.696E-01	30.05
ANH-511	511.00	60	100.00*	3.020E+00	1.028E-01	1.028E-01	56.43

Flag: "*" = Keyline

Total number of lines in spectrum 37
Number of unidentified lines 5
Number of lines tentatively identified by NID 32 86.49%

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	1.049E+01	1.049E+01	0.139E+01	13.27	
RH-106	371.80D	1.73	6.971E-01	1.205E+00	1.049E+00	87.04	
RU-106	371.80D	1.73	6.971E-01	1.205E+00	1.049E+00	87.04	
CD-109	461.40D	1.55	1.412E+00	2.195E+00	1.957E+00	89.18	
SN-126	2.30E+05Y	1.00	1.412E-01	1.412E-01	1.259E-01	89.18	
CE-141	32.51D	524.	4.997E-02	2.619E+01	3.955E+01	151.00	
TL-208	1.41E+10Y	1.00	2.641E-01	2.641E-01	0.752E-01	28.47	
PB-210	22.20Y	1.03	2.605E+00	2.671E+00	3.671E+00	137.44	
BI-211	7.04E+08Y	1.00	3.265E+00	3.265E+00	0.444E+00	13.60	
PB-212	1.41E+10Y	1.00	8.023E-01	8.023E-01	1.142E-01	14.23	
BI-214	1600.00Y	1.00	9.221E-01	9.224E-01	1.669E-01	18.09	
PB-214	1600.00Y	1.00	1.185E+00	1.185E+00	0.161E+00	13.60	
RN-222	1600.00Y	1.00	9.221E-01	9.224E-01	1.669E-01	18.09	
RA-224	1.41E+10Y	1.00	1.838E+00	1.838E+00	0.870E+00	47.31	
RA-226	1600.00Y	1.00	9.221E-01	9.224E-01	1.669E-01	18.09	
TH-228	1.41E+10Y	1.00	8.023E-01	8.023E-01	1.142E-01	14.23	
TH-230	7.54E+04Y	1.00	9.221E-01	9.221E-01	1.668E-01	18.09	
PA-231	7.04E+08Y	1.00	1.003E+00	1.003E+00	0.564E+00	56.28	
TH-234	4.47E+09Y	1.00	3.806E-01	3.806E-01	17.08E-01	448.65	
U-234	2.45E+05Y	1.00	9.221E-01	9.221E-01	1.668E-01	18.09	
U-235	7.04E+08Y	1.00	2.202E-01	2.202E-01	3.324E-01	151.00	
U-238	4.47E+09Y	1.00	3.806E-01	3.806E-01	17.08E-01	448.65	
AM-243	7370.00Y	1.00	2.696E-01	2.696E-01	0.810E-01	30.05	
ANH-511	1.00E+09Y	1.00	1.028E-01	1.028E-01	0.580E-01	56.43	

Total Activity : 3.122E+01 5.923E+01

Grand Total Activity : 3.122E+01 5.923E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.70	22	140	1.40	259.47	253	8	5.17E-03	****	7.53E+00	T
0	209.70	24	102	1.39	419.38	415	8	5.92E-03	****	6.08E+00	T
0	270.20	48	79	1.58	540.33	535	9	1.20E-02	77.1	5.05E+00	T
4	304.96	26	24	2.01	609.83	595	21	6.44E-03	****	4.59E+00	T
2	356.36	21	32	1.71	712.60	697	19	5.26E-03	****	4.04E+00	T
0	723.27	69	43	11.05	1446.45	1431	31	1.85E-02	64.9	2.30E+00	T
1	763.00	19	31	1.83	1525.94	1518	23	5.18E-03	****	2.21E+00	T
1	768.40	39	21	1.84	1536.75	1518	23	1.06E-02	51.1	2.19E+00	
0	796.11	33	14	3.96	1592.18	1583	18	9.02E-03	63.6	2.14E+00	T
0	911.42	85	8	1.78	1822.93	1818	11	2.35E-02	25.9	1.92E+00	T
0	1001.94	19	8	3.13	2004.11	1994	16	5.34E-03	83.3	1.79E+00	T
0	1156.21	20	4	2.57	2312.95	2308	11	5.70E-03	61.7	1.59E+00	
0	1305.58	17	2	3.63	2612.04	2608	10	4.74E-03	58.8	1.44E+00	
0	1320.12	5	5	1.29	2641.15	2636	7	1.49E-03	****	1.43E+00	
0	1332.48	5	3	1.23	2665.90	2661	7	1.57E-03	****	1.42E+00	T
0	1587.68	18	0	2.16	3177.11	3172	11	5.28E-03	45.9	1.22E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235061.CNF;1    *
* Acquisition date   : 3-OCT-2016 05:52:51 Sensitivity      : 3.000              *
* Detector ID        : GAM20 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000    *
* Elapsed real time  : 0 01:00:14.55 Half life ratio : *****      *
* Sample date        : 14-DEC-2015 13:47:00 Nuclide Library : SOLID        *
* Sample ID          : G405235061 Analyst initials: MXR1        *
* Batch Number       : 1596254 Sample Quantity : 1.4423E+02 GRAM    *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000          *
*                               Dry Weight : 0.00000          *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 30-JUN-2016 06:52:39 Eff. Geometry  : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM20 CAN.CNF;15        *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.863E-01
RH-106	3.648E-01
RU-106	3.648E-01
CD-109	8.009E-01
SN-126	5.169E-02
CE-141	1.526E+01
TL-208	2.265E-02
PB-210	1.242E+00
PB-212	4.275E-02
BI-214	5.116E-02
PB-214	4.594E-02
RN-222	5.116E-02
RA-226	5.116E-02
TH-228	4.275E-02
TH-230	5.114E-02
PA-231	2.308E-01
TH-234	7.161E-01
U-234	5.114E-02
U-235	1.557E-01
U-238	7.161E-01
AM-243	3.369E-02
ANH-511	1.950E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	7.678E+00	NOT IDENT.
NA-22	3.670E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.875E-02	NOT IDENT.
SC-46	2.983E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	4.749E-02	NOT IDENT.
CO-56	3.616E-01	NOT IDENT.

MN-56	0.000E+00	SHORT HLIF
CO-57	3.375E-02	NOT IDENT.
CO-58	3.573E-01	NOT IDENT.
FE-59	5.929E+00	NOT IDENT.
CO-60	2.949E-02	FAIL ABUN
ZN-65	1.269E-01	NOT IDENT.
GE-68	1.598E+00	NOT IDENT.
AS-73	4.012E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.465E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.047E-01	NOT IDENT.
KR-85	5.123E+00	NOT IDENT.
SR-85	5.068E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.775E-01	NOT IDENT.
Y-91	4.190E+02	NOT IDENT.
NB-94	2.744E-02	NOT IDENT.
NB-95	6.112E-01	NOT IDENT.
NB-95M	1.766E+00	NOT IDENT.
ZR-95	1.084E+00	FAIL ABUN
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.550E-02	NOT IDENT.
RH-102	4.055E-02	NOT IDENT.
RU-103	3.465E+00	FAIL ABUN
AG-108M	2.009E-02	FAIL ABUN
AG-110M	6.390E-02	FAIL ABUN
SN-113	1.435E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	9.318E-02	NOT IDENT.
SB-124	6.516E-01	FAIL ABUN
SB-125	8.036E-02	NOT IDENT.
TE-125M	2.010E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.127E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	4.320E-02	FAIL ABUN
CS-135	1.179E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.376E-02	NOT IDENT.
CS-137	3.566E-02	NOT IDENT.
CE-139	7.890E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-143	0.000E+00	SHORT HLIF
CE-144	2.406E-01	NOT IDENT.
PM-144	3.954E-02	NOT IDENT.
PR-144	3.420E+00	NOT IDENT.
PM-146	3.358E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	6.116E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.706E-02	FAIL ABUN
EU-152	7.229E-02	NOT IDENT.
GD-153	1.254E-01	NOT IDENT.
EU-154	8.953E-02	FAIL ABUN
EU-155	8.378E-02	FAIL ABUN
TB-160	1.323E+00	FAIL ABUN
HO-166M	3.757E-02	NOT IDENT.
TM-171	1.006E+01	NOT IDENT.
HF-172	1.760E-01	FAIL ABUN
LU-172	7.180E-02	FAIL ABUN
LU-176	1.396E-02	FAIL ABUN
HF-181	2.822E+00	NOT IDENT.
TA-182	6.474E-01	FAIL ABUN
RE-183	1.591E+00	NOT IDENT.
RE-184	2.104E+01	NOT IDENT.

W-188	7.014E+01	FAIL ABUN
IR-192	3.128E-01	FAIL ABUN
HG-203	1.562E+00	NOT IDENT.
BI-207	3.660E-02	FAIL ABUN
BI-211	4.012E-01	FAIL ABUN
PE-211	4.481E-01	NOT IDENT.
BI-212	5.129E-01	NOT IDENT.
RN-219	2.935E-01	FAIL ABUN
RA-223	4.033E-01	FAIL ABUN
RA-224	6.496E-01	FAIL ABUN
AC-227	1.601E-01	FAIL ABUN
TH-227	1.601E-01	FAIL ABUN
AC-228	2.343E-01	FAIL ABUN
RA-228	2.343E-01	FAIL ABUN
TH-229	3.399E-01	FAIL ABUN
TH-231	4.033E-01	FAIL ABUN
TH-232	2.343E-01	FAIL ABUN
PA-233	3.817E-02	FAIL ABUN
PA-234	1.648E-01	FAIL ABUN
PA-234M	3.480E+00	FAIL ABUN
NP-237	3.817E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.784E-01	NOT IDENT.
PU-239	2.579E+02	FAIL ABUN
AM-241	8.140E-02	NOT IDENT.
CM-243	7.306E-02	NOT IDENT.
BK-247	5.489E-02	NOT IDENT.
CM-247	2.717E-02	NOT IDENT.
CF-249	2.385E-02	NOT IDENT.
CF-251	8.521E-02	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act. Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.049E+01	1.471E+00	1.471E+00
RH-106	1.205E+00	1.031E+00	1.031E+00
RU-106	1.205E+00	1.031E+00	1.031E+00
CD-109	4.084E-01	1.954E+00	1.954E+00
SN-126	2.627E-02	1.257E-01	1.257E-01
CE-141	9.847E+00	3.975E+01	3.975E+01
TL-208	2.641E-01	7.453E-02	7.453E-02
PB-210	2.671E+00	3.604E+00	3.604E+00
PB-212	8.023E-01	1.197E-01	1.197E-01
BI-214	9.224E-01	1.682E-01	1.682E-01
PB-214	1.185E+00	1.655E-01	1.655E-01
RN-222	9.224E-01	1.682E-01	1.682E-01
RA-226	9.224E-01	1.682E-01	1.682E-01
TH-228	8.023E-01	1.197E-01	1.197E-01
TH-230	9.221E-01	1.682E-01	1.682E-01
PA-231	1.003E+00	5.929E-01	5.929E-01
TH-234	3.806E-01	1.675E+00	1.675E+00
U-234	9.221E-01	1.682E-01	1.682E-01
U-235	2.202E-01	3.260E-01	3.260E-01
U-238	3.806E-01	1.675E+00	1.675E+00
AM-243	1.619E-01	8.306E-02	8.306E-02
ANH-511	1.028E-01	5.701E-02	5.701E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	2.103E+00	8.542E+00	8.594E+00	NOT IDENT.
NA-22	2.263E-02	3.836E-02	3.969E-02	NOT IDENT.
NA-24	1.000E+41	3.879E+41	0.000E+00	SHORT HLIF
AL-26	3.341E-03	2.111E-02	2.116E-02	NOT IDENT.
SC-46	1.455E-01	3.349E-01	3.412E-01	FAIL ABUN
V-48	-9.514E+02	1.073E+04	1.074E+04	SHORT HLIF
CR-51	3.303E+01	2.904E+02	2.908E+02	SHORT HLIF
MN-54	1.118E-02	5.532E-02	5.555E-02	NOT IDENT.

CO-56	1.252E-01	4.148E-01	4.187E-01	NOT IDENT.
MN-56	1.000E+41	3.350E+41	0.000E+00	SHORT HLIF
CO-57	-1.944E-02	4.151E-02	4.243E-02	NOT IDENT.
CO-58	-1.763E-01	4.682E-01	4.749E-01	NOT IDENT.
FE-59	1.482E+00	6.620E+00	6.653E+00	NOT IDENT.
CO-60	2.241E-02	3.015E-02	3.180E-02	FAIL ABUN
ZN-65	5.364E-02	1.523E-01	1.542E-01	NOT IDENT.
GE-68	-1.261E-01	1.861E+00	1.862E+00	NOT IDENT.
AS-73	-5.461E-01	4.569E+00	4.576E+00	NOT IDENT.
AS-74	1.281E+02	4.121E+03	4.122E+03	SHORT HLIF
SE-75	-7.514E-03	1.710E-01	1.711E-01	NOT IDENT.
BR-77	2.395E+37	2.031E+38	0.000E+00	SHORT HLIF
SR-82	-3.985E+02	4.983E+02	5.296E+02	SHORT HLIF
RB-83	-2.305E-01	5.097E-01	5.202E-01	NOT IDENT.
KR-85	5.112E+00	5.642E+00	6.094E+00	NOT IDENT.
SR-85	5.040E-01	5.584E-01	6.029E-01	NOT IDENT.
RB-86	-5.600E+03	1.716E+04	1.735E+04	SHORT HLIF
Y-88	3.545E-02	2.028E-01	2.034E-01	NOT IDENT.
Y-91	2.840E+02	4.401E+02	4.583E+02	NOT IDENT.
NB-94	1.661E-02	3.025E-02	3.117E-02	NOT IDENT.
NB-95	2.592E-02	7.292E-01	7.293E-01	NOT IDENT.
NB-95M	8.731E-01	2.069E+00	2.106E+00	NOT IDENT.
ZR-95	9.818E-01	1.219E+00	1.297E+00	FAIL ABUN
NB-97	1.000E+41	1.260E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.689E+41	0.000E+00	SHORT HLIF
MO-99	-1.627E+30	3.388E+31	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	2.919E+41	0.000E+00	SHORT HLIF
RH-101	2.804E-03	3.232E-02	3.235E-02	NOT IDENT.
RH-102	-2.559E-02	5.233E-02	5.359E-02	NOT IDENT.
RU-103	-2.462E-02	4.020E+00	4.020E+00	FAIL ABUN
AG-108M	7.692E-04	2.295E-02	2.295E-02	FAIL ABUN
AG-110M	-3.411E-02	8.528E-02	8.665E-02	FAIL ABUN
SN-113	6.533E-02	1.540E-01	1.568E-01	NOT IDENT.
CD-115	-1.109E+38	3.478E+38	0.000E+00	SHORT HLIF
SN-117M	-1.240E+04	6.445E+04	6.469E+04	SHORT HLIF
TE-123M	-3.991E-02	1.153E-01	1.167E-01	NOT IDENT.
SB-124	-8.677E-01	1.252E+00	1.311E+00	FAIL ABUN
SB-125	6.802E-02	8.323E-02	8.870E-02	NOT IDENT.
TE-125M	3.041E+01	2.320E+02	2.324E+02	NOT IDENT.
I-126	2.887E+05	5.203E+05	5.363E+05	SHORT HLIF
SB-126	-2.392E+05	6.305E+05	6.397E+05	SHORT HLIF
SB-127	-3.615E+21	8.197E+21	0.000E+00	SHORT HLIF
I-131	4.626E+07	2.524E+09	2.524E+09	SHORT HLIF
I-132	-1.000E+41	1.813E+42	0.000E+00	SHORT HLIF
TE-132	5.459E+25	8.315E+25	0.000E+00	SHORT HLIF
BA-133	4.539E-02	5.181E-02	5.571E-02	FAIL ABUN
I-133	-1.000E+41	6.569E+41	0.000E+00	SHORT HLIF
CS-134	1.235E-01	7.718E-02	9.516E-02	FAIL ABUN
CS-135	4.088E-02	1.409E-01	1.421E-01	NOT IDENT.
I-135	1.000E+41	7.522E+41	0.000E+00	SHORT HLIF
CS-136	5.635E+04	1.573E+05	1.594E+05	SHORT HLIF
BA-137M	2.377E-02	3.697E-02	3.850E-02	NOT IDENT.
CS-137	2.511E-02	3.906E-02	4.067E-02	NOT IDENT.
CE-139	-6.957E-03	9.512E-02	9.517E-02	NOT IDENT.
BA-140	-1.382E+05	6.667E+05	6.696E+05	SHORT HLIF
LA-140	-4.039E+04	2.283E+05	2.291E+05	SHORT HLIF
CE-143	1.000E+41	1.284E+41	0.000E+00	SHORT HLIF
CE-144	-2.494E-02	2.867E-01	2.869E-01	NOT IDENT.
PM-144	-4.298E-03	4.781E-02	4.785E-02	NOT IDENT.
PR-144	-3.856E-01	4.137E+00	4.141E+00	NOT IDENT.
PM-146	-3.211E-03	3.909E-02	3.911E-02	NOT IDENT.
ND-147	8.346E+06	1.811E+07	1.850E+07	SHORT HLIF
PM-147	1.414E+02	7.047E+02	7.076E+02	NOT IDENT.
PM-149	-1.701E+39	5.545E+39	0.000E+00	SHORT HLIF
EU-150	-1.318E-02	2.076E-02	2.159E-02	FAIL ABUN
EU-152	3.094E-02	7.824E-02	7.947E-02	NOT IDENT.
GD-153	-5.501E-02	1.629E-01	1.648E-01	NOT IDENT.
EU-154	3.306E-02	9.802E-02	9.915E-02	FAIL ABUN
EU-155	7.278E-02	9.132E-02	9.704E-02	FAIL ABUN
TB-160	4.628E-01	1.511E+00	1.526E+00	FAIL ABUN
HO-166M	-7.262E-03	4.620E-02	4.631E-02	NOT IDENT.
TM-171	-3.157E+00	1.160E+01	1.169E+01	NOT IDENT.
HF-172	-2.114E-02	2.275E-01	2.277E-01	FAIL ABUN
LU-172	1.170E-02	8.098E-02	8.115E-02	FAIL ABUN
LU-176	-1.219E-03	1.764E-02	1.764E-02	FAIL ABUN
HF-181	1.071E+00	3.103E+00	3.140E+00	NOT IDENT.
TA-182	-2.480E-01	7.956E-01	8.034E-01	FAIL ABUN
RE-183	6.950E-01	1.746E+00	1.774E+00	NOT IDENT.

RE-184	1.265E+01	2.325E+01	2.394E+01	NOT IDENT.
W-188	2.977E+01	8.261E+01	8.369E+01	FAIL ABUN
IR-192	9.261E-02	3.408E-01	3.433E-01	FAIL ABUN
HG-203	-1.126E+00	1.852E+00	1.921E+00	NOT IDENT.
BI-207	9.041E-03	4.044E-02	4.064E-02	FAIL ABUN
BI-211	3.265E+00	4.589E-01	1.542E+00	FAIL ABUN
PB-211	-6.994E-02	5.213E-01	5.222E-01	NOT IDENT.
BI-212	8.436E-01	5.060E-01	6.330E-01	NOT IDENT.
RN-219	4.697E-02	3.295E-01	3.301E-01	FAIL ABUN
RA-223	-1.475E-01	4.706E-01	4.753E-01	FAIL ABUN
RA-224	1.838E+00	8.580E-01	1.193E+00	FAIL ABUN
AC-227	-1.198E-01	1.897E-01	1.972E-01	FAIL ABUN
TH-227	-1.198E-01	1.897E-01	1.972E-01	FAIL ABUN
AC-228	8.942E-01	2.313E-01	4.647E-01	FAIL ABUN
RA-228	8.942E-01	2.313E-01	4.647E-01	FAIL ABUN
TH-229	-1.695E-01	3.840E-01	3.915E-01	FAIL ABUN
TH-231	-1.475E-01	4.706E-01	4.753E-01	FAIL ABUN
TH-232	8.942E-01	2.313E-01	4.647E-01	FAIL ABUN
PA-233	-1.104E-02	4.417E-02	4.445E-02	FAIL ABUN
PA-234	2.651E-02	1.843E-01	1.847E-01	FAIL ABUN
PA-234M	6.646E+00	5.435E+00	6.206E+00	FAIL ABUN
NP-237	-1.104E-02	4.417E-02	4.445E-02	FAIL ABUN
NP-238	-4.446E+39	6.108E+40	0.000E+00	SHORT HLIF
NP-239	-7.460E-02	2.161E-01	2.187E-01	NOT IDENT.
PU-239	2.427E+02	4.953E+02	5.072E+02	FAIL ABUN
AM-241	1.781E-02	9.077E-02	9.112E-02	NOT IDENT.
CM-243	-9.227E-03	8.586E-02	8.596E-02	NOT IDENT.
BK-247	-3.439E-03	6.820E-02	6.822E-02	NOT IDENT.
CM-247	9.215E-03	2.995E-02	3.024E-02	NOT IDENT.
CF-249	-7.496E-03	2.820E-02	2.841E-02	NOT IDENT.
CF-251	5.177E-03	9.200E-02	9.203E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	75.1192	87.09	102.7180	136.47	55.5957
45.60	58.7096	87.57	102.7840	140.51	0.0000
46.54	58.8187	88.03	102.8478	143.76	53.5666
49.72	0.0000	88.34	102.8904	144.24	53.5914
51.35	69.0737	88.47	102.9079	145.44	65.0358
51.87	77.7827	89.96	103.1115	152.43	71.2017
52.39	77.8568	1093.63	103.2035	153.25	0.0000
52.97	79.0217	91.11	0.0000	323.87	73.7805
53.44	71.5052	92.59	103.4658	156.02	0.0000
54.07	69.4170	93.35	103.5674	158.56	0.0000
57.36	0.0000	94.56	70.6888	159.00	66.6991
57.53	66.5680	94.65	70.6972	162.33	84.2467
57.98	75.3564	94.67	70.6991	162.66	0.0000
59.27	86.4683	94.87	70.7169	163.33	64.4827
59.32	86.4756	97.43	81.7423	165.86	63.3866
59.54	86.5078	98.43	74.1235	176.31	61.8789
60.96	84.8854	98.44	74.1245	176.60	0.0000
61.17	84.9152	99.53	89.3015	177.52	59.4325
62.93	94.7065	100.11	74.2778	181.07	0.0000
63.29	94.7624	102.03	63.9832	181.52	61.7345
63.58	94.8072	103.18	90.8665	184.41	65.6729
64.28	94.9150	103.37	76.9047	143.76	69.9595
66.73	112.2775	105.21	63.0612	193.51	66.1664
67.24	84.2754	105.31	63.0687	197.03	51.8919
125.81	99.1294	106.12	81.8347	198.01	56.1890
67.75	99.1403	106.47	81.8689	201.83	63.1910
69.67	113.5360	109.28	79.7931	203.43	65.8351
70.83	102.5868	111.00	78.7768	205.31	69.3572
72.81	105.8774	111.76	0.0000	210.85	59.3348
72.87	105.8868	114.06	53.0956	215.65	51.7841
74.66	108.7861	116.30	0.0000	222.11	58.1043
74.82	108.8120	116.74	78.1096	227.09	49.6129
74.97	108.8356	119.76	71.2473	227.38	49.6234
77.11	109.1768	121.12	64.2181	228.16	0.0000
78.74	97.7757	121.22	64.2251	228.18	40.0703
79.69	96.4017	121.78	66.6448	116.74	40.0703
80.12	84.4027	122.06	76.1885	235.69	55.1756
80.19	0.0000	122.92	63.1526	235.96	55.1859
80.57	93.5052	123.07	60.7796	238.63	66.6995
81.00	95.0710	265.00	65.5899	238.98	0.0000
81.07	104.1359	125.81	78.0913	240.99	66.8100
81.75	102.7242	127.23	71.8245	242.00	51.4624
83.79	115.1349	127.91	64.6888	244.70	37.0166
84.00	103.0452	129.30	55.9856	252.40	0.0000
85.43	121.4673	131.20	59.3022	252.80	36.3363
86.55	102.6432	133.02	63.8303	254.15	0.0000
86.79	102.6762	133.52	60.2486	256.23	51.5217
86.94	102.6974	136.00	56.7771	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	41.8060	355.39	0.0000	584.27	17.7512
264.80	41.8098	356.01	28.2880	595.83	0.0000
265.00	45.5682	364.49	0.0000	427.87	18.9104
268.22	51.0358	366.42	0.0000	602.52	0.0000
269.46	43.9088	372.51	29.4863	604.72	12.6260
270.03	43.9247	375.05	27.6206	607.14	22.1151
271.23	45.7529	377.52	32.4242	609.32	24.2410
273.65	0.0000	356.01	36.3564	610.33	24.2503
276.40	38.7045	388.16	25.8887	614.28	19.0056
277.37	47.7347	388.63	0.0000	618.01	23.7891
277.60	49.5439	391.69	17.2899	620.36	19.0481
278.00	46.8531	264.66	31.8398	621.93	19.0583
279.20	50.4959	401.81	29.9272	630.19	0.0000
279.54	50.5062	402.40	28.0047	631.29	22.3099
279.70	44.1979	404.85	26.1046	633.25	18.0729
280.46	39.7067	410.95	31.0313	634.78	0.0000
283.69	32.5532	413.71	20.3916	635.95	21.2826
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	38.9250	423.72	0.0000	645.85	20.2896
285.90	0.0000	427.09	27.3631	657.76	11.7958
287.50	29.9116	427.87	18.5744	657.90	0.0000
290.67	27.2461	433.94	24.5102	661.66	22.5492
293.27	0.0000	439.40	18.6749	664.57	0.0000
351.93	32.7861	453.88	28.6938	666.33	0.0000
295.96	16.4008	463.37	22.8545	666.50	0.0000
879.38	16.4268	468.07	24.8937	667.71	0.0000
299.98	20.5508	473.00	0.0000	677.62	19.4341
300.09	20.5522	475.06	22.9729	685.70	0.0000
300.13	20.5527	476.78	19.9915	695.00	0.0000
301.36	20.5678	477.60	16.9986	696.49	19.5579
302.85	20.5861	482.18	18.0344	696.51	19.5579
256.23	20.6067	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	17.3893
306.78	23.3859	497.08	19.1585	697.49	16.3037
308.46	16.5242	505.52	27.3224	702.65	19.5974
311.90	31.2760	507.63	0.0000	706.68	23.9846
316.51	29.5156	511.00	22.3138	711.68	16.3800
319.41	0.0000	514.00	13.7098	720.70	0.0000
320.08	0.0000	514.00	13.7098	721.93	0.0000
321.04	29.5931	520.40	22.4010	722.78	15.3433
323.87	36.1253	520.69	0.0000	722.91	15.3438
325.23	42.6421	522.65	0.0000	723.31	15.3461
328.76	0.0000	527.90	0.0000	724.19	15.3507
333.37	28.8695	528.26	17.3652	727.33	15.3660
333.97	40.0588	529.59	20.4411	733.00	11.5455
334.37	50.3174	529.87	0.0000	735.93	7.7044
338.28	34.5520	531.02	0.0000	333.97	16.5173
338.32	34.5528	537.26	0.0000	739.50	0.0000
311.90	86.0179	546.56	0.0000	747.24	15.4640
340.48	86.0179	552.55	18.5662	748.06	17.6777
340.55	0.0000	563.25	26.9310	752.31	16.5948
344.28	30.9187	569.33	14.5355	753.82	0.0000
345.93	39.3870	946.00	17.6509	756.73	9.9708
351.06	28.2123	569.70	17.6523	756.80	9.9712
351.93	28.2257	583.19	17.7436	884.68	19.9871

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	19.9980	1274.44	8.5342	1620.50	4.0537
766.42	20.0024	1001.03	5.3403	1621.92	6.0820
766.84	20.0046	1002.74	5.3427	1678.03	0.0000
772.60	0.0000	1004.73	8.5523	1690.97	4.1033
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	1.0385
778.90	8.9242	1028.54	0.0000	1063.66	3.1183
783.70	0.0000	1037.84	14.3730	1771.35	0.0000
785.37	15.6480	1038.76	0.0000	1791.20	0.0000
792.07	15.1199	631.29	9.9030	1808.65	2.0919
794.95	7.8468	1048.07	0.0000	1810.72	0.0000
795.86	7.8491	1049.04	9.9083	1836.06	4.2021
810.06	11.2606	1050.41	6.3074		
810.29	12.3875	1063.66	11.7519		
344.28	14.6403	1077.00	0.0000		
810.76	15.7682	1077.34	11.7908		
815.77	0.0000	1085.87	13.6331		
1048.07	0.0000	1093.63	19.1210		
832.01	11.3338	1099.45	19.1479		
834.85	14.7461	1112.07	12.5416		
835.71	12.4806	1112.84	10.2443		
836.80	0.0000	1115.54	10.2512		
846.75	0.0000	1120.29	11.9114		
846.77	14.7969	1120.55	11.9122		
856.80	0.0000	1221.41	11.9146		
860.56	10.2847	1129.67	6.4279		
871.09	16.0462	1131.51	0.0000		
873.19	19.4965	1147.95	0.0000		
875.33	0.0000	1173.23	11.1299		
879.38	11.4884	1177.95	9.2847		
880.51	11.4921	1189.05	16.7542		
883.24	12.6507	1204.77	11.2083		
884.68	14.9572	1221.41	16.8739		
889.28	12.6722	1231.02	15.9697		
894.76	12.6914	1235.36	0.0000		
898.04	10.3934	1238.28	19.7580		
900.72	11.5568	1260.41	0.0000		
903.28	10.4084	1271.87	14.2154		
911.20	11.5898	1274.44	9.4818		
912.08	11.5926	1274.54	7.5854		
923.98	0.0000	1291.59	10.4676		
926.50	13.9658	1298.22	0.0000		
929.11	12.8110	1312.11	0.0000		
937.49	17.5085	1332.49	9.2133		
944.13	0.0000	1362.66	0.0000		
946.00	7.8967	1365.19	6.7625		
949.00	9.6592	1368.63	0.0000		
667.71	0.0000	1384.29	0.9697		
962.31	21.1487	1408.01	2.9229		
964.08	22.0398	1457.56	0.0000		
966.17	43.2219	1460.82	10.8268		
911.20	16.7717	1489.16	2.9687		
968.97	16.7717	1505.03	3.9700		
983.53	0.0000	1584.12	4.8331		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 06:55:31.25

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235062.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM36.CNF;52
Background date  : 2-OCT-2016 11:02:08.
Sample date     : 14-DEC-2015 13:10:00 Acquisition date : 3-OCT-2016 05:53:13.
Sample ID      : G405235062 Sample quantity   : 1.46441E+02 GRAM
Detector name   : GAM36 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.31 0.0%
Energy tolerance: 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity    : 3.00000
Batch ID       : 1596254 Detector SN#    :
Matrix Spike ID : LCS ID      : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.67*	25	104	1.10	127.31	123	8	7.06E-03	73.9	
2	1	74.95*	71	111	0.94	149.86	146	12	1.96E-02	25.9	9.68E-01
3	1	77.07*	133	86	0.95	154.11	146	12	3.70E-02	14.9	
4	0	87.35	24	188	0.93	174.68	169	10	6.68E-03	108.5	
5	8	90.00	43	59	0.95	179.97	178	14	1.19E-02	28.1	1.95E+00
6	8	93.03*	79	120	1.81	186.03	178	14	2.19E-02	31.7	
7	0	185.92*	70	90	1.33	371.83	366	12	1.95E-02	30.6	
8	0	209.69	49	87	1.93	419.37	413	12	1.35E-02	41.8	
9	0	229.01	19	44	0.59	458.01	454	8	5.17E-03	66.8	
10	5	238.59*	234	37	1.12	477.16	465	24	6.50E-02	8.0	3.77E+00
11	5	241.87	57	56	1.79	483.73	465	24	1.58E-02	33.6	
12	0	295.42*	89	56	1.07	590.82	586	9	2.48E-02	18.7	
13	1	327.91*	26	14	1.32	655.80	652	11	7.36E-03	34.1	2.77E+00
14	1	329.89*	14	9	1.32	659.76	652	11	4.00E-03	48.9	
15	0	332.46	16	13	1.13	664.90	663	6	4.52E-03	42.1	
16	0	338.28	47	31	0.98	676.54	672	10	1.30E-02	26.4	
17	0	351.98*	155	32	1.18	703.94	700	11	4.31E-02	10.9	
18	0	388.58	27	19	0.91	777.13	771	11	7.62E-03	36.3	
19	0	463.83	12	19	0.68	927.63	921	9	3.45E-03	70.5	
20	0	477.51	15	21	4.35	954.97	946	13	4.30E-03	67.8	
21	0	482.27	14	9	1.43	964.50	959	9	3.96E-03	46.2	
22	0	505.99	10	5	1.57	1011.94	1009	6	2.91E-03	44.6	
23	0	510.80*	29	26	2.46	1021.55	1015	13	8.01E-03	49.2	
24	0	583.24*	56	5	1.23	1166.40	1162	10	1.56E-02	16.0	
25	0	609.52*	107	10	1.24	1218.96	1213	13	2.98E-02	11.9	
26	0	661.76	17	9	1.30	1323.41	1319	9	4.72E-03	40.0	
27	0	727.92	8	17	0.95	1455.71	1450	11	2.18E-03	107.0	
28	0	754.46	16	2	2.30	1508.78	1504	10	4.38E-03	31.2	
29	0	768.34	17	3	1.53	1536.53	1533	7	4.67E-03	30.4	
30	0	794.98	16	2	1.00	1589.79	1585	9	4.41E-03	30.3	
31	0	820.27	6	3	1.37	1640.37	1637	6	1.76E-03	58.0	
32	0	911.40*	52	9	1.24	1822.58	1816	13	1.43E-02	19.2	
33	5	964.75	18	10	2.70	1929.24	1923	19	5.08E-03	42.0	1.21E+00
34	5	969.39	18	4	1.53	1938.50	1923	19	5.03E-03	33.7	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	1053.83	6	7	0.60	2107.33	2102	7	1.67E-03	83.7	
36	0	1121.35*	24	9	0.79	2242.31	2234	17	6.62E-03	35.3	
37	0	1173.95	9	2	1.53	2347.47	2344	7	2.61E-03	39.9	
38	0	1188.54	8	3	1.23	2376.64	2373	7	2.25E-03	51.1	
39	0	1233.94	13	0	0.98	2467.38	2462	10	3.61E-03	27.7	
40	0	1461.11*	145	6	2.00	2921.49	2915	13	4.04E-02	9.2	
41	0	1765.02*	16	0	1.50	3528.90	3522	11	4.37E-03	28.7	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235062.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 14-DEC-2015 13:10:00 Acquisition date : 3-OCT-2016 05:53:13
Sample ID : G405235062 Sample quantity : 146.44 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA36 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.31 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
BE-7	477.60	10.44*	1.801E+00	4.525E-01	2.075E+01	135.53	OK
K-40	1460.82	10.66*	6.546E-01	1.027E+01	1.027E+01	18.32	OK
CD-109	88.03	3.70*	4.301E+00	6.347E-02	9.868E-02	3326.46	OK
SN-126	64.28	9.60	2.509E+00	6.880E-01	6.880E-01	147.76	OK
	86.94	8.90	4.301E+00	2.639E-02	2.639E-02	3326.46	OK
	87.57	37.00*	4.301E+00	6.347E-03	6.347E-03	3326.46	OK
BA-137M	661.66	89.90*	1.335E+00	7.558E-02	7.699E-02	80.01	OK
CS-137	661.66	85.10*	1.335E+00	7.984E-02	8.133E-02	80.01	OK
TL-208	277.37	6.60	3.041E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	1.496E+00	2.377E-01	2.377E-01	32.07	OK
	860.56	12.50	1.058E+00	----- Line	Not Found	-----	Absent
BI-211	72.87	1.23	3.327E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	2.414E+00	1.316E-01	1.316E-01	893.25	OK
PB-212	74.82	10.28	3.492E+00	7.150E-01	7.150E-01	96.01	OK
	77.11	17.10	3.653E+00	1.371E+00	1.371E+00	29.79	OK
	238.63	43.60*	3.500E+00	8.970E-01	8.970E-01	15.92	OK
	300.09	3.30	2.819E+00	----- Line	Not Found	-----	Absent
BI-214	609.32	45.49*	1.437E+00	8.806E-01	8.809E-01	23.71	OK
	1120.29	14.92	8.365E-01	9.682E-01	9.685E-01	70.51	OK
	1764.49	15.30	5.417E-01	9.188E-01	9.191E-01	57.44	OK
PB-214	74.82	5.80	3.482E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.653E+00	2.416E+00	2.417E+00	29.79	OK
	87.09	3.41	4.287E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	3.455E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	2.862E+00	9.735E-01	9.738E-01	37.36	OK
	351.93	35.60*	2.414E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	1.437E+00	8.806E-01	8.809E-01	23.71	OK
	1120.29	14.92	8.365E-01	9.682E-01	9.685E-01	70.51	OK
	1764.49	15.30	5.417E-01	9.188E-01	9.191E-01	57.44	OK
RA-224	240.99	4.10*	3.457E+00	6.254E-01	6.254E-01	272.29	OK
RA-226	609.32	45.49*	1.437E+00	8.806E-01	8.809E-01	23.71	OK
	1120.29	14.92	8.365E-01	9.682E-01	9.685E-01	70.51	OK
	1764.49	15.30	5.417E-01	9.188E-01	9.191E-01	57.44	OK
AC-228	105.21	1.10	4.933E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	2.509E+00	9.408E-01	9.408E-01	52.75	OK
	794.95	4.25	1.134E+00	1.725E+00	1.725E+00	60.55	OK
	835.71	1.61	1.085E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.005E+00	1.029E+00	1.029E+00	38.34	OK
	968.97	15.80	9.522E-01	6.186E-01	6.186E-01	67.37	OK
RA-228	105.21	1.10	4.933E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	2.509E+00	9.408E-01	9.408E-01	52.75	OK
	794.95	4.25	1.134E+00	1.725E+00	1.725E+00	60.55	OK
	835.71	1.61	1.085E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.005E+00	1.029E+00	1.029E+00	38.34	OK
	968.97	15.80	9.522E-01	6.186E-01	6.186E-01	67.37	OK
TH-228	74.82	10.28	3.492E+00	7.150E-01	7.150E-01	96.01	OK
	77.11	17.10	3.653E+00	1.371E+00	1.371E+00	29.79	OK
	238.63	43.60*	3.500E+00	8.970E-01	8.970E-01	15.92	OK
	300.09	3.30	2.819E+00	----- Line	Not Found	-----	Absent

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	609.32	45.49*	1.437E+00	8.806E-01	8.806E-01	23.71	OK
	1120.29	14.92	8.365E-01	9.682E-01	9.682E-01	70.51	OK
	1764.49	15.30	5.417E-01	9.188E-01	9.188E-01	57.44	OK
TH-232	105.21	1.10	4.933E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	2.509E+00	9.408E-01	9.408E-01	52.75	OK
	835.71	1.61	1.085E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.005E+00	1.029E+00	1.029E+00	38.34	OK
	968.97	15.80	9.522E-01	6.186E-01	6.186E-01	67.37	OK
TH-234	63.29	3.70*	2.509E+00	1.785E+00	1.785E+00	147.76	OK
	92.59	4.23	4.565E+00	2.580E+00	2.580E+00	63.39	OK
U-234	609.32	45.49*	1.437E+00	8.806E-01	8.806E-01	23.71	OK
	1120.29	14.92	8.365E-01	9.682E-01	9.682E-01	70.51	OK
	1764.49	15.30	5.417E-01	9.188E-01	9.188E-01	57.44	OK
U-235	89.96	3.47	4.432E+00	1.762E+00	1.762E+00	56.15	OK
	93.35	5.60	4.565E+00	1.949E+00	1.949E+00	63.39	OK
	143.76	10.96*	4.954E+00	----- Line	Not Found	-----	Absent
	163.33	5.08	4.674E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	4.300E+00	1.704E-01	1.704E-01	61.18	OK
	205.31	5.01	3.984E+00	----- Line	Not Found	-----	Absent
U-238	63.29	3.70*	2.509E+00	1.785E+00	1.785E+00	147.76	OK
	92.59	4.23	4.565E+00	2.580E+00	2.580E+00	63.39	OK
AM-243	43.53	5.90	5.957E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.492E+00	1.094E-01	1.094E-01	96.01	OK
CF-249	252.80	2.50	3.319E+00	----- Line	Not Found	-----	Absent
	333.37	14.60	2.552E+00	2.482E-01	2.486E-01	84.24	OK
	388.16	66.00*	2.193E+00	1.062E-01	1.064E-01	72.51	OK
ANH-511	511.00	100.00*	1.690E+00	9.326E-02	9.326E-02	98.40	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235062.CNF;1
* Acquisition date   : 3-OCT-2016 05:53:13 Sensitivity      : 3.000
* Detector ID        : GAM36 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.31 Half life ratio : *****
* Sample date        : 14-DEC-2015 13:10:00 Analyst initials: MXR1
* Sample ID          : G405235062 Sample Quantity : 1.4644E+02 GRAM
* Batch Number       : 1596254 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 1-JUN-2016 09:39:12 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM36 CAN.CNF;7
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
BE-7	2.075E+01	2.756E+01	2.757E+01
K-40	1.027E+01	1.844E+00	6.783E-01
CD-109	9.868E-02	3.217E+00	2.295E+00
SN-126	6.347E-03	2.069E-01	1.484E-01
BA-137M	7.699E-02	6.037E-02	7.037E-02
CS-137	8.133E-02	6.377E-02	7.434E-02
TL-208	2.377E-01	7.468E-02	6.431E-02
BI-211	1.316E-01	1.152E+00	4.287E-01
PB-212	8.970E-01	1.399E-01	9.570E-02
BI-214	8.809E-01	2.047E-01	1.436E-01
PB-214	1.022E+00	2.188E-01	3.941E-01
RN-222	8.809E-01	2.047E-01	1.436E-01
RA-224	6.254E-01	1.669E+00	1.028E+00
RA-226	8.809E-01	2.047E-01	1.436E-01
AC-228	1.029E+00	3.868E-01	3.133E-01
RA-228	1.029E+00	3.868E-01	3.133E-01
TH-228	8.970E-01	1.399E-01	9.570E-02
TH-230	8.806E-01	2.046E-01	1.436E-01
TH-232	1.029E+00	3.868E-01	3.133E-01
TH-234	1.785E+00	2.585E+00	2.083E+00
U-234	8.806E-01	2.046E-01	1.436E-01
U-235	4.347E-02	1.917E-01	3.691E-01
U-238	1.785E+00	2.585E+00	2.083E+00
AM-243	1.094E-01	1.029E-01	8.911E-02
CF-249	1.064E-01	7.559E-02	8.007E-02
ANH-511	9.326E-02	8.994E-02	6.738E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
NA-22	-6.126E-03	5.722E-02	1.193E-01	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
AL-26	-1.378E-03	4.784E-02	1.048E-01	NOT IDENT.
SC-46	-5.265E-02	3.170E-01	6.522E-01	FAIL ABUN

V-48	0.000E+00	1.141E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	4.444E+02	0.000E+00	SHORT HLIF
MN-54	-4.324E-02	8.256E-02	1.466E-01	NOT IDENT.
CO-56	2.954E-02	6.216E-01	1.240E+00	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	4.853E-02	4.361E-02	9.479E-02	NOT IDENT.
CO-58	-3.751E-01	7.033E-01	1.254E+00	NOT IDENT.
FE-59	8.973E-01	7.129E+00	1.572E+01	NOT IDENT.
CO-60	-3.067E-02	4.656E-02	8.343E-02	FAIL ABUN
ZN-65	8.957E-02	1.722E-01	3.974E-01	NOT IDENT.
GE-68	-1.790E+00	3.451E+00	5.921E+00	NOT IDENT.
AS-73	-4.405E+00	6.594E+00	1.298E+01	NOT IDENT.
AS-74	0.000E+00	4.829E+03	0.000E+00	SHORT HLIF
SE-75	9.369E-02	2.400E-01	4.714E-01	NOT IDENT.
BR-77	0.000E+00	4.210E+36	0.000E+00	SHORT HLIF
SR-82	0.000E+00	7.000E+02	0.000E+00	SHORT HLIF
RB-83	1.164E-01	7.901E-01	1.640E+00	NOT IDENT.
KR-85	3.266E+00	9.559E+00	1.828E+01	NOT IDENT.
SR-85	3.223E-01	9.467E-01	1.811E+00	NOT IDENT.
RB-86	0.000E+00	3.064E+04	0.000E+00	SHORT HLIF
Y-88	-1.449E-01	2.736E-01	4.941E-01	NOT IDENT.
Y-91	-1.986E+01	6.917E+02	1.418E+03	NOT IDENT.
NB-94	-1.361E-02	4.281E-02	8.025E-02	NOT IDENT.
NB-95	8.616E-01	8.284E-01	1.972E+00	NOT IDENT.
NB-95M	1.931E+00	2.329E+00	4.802E+00	NOT IDENT.
ZR-95	-4.345E-01	1.564E+00	2.653E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	8.754E+40	0.000E+00	SHORT HLIF
MO-99	0.000E+00	4.292E+31	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-3.487E-02	3.226E-02	5.667E-02	NOT IDENT.
RH-102	5.146E-02	6.391E-02	1.504E-01	FAIL ABUN
RU-103	3.935E+00	5.572E+00	1.270E+01	FAIL ABUN
RH-106	1.010E-02	5.234E-01	1.099E+00	NOT IDENT.
RU-106	1.010E-02	5.234E-01	1.099E+00	NOT IDENT.
AG-108M	-5.706E-03	2.759E-02	5.582E-02	NOT IDENT.
AG-110M	-7.338E-03	1.186E-01	2.375E-01	NOT IDENT.
SN-113	-6.791E-02	2.628E-01	4.673E-01	NOT IDENT.
CD-115	0.000E+00	5.243E+38	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	7.064E+04	0.000E+00	SHORT HLIF
TE-123M	-4.641E-02	1.303E-01	2.429E-01	NOT IDENT.
SB-124	-5.841E-01	1.929E+00	4.131E+00	NOT IDENT.
SB-125	-7.819E-03	9.643E-02	2.005E-01	FAIL ABUN
TE-125M	1.764E+01	2.612E+02	5.179E+02	NOT IDENT.
I-126	0.000E+00	6.941E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	9.374E+05	0.000E+00	SHORT HLIF
SB-127	0.000E+00	7.084E+21	0.000E+00	SHORT HLIF
I-131	0.000E+00	3.450E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.159E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.915E+26	0.000E+00	SHORT HLIF
BA-133	7.281E-03	4.577E-02	8.249E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	1.123E-01	6.664E-02	1.519E-01	FAIL ABUN
CS-135	-7.422E-02	1.766E-01	3.124E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.865E+05	0.000E+00	SHORT HLIF
CE-139	3.731E-02	1.164E-01	2.298E-01	NOT IDENT.
BA-140	0.000E+00	9.772E+05	0.000E+00	SHORT HLIF
LA-140	0.000E+00	4.535E+05	0.000E+00	SHORT HLIF
CE-141	8.082E-01	2.146E+01	4.067E+01	NOT IDENT.
CE-143	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CE-144	9.830E-02	3.553E-01	7.101E-01	NOT IDENT.
PM-144	-3.112E-02	6.164E-02	1.129E-01	FAIL ABUN
PR-144	-2.719E+00	5.332E+00	9.750E+00	NOT IDENT.
PM-146	3.664E-02	4.769E-02	1.084E-01	NOT IDENT.
ND-147	0.000E+00	2.842E+07	0.000E+00	SHORT HLIF
PM-147	6.002E+02	7.814E+02	1.648E+03	NOT IDENT.
PM-149	0.000E+00	8.538E+39	0.000E+00	SHORT HLIF
EU-150	1.621E-02	2.924E-02	5.185E-02	FAIL ABUN
EU-152	-4.821E-02	1.010E-01	1.745E-01	FAIL ABUN
GD-153	-1.030E-01	1.758E-01	3.082E-01	NOT IDENT.
EU-154	-1.926E-02	1.395E-01	2.892E-01	NOT IDENT.
EU-155	-9.589E-03	9.956E-02	1.966E-01	FAIL ABUN
TB-160	-1.407E+00	2.244E+00	3.855E+00	FAIL ABUN
HO-166M	4.556E-02	5.973E-02	1.410E-01	NOT IDENT.
TM-171	4.841E+00	1.591E+01	3.442E+01	NOT IDENT.
HF-172	1.951E-01	2.167E-01	4.604E-01	FAIL ABUN
LU-172	-9.367E-03	8.663E-02	1.715E-01	FAIL ABUN

LU-176	-1.640E-02	2.777E-02	4.745E-02	FAIL ABUN
HF-181	6.637E+00	6.008E+00	1.022E+01	FAIL ABUN
TA-182	-7.525E-01	9.199E-01	1.580E+00	FAIL ABUN
RE-183	1.549E-01	2.289E+00	4.795E+00	NOT IDENT.
RE-184	-1.067E+01	2.735E+01	5.103E+01	NOT IDENT.
W-188	1.869E+01	1.288E+02	2.282E+02	FAIL ABUN
IR-192	-1.938E-01	5.030E-01	8.880E-01	FAIL ABUN
HG-203	9.781E-01	2.504E+00	4.934E+00	NOT IDENT.
BI-207	7.678E-02	5.971E-02	1.517E-01	FAIL ABUN
PB-210	-4.107E-01	2.477E+00	5.103E+00	NOT IDENT.
PB-211	-3.912E-01	7.320E-01	1.405E+00	NOT IDENT.
BI-212	5.068E-01	1.063E+00	1.476E+00	FAIL ABUN
RN-219	1.230E-01	4.321E-01	9.147E-01	NOT IDENT.
RA-223	9.480E-01	6.396E-01	1.417E+00	FAIL ABUN
AC-227	-2.493E-01	2.529E-01	4.131E-01	NOT IDENT.
TH-227	-2.493E-01	2.529E-01	4.131E-01	NOT IDENT.
TH-229	1.345E-01	4.614E-01	9.136E-01	FAIL ABUN
PA-231	2.593E-01	5.449E-01	1.071E+00	NOT IDENT.
TH-231	9.480E-01	6.396E-01	1.417E+00	FAIL ABUN
PA-233	2.404E-02	5.971E-02	1.210E-01	NOT IDENT.
PA-234	-1.190E-01	3.444E-01	6.363E-01	NOT IDENT.
PA-234M	2.732E+00	5.606E+00	1.244E+01	NOT IDENT.
NP-237	2.404E-02	5.971E-02	1.210E-01	NOT IDENT.
NP-238	0.000E+00	7.189E+40	0.000E+00	SHORT HLIF
NP-239	-2.750E-02	2.115E-01	4.157E-01	FAIL ABUN
PU-239	2.985E+02	3.061E+02	6.476E+02	NOT IDENT.
AM-241	1.746E-02	1.260E-01	2.464E-01	NOT IDENT.
CM-243	6.845E-02	9.415E-02	1.989E-01	FAIL ABUN
BK-247	4.815E-02	8.327E-02	1.678E-01	NOT IDENT.
CM-247	1.886E-02	3.649E-02	8.038E-02	NOT IDENT.
CF-251	-4.609E-02	1.096E-01	2.020E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
BE-7	477.60	17	10.44*	1.801E+00	4.525E-01	2.075E+01	135.53
K-40	1460.82	140	10.66*	6.546E-01	1.027E+01	1.027E+01	18.32
CD-109	88.03	30	3.70*	4.301E+00	9.606E-01	1.493E+00	217.00
SN-126	64.28	32	9.60	2.509E+00	6.880E-01	6.880E-01	147.76
	86.94	30	8.90	4.301E+00	3.994E-01	3.994E-01	217.00
	87.57	30	37.00*	4.301E+00	9.606E-02	9.606E-02	217.00
BA-137M	661.66	18	89.90*	1.335E+00	7.558E-02	7.699E-02	80.01
CS-137	661.66	18	85.10*	1.335E+00	7.984E-02	8.133E-02	80.01
TL-208	277.37	-----	6.60	3.041E+00	-----	Line Not Found	-----
	583.19	59	85.00*	1.496E+00	2.377E-01	2.377E-01	32.07
	860.56	-----	12.50	1.058E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.327E+00	-----	Line Not Found	-----
	351.06	171	12.92*	2.414E+00	2.814E+00	2.814E+00	21.85
PB-212	74.82	89	10.28	3.492E+00	1.264E+00	1.264E+00	51.81
	77.11	167	17.10	3.653E+00	1.371E+00	1.371E+00	29.79
	238.63	267	43.60*	3.500E+00	8.970E-01	8.970E-01	15.92
	300.09	-----	3.30	2.819E+00	-----	Line Not Found	-----
BI-214	609.32	112	45.49*	1.437E+00	8.806E-01	8.809E-01	23.71
	1120.29	24	14.92	8.365E-01	9.682E-01	9.685E-01	70.51
	1764.49	15	15.30	5.417E-01	9.188E-01	9.191E-01	57.44
PB-214	74.82	89	5.80	3.492E+00	2.241E+00	2.242E+00	51.81
	77.11	167	9.70	3.653E+00	2.416E+00	2.417E+00	29.79
	87.09	30	3.41	4.301E+00	1.042E+00	1.043E+00	217.00
	242.00	65	7.25	3.457E+00	1.327E+00	1.328E+00	67.19
	295.22	100	18.42	2.862E+00	9.735E-01	9.738E-01	37.36
	351.93	171	35.60*	2.414E+00	1.021E+00	1.022E+00	21.85
RN-222	609.32	112	45.49*	1.437E+00	8.806E-01	8.809E-01	23.71
	1120.29	24	14.92	8.365E-01	9.682E-01	9.685E-01	70.51
	1764.49	15	15.30	5.417E-01	9.188E-01	9.191E-01	57.44
RA-224	240.99	65	4.10*	3.457E+00	2.347E+00	2.347E+00	67.19
RA-226	609.32	112	45.49*	1.437E+00	8.806E-01	8.809E-01	23.71
	1120.29	24	14.92	8.365E-01	9.682E-01	9.685E-01	70.51
	1764.49	15	15.30	5.417E-01	9.188E-01	9.191E-01	57.44
AC-228	105.21	-----	1.10	4.933E+00	-----	Line Not Found	-----
	338.32	52	11.27	2.509E+00	9.408E-01	9.408E-01	52.75
	794.95	16	4.25	1.134E+00	1.725E+00	1.725E+00	60.55
	835.71	-----	1.61	1.085E+00	-----	Line Not Found	-----
	911.20	52	25.80*	1.005E+00	1.029E+00	1.029E+00	38.34
	968.97	18	15.80	9.522E-01	6.186E-01	6.186E-01	67.37
RA-228	105.21	-----	1.10	4.933E+00	-----	Line Not Found	-----
	338.32	52	11.27	2.509E+00	9.408E-01	9.408E-01	52.75
	794.95	16	4.25	1.134E+00	1.725E+00	1.725E+00	60.55
	835.71	-----	1.61	1.085E+00	-----	Line Not Found	-----
	911.20	52	25.80*	1.005E+00	1.029E+00	1.029E+00	38.34
	968.97	18	15.80	9.522E-01	6.186E-01	6.186E-01	67.37
TH-228	74.82	89	10.28	3.492E+00	1.264E+00	1.264E+00	51.81
	77.11	167	17.10	3.653E+00	1.371E+00	1.371E+00	29.79

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	238.63	267	43.60*	3.500E+00	8.970E-01	8.970E-01	15.92
	300.09	-----	3.30	2.819E+00	-----	Line Not Found	-----
TH-230	609.32	112	45.49*	1.437E+00	8.806E-01	8.806E-01	23.71
	1120.29	24	14.92	8.365E-01	9.682E-01	9.682E-01	70.51
	1764.49	15	15.30	5.417E-01	9.188E-01	9.188E-01	57.44
TH-232	105.21	-----	1.10	4.933E+00	-----	Line Not Found	-----
	338.32	52	11.27	2.509E+00	9.408E-01	9.408E-01	52.75
	835.71	-----	1.61	1.085E+00	-----	Line Not Found	-----
	911.20	52	25.80*	1.005E+00	1.029E+00	1.029E+00	38.34
	968.97	18	15.80	9.522E-01	6.186E-01	6.186E-01	67.37
TH-234	63.29	32	3.70*	2.509E+00	1.785E+00	1.785E+00	147.76
	92.59	97	4.23	4.565E+00	2.580E+00	2.580E+00	63.39
U-234	609.32	112	45.49*	1.437E+00	8.806E-01	8.806E-01	23.71
	1120.29	24	14.92	8.365E-01	9.682E-01	9.682E-01	70.51
	1764.49	15	15.30	5.417E-01	9.188E-01	9.188E-01	57.44
U-235	89.96	53	3.47	4.432E+00	1.762E+00	1.762E+00	56.15
	93.35	97	5.60	4.565E+00	1.949E+00	1.949E+00	63.39
	143.76	-----	10.96*	4.954E+00	-----	Line Not Found	-----
	163.33	-----	5.08	4.674E+00	-----	Line Not Found	-----
	185.72	82	57.20	4.300E+00	1.704E-01	1.704E-01	61.18
	205.31	-----	5.01	3.984E+00	-----	Line Not Found	-----
U-238	63.29	32	3.70*	2.509E+00	1.785E+00	1.785E+00	147.76
	92.59	97	4.23	4.565E+00	2.580E+00	2.580E+00	63.39
AM-243	43.53	-----	5.90	5.957E-01	-----	Line Not Found	-----
	74.66	89	67.20*	3.492E+00	1.934E-01	1.934E-01	51.81
CF-249	252.80	-----	2.50	3.319E+00	-----	Line Not Found	-----
	333.37	18	14.60	2.552E+00	2.482E-01	2.486E-01	84.24
	388.16	30	66.00*	2.193E+00	1.062E-01	1.064E-01	72.51
ANH-511	511.00	31	100.00*	1.690E+00	9.326E-02	9.326E-02	98.40

Flag: "*" = Keyline

Total number of lines in spectrum 41
Number of unidentified lines 3
Number of lines tentatively identified by NID 38 92.68%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BE-7	53.22D	45.9	4.525E-01	2.075E+01	2.812E+01	135.53	
K-40	1.25E+09Y	1.00	1.027E+01	1.027E+01	0.188E+01	18.32	
CD-109	461.40D	1.55	9.606E-01	1.493E+00	3.241E+00	217.00	
SN-126	2.30E+05Y	1.00	9.606E-02	9.606E-02	20.85E-02	217.00	
BA-137M	30.08Y	1.02	7.558E-02	7.699E-02	6.160E-02	80.01	
CS-137	30.08Y	1.02	7.984E-02	8.133E-02	6.507E-02	80.01	
TL-208	1.41E+10Y	1.00	2.377E-01	2.377E-01	0.762E-01	32.07	
BI-211	7.04E+08Y	1.00	2.814E+00	2.814E+00	0.615E+00	21.85	
PB-212	1.41E+10Y	1.00	8.970E-01	8.970E-01	1.428E-01	15.92	
BI-214	1600.00Y	1.00	8.806E-01	8.809E-01	2.089E-01	23.71	
PB-214	1600.00Y	1.00	1.021E+00	1.022E+00	0.223E+00	21.85	
RN-222	1600.00Y	1.00	8.806E-01	8.809E-01	2.089E-01	23.71	
RA-224	1.41E+10Y	1.00	2.347E+00	2.347E+00	1.577E+00	67.19	
RA-226	1600.00Y	1.00	8.806E-01	8.809E-01	2.089E-01	23.71	
AC-228	1.41E+10Y	1.00	1.029E+00	1.029E+00	0.395E+00	38.34	
RA-228	1.41E+10Y	1.00	1.029E+00	1.029E+00	0.395E+00	38.34	
TH-228	1.41E+10Y	1.00	8.970E-01	8.970E-01	1.428E-01	15.92	
TH-230	7.54E+04Y	1.00	8.806E-01	8.806E-01	2.088E-01	23.71	
TH-232	1.41E+10Y	1.00	1.029E+00	1.029E+00	0.395E+00	38.34	
TH-234	4.47E+09Y	1.00	1.785E+00	1.785E+00	2.638E+00	147.76	
U-234	2.45E+05Y	1.00	8.806E-01	8.806E-01	2.088E-01	23.71	
U-235	7.04E+08Y	1.00	1.704E-01	1.704E-01	1.042E-01	61.18	K
U-238	4.47E+09Y	1.00	1.785E+00	1.785E+00	2.638E+00	147.76	
AM-243	7370.00Y	1.00	1.934E-01	1.934E-01	1.002E-01	51.81	
CF-249	351.00Y	1.00	1.062E-01	1.064E-01	0.771E-01	72.51	
ANH-511	1.00E+09Y	1.00	9.326E-02	9.326E-02	9.177E-02	98.40	

Total Activity : 3.177E+01 5.261E+01

Grand Total Activity : 3.177E+01 5.261E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.69	56	101	1.93	419.37	413	12	1.35E-02	83.6	3.92E+00	T
0	229.01	21	51	0.59	458.01	454	8	5.17E-03	****	3.63E+00	T
1	327.91	29	16	1.32	655.80	652	11	7.36E-03	68.3	2.59E+00	T
1	329.89	16	10	1.32	659.76	652	11	4.00E-03	97.8	2.57E+00	
0	463.83	13	20	0.68	927.63	921	9	3.45E-03	****	1.85E+00	T
0	482.27	15	9	1.43	964.50	959	9	3.96E-03	92.4	1.78E+00	T
0	505.99	11	5	1.57	1011.94	1009	6	2.91E-03	89.1	1.71E+00	T
0	727.92	8	18	0.95	1455.71	1450	11	2.18E-03	****	1.23E+00	T
0	754.46	16	2	2.30	1508.78	1504	10	4.38E-03	62.4	1.19E+00	T
0	768.34	17	3	1.53	1536.53	1533	7	4.67E-03	60.8	1.17E+00	T
0	820.27	6	3	1.37	1640.37	1637	6	1.76E-03	****	1.10E+00	
5	964.75	18	10	2.70	1929.24	1923	19	5.08E-03	84.1	9.56E-01	T
0	1053.83	6	7	0.60	2107.33	2102	7	1.67E-03	****	8.84E-01	
0	1173.95	9	2	1.53	2347.47	2344	7	2.61E-03	79.7	8.03E-01	T
0	1188.54	8	3	1.23	2376.64	2373	7	2.25E-03	****	7.94E-01	T
0	1233.94	13	0	0.98	2467.38	2462	10	3.61E-03	55.5	7.67E-01	T

Flags: "T" = Tentatively associated

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Nuclide	Lc (pCi/GRAM)
BE-7	1.204E+01
K-40	2.392E-01
CD-109	1.076E+00
SN-126	6.955E-02
BA-137M	2.916E-02
CS-137	3.080E-02
TL-208	2.656E-02
BI-211	1.914E-01
PB-212	4.310E-02
BI-214	6.093E-02
PB-214	1.888E-01
RN-222	6.093E-02
RA-224	4.629E-01
RA-226	6.093E-02
AC-228	1.295E-01
RA-228	1.295E-01
TH-228	4.310E-02
TH-230	6.091E-02
TH-232	1.295E-01
TH-234	9.601E-01
U-234	6.091E-02
U-235	1.711E-01
U-238	9.601E-01
AM-243	4.137E-02
CF-249	3.507E-02
ANH-511	2.947E-02

Nuclide	Lc (pCi/GRAM)	
NA-22	4.801E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	3.924E-02	NOT IDENT.
SC-46	2.481E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF

CR-51	0.000E+00	SHORT HLIF
MN-54	6.080E-02	NOT IDENT.
CO-56	5.280E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.384E-02	NOT IDENT.
CO-58	5.141E-01	NOT IDENT.
FE-59	6.445E+00	NOT IDENT.
CO-60	3.084E-02	FAIL ABUN
ZN-65	1.607E-01	NOT IDENT.
GE-68	2.428E+00	NOT IDENT.
AS-73	5.880E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	2.146E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	7.190E-01	NOT IDENT.
KR-85	8.111E+00	NOT IDENT.
SR-85	8.032E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.562E-01	NOT IDENT.
Y-91	5.976E+02	NOT IDENT.
NB-94	3.451E-02	NOT IDENT.
NB-95	8.408E-01	NOT IDENT.
NB-95M	2.202E+00	NOT IDENT.
ZR-95	1.062E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.582E-02	NOT IDENT.
RH-102	6.461E-02	FAIL ABUN
RU-103	5.541E+00	FAIL ABUN
RH-106	4.620E-01	NOT IDENT.
RU-106	4.620E-01	NOT IDENT.
AG-108M	2.389E-02	NOT IDENT.
AG-110M	9.754E-02	NOT IDENT.
SN-113	2.039E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.113E-01	NOT IDENT.
SB-124	1.306E+00	NOT IDENT.
SB-125	8.550E-02	FAIL ABUN
TE-125M	2.400E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.613E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	6.641E-02	FAIL ABUN
CS-135	1.418E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
CE-139	1.063E-01	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.873E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	3.283E-01	NOT IDENT.
PM-144	4.663E-02	FAIL ABUN
PR-144	4.027E+00	NOT IDENT.
PM-146	4.775E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.615E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.293E-02	FAIL ABUN
EU-152	7.580E-02	FAIL ABUN
GD-153	1.415E-01	NOT IDENT.
EU-154	1.160E-01	NOT IDENT.
EU-155	9.032E-02	FAIL ABUN
TB-160	1.550E+00	FAIL ABUN
HO-166M	6.001E-02	NOT IDENT.
TM-171	1.570E+01	NOT IDENT.
HF-172	2.130E-01	FAIL ABUN
LU-172	6.818E-02	FAIL ABUN
LU-176	2.093E-02	FAIL ABUN

HF-181	4.506E+00	FAIL ABUN
TA-182	5.914E-01	FAIL ABUN
RE-183	2.193E+00	NOT IDENT.
RE-184	1.977E+01	NOT IDENT.
W-188	1.027E+02	FAIL ABUN
IR-192	3.927E-01	FAIL ABUN
HG-203	2.235E+00	NOT IDENT.
BI-207	6.494E-02	FAIL ABUN
PB-210	2.340E+00	NOT IDENT.
PB-211	6.126E-01	NOT IDENT.
BI-212	6.515E-01	FAIL ABUN
RN-219	4.062E-01	NOT IDENT.
RA-223	6.395E-01	FAIL ABUN
AC-227	1.833E-01	NOT IDENT.
TH-227	1.833E-01	NOT IDENT.
TH-229	4.173E-01	FAIL ABUN
PA-231	4.875E-01	NOT IDENT.
TH-231	6.395E-01	FAIL ABUN
PA-233	5.362E-02	NOT IDENT.
PA-234	2.578E-01	NOT IDENT.
PA-234M	5.316E+00	NOT IDENT.
NP-237	5.362E-02	NOT IDENT.
NP-238	0.000E+00	SHORT HLIF
NP-239	1.896E-01	FAIL ABUN
PU-239	3.009E+02	NOT IDENT.
AM-241	1.134E-01	NOT IDENT.
CM-243	9.211E-02	FAIL ABUN
BK-247	7.633E-02	NOT IDENT.
CM-247	3.549E-02	NOT IDENT.
CF-251	9.150E-02	NOT IDENT.

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Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
BE-7	2.075E+01	2.758E+01	2.758E+01
K-40	1.027E+01	1.921E+00	1.921E+00
CD-109	9.868E-02	3.221E+00	3.221E+00
SN-126	6.347E-03	2.072E-01	2.072E-01
BA-137M	7.699E-02	6.046E-02	6.046E-02
CS-137	8.133E-02	6.387E-02	6.387E-02
TL-208	2.377E-01	7.537E-02	7.537E-02
BI-211	1.316E-01	1.164E+00	1.164E+00
PB-212	8.970E-01	1.477E-01	1.477E-01
BI-214	8.809E-01	2.082E-01	2.082E-01
PB-214	1.022E+00	2.229E-01	2.229E-01
RN-222	8.809E-01	2.082E-01	2.082E-01
RA-224	6.254E-01	1.673E+00	1.673E+00
RA-226	8.809E-01	2.082E-01	2.082E-01
AC-228	1.029E+00	3.904E-01	3.904E-01
RA-228	1.029E+00	3.904E-01	3.904E-01
TH-228	8.970E-01	1.477E-01	1.477E-01
TH-230	8.806E-01	2.081E-01	2.081E-01
TH-232	1.029E+00	3.904E-01	3.904E-01
TH-234	1.785E+00	2.615E+00	2.615E+00
U-234	8.806E-01	2.081E-01	2.081E-01
U-235	4.347E-02	1.917E-01	1.917E-01
U-238	1.785E+00	2.615E+00	2.615E+00
AM-243	1.094E-01	1.037E-01	1.037E-01
CF-249	1.064E-01	7.609E-02	7.609E-02
ANH-511	9.326E-02	9.002E-02	9.002E-02

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
NA-22	-6.126E-03	5.722E-02	5.729E-02	NOT IDENT.
NA-24	-1.000E+41	3.126E+41	0.000E+00	SHORT HLIF
AL-26	-1.378E-03	4.784E-02	4.785E-02	NOT IDENT.
SC-46	-5.265E-02	3.170E-01	3.179E-01	FAIL ABUN

V-48	4.628E+03	1.141E+04	1.160E+04	SHORT HLIF
CR-51	-1.408E+02	4.444E+02	4.489E+02	SHORT HLIF
MN-54	-4.324E-02	8.258E-02	8.485E-02	NOT IDENT.
CO-56	2.954E-02	6.216E-01	6.217E-01	NOT IDENT.
MN-56	1.000E+41	1.785E+42	0.000E+00	SHORT HLIF
CO-57	4.853E-02	4.367E-02	4.885E-02	NOT IDENT.
CO-58	-3.751E-01	7.035E-01	7.236E-01	NOT IDENT.
FE-59	8.973E-01	7.129E+00	7.141E+00	NOT IDENT.
CO-60	-3.067E-02	4.657E-02	4.858E-02	FAIL ABUN
ZN-65	8.957E-02	1.722E-01	1.769E-01	NOT IDENT.
GE-68	-1.790E+00	3.451E+00	3.544E+00	NOT IDENT.
AS-73	-4.405E+00	6.656E+00	6.946E+00	NOT IDENT.
AS-74	3.866E+02	4.829E+03	4.833E+03	SHORT HLIF
SE-75	9.369E-02	2.400E-01	2.437E-01	NOT IDENT.
BR-77	2.698E+37	2.288E+38	0.000E+00	SHORT HLIF
SR-82	4.558E+02	7.003E+02	7.299E+02	SHORT HLIF
RB-83	1.164E-01	7.902E-01	7.920E-01	NOT IDENT.
KR-85	3.266E+00	9.560E+00	9.672E+00	NOT IDENT.
SR-85	3.223E-01	9.468E-01	9.579E-01	NOT IDENT.
RB-86	-1.146E+04	3.064E+04	3.108E+04	SHORT HLIF
Y-88	-1.449E-01	2.738E-01	2.815E-01	NOT IDENT.
Y-91	-1.986E+01	6.917E+02	6.918E+02	NOT IDENT.
NB-94	-1.361E-02	4.282E-02	4.326E-02	NOT IDENT.
NB-95	8.616E-01	8.292E-01	9.157E-01	NOT IDENT.
NB-95M	1.931E+00	2.334E+00	2.491E+00	NOT IDENT.
ZR-95	-4.345E-01	1.564E+00	1.577E+00	NOT IDENT.
NB-97	1.000E+41	4.922E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	8.763E+40	0.000E+00	SHORT HLIF
MO-99	-1.941E+31	4.294E+31	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	3.395E+41	0.000E+00	SHORT HLIF
RH-101	-3.487E-02	3.287E-02	3.644E-02	NOT IDENT.
RH-102	5.146E-02	6.404E-02	6.812E-02	FAIL ABUN
RU-103	3.935E+00	5.575E+00	5.850E+00	FAIL ABUN
RH-106	1.010E-02	5.234E-01	5.234E-01	NOT IDENT.
RU-106	1.010E-02	5.234E-01	5.234E-01	NOT IDENT.
AG-108M	-5.706E-03	2.759E-02	2.771E-02	NOT IDENT.
AG-110M	-7.338E-03	1.186E-01	1.186E-01	NOT IDENT.
SN-113	-6.791E-02	2.628E-01	2.646E-01	NOT IDENT.
CD-115	8.343E+37	5.246E+38	0.000E+00	SHORT HLIF
SN-117M	-1.342E+04	7.066E+04	7.092E+04	SHORT HLIF
TE-123M	-4.641E-02	1.303E-01	1.320E-01	NOT IDENT.
SB-124	-5.841E-01	1.929E+00	1.947E+00	NOT IDENT.
SB-125	-7.819E-03	9.644E-02	9.650E-02	FAIL ABUN
TE-125M	1.764E+01	2.612E+02	2.613E+02	NOT IDENT.
I-126	-1.316E+05	6.943E+05	6.968E+05	SHORT HLIF
SB-126	2.394E+05	9.384E+05	9.446E+05	SHORT HLIF
SB-127	-2.769E+21	8.005E+21	0.000E+00	SHORT HLIF
I-131	-2.580E+09	3.452E+09	3.643E+09	SHORT HLIF
I-132	-1.000E+41	1.814E+42	0.000E+00	SHORT HLIF
TE-132	1.462E+26	2.001E+26	0.000E+00	SHORT HLIF
BA-133	7.281E-03	4.578E-02	4.589E-02	NOT IDENT.
I-133	-1.000E+41	4.481E+41	0.000E+00	SHORT HLIF
CS-134	1.123E-01	6.681E-02	8.382E-02	FAIL ABUN
CS-135	-7.422E-02	1.767E-01	1.799E-01	NOT IDENT.
I-135	-1.000E+41	1.472E+42	0.000E+00	SHORT HLIF
CS-136	7.146E+04	2.867E+05	2.885E+05	SHORT HLIF
CE-139	3.731E-02	1.166E-01	1.178E-01	NOT IDENT.
BA-140	-3.784E+05	9.773E+05	9.921E+05	SHORT HLIF
LA-140	-7.554E+04	4.535E+05	4.548E+05	SHORT HLIF
CE-141	8.082E-01	2.146E+01	2.146E+01	NOT IDENT.
CE-143	1.000E+41	9.032E+42	0.000E+00	SHORT HLIF
CE-144	9.830E-02	3.553E-01	3.581E-01	NOT IDENT.
PM-144	-3.112E-02	6.167E-02	6.325E-02	FAIL ABUN
PR-144	-2.719E+00	5.333E+00	5.472E+00	NOT IDENT.
PM-146	3.664E-02	4.776E-02	5.054E-02	NOT IDENT.
ND-147	8.488E+05	2.842E+07	2.843E+07	SHORT HLIF
PM-147	6.002E+02	7.819E+02	8.274E+02	NOT IDENT.
PM-149	-5.573E+39	8.622E+39	0.000E+00	SHORT HLIF
EU-150	1.621E-02	2.925E-02	3.015E-02	FAIL ABUN
EU-152	-4.821E-02	1.010E-01	1.033E-01	FAIL ABUN
GD-153	-1.030E-01	1.759E-01	1.820E-01	NOT IDENT.
EU-154	-1.926E-02	1.395E-01	1.398E-01	NOT IDENT.
EU-155	-9.589E-03	9.956E-02	9.966E-02	FAIL ABUN
TB-160	-1.407E+00	2.245E+00	2.333E+00	FAIL ABUN
HO-166M	4.556E-02	5.978E-02	6.321E-02	NOT IDENT.
TM-171	4.841E+00	1.592E+01	1.607E+01	NOT IDENT.
HF-172	1.951E-01	2.190E-01	2.360E-01	FAIL ABUN
LU-172	-9.367E-03	8.663E-02	8.674E-02	FAIL ABUN

LU-176	-1.640E-02	2.778E-02	2.874E-02	FAIL ABUN
HF-181	6.637E+00	6.015E+00	6.718E+00	FAIL ABUN
TA-182	-7.525E-01	9.203E-01	9.809E-01	FAIL ABUN
RE-183	1.549E-01	2.290E+00	2.291E+00	NOT IDENT.
RE-184	-1.067E+01	2.746E+01	2.788E+01	NOT IDENT.
W-188	1.869E+01	1.288E+02	1.291E+02	FAIL ABUN
IR-192	-1.938E-01	5.031E-01	5.106E-01	FAIL ABUN
HG-203	9.781E-01	2.505E+00	2.543E+00	NOT IDENT.
BI-207	7.678E-02	5.979E-02	6.908E-02	FAIL ABUN
PB-210	-4.107E-01	2.477E+00	2.484E+00	NOT IDENT.
PB-211	-3.912E-01	7.323E-01	7.532E-01	NOT IDENT.
BI-212	5.068E-01	1.063E+00	1.087E+00	FAIL ABUN
RN-219	1.230E-01	4.324E-01	4.359E-01	NOT IDENT.
RA-223	9.480E-01	6.423E-01	7.715E-01	FAIL ABUN
AC-227	-2.493E-01	2.550E-01	2.787E-01	NOT IDENT.
TH-227	-2.493E-01	2.550E-01	2.787E-01	NOT IDENT.
TH-229	1.345E-01	4.615E-01	4.654E-01	FAIL ABUN
PA-231	2.593E-01	5.477E-01	5.601E-01	NOT IDENT.
TH-231	9.480E-01	6.423E-01	7.715E-01	FAIL ABUN
PA-233	2.404E-02	5.972E-02	6.070E-02	NOT IDENT.
PA-234	-1.190E-01	3.703E-01	3.742E-01	NOT IDENT.
PA-234M	2.732E+00	5.608E+00	5.741E+00	NOT IDENT.
NP-237	2.404E-02	5.972E-02	6.070E-02	NOT IDENT.
NP-238	-9.649E+39	7.189E+40	0.000E+00	SHORT HLIF
NP-239	-2.750E-02	2.115E-01	2.119E-01	FAIL ABUN
PU-239	2.985E+02	3.064E+02	3.346E+02	NOT IDENT.
AM-241	1.746E-02	1.260E-01	1.262E-01	NOT IDENT.
CM-243	6.845E-02	9.436E-02	9.928E-02	FAIL ABUN
BK-247	4.815E-02	8.383E-02	8.659E-02	NOT IDENT.
CM-247	1.886E-02	3.663E-02	3.761E-02	NOT IDENT.
CF-251	-4.609E-02	1.098E-01	1.117E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
74.66	14.0690	105.31	75.1328	131.20	57.5436
879.38	39.3639	86.79	75.1725	133.02	48.0972
46.54	37.1209	86.94	75.1979	133.52	45.2487
228.16	0.0000	87.09	75.2233	136.00	47.3656
52.39	32.8973	87.57	75.3034	136.47	45.4667
1093.63	35.3626	88.03	75.3796	739.50	0.0000
52.39	31.3953	306.78	75.4310	140.51	0.0000
125.81	37.0976	88.47	38.9052	143.76	47.9525
53.44	41.9977	143.76	56.7739	144.24	51.9058
54.07	38.8423	90.64	48.5659	145.44	43.1722
293.27	0.0000	531.02	0.0000	152.43	58.5067
482.18	44.9726	92.59	48.7692	1048.07	0.0000
57.98	37.6630	93.35	48.8481	154.21	40.7648
59.27	42.7356	94.56	48.9728	158.56	0.0000
59.32	42.7417	311.90	48.9820	159.00	47.0595
59.54	41.6723	946.00	48.9840	162.33	40.2423
60.96	55.0547	94.87	33.4665	537.26	0.0000
61.17	44.0700	97.43	45.6604	163.33	48.3596
62.93	46.5021	98.43	39.7337	165.86	44.4881
63.29	46.5484	98.44	39.7347	427.87	47.1820
290.67	46.5856	103.37	39.8226	176.60	0.0000
87.57	46.6752	116.74	39.8226	177.52	38.0123
66.73	59.2907	100.11	39.8693	181.07	0.0000
67.24	48.7291	102.03	49.1188	181.52	37.1810
67.68	47.9446	103.18	31.9089	184.41	38.3584
1221.41	47.9533	103.37	39.2171	185.72	38.4233
97.43	54.1138	911.20	44.8504	193.51	32.5132
279.20	59.3632	105.31	44.8593	197.03	40.0294
1063.66	47.7298	106.12	44.0127	198.01	40.0781
72.87	47.7371	106.47	41.2901	201.83	42.3846
351.06	47.7371	109.28	52.5825	203.43	39.2820
74.66	56.5128	111.00	48.1255	205.31	31.2128
238.63	56.5350	111.76	0.0000	210.85	35.3460
351.93	56.5350	114.06	33.5075	215.65	35.5439
238.63	56.5350	116.30	0.0000	222.11	28.2118
74.97	56.5561	116.74	38.3480	227.09	45.1005
77.11	56.8517	119.76	47.9600	227.38	42.2043
78.74	50.7327	264.66	44.3049	228.16	0.0000
256.23	53.1585	121.22	35.8274	228.18	22.9418
133.52	52.0555	344.28	37.7499	235.69	27.5368
364.49	0.0000	122.06	31.1591	235.96	27.5448
711.68	46.3204	122.92	52.0098	238.63	27.6241
356.01	43.4692	1274.44	52.0232	238.98	0.0000
323.87	43.4761	123.68	53.0255	240.99	27.6936
81.75	54.8669	125.81	35.1636	242.00	27.7233
83.79	51.3333	127.23	55.2545	244.70	32.6213
265.00	51.3580	127.91	55.3186	685.70	0.0000
193.51	74.9447	129.30	39.1964	388.16	28.0369

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
507.63	0.0000	345.93	23.1818	569.50	10.3582
256.23	36.0127	351.06	23.2774	569.70	9.4173
527.90	0.0000	351.93	23.2937	583.19	7.5889
264.66	28.3737	355.39	0.0000	584.27	7.5931
264.80	28.3775	356.01	14.7590	595.83	0.0000
265.00	24.9769	364.49	0.0000	600.60	13.4024
268.22	39.8621	366.42	0.0000	602.52	0.0000
269.46	33.0693	372.51	22.4231	604.72	8.6342
270.03	34.2279	375.05	14.9777	607.14	11.5264
401.81	26.2723	377.52	17.5064	609.32	10.5779
273.65	0.0000	383.85	25.1276	610.33	10.5833
276.40	30.9955	388.16	16.8050	614.28	2.8922
583.19	27.5771	666.33	0.0000	618.01	9.6590
277.60	26.4337	391.69	18.9546	884.68	17.4067
402.40	27.5940	400.66	21.1980	621.93	7.7425
279.20	25.3234	401.81	17.8213	630.19	0.0000
279.54	29.9371	402.40	13.5837	631.29	5.8342
279.70	31.0935	404.85	19.5607	633.25	11.6797
280.46	28.8109	410.95	18.7912	634.78	0.0000
301.36	25.4308	413.71	23.9622	635.95	9.7461
284.31	0.0000	720.70	0.0000	636.99	0.0000
285.41	30.1030	423.72	0.0000	1690.97	9.7937
285.90	0.0000	427.09	11.2287	657.76	8.8656
287.50	23.2013	427.87	12.0990	657.90	0.0000
290.67	24.8210	433.94	13.8844	661.66	7.8952
293.27	0.0000	439.40	16.5481	664.57	0.0000
295.22	26.8717	453.88	10.5515	666.33	0.0000
316.51	26.8893	463.37	11.5009	666.50	0.0000
298.58	42.1875	468.07	10.6482	667.71	0.0000
299.98	18.7739	473.00	0.0000	677.62	12.9275
300.09	23.4698	631.29	16.0430	685.70	0.0000
300.13	23.4705	696.49	16.0602	695.00	0.0000
311.90	23.4705	477.60	16.0682	696.49	12.0386
301.36	27.0205	482.18	9.3998	696.51	12.0386
302.85	36.4681	487.02	0.0000	697.00	0.0000
304.50	24.7401	492.35	0.0000	697.30	12.0430
304.85	0.0000	497.08	9.0342	697.49	14.0513
306.78	27.1518	505.52	10.8962	702.65	16.0964
308.46	21.2805	507.63	0.0000	706.68	11.0868
311.90	15.4157	511.00	16.3976	711.68	5.0509
316.51	25.0016	514.00	16.4268	720.70	0.0000
319.41	0.0000	514.00	16.4268	721.93	0.0000
320.08	0.0000	520.40	13.7402	722.78	9.1370
321.04	35.8557	520.69	0.0000	722.91	6.0916
323.87	9.5847	667.71	0.0000	723.31	6.0928
325.23	19.1914	527.90	0.0000	756.73	10.6666
1596.21	0.0000	528.26	8.2819	727.33	9.1556
333.37	20.9325	529.59	11.9717	733.00	12.2378
333.97	12.0825	529.87	0.0000	735.93	10.2116
334.37	7.2519	531.02	0.0000	737.46	8.1748
338.28	25.4637	537.26	0.0000	739.50	0.0000
338.32	25.4643	1260.41	0.0000	747.24	7.1834
340.48	24.2944	552.55	14.9271	748.06	11.2923
340.55	0.0000	795.86	15.0150	752.31	7.7133
344.28	20.7141	569.33	10.3573	753.82	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
756.73	7.7283	968.97	5.5929	1505.03	4.8950
756.80	7.7283	983.53	0.0000	1584.12	5.9843
763.94	10.8529	984.45	0.0000	1596.21	0.0000
765.81	3.1033	996.26	4.5168	1620.50	5.0284
1001.03	9.3124	1001.03	5.6551	1621.92	2.0120
766.84	9.3138	1002.74	5.6584	1678.03	0.0000
772.60	0.0000	1004.73	10.1920	1690.97	2.0430
776.52	0.0000	1021.30	0.0000	1750.46	0.0000
777.92	0.0000	1025.87	0.0000	1764.49	1.0377
778.90	5.2008	1028.54	0.0000	1770.23	6.2333
783.70	0.0000	1037.84	5.7255	1771.35	3.1174
785.37	7.3008	1038.76	0.0000	1791.20	0.0000
903.28	10.9819	1046.59	9.1868	1808.65	3.1415
794.95	6.2827	1048.07	0.0000	1810.72	0.0000
795.86	10.9990	1049.04	6.8955	1836.06	3.1591
801.95	11.5514	1050.41	6.8989		
810.06	11.5899	1063.66	2.3096		
810.29	11.5908	1077.00	0.0000		
810.45	11.5917	1077.34	11.5983		
810.76	11.5931	1085.87	4.6520		
815.77	0.0000	1093.63	5.8293		
818.51	0.0000	1099.45	6.1323		
832.01	7.4406	1112.07	5.2767		
834.85	12.7700	1112.84	8.7970		
835.71	9.5808	1115.54	2.8174		
836.80	0.0000	1120.29	7.0537		
846.75	0.0000	1120.55	7.0542		
846.77	10.6917	1121.30	7.0562		
856.80	0.0000	1808.65	7.0742		
860.56	8.5993	1131.51	0.0000		
871.09	4.3171	1147.95	0.0000		
873.19	12.9614	1332.49	3.5840		
875.33	0.0000	1177.95	2.8713		
879.38	10.8268	1189.05	7.2017		
880.51	8.6650	1204.77	9.9479		
883.24	6.5056	1221.41	8.1788		
884.68	7.5939	1231.02	2.9160		
889.28	4.3470	1235.36	0.0000		
894.76	6.5339	1238.28	1.4610		
1836.06	7.6320	1260.41	0.0000		
900.72	5.4569	1271.87	7.3740		
903.28	6.5547	1274.44	6.4570		
911.20	7.6694	1274.54	6.4574		
912.08	7.6719	1291.59	2.7805		
984.45	0.0000	1298.22	0.0000		
926.50	7.7124	1312.11	0.0000		
929.11	9.9254	1332.49	6.5599		
937.49	9.9554	1362.66	0.0000		
983.53	0.0000	1365.19	3.7810		
946.00	8.8763	1368.63	0.0000		
949.00	4.4429	1384.29	7.5996		
954.55	0.0000	1408.01	2.8672		
962.31	3.3479	1457.56	0.0000		
964.08	5.5833	1460.82	1.9370		
966.17	5.5874	1489.16	1.9504		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 06:56:28.72

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235063.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM44.CNF;111
Background date    : 2-OCT-2016 11:02:28.
Sample date       : 14-DEC-2015 13:15:00 Acquisition date : 3-OCT-2016 05:53:40.
Sample ID        : G405235063 Sample quantity : 1.47883E+02 GRAM
Detector name    : GAM44 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.75 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 3.00000
Batch ID        : 1596254 Detector SN# :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	63.34*	28	84	1.37	127.13	124	11	7.86E-03	55.9	1.27E+00
2	4	65.77	22	74	1.09	131.99	124	11	6.15E-03	60.8	
3	1	74.80	58	125	0.93	150.05	147	13	1.60E-02	31.6	1.70E+00
4	1	77.17*	122	99	1.06	154.81	147	13	3.40E-02	16.3	
5	0	84.27	35	105	1.37	169.00	167	6	9.84E-03	48.3	
6	4	87.25	48	112	0.95	174.98	172	20	1.33E-02	35.9	7.10E-01
7	4	89.87	41	142	1.45	180.22	172	20	1.14E-02	56.1	
8	4	92.67*	54	118	1.46	185.81	172	20	1.50E-02	44.0	
9	0	110.26	36	121	1.05	221.01	217	9	1.00E-02	57.6	
10	0	144.83	20	98	1.24	290.17	287	7	5.65E-03	84.0	
11	0	154.39	21	81	0.83	309.31	306	6	5.83E-03	71.2	
12	0	185.93*	62	122	1.29	372.41	367	10	1.73E-02	36.6	
13	3	205.54	25	60	1.56	411.64	408	29	6.99E-03	55.0	9.60E-01
14	3	209.50	35	61	1.20	419.57	408	29	9.60E-03	42.4	
15	3	211.70	27	79	1.57	423.96	408	29	7.55E-03	65.5	
16	6	238.68*	340	65	1.10	477.96	473	17	9.44E-02	6.8	9.83E-01
17	6	241.60	77	100	1.82	483.79	473	17	2.14E-02	34.5	
18	0	270.36	23	50	1.37	541.35	537	9	6.37E-03	59.2	
19	0	295.45	147	79	1.11	591.55	586	12	4.08E-02	14.7	
20	0	300.07	37	37	1.75	600.78	597	7	1.02E-02	32.0	
21	0	338.64	65	96	1.32	677.96	672	14	1.80E-02	34.2	
22	0	352.00*	202	51	1.30	704.69	700	10	5.61E-02	9.8	
23	1	401.23	24	24	1.53	803.20	799	19	6.79E-03	38.3	1.54E+00
24	1	405.01	21	18	1.53	810.76	799	19	5.78E-03	45.3	
25	0	463.97	19	37	2.60	928.75	922	10	5.24E-03	64.9	
26	0	511.35*	56	22	2.47	1023.57	1017	16	1.56E-02	28.4	
27	0	520.52	11	16	0.87	1041.91	1038	8	3.06E-03	69.8	
28	5	543.58	10	6	1.56	1088.05	1086	12	2.87E-03	36.7	8.91E-01
29	5	546.66	15	10	1.65	1094.23	1086	12	4.25E-03	45.8	
30	0	583.42*	84	33	1.19	1167.77	1162	10	2.33E-02	17.2	
31	0	609.58*	154	53	1.54	1220.14	1214	15	4.28E-02	13.6	
32	0	678.72	7	12	0.61	1358.50	1352	8	2.00E-03	95.1	
33	0	711.57	13	12	0.64	1424.23	1420	8	3.49E-03	55.7	
34	0	728.58	18	31	1.89	1458.28	1449	14	5.12E-03	68.5	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	746.85	12	5	1.29	1494.85	1491	7	3.31E-03	43.0	
36	0	773.10	15	13	1.59	1547.37	1541	10	4.21E-03	53.4	
37	0	776.26	10	0	0.95	1553.70	1551	6	2.78E-03	31.6	
38	0	795.67	12	27	0.63	1592.54	1584	12	3.37E-03	90.4	
39	0	840.54	15	8	1.51	1682.34	1678	8	4.28E-03	40.6	
40	0	862.77	11	31	1.71	1726.83	1719	15	2.97E-03	116.3	
41	0	911.20*	87	25	1.62	1823.77	1815	18	2.41E-02	17.8	
42	0	969.25*	31	20	2.05	1939.94	1935	10	8.70E-03	32.7	
43	0	1000.74	22	3	0.97	2002.97	1998	11	6.12E-03	25.9	
44	0	1120.34	51	17	1.56	2242.37	2235	14	1.42E-02	22.2	
45	0	1377.40	7	4	0.55	2756.93	2752	8	1.94E-03	62.3	
46	0	1460.71*	261	14	2.25	2923.72	2917	14	7.26E-02	7.0	
47	0	1764.37	25	4	2.04	3531.65	3525	11	6.81E-03	27.1	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235063.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title      : MXR1
Sample date       : 14-DEC-2015 13:15:00 Acquisition date : 3-OCT-2016 05:53:40
Sample ID        : G405235063 Sample quantity : 147.88 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA44 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.75 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type  : Linear Efficiencies at : Peak Energy
Abundance limit  : 75.00

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Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
U-235	143.76	CE-141	145.44
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	87.09	TH-229	88.47
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.030E+00	1.163E+01	1.163E+01	13.95	OK
CD-109	88.03	3.70*	4.459E+00	7.567E-01	1.176E+00	179.82	OK
TE-125M	109.28	0.27*	5.627E+00	1.475E+01	5.118E+02	115.11	OK
SN-126	64.28	9.60	2.050E+00	9.341E-01	9.341E-01	111.73	OK
	86.94	8.90	4.459E+00	3.146E-01	3.146E-01	179.82	OK
	87.57	37.00*	4.459E+00	7.567E-02	7.567E-02	179.82	OK
CE-141	145.44	48.29*	5.912E+00	1.345E-02	7.054E+00	560.68	OK
TL-208	277.37	6.60	4.074E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.178E+00	2.434E-01	2.434E-01	34.32	OK
	860.56	12.50	1.592E+00	----- Line	Not Found	-----	Absent
PB-212	74.82	10.28	3.338E+00	4.161E-01	4.161E-01	170.92	OK
	77.11	17.10	3.578E+00	1.279E+00	1.279E+00	32.68	OK
	238.63	43.60*	4.585E+00	9.891E-01	9.891E-01	13.62	OK
	300.09	3.30	3.818E+00	1.663E+00	1.663E+00	64.02	OK
BI-214	609.32	45.49*	2.101E+00	8.600E-01	8.603E-01	27.23	OK
	1120.29	14.92	1.288E+00	1.341E+00	1.341E+00	44.37	OK
	1764.49	15.30	8.674E-01	8.854E-01	8.858E-01	54.19	OK
PB-214	74.82	5.80	3.340E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	3.578E+00	2.254E+00	2.255E+00	32.68	OK
	87.09	3.41	4.447E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.538E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	3.868E+00	1.177E+00	1.178E+00	29.49	OK
	351.93	35.60*	3.336E+00	9.566E-01	9.569E-01	19.55	OK
RN-219	271.23	10.80	4.160E+00	2.940E-01	2.940E-01	118.36	OK
	401.81	6.60*	2.983E+00	6.899E-01	6.899E-01	76.53	OK
RN-222	609.32	45.49*	2.101E+00	8.600E-01	8.603E-01	27.23	OK
	1120.29	14.92	1.288E+00	1.341E+00	1.341E+00	44.37	OK
	1764.49	15.30	8.674E-01	8.854E-01	8.858E-01	54.19	OK
RA-224	240.99	4.10*	4.543E+00	3.268E-01	3.268E-01	542.80	OK
RA-226	609.32	45.49*	2.101E+00	8.600E-01	8.603E-01	27.23	OK
	1120.29	14.92	1.288E+00	1.341E+00	1.341E+00	44.37	OK
	1764.49	15.30	8.674E-01	8.854E-01	8.858E-01	54.19	OK
AC-228	105.21	1.10	5.460E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.448E+00	9.424E-01	9.424E-01	68.32	OK
	794.95	4.25	1.695E+00	8.749E-01	8.749E-01	180.84	OK
	835.71	1.61	1.630E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.521E+00	1.136E+00	1.136E+00	35.58	OK
	968.97	15.80	1.448E+00	6.987E-01	6.987E-01	65.47	OK
RA-228	105.21	1.10	5.460E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.448E+00	9.424E-01	9.424E-01	68.32	OK
	794.95	4.25	1.695E+00	8.749E-01	8.749E-01	180.84	OK
	835.71	1.61	1.630E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.521E+00	1.136E+00	1.136E+00	35.58	OK
	968.97	15.80	1.448E+00	6.987E-01	6.987E-01	65.47	OK
TH-228	74.82	10.28	3.338E+00	4.161E-01	4.161E-01	170.92	OK
	77.11	17.10	3.578E+00	1.279E+00	1.279E+00	32.68	OK
	238.63	43.60*	4.585E+00	9.891E-01	9.891E-01	13.62	OK
	300.09	3.30	3.818E+00	1.663E+00	1.663E+00	64.02	OK
TH-229	85.43	14.70	4.223E+00	3.627E-01	3.627E-01	96.63	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	88.47	24.00	4.459E+00	1.167E-01	1.167E-01	179.82	OK
	193.51	4.41*	5.283E+00	----- Line	Not Found	-----	Absent
	210.85	2.80	4.994E+00	1.143E+00	1.143E+00	131.04	OK
TH-230	609.32	45.49*	2.101E+00	8.600E-01	8.600E-01	27.23	OK
	1120.29	14.92	1.288E+00	1.341E+00	1.341E+00	44.37	OK
	1764.49	15.30	8.674E-01	8.854E-01	8.855E-01	54.19	OK
PA-231	283.69	1.70	4.000E+00	----- Line	Not Found	-----	Absent
	301.36	5.35*	3.818E+00	1.026E+00	1.026E+00	64.02	OK
TH-232	105.21	1.10	5.460E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.448E+00	9.424E-01	9.424E-01	68.32	OK
	835.71	1.61	1.630E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.521E+00	1.136E+00	1.136E+00	35.58	OK
	968.97	15.80	1.448E+00	6.987E-01	6.987E-01	65.47	OK
TH-234	63.29	3.70*	2.050E+00	2.424E+00	2.424E+00	111.73	OK
	92.59	4.23	4.835E+00	1.664E+00	1.664E+00	88.03	OK
U-234	609.32	45.49*	2.101E+00	8.600E-01	8.600E-01	27.23	OK
	1120.29	14.92	1.288E+00	1.341E+00	1.341E+00	44.37	OK
	1764.49	15.30	8.674E-01	8.854E-01	8.854E-01	54.19	OK
U-235	89.96	3.47	4.649E+00	1.608E+00	1.608E+00	112.29	OK
	93.35	5.60	4.835E+00	1.257E+00	1.257E+00	88.03	OK
	143.76	10.96*	5.918E+00	----- Line	Not Found	-----	<<INT Reject
	163.33	5.08	5.731E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	5.403E+00	1.197E-01	1.197E-01	73.11	OK
	205.31	5.01	5.091E+00	5.815E-01	5.815E-01	109.95	OK
U-238	63.29	3.70*	2.050E+00	2.424E+00	2.424E+00	111.73	OK
	92.59	4.23	4.835E+00	1.664E+00	1.664E+00	88.03	OK
AM-243	43.53	5.90	1.573E-01	----- Line	Not Found	-----	Absent
	74.66	67.20*	3.338E+00	6.366E-02	6.366E-02	170.92	OK
CM-247	278.00	3.40	4.067E+00	----- Line	Not Found	-----	Absent
	287.50	2.00	3.956E+00	----- Line	Not Found	-----	Absent
	402.40	72.00*	2.983E+00	6.324E-02	6.324E-02	76.53	OK
ANH-511	511.00	100.00*	2.429E+00	1.255E-01	1.255E-01	56.85	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235063.CNF;1  *
* Acquisition date   : 3-OCT-2016 05:53:40 Sensitivity      : 3.000          *
* Detector ID        : GAM44 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.75 Half life ratio : *****      *
* Sample date        : 14-DEC-2015 13:15:00 Analyst initials: MXR1      *
* Sample ID          : G405235063 Sample Quantity : 1.4788E+02 GRAM    *
* Batch Number       : 1596254 Wet Weight      : 0.00000        *
* Wet wt corr        : 1.00000 Dry Weight       : 0.00000        *
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 6-SEP-2016 04:59:25 Eff. Geometry   : CAN          *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM44 CAN.CNF;3          *
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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.163E+01	1.590E+00	8.231E-01
CD-109	1.176E+00	2.073E+00	1.870E+00
TE-125M	5.118E+02	5.773E+02	5.037E+02
SN-126	7.567E-02	1.334E-01	1.212E-01
CE-141	7.054E+00	3.876E+01	4.035E+01
TL-208	2.434E-01	8.186E-02	7.148E-02
PB-212	9.891E-01	1.321E-01	8.930E-02
BI-214	8.603E-01	2.296E-01	1.248E-01
PB-214	9.569E-01	1.834E-01	1.327E-01
RN-219	6.899E-01	5.174E-01	7.187E-01
RN-222	8.603E-01	2.296E-01	1.248E-01
RA-224	3.268E-01	1.738E+00	9.576E-01
RA-226	8.603E-01	2.296E-01	1.248E-01
AC-228	1.136E+00	3.959E-01	2.269E-01
RA-228	1.136E+00	3.959E-01	2.269E-01
TH-228	9.891E-01	1.321E-01	8.930E-02
TH-229	2.170E-01	4.726E-01	9.051E-01
TH-230	8.600E-01	2.295E-01	1.248E-01
PA-231	1.026E+00	6.435E-01	8.960E-01
TH-232	1.136E+00	3.959E-01	2.269E-01
TH-234	2.424E+00	2.654E+00	2.806E+00
U-234	8.600E-01	2.295E-01	1.248E-01
U-235	1.909E-01	3.144E-01	3.688E-01
U-238	2.424E+00	2.654E+00	2.806E+00
AM-243	6.366E-02	1.066E-01	1.039E-01
CM-247	6.324E-02	4.743E-02	6.597E-02
ANH-511	1.255E-01	6.992E-02	4.576E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	3.200E+00		9.086E+00	1.926E+01	NOT IDENT.
NA-22	2.212E-02		4.504E-02	9.953E-02	NOT IDENT.
NA-24	0.000E+00		1.321E+41	0.000E+00	SHORT HLIF

AL-26	-3.505E-02	3.864E-02	5.583E-02	NOT IDENT.
SC-46	-3.425E-01	4.021E-01	7.099E-01	FAIL ABUN
V-48	0.000E+00	1.221E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.083E+02	0.000E+00	SHORT HLIF
MN-54	7.283E-02	7.115E-02	1.545E-01	NOT IDENT.
CO-56	-9.726E-02	5.283E-01	9.622E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	1.636E-02	4.904E-02	9.535E-02	NOT IDENT.
CO-58	-9.557E-02	4.462E-01	8.454E-01	NOT IDENT.
FE-59	8.441E+00	6.596E+00	1.562E+01	NOT IDENT.
CO-60	-1.242E-02	3.931E-02	7.482E-02	NOT IDENT.
ZN-65	7.991E-02	2.182E-01	4.074E-01	NOT IDENT.
GE-68	1.089E+00	1.922E+00	4.429E+00	NOT IDENT.
AS-73	1.684E+00	1.374E+01	2.770E+01	NOT IDENT.
AS-74	0.000E+00	4.651E+03	0.000E+00	SHORT HLIF
SE-75	-5.889E-02	1.904E-01	3.335E-01	FAIL ABUN
BR-77	0.000E+00	3.969E+36	0.000E+00	SHORT HLIF
SR-82	0.000E+00	3.812E+02	0.000E+00	SHORT HLIF
RB-83	5.872E-01	8.037E-01	1.285E+00	FAIL ABUN
KR-85	6.739E+00	6.693E+00	1.462E+01	NOT IDENT.
SR-85	6.637E-01	6.624E-01	1.447E+00	NOT IDENT.
RB-86	0.000E+00	1.785E+04	0.000E+00	SHORT HLIF
Y-88	-1.821E-01	1.963E-01	3.046E-01	NOT IDENT.
Y-91	-2.375E+02	5.230E+02	9.574E+02	NOT IDENT.
NB-94	1.326E-02	2.681E-02	5.712E-02	NOT IDENT.
NB-95	1.592E-01	8.432E-01	1.645E+00	NOT IDENT.
NB-95M	2.462E-01	2.407E+00	4.064E+00	NOT IDENT.
ZR-95	2.142E-01	1.564E+00	3.024E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	3.899E+31	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.350E+41	0.000E+00	SHORT HLIF
RH-101	-4.416E-02	3.278E-02	5.433E-02	NOT IDENT.
RH-102	3.669E-02	5.999E-02	1.266E-01	NOT IDENT.
RU-103	-2.181E+00	5.050E+00	9.321E+00	FAIL ABUN
RH-106	-3.128E-02	4.938E-01	9.513E-01	NOT IDENT.
RU-106	-3.128E-02	4.938E-01	9.513E-01	NOT IDENT.
AG-108M	-4.664E-03	2.191E-02	4.286E-02	NOT IDENT.
AG-110M	5.776E-03	1.062E-01	2.169E-01	FAIL ABUN
SN-113	-1.233E-01	1.936E-01	3.552E-01	NOT IDENT.
CD-115	0.000E+00	4.675E+38	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	7.516E+04	0.000E+00	SHORT HLIF
TE-123M	8.559E-02	1.297E-01	2.549E-01	NOT IDENT.
SB-124	-1.613E-01	2.258E+00	4.571E+00	NOT IDENT.
SB-125	9.090E-02	1.187E-01	2.475E-01	FAIL ABUN
I-126	0.000E+00	6.620E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	8.110E+05	0.000E+00	SHORT HLIF
SB-127	0.000E+00	7.638E+21	0.000E+00	SHORT HLIF
I-131	0.000E+00	2.869E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.095E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.122E+26	0.000E+00	SHORT HLIF
BA-133	4.348E-02	3.887E-02	8.122E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	5.696E-02	1.009E-01	1.189E-01	FAIL ABUN
CS-135	4.569E-03	1.301E-01	2.381E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.334E+05	0.000E+00	SHORT HLIF
BA-137M	2.924E-02	4.049E-02	8.363E-02	NOT IDENT.
CS-137	3.089E-02	4.277E-02	8.834E-02	NOT IDENT.
CE-139	-8.175E-02	1.103E-01	1.906E-01	NOT IDENT.
BA-140	0.000E+00	8.554E+05	0.000E+00	SHORT HLIF
LA-140	0.000E+00	3.004E+05	0.000E+00	SHORT HLIF
CE-143	0.000E+00	8.105E+40	0.000E+00	SHORT HLIF
CE-144	6.516E-02	3.306E-01	6.369E-01	NOT IDENT.
PM-144	1.627E-02	5.329E-02	1.078E-01	NOT IDENT.
PR-144	1.408E+00	4.614E+00	9.333E+00	NOT IDENT.
PM-146	-9.657E-03	4.266E-02	8.149E-02	FAIL ABUN
ND-147	0.000E+00	2.385E+07	0.000E+00	SHORT HLIF
PM-147	3.574E+02	8.541E+02	1.674E+03	NOT IDENT.
PM-149	0.000E+00	6.978E+39	0.000E+00	SHORT HLIF
EU-150	7.598E-03	2.569E-02	4.787E-02	FAIL ABUN
EU-152	-5.850E-03	1.064E-01	1.873E-01	NOT IDENT.
GD-153	7.267E-02	1.730E-01	3.248E-01	NOT IDENT.
EU-154	5.439E-02	1.108E-01	2.448E-01	NOT IDENT.
EU-155	1.034E-01	1.159E-01	2.362E-01	FAIL ABUN
TB-160	5.961E-01	1.754E+00	3.768E+00	FAIL ABUN
HO-166M	6.590E-02	7.199E-02	1.304E-01	FAIL ABUN
TM-171	-9.680E+00	3.579E+01	6.997E+01	FAIL ABUN

HF-172	1.058E-01	2.131E-01	4.231E-01	FAIL ABUN
LU-172	-4.453E-02	8.206E-02	1.496E-01	FAIL ABUN
LU-176	8.463E-03	2.022E-02	4.260E-02	FAIL ABUN
HF-181	-2.553E-01	3.431E+00	6.756E+00	NOT IDENT.
TA-182	2.742E-01	9.965E-01	2.034E+00	FAIL ABUN
RE-183	-5.749E-01	4.043E+00	7.973E+00	FAIL ABUN
RE-184	-8.429E+00	2.806E+01	5.256E+01	NOT IDENT.
W-188	-8.826E+01	1.089E+02	1.752E+02	FAIL ABUN
IR-192	1.715E-02	4.312E-01	8.591E-01	FAIL ABUN
HG-203	-6.890E-01	1.883E+00	3.655E+00	NOT IDENT.
BI-207	1.354E-02	5.154E-02	1.075E-01	FAIL ABUN
PB-210	2.430E+00	7.416E+00	1.544E+01	NOT IDENT.
BI-211	0.000E+00	5.050E-01	8.217E-01	FAIL ABUN
PB-211	1.031E+00	9.151E-01	1.377E+00	FAIL ABUN
BI-212	7.967E-01	1.070E+00	1.324E+00	FAIL ABUN
RA-223	2.211E-01	5.556E-01	1.147E+00	FAIL ABUN
AC-227	3.202E-02	2.304E-01	4.249E-01	FAIL ABUN
TH-227	3.202E-02	2.304E-01	4.249E-01	FAIL ABUN
TH-231	2.211E-01	5.556E-01	1.147E+00	FAIL ABUN
PA-233	9.428E-03	5.455E-02	1.108E-01	FAIL ABUN
PA-234	-5.251E-02	2.831E-01	5.586E-01	FAIL ABUN
PA-234M	9.446E+00	4.798E+00	1.099E+01	FAIL ABUN
NP-237	9.428E-03	5.455E-02	1.108E-01	FAIL ABUN
NP-238	0.000E+00	6.618E+40	0.000E+00	SHORT HLIF
NP-239	-1.518E-01	2.458E-01	4.429E-01	NOT IDENT.
PU-239	3.049E+02	2.953E+02	6.070E+02	NOT IDENT.
AM-241	1.400E-01	1.970E-01	4.111E-01	NOT IDENT.
CM-243	-4.340E-02	1.027E-01	1.901E-01	NOT IDENT.
BK-247	-5.989E-03	6.501E-02	1.177E-01	FAIL ABUN
CF-249	-8.936E-03	3.328E-02	6.415E-02	NOT IDENT.
CF-251	-8.984E-02	1.146E-01	1.957E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	252	10.66*	1.030E+00	1.163E+01	1.163E+01	13.95
CD-109	88.03	60	3.70*	4.459E+00	1.842E+00	2.863E+00	71.81
TE-125M	109.28	44	0.27*	5.627E+00	1.475E+01	5.118E+02	115.11
SN-126	64.28	36	9.60	2.050E+00	9.341E-01	9.341E-01	111.73
	86.94	60	8.90	4.459E+00	7.657E-01	7.657E-01	71.81
	87.57	60	37.00*	4.459E+00	1.842E-01	1.842E-01	71.81
CE-141	145.44	24	48.29*	5.912E+00	4.332E-02	2.272E+01	168.05
TL-208	277.37	-----	6.60	4.074E+00	-----	Line Not Found	-----
	583.19	89	85.00*	2.178E+00	2.434E-01	2.434E-01	34.32
	860.56	-----	12.50	1.592E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.135E+00	-----	Line Not Found	-----
	351.06	224	12.92*	3.336E+00	2.636E+00	2.636E+00	19.55
PB-212	74.82	73	10.28	3.338E+00	1.080E+00	1.080E+00	63.29
	77.11	154	17.10	3.578E+00	1.279E+00	1.279E+00	32.68
	238.63	389	43.60*	4.585E+00	9.891E-01	9.891E-01	13.62
	300.09	41	3.30	3.818E+00	1.663E+00	1.663E+00	64.02
BI-214	609.32	162	45.49*	2.101E+00	8.600E-01	8.603E-01	27.23
	1120.29	51	14.92	1.288E+00	1.341E+00	1.341E+00	44.37
	1764.49	23	15.30	8.674E-01	8.854E-01	8.858E-01	54.19
PB-214	74.82	73	5.80	3.338E+00	1.915E+00	1.915E+00	63.29
	77.11	154	9.70	3.578E+00	2.254E+00	2.255E+00	32.68
	87.09	60	3.41	4.459E+00	1.998E+00	1.999E+00	71.81
	242.00	88	7.25	4.543E+00	1.362E+00	1.363E+00	69.10
	295.22	165	18.42	3.868E+00	1.177E+00	1.178E+00	29.49
	351.93	224	35.60*	3.336E+00	9.566E-01	9.569E-01	19.55
RN-219	271.23	26	10.80	4.160E+00	2.940E-01	2.940E-01	118.36
	401.81	27	6.60*	2.983E+00	6.899E-01	6.899E-01	76.53
RN-222	609.32	162	45.49*	2.101E+00	8.600E-01	8.603E-01	27.23
	1120.29	51	14.92	1.288E+00	1.341E+00	1.341E+00	44.37
	1764.49	23	15.30	8.674E-01	8.854E-01	8.858E-01	54.19
RA-224	240.99	88	4.10*	4.543E+00	2.409E+00	2.409E+00	69.10
RA-226	609.32	162	45.49*	2.101E+00	8.600E-01	8.603E-01	27.23
	1120.29	51	14.92	1.288E+00	1.341E+00	1.341E+00	44.37
	1764.49	23	15.30	8.674E-01	8.854E-01	8.858E-01	54.19
AC-228	105.21	-----	1.10	5.460E+00	-----	Line Not Found	-----
	338.32	72	11.27	3.448E+00	9.424E-01	9.424E-01	68.32
	794.95	12	4.25	1.695E+00	8.749E-01	8.749E-01	180.84
	835.71	-----	1.61	1.630E+00	-----	Line Not Found	-----
	911.20	88	25.80*	1.521E+00	1.136E+00	1.136E+00	35.58
	968.97	31	15.80	1.448E+00	6.987E-01	6.987E-01	65.47
RA-228	105.21	-----	1.10	5.460E+00	-----	Line Not Found	-----
	338.32	72	11.27	3.448E+00	9.424E-01	9.424E-01	68.32
	794.95	12	4.25	1.695E+00	8.749E-01	8.749E-01	180.84
	835.71	-----	1.61	1.630E+00	-----	Line Not Found	-----
	911.20	88	25.80*	1.521E+00	1.136E+00	1.136E+00	35.58
	968.97	31	15.80	1.448E+00	6.987E-01	6.987E-01	65.47
TH-228	74.82	73	10.28	3.338E+00	1.080E+00	1.080E+00	63.29

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	154	17.10	3.578E+00	1.279E+00	1.279E+00	32.68
	238.63	389	43.60*	4.585E+00	9.891E-01	9.891E-01	13.62
	300.09	41	3.30	3.818E+00	1.663E+00	1.663E+00	64.02
TH-229	85.43	44	14.70	4.223E+00	3.627E-01	3.627E-01	96.63
	88.47	60	24.00	4.459E+00	2.839E-01	2.840E-01	71.81
	193.51	-----	4.41*	5.283E+00	-----	Line Not Found	-----
	210.85	31	2.80	4.994E+00	1.143E+00	1.143E+00	131.04
TH-230	609.32	162	45.49*	2.101E+00	8.600E-01	8.600E-01	27.23
	1120.29	51	14.92	1.288E+00	1.341E+00	1.341E+00	44.37
	1764.49	23	15.30	8.674E-01	8.854E-01	8.855E-01	54.19
PA-231	283.69	-----	1.70	4.000E+00	-----	Line Not Found	-----
	301.36	41	5.35*	3.818E+00	1.026E+00	1.026E+00	64.02
TH-232	105.21	-----	1.10	5.460E+00	-----	Line Not Found	-----
	338.32	72	11.27	3.448E+00	9.424E-01	9.424E-01	68.32
	835.71	-----	1.61	1.630E+00	-----	Line Not Found	-----
	911.20	88	25.80*	1.521E+00	1.136E+00	1.136E+00	35.58
	968.97	31	15.80	1.448E+00	6.987E-01	6.987E-01	65.47
TH-234	63.29	36	3.70*	2.050E+00	2.424E+00	2.424E+00	111.73
	92.59	67	4.23	4.835E+00	1.664E+00	1.664E+00	88.03
U-234	609.32	162	45.49*	2.101E+00	8.600E-01	8.600E-01	27.23
	1120.29	51	14.92	1.288E+00	1.341E+00	1.341E+00	44.37
	1764.49	23	15.30	8.674E-01	8.854E-01	8.854E-01	54.19
U-235	89.96	51	3.47	4.649E+00	1.608E+00	1.608E+00	112.29
	93.35	67	5.60	4.835E+00	1.257E+00	1.257E+00	88.03
	143.76	24	10.96*	5.912E+00	1.909E-01	1.909E-01	168.05
	163.33	-----	5.08	5.731E+00	-----	Line Not Found	-----
	185.72	73	57.20	5.403E+00	1.197E-01	1.197E-01	73.11
	205.31	29	5.01	5.091E+00	5.815E-01	5.815E-01	109.95
U-238	63.29	36	3.70*	2.050E+00	2.424E+00	2.424E+00	111.73
	92.59	67	4.23	4.835E+00	1.664E+00	1.664E+00	88.03
AM-243	43.53	-----	5.90	1.573E-01	-----	Line Not Found	-----
	74.66	73	67.20*	3.338E+00	1.653E-01	1.653E-01	63.29
CM-247	278.00	-----	3.40	4.067E+00	-----	Line Not Found	-----
	287.50	-----	2.00	3.956E+00	-----	Line Not Found	-----
	402.40	27	72.00*	2.983E+00	6.324E-02	6.324E-02	76.53
ANH-511	511.00	60	100.00*	2.429E+00	1.255E-01	1.255E-01	56.85

Flag: "*" = Keyline

Total number of lines in spectrum 47
Number of unidentified lines 5
Number of lines tentatively identified by NID 42 89.36%

Nuclide Type :

Nuclide	Hlfe	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	1.163E+01	1.163E+01	0.162E+01	13.95	
CD-109	461.40D	1.55	1.842E+00	2.863E+00	2.056E+00	71.81	
TE-125M	57.40D	34.7	1.475E+01	5.118E+02	5.891E+02	115.11	
SN-126	2.30E+05Y	1.00	1.842E-01	1.842E-01	1.323E-01	71.81	
CE-141	32.51D	524.	4.332E-02	2.272E+01	3.818E+01	168.05	
TL-208	1.41E+10Y	1.00	2.434E-01	2.434E-01	0.835E-01	34.32	
BI-211	7.04E+08Y	1.00	2.636E+00	2.636E+00	0.515E+00	19.55	
PB-212	1.41E+10Y	1.00	9.891E-01	9.891E-01	1.347E-01	13.62	
BI-214	1600.00Y	1.00	8.600E-01	8.603E-01	2.343E-01	27.23	
PB-214	1600.00Y	1.00	9.566E-01	9.569E-01	1.871E-01	19.55	
RN-219	7.04E+08Y	1.00	6.899E-01	6.899E-01	5.280E-01	76.53	
RN-222	1600.00Y	1.00	8.600E-01	8.603E-01	2.343E-01	27.23	
RA-224	1.41E+10Y	1.00	2.409E+00	2.409E+00	1.664E+00	69.10	
RA-226	1600.00Y	1.00	8.600E-01	8.603E-01	2.343E-01	27.23	
AC-228	1.41E+10Y	1.00	1.136E+00	1.136E+00	0.404E+00	35.58	
RA-228	1.41E+10Y	1.00	1.136E+00	1.136E+00	0.404E+00	35.58	
TH-228	1.41E+10Y	1.00	9.891E-01	9.891E-01	1.347E-01	13.62	
TH-229	7340.00Y	1.00	2.839E-01	2.840E-01	2.039E-01	71.81	K
TH-230	7.54E+04Y	1.00	8.600E-01	8.600E-01	2.342E-01	27.23	
PA-231	7.04E+08Y	1.00	1.026E+00	1.026E+00	0.657E+00	64.02	
TH-232	1.41E+10Y	1.00	1.136E+00	1.136E+00	0.404E+00	35.58	
TH-234	4.47E+09Y	1.00	2.424E+00	2.424E+00	2.708E+00	111.73	
U-234	2.45E+05Y	1.00	8.600E-01	8.600E-01	2.342E-01	27.23	
U-235	7.04E+08Y	1.00	1.909E-01	1.909E-01	3.208E-01	168.05	
U-238	4.47E+09Y	1.00	2.424E+00	2.424E+00	2.708E+00	111.73	
AM-243	7370.00Y	1.00	1.653E-01	1.653E-01	1.046E-01	63.29	
CM-247	1.56E+07Y	1.00	6.324E-02	6.324E-02	4.840E-02	76.53	
ANH-511	1.00E+09Y	1.00	1.255E-01	1.255E-01	0.713E-01	56.85	
Total Activity :			5.177E+01	5.725E+02			

Grand Total Activity : 5.177E+01 5.725E+02

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
4	65.77	28	94	1.09	131.99	124	11	6.15E-03	****	2.34E+00	T
0	154.39	25	96	0.83	309.31	306	6	5.83E-03	****	5.83E+00	T
3	209.50	40	71	1.20	419.57	408	29	9.60E-03	84.7	5.03E+00	
1	405.01	23	20	1.53	810.76	799	19	5.78E-03	90.5	2.96E+00	T
0	463.97	20	40	2.60	928.75	922	10	5.24E-03	****	2.64E+00	T
0	520.52	12	17	0.87	1041.91	1038	8	3.06E-03	****	2.39E+00	T
5	543.58	11	6	1.56	1088.05	1086	12	2.87E-03	73.4	2.31E+00	
5	546.66	16	11	1.65	1094.23	1086	12	4.25E-03	91.6	2.30E+00	T
0	678.72	8	12	0.61	1358.50	1352	8	2.00E-03	****	1.93E+00	T
0	711.57	13	13	0.64	1424.23	1420	8	3.49E-03	****	1.85E+00	T
0	728.58	19	32	1.89	1458.28	1449	14	5.12E-03	****	1.82E+00	T
0	746.85	12	5	1.29	1494.85	1491	7	3.31E-03	85.9	1.78E+00	T
0	773.10	16	13	1.59	1547.37	1541	10	4.21E-03	****	1.73E+00	T
0	776.26	10	0	0.95	1553.70	1551	6	2.78E-03	63.2	1.73E+00	T
0	840.54	16	8	1.51	1682.34	1678	8	4.28E-03	81.1	1.62E+00	
0	862.77	11	32	1.71	1726.83	1719	15	2.97E-03	****	1.59E+00	
0	1000.74	22	3	0.97	2002.97	1998	11	6.12E-03	51.8	1.41E+00	T
0	1377.40	7	4	0.55	2756.93	2752	8	1.94E-03	****	1.08E+00	

Flags: "T" = Tentatively associated


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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235063.CNF;1
* Acquisition date   : 3-OCT-2016 05:53:40 Sensitivity      : 3.000
* Detector ID        : GAM44 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.75 Half life ratio : *****
* Sample date       : 14-DEC-2015 13:15:00 Nuclide Library : SOLID
* Sample ID         : G405235063 Analyst initials: MXR1
* Batch Number      : 1596254 Sample Quantity : 1.4788E+02 GRAM
* Wet wt corr       : 1.00000 Wet Weight : 0.00000
*                   : Dry Weight : 0.00000
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 6-SEP-2016 04:59:25 Eff. Geometry : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM44 CAN.CNF;3
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	3.487E-01
CD-109	8.669E-01
TE-125M	2.351E+02
SN-126	5.617E-02
CE-141	1.884E+01
TL-208	3.193E-02
PB-212	4.106E-02
BI-214	5.504E-02
PB-214	6.037E-02
RN-219	3.232E-01
RN-222	5.504E-02
RA-224	4.403E-01
RA-226	5.504E-02
AC-228	9.566E-02
RA-228	9.566E-02
TH-228	4.106E-02
TH-229	4.216E-01
TH-230	5.502E-02
PA-231	4.129E-01
TH-232	9.566E-02
TH-234	1.306E+00
U-234	5.502E-02
U-235	1.732E-01
U-238	1.306E+00
AM-243	4.868E-02
CM-247	2.967E-02
ANH-511	1.997E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	8.423E+00	NOT IDENT.
NA-22	4.235E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.978E-02	NOT IDENT.

SC-46	3.038E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	6.903E-02	NOT IDENT.
CO-56	4.206E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.461E-02	NOT IDENT.
CO-58	3.481E-01	NOT IDENT.
FE-59	6.897E+00	NOT IDENT.
CO-60	3.051E-02	NOT IDENT.
ZN-65	1.793E-01	NOT IDENT.
GE-68	1.870E+00	NOT IDENT.
AS-73	1.287E+01	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.510E-01	FAIL ABUN
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.730E-01	FAIL ABUN
KR-85	6.603E+00	NOT IDENT.
SR-85	6.532E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	9.627E-02	NOT IDENT.
Y-91	4.074E+02	NOT IDENT.
NB-94	2.481E-02	NOT IDENT.
NB-95	7.262E-01	NOT IDENT.
NB-95M	1.882E+00	NOT IDENT.
ZR-95	1.336E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.502E-02	NOT IDENT.
RH-102	5.619E-02	NOT IDENT.
RU-103	4.102E+00	FAIL ABUN
RH-106	4.164E-01	NOT IDENT.
RU-106	4.164E-01	NOT IDENT.
AG-108M	1.862E-02	NOT IDENT.
AG-110M	9.451E-02	FAIL ABUN
SN-113	1.565E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.192E-01	NOT IDENT.
SB-124	1.814E+00	NOT IDENT.
SB-125	1.134E-01	FAIL ABUN
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.695E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.315E-02	FAIL ABUN
CS-135	1.083E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.777E-02	NOT IDENT.
CS-137	3.990E-02	NOT IDENT.
CE-139	8.833E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-143	0.000E+00	SHORT HLIF
CE-144	2.959E-01	NOT IDENT.
PM-144	4.734E-02	NOT IDENT.
PR-144	4.099E+00	NOT IDENT.
PM-146	3.626E-02	FAIL ABUN
ND-147	0.000E+00	SHORT HLIF
PM-147	7.831E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.178E-02	FAIL ABUN
EU-152	8.547E-02	NOT IDENT.
GD-153	1.509E-01	NOT IDENT.
EU-154	1.042E-01	NOT IDENT.
EU-155	1.110E-01	FAIL ABUN
TB-160	1.637E+00	FAIL ABUN
HO-166M	5.821E-02	FAIL ABUN
TM-171	3.241E+01	FAIL ABUN
HF-172	1.969E-01	FAIL ABUN

LU-172	6.347E-02	FAIL ABUN
LU-176	1.926E-02	FAIL ABUN
HF-181	2.958E+00	NOT IDENT.
TA-182	8.903E-01	FAIL ABUN
RE-183	3.709E+00	FAIL ABUN
RE-184	2.252E+01	NOT IDENT.
W-188	7.922E+01	FAIL ABUN
IR-192	3.923E-01	FAIL ABUN
HG-203	1.656E+00	NOT IDENT.
BI-207	4.668E-02	FAIL ABUN
PB-210	7.168E+00	NOT IDENT.
BI-211	3.945E-01	FAIL ABUN
PB-211	6.251E-01	FAIL ABUN
BI-212	6.043E-01	FAIL ABUN
RA-223	5.235E-01	FAIL ABUN
AC-227	1.951E-01	FAIL ABUN
TH-227	1.951E-01	FAIL ABUN
TH-231	5.235E-01	FAIL ABUN
PA-233	5.040E-02	FAIL ABUN
PA-234	2.400E-01	FAIL ABUN
PA-234M	4.908E+00	FAIL ABUN
NP-237	5.040E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	2.056E-01	NOT IDENT.
PU-239	2.841E+02	NOT IDENT.
AM-241	1.927E-01	NOT IDENT.
CM-243	8.842E-02	NOT IDENT.
BK-247	5.321E-02	FAIL ABUN
CF-249	2.856E-02	NOT IDENT.
CF-251	9.031E-02	NOT IDENT.

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29407                     *
*****
*
*                                     DETECTOR AND SAMPLE DATA                *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235063.CNF;1  *
* Acquisition date   : 3-OCT-2016 05:53:40 Sensitivity      : 3.000          *
* Detector ID        : GAM44 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.75 Half life ratio : *****          *
* Sample date       : 14-DEC-2015 13:15:00 Nuclide Library : SOLID        *
* Sample ID         : G405235063 Analyst initials: MXR1         *
* Batch Number      : 1596254 Sample Quantity : 1.4788E+02 GRAM      *
* Wet wt corr       : 1.00000 Quantity Err(%) : 1.3524E-03 %         *
* Wet Weight        : 0.00000 Wet Weight       : 0.00000          *
* Dry Weight        : 0.00000 Dry Weight      : 0.00000          *
*****
*
*                                     CALIBRATION INFORMATION                  *
*
* Eff. Cal. date    : 6-SEP-2016 04:59:25 Eff. Geometry   : CAN          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM44 CAN.CNF;3          *
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.163E+01	1.702E+00	1.702E+00
CD-109	1.176E+00	2.086E+00	2.086E+00
TE-125M	5.118E+02	5.781E+02	5.781E+02
SN-126	7.567E-02	1.341E-01	1.341E-01
CE-141	7.050E+00	3.878E+01	3.878E+01
TL-208	2.434E-01	8.251E-02	8.251E-02
PB-212	9.891E-01	1.421E-01	1.421E-01
BI-214	8.603E-01	2.325E-01	2.325E-01
PB-214	9.569E-01	1.876E-01	1.876E-01
RN-219	6.899E-01	5.246E-01	5.246E-01
RN-222	8.603E-01	2.325E-01	2.325E-01
RA-224	3.268E-01	1.744E+00	1.744E+00
RA-226	8.603E-01	2.325E-01	2.325E-01
AC-228	1.136E+00	4.002E-01	4.002E-01
RA-228	1.136E+00	4.002E-01	4.002E-01
TH-228	9.891E-01	1.421E-01	1.421E-01
TH-229	2.170E-01	4.727E-01	4.727E-01
TH-230	8.600E-01	2.324E-01	2.324E-01
PA-231	1.026E+00	6.797E-01	6.797E-01
TH-232	1.136E+00	4.002E-01	4.002E-01
TH-234	2.424E+00	2.708E+00	2.708E+00
U-234	8.600E-01	2.324E-01	2.324E-01
U-235	1.909E-01	3.145E-01	3.145E-01
U-238	2.424E+00	2.708E+00	2.708E+00
AM-243	6.366E-02	1.075E-01	1.075E-01
CM-247	6.324E-02	4.861E-02	4.861E-02
ANH-511	1.255E-01	7.010E-02	7.010E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error (1.96-sigma)	TPU (1.96-sigma)	
BE-7	3.200E+00	9.087E+00	9.201E+00	NOT IDENT.
NA-22	2.212E-02	4.505E-02	4.614E-02	NOT IDENT.
NA-24	-1.000E+41	1.388E+41	0.000E+00	SHORT HLIF

AL-26	-3.505E-02	3.870E-02	4.180E-02	NOT IDENT.
SC-46	-3.425E-01	4.024E-01	4.310E-01	FAIL ABUN
V-48	4.727E+01	1.221E+04	1.221E+04	SHORT HLIF
CR-51	4.340E+01	3.083E+02	3.090E+02	SHORT HLIF
MN-54	7.283E-02	7.122E-02	7.842E-02	NOT IDENT.
CO-56	-9.726E-02	5.283E-01	5.301E-01	NOT IDENT.
MN-56	-1.000E+41	5.144E+41	0.000E+00	SHORT HLIF
CO-57	1.636E-02	4.904E-02	4.959E-02	NOT IDENT.
CO-58	-9.557E-02	4.462E-01	4.483E-01	NOT IDENT.
FE-59	8.441E+00	6.624E+00	7.639E+00	NOT IDENT.
CO-60	-1.242E-02	3.932E-02	3.971E-02	NOT IDENT.
ZN-65	7.991E-02	2.182E-01	2.212E-01	NOT IDENT.
GE-68	1.089E+00	1.922E+00	1.984E+00	NOT IDENT.
AS-73	1.684E+00	1.375E+01	1.377E+01	NOT IDENT.
AS-74	3.817E+02	4.651E+03	4.654E+03	SHORT HLIF
SE-75	-5.889E-02	1.904E-01	1.923E-01	FAIL ABUN
BR-77	2.973E+37	2.520E+38	0.000E+00	SHORT HLIF
SR-82	6.151E+02	3.823E+02	4.723E+02	SHORT HLIF
RB-83	5.872E-01	8.077E-01	8.500E-01	FAIL ABUN
KR-85	6.739E+00	6.698E+00	7.355E+00	NOT IDENT.
SR-85	6.637E-01	6.630E-01	7.274E-01	NOT IDENT.
RB-86	1.616E+04	1.787E+04	1.930E+04	SHORT HLIF
Y-88	-1.821E-01	1.967E-01	2.131E-01	NOT IDENT.
Y-91	-2.375E+02	5.231E+02	5.339E+02	NOT IDENT.
NB-94	1.326E-02	2.682E-02	2.748E-02	NOT IDENT.
NB-95	1.592E-01	8.433E-01	8.463E-01	NOT IDENT.
NB-95M	2.462E-01	2.407E+00	2.410E+00	NOT IDENT.
ZR-95	2.142E-01	1.564E+00	1.567E+00	NOT IDENT.
NB-97	1.000E+41	7.694E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	7.676E+41	0.000E+00	SHORT HLIF
MO-99	2.974E+31	3.905E+31	0.000E+00	SHORT HLIF
TC-99M	1.000E+41	1.353E+41	0.000E+00	SHORT HLIF
RH-101	-4.416E-02	3.374E-02	3.917E-02	NOT IDENT.
RH-102	3.669E-02	6.006E-02	6.230E-02	NOT IDENT.
RU-103	-2.181E+00	5.052E+00	5.146E+00	FAIL ABUN
RH-106	-3.128E-02	4.938E-01	4.941E-01	NOT IDENT.
RU-106	-3.128E-02	4.938E-01	4.941E-01	NOT IDENT.
AG-108M	-4.664E-03	2.191E-02	2.201E-02	NOT IDENT.
AG-110M	5.776E-03	1.062E-01	1.062E-01	FAIL ABUN
SN-113	-1.233E-01	1.937E-01	2.015E-01	NOT IDENT.
CD-115	2.448E+38	4.696E+38	0.000E+00	SHORT HLIF
SN-117M	1.310E+04	7.518E+04	7.541E+04	SHORT HLIF
TE-123M	8.559E-02	1.298E-01	1.354E-01	NOT IDENT.
SB-124	-1.613E-01	2.258E+00	2.259E+00	NOT IDENT.
SB-125	9.090E-02	1.187E-01	1.256E-01	FAIL ABUN
I-126	-4.375E+05	6.646E+05	6.933E+05	SHORT HLIF
SB-126	-1.847E+05	8.117E+05	8.160E+05	SHORT HLIF
SB-127	-1.244E+21	7.820E+21	0.000E+00	SHORT HLIF
I-131	-1.666E+09	2.870E+09	2.967E+09	SHORT HLIF
I-132	-1.000E+41	1.814E+42	0.000E+00	SHORT HLIF
TE-132	-5.729E+25	1.145E+26	0.000E+00	SHORT HLIF
BA-133	4.348E-02	3.891E-02	4.357E-02	NOT IDENT.
I-133	1.000E+41	7.702E+41	0.000E+00	SHORT HLIF
CS-134	5.696E-02	1.010E-01	1.042E-01	FAIL ABUN
CS-135	4.569E-03	1.301E-01	1.301E-01	NOT IDENT.
I-135	1.000E+41	7.470E+41	0.000E+00	SHORT HLIF
CS-136	-1.183E+05	2.337E+05	2.397E+05	SHORT HLIF
BA-137M	2.924E-02	4.051E-02	4.260E-02	NOT IDENT.
CS-137	3.089E-02	4.279E-02	4.500E-02	NOT IDENT.
CE-139	-8.175E-02	1.116E-01	1.175E-01	NOT IDENT.
BA-140	1.573E+05	8.555E+05	8.584E+05	SHORT HLIF
LA-140	6.169E+04	3.004E+05	3.017E+05	SHORT HLIF
CE-143	1.000E+41	8.166E+40	0.000E+00	SHORT HLIF
CE-144	6.516E-02	3.306E-01	3.319E-01	NOT IDENT.
PM-144	1.627E-02	5.330E-02	5.380E-02	NOT IDENT.
PR-144	1.408E+00	4.615E+00	4.658E+00	NOT IDENT.
PM-146	-9.657E-03	4.266E-02	4.289E-02	FAIL ABUN
ND-147	-2.092E+07	2.388E+07	2.567E+07	SHORT HLIF
PM-147	3.574E+02	8.542E+02	8.693E+02	NOT IDENT.
PM-149	-1.286E+39	6.984E+39	0.000E+00	SHORT HLIF
EU-150	7.598E-03	2.569E-02	2.592E-02	FAIL ABUN
EU-152	-5.850E-03	1.064E-01	1.064E-01	NOT IDENT.
GD-153	7.267E-02	1.731E-01	1.761E-01	NOT IDENT.
EU-154	5.439E-02	1.108E-01	1.135E-01	NOT IDENT.
EU-155	1.034E-01	1.161E-01	1.251E-01	FAIL ABUN
TB-160	5.961E-01	1.754E+00	1.774E+00	FAIL ABUN
HO-166M	6.590E-02	7.208E-02	7.796E-02	FAIL ABUN
TM-171	-9.680E+00	3.580E+01	3.607E+01	FAIL ABUN

HF-172	1.058E-01	2.137E-01	2.190E-01	FAIL ABUN
LU-172	-4.453E-02	8.219E-02	8.460E-02	FAIL ABUN
LU-176	8.463E-03	2.023E-02	2.058E-02	FAIL ABUN
HF-181	-2.553E-01	3.431E+00	3.433E+00	NOT IDENT.
TA-182	2.742E-01	9.965E-01	1.004E+00	FAIL ABUN
RE-183	-5.749E-01	4.044E+00	4.052E+00	FAIL ABUN
RE-184	-8.429E+00	2.813E+01	2.838E+01	NOT IDENT.
W-188	-8.826E+01	1.093E+02	1.163E+02	FAIL ABUN
IR-192	1.715E-02	4.312E-01	4.313E-01	FAIL ABUN
HG-203	-6.890E-01	1.883E+00	1.908E+00	NOT IDENT.
BI-207	1.354E-02	5.154E-02	5.190E-02	FAIL ABUN
PB-210	2.430E+00	7.419E+00	7.499E+00	NOT IDENT.
BI-211	2.636E+00	5.186E-01	1.296E+00	FAIL ABUN
PB-211	1.031E+00	9.166E-01	1.028E+00	FAIL ABUN
BI-212	7.967E-01	1.071E+00	1.129E+00	FAIL ABUN
RA-223	2.211E-01	5.557E-01	5.646E-01	FAIL ABUN
AC-227	3.202E-02	2.304E-01	2.309E-01	FAIL ABUN
TH-227	3.202E-02	2.304E-01	2.309E-01	FAIL ABUN
TH-231	2.211E-01	5.557E-01	5.646E-01	FAIL ABUN
PA-233	9.428E-03	5.455E-02	5.471E-02	FAIL ABUN
PA-234	-5.251E-02	2.894E-01	2.904E-01	FAIL ABUN
PA-234M	9.446E+00	4.816E+00	6.428E+00	FAIL ABUN
NP-237	9.428E-03	5.455E-02	5.471E-02	FAIL ABUN
NP-238	1.001E+40	6.618E+40	0.000E+00	SHORT HLIF
NP-239	-1.518E-01	2.461E-01	2.555E-01	NOT IDENT.
PU-239	3.049E+02	2.956E+02	3.260E+02	NOT IDENT.
AM-241	1.400E-01	1.973E-01	2.072E-01	NOT IDENT.
CM-243	-4.340E-02	1.028E-01	1.046E-01	NOT IDENT.
BK-247	-5.989E-03	6.502E-02	6.508E-02	FAIL ABUN
CF-249	-8.936E-03	3.329E-02	3.353E-02	NOT IDENT.
CF-251	-8.984E-02	1.150E-01	1.220E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	55.5689	87.09	53.8617	136.47	61.2174
45.60	47.9465	87.57	53.9151	140.51	0.0000
46.54	49.8688	88.03	53.9656	143.76	69.4795
49.72	0.0000	88.34	53.9998	144.24	67.3556
51.35	60.5342	88.47	54.0139	145.44	66.7464
51.87	64.2452	89.96	54.1766	152.43	61.5482
52.39	55.2794	1093.63	54.2504	153.25	0.0000
52.97	47.2020	91.11	0.0000	323.87	67.2083
53.44	51.8100	92.59	54.4606	156.02	0.0000
54.07	58.2764	93.35	54.5420	158.56	0.0000
57.36	0.0000	94.56	42.6699	159.00	55.4504
57.53	58.8362	94.65	42.6774	162.33	66.8381
57.98	62.5892	94.67	42.6790	162.66	0.0000
59.27	52.6458	94.87	42.6956	163.33	54.6570
59.32	52.6528	97.43	48.2692	165.86	70.5078
59.54	59.1533	98.43	60.4509	176.31	46.5041
60.96	68.0330	98.44	60.4520	176.60	0.0000
61.17	68.0702	99.53	65.6244	177.52	64.7504
62.93	59.6769	100.11	65.6953	181.07	0.0000
63.29	59.7314	102.03	67.9584	181.52	66.9740
63.58	59.7755	103.18	69.1180	184.41	64.1553
64.28	59.8813	103.37	69.1424	143.76	64.2578
66.73	57.7368	105.21	60.1920	193.51	52.1157
67.24	54.0387	105.31	60.2028	197.03	58.1444
125.81	66.6775	106.12	70.8499	198.01	55.8816
67.75	66.6883	106.47	70.8943	201.83	56.1270
69.67	75.8466	109.28	65.7676	203.43	46.8573
70.83	66.5484	111.00	65.9658	205.31	51.6518
72.81	92.9632	111.76	0.0000	210.85	51.9707
72.87	92.9765	114.06	55.2616	215.65	52.2440
74.66	72.8967	116.30	0.0000	222.11	45.4329
74.82	72.9234	116.74	69.7383	227.09	54.0843
74.97	72.9483	119.76	70.0895	227.38	54.1008
77.11	73.3003	121.12	60.8099	228.16	0.0000
78.74	60.6591	121.22	60.8201	228.18	64.9753
79.69	55.6121	121.78	68.2224	116.74	64.9753
80.12	64.7257	122.06	63.0034	235.69	50.1189
80.19	0.0000	122.92	66.2458	235.96	50.1322
80.57	62.1973	123.07	65.2104	238.63	43.7816
81.00	60.9584	265.00	62.1163	238.98	0.0000
81.07	50.5900	125.81	49.6517	240.99	43.8849
81.75	61.0564	127.23	75.1742	242.00	43.9294
83.79	65.2359	127.91	78.4353	244.70	32.6274
84.00	70.4861	129.30	48.8631	252.40	0.0000
85.43	74.6246	131.20	67.1201	252.80	40.6961
86.55	51.1776	133.02	65.1709	254.15	0.0000
86.79	51.2026	133.52	53.4599	256.23	39.5928
86.94	51.2188	136.00	54.7346	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	36.1668	355.39	0.0000	584.27	13.9098
264.80	31.1829	356.01	17.4886	595.83	0.0000
265.00	31.1882	364.49	0.0000	427.87	18.6980
268.22	33.7838	366.42	0.0000	602.52	0.0000
269.46	32.5698	372.51	19.9702	604.72	20.2974
270.03	32.5865	375.05	31.8291	607.14	28.1371
271.23	27.6041	377.52	30.0627	609.32	18.7786
273.65	0.0000	356.01	30.1976	610.33	18.7874
276.40	35.2974	388.16	25.6997	614.28	17.2553
277.37	44.5807	388.63	0.0000	618.01	17.8100
277.60	44.5894	391.69	26.6825	620.36	18.8789
278.00	34.5062	264.66	26.8471	621.93	15.7446
279.20	37.0713	401.81	26.8677	630.19	0.0000
279.54	48.8809	402.40	26.8789	631.29	13.7067
279.70	50.5737	404.85	26.9232	633.25	22.1621
280.46	47.2340	410.95	23.4912	634.78	0.0000
283.69	42.2943	413.71	26.1492	635.95	14.7935
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	47.4414	423.72	0.0000	645.85	15.9241
285.90	0.0000	427.09	27.3214	657.76	22.4167
287.50	39.8905	427.87	28.2776	657.90	0.0000
290.67	44.6814	433.94	17.0328	661.66	19.2488
293.27	0.0000	439.40	26.5872	664.57	0.0000
351.93	35.8853	453.88	24.9124	666.33	0.0000
295.96	35.9083	463.37	20.2386	666.50	0.0000
879.38	15.4237	468.07	23.1958	667.71	0.0000
299.98	42.4655	473.00	0.0000	677.62	11.3101
300.09	42.4696	475.06	23.2930	685.70	0.0000
300.13	42.4706	476.78	18.4592	695.00	0.0000
301.36	46.3799	477.60	12.6361	696.49	14.1204
302.85	20.6392	482.18	17.5437	696.51	14.1209
256.23	38.7524	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	13.0391
306.78	24.1588	497.08	23.5947	697.49	14.1267
308.46	25.0564	505.52	16.2996	702.65	9.8020
311.90	31.1931	507.63	0.0000	706.68	9.8192
316.51	36.5295	511.00	15.8548	711.68	24.6011
319.41	0.0000	514.00	15.8815	720.70	0.0000
320.08	0.0000	514.00	15.8815	721.93	0.0000
321.04	30.5524	520.40	16.9343	722.78	8.2397
323.87	30.6222	520.69	0.0000	722.91	9.8881
325.23	42.9179	522.65	0.0000	723.31	9.8899
328.76	0.0000	527.90	0.0000	724.19	21.4360
333.37	34.3789	528.26	16.0072	727.33	13.2090
333.97	29.1033	529.59	17.0201	733.00	19.8611
334.37	34.4059	529.87	0.0000	735.93	17.6758
338.28	33.6257	531.02	0.0000	333.97	19.8984
338.32	33.6265	537.26	0.0000	739.50	0.0000
311.90	33.6829	546.56	0.0000	747.24	4.9949
340.48	33.6829	552.55	19.2582	748.06	9.9932
340.55	0.0000	563.25	22.4243	752.31	15.5723
344.28	37.3370	569.33	14.3150	753.82	0.0000
345.93	30.2633	946.00	14.3162	756.73	17.8294
351.06	33.9551	569.70	14.3179	756.80	17.8301
351.93	33.9767	583.19	23.6851	884.68	15.6469

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	16.7773	1274.44	7.2983	1620.50	3.2291
766.42	19.0185	1001.03	7.3098	1621.92	6.4603
766.84	16.1127	1002.74	8.7765	1678.03	0.0000
772.60	0.0000	1004.73	11.7098	1690.97	5.4636
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	3.5500
778.90	11.8061	1028.54	0.0000	1063.66	2.2214
783.70	0.0000	1037.84	12.9447	1771.35	1.1110
785.37	12.4005	1038.76	0.0000	1791.20	0.0000
792.07	10.1730	631.29	10.1984	1808.65	7.8348
794.95	13.5791	1048.07	0.0000	1810.72	0.0000
795.86	15.2820	1049.04	12.0621	1836.06	5.4015
810.06	12.5214	1050.41	14.8525		
810.29	12.5227	1063.66	12.1177		
344.28	9.1077	1077.00	0.0000		
810.76	9.1090	1077.34	5.6162		
815.77	0.0000	1085.87	11.2617		
1048.07	0.0000	1093.63	15.9925		
832.01	11.4795	1099.45	6.5967		
834.85	11.4917	1112.07	18.9197		
835.71	13.7949	1112.84	18.3827		
836.80	0.0000	1115.54	13.6362		
846.75	0.0000	1120.29	13.2762		
846.77	18.4701	1120.55	13.2771		
856.80	0.0000	1221.41	13.2797		
860.56	12.7635	1129.67	12.3621		
871.09	20.9663	1131.51	0.0000		
873.19	17.4854	1147.95	0.0000		
875.33	0.0000	1173.23	17.3353		
879.38	11.3913	1177.95	5.7861		
880.51	10.5194	1189.05	17.4133		
883.24	19.3044	1204.77	15.5469		
884.68	14.9248	1221.41	13.6667		
889.28	21.1055	1231.02	13.7026		
894.76	15.8604	1235.36	0.0000		
898.04	14.9964	1238.28	16.6721		
900.72	12.3619	1260.41	0.0000		
903.28	15.1507	1271.87	15.8350		
911.20	9.7492	1274.44	6.9325		
912.08	9.7522	1274.54	6.9325		
923.98	0.0000	1291.59	6.9641		
926.50	7.1284	1298.22	0.0000		
929.11	11.5940	1312.11	0.0000		
937.49	11.6277	1332.49	9.0500		
944.13	0.0000	1362.66	0.0000		
946.00	14.3530	1365.19	5.0696		
949.00	10.7758	1368.63	0.0000		
667.71	0.0000	1384.29	4.0752		
962.31	16.2367	1408.01	8.1982		
964.08	10.1090	1457.56	0.0000		
966.17	17.3420	1460.82	10.3796		
911.20	22.6021	1489.16	4.1797		
968.97	22.6021	1505.03	9.4389		
983.53	0.0000	1584.12	9.6103		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 06:47:05.68

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*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                             *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235064.CNF;1
Background file : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM02.CNF;493
Background date : 2-OCT-2016 11:00:01.
Sample date     : 14-DEC-2015 13:25:00 Acquisition date : 3-OCT-2016 05:44:14.
Sample ID      : G405235064 Sample quantity   : 1.74637E+02 GRAM
Detector name   : GAM02 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.40 0.0%
Energy tolerance: 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity      : 3.00000
Batch ID        : 1596254 Detector SN#      :
Matrix Spike ID : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.31*	47	136	1.09	126.12	123	8	1.30E-02	48.5	
2	3	69.84*	31	203	1.45	139.18	135	22	8.52E-03	85.4	1.69E+00
3	3	74.62*	111	182	1.33	148.73	135	22	3.09E-02	24.2	
4	3	77.01	151	160	1.47	153.51	135	22	4.19E-02	16.5	
5	0	84.14*	56	149	1.31	167.76	165	7	1.55E-02	39.7	
6	0	87.30	57	159	1.13	174.06	172	6	1.58E-02	37.3	
7	2	89.95	72	100	1.08	179.37	177	13	2.01E-02	21.1	3.86E+00
8	2	92.51*	97	159	1.37	184.48	177	13	2.69E-02	27.9	
9	0	128.68	33	132	0.62	256.75	252	8	9.11E-03	63.2	
10	0	185.97*	105	145	1.44	371.24	367	12	2.91E-02	26.4	
11	0	209.88	47	118	0.87	419.00	414	10	1.29E-02	46.3	
12	2	238.55*	398	75	1.44	476.30	469	19	1.10E-01	6.5	1.64E+00
13	2	241.65	114	92	1.65	482.49	469	19	3.18E-02	18.9	
14	0	269.89	26	99	1.25	538.93	536	8	7.13E-03	70.2	
15	0	276.36	25	108	3.45	551.85	547	11	6.97E-03	82.4	
16	0	294.95	168	93	1.20	589.00	582	13	4.67E-02	14.2	
17	0	299.94	61	42	2.83	598.97	595	8	1.69E-02	22.5	
18	0	315.18	13	55	2.17	629.42	624	8	3.63E-03	101.4	
19	0	338.30*	70	89	1.01	675.63	670	12	1.95E-02	29.9	
20	0	351.90*	290	62	1.33	702.80	696	15	8.07E-02	8.5	
21	0	403.01	12	51	1.34	804.94	799	10	3.40E-03	112.0	
22	0	438.14	14	29	1.83	875.14	871	8	4.00E-03	69.1	
23	0	511.01*	34	55	1.73	1020.76	1014	13	9.44E-03	56.1	
24	0	528.15	18	30	3.38	1055.03	1049	11	4.88E-03	65.2	
25	0	583.31*	121	31	1.36	1165.26	1157	16	3.36E-02	14.1	
26	0	597.29*	10	28	1.89	1193.20	1185	10	2.84E-03	107.0	
27	0	609.23*	204	26	1.71	1217.06	1212	12	5.67E-02	8.8	
28	0	726.96	56	26	1.16	1452.34	1446	12	1.55E-02	23.0	
29	0	793.58	39	12	4.48	1585.49	1579	12	1.08E-02	23.9	
30	0	835.02	18	9	1.57	1668.29	1665	8	5.06E-03	36.0	
31	0	838.66	12	8	0.57	1675.58	1672	8	3.33E-03	50.0	
32	0	859.44*	20	24	0.96	1717.11	1710	14	5.45E-03	58.9	
33	0	911.40*	81	17	1.69	1820.94	1814	15	2.24E-02	16.6	
34	0	953.87	14	13	2.61	1905.84	1900	12	3.94E-03	56.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	969.35*	39	32	1.51	1936.78	1929	14	1.09E-02	35.9	
36	0	1003.26	33	9	1.70	2004.55	1997	18	9.17E-03	27.5	
37	0	1058.18	12	8	1.80	2114.32	2110	9	3.35E-03	52.6	
38	0	1074.10	17	13	3.21	2146.13	2139	14	4.76E-03	51.9	
39	0	1087.17	8	13	0.74	2172.26	2163	11	2.12E-03	100.3	
40	0	1119.91*	64	10	2.42	2237.70	2230	14	1.78E-02	17.0	
41	0	1125.22	18	7	2.73	2248.31	2244	10	5.00E-03	36.7	
42	0	1232.75	9	14	0.90	2463.23	2457	10	2.49E-03	86.8	
43	0	1334.41	9	7	3.85	2666.45	2661	12	2.60E-03	62.2	
44	0	1379.13	12	17	2.96	2755.82	2748	14	3.32E-03	79.5	
45	0	1460.70*	341	11	1.94	2918.88	2911	15	9.47E-02	5.9	
46	0	1589.05	9	6	1.46	3175.44	3166	11	2.43E-03	62.8	
47	0	1764.11*	36	0	2.29	3525.39	3518	13	9.98E-03	18.8	
48	0	1847.41	11	0	1.24	3691.91	3687	9	3.06E-03	30.2	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235064.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
 Sample title : MXR1
 Sample date : 14-DEC-2015 13:25:00 Acquisition date : 3-OCT-2016 05:44:14
 Sample ID : G405235064 Sample quantity : 174.64 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA2 Detector geometry: CAN
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.40 0.0%
 Energy tolerance : 1.50 keV Half life ratio : 10.00
 Errors propagated: No Systematic Error : 0.00 %
 Efficiency type : Linear Efficiencies at : Peak Energy
 Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	87.09	TH-229	88.47
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.059E+00	1.272E+01	1.272E+01	11.85	OK
MN-54	834.85	99.98*	1.673E+00	4.977E-02	9.556E-02	71.97	OK
CD-109	88.03	3.70*	4.852E+00	8.019E-01	1.247E+00	182.02	OK
SN-126	64.28	9.60	2.482E+00	1.218E+00	1.218E+00	97.07	OK
	86.94	8.90	4.852E+00	3.334E-01	3.334E-01	182.02	OK
	87.57	37.00*	4.852E+00	8.019E-02	8.019E-02	182.02	OK
TL-208	277.37	6.60	4.186E+00	4.795E-01	4.795E-01	164.82	OK
	583.19	85.00*	2.233E+00	3.057E-01	3.057E-01	28.18	OK
	860.56	12.50	1.635E+00	4.371E-01	4.371E-01	117.87	OK
BI-211	72.87	1.23	3.574E+00	-----	Line Not Found	-----	Absent
	351.06	12.92*	3.417E+00	5.100E-02	5.100E-02	2158.25	OK
PB-212	74.82	10.28	3.755E+00	1.086E+00	1.086E+00	80.71	OK
	77.11	17.10	3.991E+00	1.347E+00	1.347E+00	33.05	OK
	238.63	43.60*	4.702E+00	1.042E+00	1.042E+00	13.04	OK
	300.09	3.30	3.912E+00	2.461E+00	2.461E+00	44.99	OK
BI-214	609.32	45.49*	2.155E+00	9.933E-01	9.937E-01	17.59	OK
	1120.29	14.92	1.323E+00	1.424E+00	1.425E+00	34.02	OK
	1764.49	15.30	8.933E-01	1.075E+00	1.075E+00	37.62	OK
PB-214	74.82	5.80	3.775E+00	-----	Line Not Found	-----	<<INT Reject
	77.11	9.70	3.991E+00	2.375E+00	2.375E+00	33.05	OK
	87.09	3.41	4.837E+00	-----	Line Not Found	-----	<<INT Reject
	242.00	7.25	4.651E+00	-----	Line Not Found	-----	<<INT Reject
	295.22	18.42	3.967E+00	1.204E+00	1.205E+00	28.34	OK
	351.93	35.60*	3.416E+00	-----	Line Not Found	-----	<<INT Reject
RN-219	271.23	10.80	4.267E+00	2.947E-01	2.947E-01	140.49	OK
	401.81	6.60*	3.043E+00	3.069E-01	3.069E-01	224.08	OK
RN-222	609.32	45.49*	2.155E+00	9.933E-01	9.937E-01	17.59	OK
	1120.29	14.92	1.323E+00	1.424E+00	1.425E+00	34.02	OK
	1764.49	15.30	8.933E-01	1.075E+00	1.075E+00	37.62	OK
RA-224	240.99	4.10*	4.656E+00	1.086E+00	1.086E+00	125.05	OK
RA-226	609.32	45.49*	2.155E+00	9.933E-01	9.937E-01	17.59	OK
	1120.29	14.92	1.323E+00	1.424E+00	1.425E+00	34.02	OK
	1764.49	15.30	8.933E-01	1.075E+00	1.075E+00	37.62	OK
AC-228	105.21	1.10	5.776E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.533E+00	9.078E-01	9.078E-01	59.76	OK
	794.95	4.25	1.742E+00	2.423E+00	2.423E+00	47.83	OK
	835.71	1.61	1.673E+00	3.090E+00	3.090E+00	71.97	OK
	911.20	25.80*	1.561E+00	9.028E-01	9.028E-01	33.11	OK
	968.97	15.80	1.486E+00	7.497E-01	7.497E-01	71.73	OK
RA-228	105.21	1.10	5.776E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.533E+00	9.078E-01	9.078E-01	59.76	OK
	794.95	4.25	1.742E+00	2.423E+00	2.423E+00	47.83	OK
	835.71	1.61	1.673E+00	3.090E+00	3.090E+00	71.97	OK
	911.20	25.80*	1.561E+00	9.028E-01	9.028E-01	33.11	OK
	968.97	15.80	1.486E+00	7.497E-01	7.497E-01	71.73	OK
TH-228	74.82	10.28	3.755E+00	1.086E+00	1.086E+00	80.71	OK
	77.11	17.10	3.991E+00	1.347E+00	1.347E+00	33.05	OK
	238.63	43.60*	4.702E+00	1.042E+00	1.042E+00	13.04	OK
	300.09	3.30	3.912E+00	2.461E+00	2.461E+00	44.99	OK

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-229	85.43	14.70	4.615E+00	4.966E-01	4.967E-01	79.31	OK
	88.47	24.00	4.852E+00	1.236E-01	1.236E-01	182.02	OK
	193.51	4.41*	5.427E+00	-----	Line Not Found	-----	Absent
TH-230	210.85	2.80	5.154E+00	1.760E+00	1.760E+00	92.62	OK
	609.32	45.49*	2.155E+00	9.933E-01	9.933E-01	17.59	OK
	1120.29	14.92	1.323E+00	1.424E+00	1.424E+00	34.02	OK
	1764.49	15.30	8.933E-01	1.075E+00	1.075E+00	37.62	OK
PA-231	283.69	1.70	4.097E+00	-----	Line Not Found	-----	Absent
	301.36	5.35*	3.912E+00	1.518E+00	1.518E+00	44.99	OK
TH-232	105.21	1.10	5.776E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	3.533E+00	9.078E-01	9.078E-01	59.76	OK
	835.71	1.61	1.673E+00	3.090E+00	3.090E+00	71.97	OK
	911.20	25.80*	1.561E+00	9.028E-01	9.028E-01	33.11	OK
	968.97	15.80	1.486E+00	7.497E-01	7.497E-01	71.73	OK
TH-234	63.29	3.70*	2.482E+00	3.160E+00	3.160E+00	97.07	OK
	92.59	4.23	5.192E+00	2.639E+00	2.639E+00	55.72	OK
U-234	609.32	45.49*	2.155E+00	9.933E-01	9.933E-01	17.59	OK
	1120.29	14.92	1.323E+00	1.424E+00	1.424E+00	34.02	OK
	1764.49	15.30	8.933E-01	1.075E+00	1.075E+00	37.62	OK
U-235	89.96	3.47	5.033E+00	2.479E+00	2.479E+00	42.11	OK
	93.35	5.60	5.192E+00	1.994E+00	1.994E+00	55.72	OK
	143.76	10.96*	6.127E+00	-----	Line Not Found	-----	Absent
	163.33	5.08	5.908E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	5.554E+00	1.823E-01	1.823E-01	52.89	OK
U-238	205.31	5.01	5.230E+00	-----	Line Not Found	-----	Absent
	63.29	3.70*	2.482E+00	3.160E+00	3.160E+00	97.07	OK
	92.59	4.23	5.192E+00	2.639E+00	2.639E+00	55.72	OK
AM-243	43.53	5.90	2.878E-01	-----	Line Not Found	-----	Absent
	74.66	67.20*	3.755E+00	1.661E-01	1.661E-01	80.71	OK
CM-247	278.00	3.40	4.166E+00	-----	Line Not Found	-----	Absent
	287.50	2.00	4.052E+00	-----	Line Not Found	-----	Absent
ANH-511	402.40	72.00*	3.043E+00	2.813E-02	2.813E-02	224.08	OK
	511.00	100.00*	2.490E+00	6.665E-02	6.665E-02	112.29	OK

Flag: "*" = Keyline

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235064.CNF;1
* Acquisition date   : 3-OCT-2016 05:44:14 Sensitivity      : 3.000
* Detector ID        : GAM02 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.40 Half life ratio : *****
* Sample date        : 14-DEC-2015 13:25:00 Analyst initials: MXR1
* Sample ID          : G405235064 Sample Quantity : 1.7464E+02 GRAM
* Batch Number       : 1596254 Wet Weight      : 0.00000
* Wet wt corr        : 1.00000 Dry Weight      : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 22-AUG-2016 09:02:05 Eff. Geometry  : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM02 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.272E+01	1.477E+00	7.189E-01
MN-54	9.556E-02	6.740E-02	1.149E-01
CD-109	1.247E+00	2.224E+00	1.967E+00
SN-126	8.019E-02	1.430E-01	1.508E-01
TL-208	3.057E-01	8.443E-02	5.768E-02
BI-211	5.100E-02	1.079E+00	3.163E-01
PB-212	1.042E+00	1.331E-01	8.452E-02
BI-214	9.937E-01	1.713E-01	1.291E-01
PB-214	1.223E+00	2.035E-01	3.143E-01
RN-219	3.069E-01	6.739E-01	6.562E-01
RN-222	9.937E-01	1.713E-01	1.291E-01
RA-224	1.086E+00	1.331E+00	9.062E-01
RA-226	9.937E-01	1.713E-01	1.291E-01
AC-228	9.028E-01	2.929E-01	2.437E-01
RA-228	9.028E-01	2.929E-01	2.437E-01
TH-228	1.042E+00	1.331E-01	8.452E-02
TH-229	1.250E-01	4.421E-01	9.032E-01
TH-230	9.933E-01	1.713E-01	1.291E-01
PA-231	1.518E+00	6.692E-01	7.117E-01
TH-232	9.028E-01	2.929E-01	2.437E-01
TH-234	3.160E+00	3.006E+00	2.481E+00
U-234	9.933E-01	1.713E-01	1.291E-01
U-235	-7.491E-02	1.838E-01	3.330E-01
U-238	3.160E+00	3.006E+00	2.481E+00
AM-243	1.661E-01	1.314E-01	9.466E-02
CM-247	2.813E-02	6.177E-02	6.023E-02
ANH-511	6.665E-02	7.334E-02	5.493E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	1.088E+01	1.085E+01	2.334E+01	NOT IDENT.
NA-22	-1.702E-02	4.001E-02	7.256E-02	NOT IDENT.
NA-24	0.000E+00	1.251E+41	0.000E+00	SHORT HLIF

AL-26	-9.232E-03	2.320E-02	4.616E-02	NOT IDENT.
SC-46	-1.475E-02	3.957E-01	7.508E-01	FAIL ABUN
V-48	0.000E+00	1.085E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	3.364E+02	0.000E+00	SHORT HLIF
CO-56	-2.600E-01	3.995E-01	7.243E-01	NOT IDENT.
MN-56	0.000E+00	1.518E+41	0.000E+00	SHORT HLIF
CO-57	-6.523E-03	4.895E-02	9.082E-02	NOT IDENT.
CO-58	3.314E-01	5.276E-01	1.143E+00	NOT IDENT.
FE-59	-1.219E+00	6.200E+00	1.175E+01	NOT IDENT.
CO-60	2.207E-02	3.626E-02	7.555E-02	NOT IDENT.
ZN-65	4.758E-02	1.785E-01	3.255E-01	NOT IDENT.
GE-68	-1.153E+00	2.337E+00	3.562E+00	NOT IDENT.
AS-73	-1.207E+01	1.115E+01	2.043E+01	NOT IDENT.
AS-74	0.000E+00	7.512E+03	0.000E+00	SHORT HLIF
SE-75	-2.044E-01	1.851E-01	3.319E-01	NOT IDENT.
BR-77	0.000E+00	3.984E+36	0.000E+00	SHORT HLIF
SR-82	0.000E+00	5.435E+02	0.000E+00	SHORT HLIF
RB-83	-1.391E-01	5.710E-01	1.064E+00	FAIL ABUN
KR-85	6.033E+00	7.159E+00	1.380E+01	NOT IDENT.
SR-85	5.946E-01	7.088E-01	1.366E+00	NOT IDENT.
RB-86	0.000E+00	2.096E+04	0.000E+00	SHORT HLIF
Y-88	-9.246E-02	1.747E-01	3.255E-01	NOT IDENT.
Y-91	-9.496E+01	5.123E+02	9.572E+02	NOT IDENT.
NB-94	3.664E-03	2.747E-02	5.653E-02	NOT IDENT.
NB-95	-8.729E-01	8.362E-01	1.457E+00	NOT IDENT.
NB-95M	2.955E-01	2.090E+00	3.799E+00	NOT IDENT.
ZR-95	8.121E-01	1.261E+00	2.744E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.404E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	3.338E+31	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.122E+41	0.000E+00	SHORT HLIF
RH-101	5.339E-02	6.611E-02	5.970E-02	FAIL ABUN
RH-102	4.409E-02	5.775E-02	1.210E-01	NOT IDENT.
RU-103	3.718E+00	4.577E+00	9.788E+00	FAIL ABUN
RH-106	-4.159E-01	5.380E-01	9.006E-01	NOT IDENT.
RU-106	-4.159E-01	5.380E-01	9.006E-01	NOT IDENT.
AG-108M	5.923E-04	2.712E-02	4.742E-02	NOT IDENT.
AG-110M	8.109E-02	9.835E-02	2.165E-01	NOT IDENT.
SN-113	-1.032E-01	2.043E-01	3.756E-01	NOT IDENT.
CD-115	0.000E+00	8.051E+38	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	6.476E+04	0.000E+00	SHORT HLIF
TE-123M	4.731E-02	1.162E-01	2.425E-01	NOT IDENT.
SB-124	-2.392E-01	1.213E+00	2.681E+00	NOT IDENT.
SB-125	-3.662E-02	9.281E-02	1.719E-01	NOT IDENT.
TE-125M	-2.925E+02	2.589E+02	4.455E+02	NOT IDENT.
I-126	0.000E+00	6.235E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	7.780E+05	0.000E+00	SHORT HLIF
SB-127	0.000E+00	6.450E+21	0.000E+00	SHORT HLIF
I-131	0.000E+00	2.725E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	9.878E+25	0.000E+00	SHORT HLIF
BA-133	-1.518E-02	4.015E-02	6.663E-02	FAIL ABUN
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	4.298E-02	5.356E-02	1.068E-01	NOT IDENT.
CS-135	1.528E-01	1.562E-01	3.015E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.031E+05	0.000E+00	SHORT HLIF
BA-137M	-3.502E-03	3.806E-02	7.222E-02	NOT IDENT.
CS-137	-3.700E-03	4.021E-02	7.629E-02	NOT IDENT.
CE-139	-4.424E-03	1.005E-01	2.034E-01	NOT IDENT.
BA-140	0.000E+00	9.511E+05	0.000E+00	SHORT HLIF
LA-140	0.000E+00	2.471E+05	0.000E+00	SHORT HLIF
CE-141	7.282E-01	2.150E+01	3.986E+01	NOT IDENT.
CE-143	0.000E+00	5.038E+40	0.000E+00	SHORT HLIF
CE-144	-1.791E-01	3.233E-01	5.761E-01	NOT IDENT.
PM-144	-1.047E-02	4.936E-02	9.708E-02	NOT IDENT.
PR-144	-9.336E-01	4.269E+00	8.391E+00	NOT IDENT.
PM-146	1.112E-02	4.142E-02	8.249E-02	NOT IDENT.
ND-147	0.000E+00	2.362E+07	0.000E+00	SHORT HLIF
PM-147	6.477E+02	8.134E+02	1.625E+03	NOT IDENT.
PM-149	0.000E+00	6.019E+39	0.000E+00	SHORT HLIF
EU-150	4.356E-03	2.689E-02	4.795E-02	FAIL ABUN
EU-152	2.032E-02	8.833E-02	1.763E-01	FAIL ABUN
GD-153	3.802E-02	1.813E-01	3.527E-01	FAIL ABUN
EU-154	-3.965E-02	9.886E-02	1.803E-01	FAIL ABUN
EU-155	-7.531E-03	1.115E-01	2.103E-01	FAIL ABUN
TB-160	6.434E-01	1.659E+00	3.503E+00	FAIL ABUN
HO-166M	4.141E-02	5.548E-02	1.204E-01	NOT IDENT.

TM-171	-3.264E+00	2.766E+01	5.478E+01	NOT IDENT.
HF-172	-3.543E-02	2.395E-01	4.074E-01	FAIL ABUN
LU-172	4.526E-02	7.501E-02	1.603E-01	FAIL ABUN
LU-176	3.419E-03	2.244E-02	4.478E-02	FAIL ABUN
HF-181	1.829E+00	3.811E+00	7.745E+00	NOT IDENT.
TA-182	-1.155E-01	8.680E-01	1.641E+00	FAIL ABUN
RE-183	-1.869E+00	3.170E+00	6.016E+00	NOT IDENT.
RE-184	2.810E+01	2.895E+01	6.354E+01	NOT IDENT.
W-188	-2.330E+01	1.129E+02	1.943E+02	FAIL ABUN
IR-192	3.450E-01	6.857E-01	7.965E-01	FAIL ABUN
HG-203	-6.008E-01	2.439E+00	4.185E+00	FAIL ABUN
BI-207	-2.806E-02	4.443E-02	7.019E-02	FAIL ABUN
PB-210	1.929E+00	5.088E+00	1.041E+01	NOT IDENT.
PB-211	5.414E-02	6.578E-01	1.161E+00	NOT IDENT.
BI-212	0.000E+00	9.352E-01	1.426E+00	FAIL ABUN
RA-223	-1.002E-01	5.604E-01	1.079E+00	FAIL ABUN
AC-227	-3.852E-02	2.002E-01	3.924E-01	FAIL ABUN
TH-227	-3.852E-02	2.002E-01	3.924E-01	FAIL ABUN
TH-231	-1.002E-01	5.604E-01	1.079E+00	FAIL ABUN
PA-233	-1.392E-02	5.856E-02	1.013E-01	FAIL ABUN
PA-234	7.504E-02	2.552E-01	5.316E-01	NOT IDENT.
PA-234M	-9.695E-02	4.935E+00	9.043E+00	NOT IDENT.
NP-237	-1.392E-02	5.856E-02	1.013E-01	FAIL ABUN
NP-238	0.000E+00	6.697E+40	0.000E+00	SHORT HLIF
NP-239	-9.472E-02	2.333E-01	4.260E-01	FAIL ABUN
PU-239	4.859E+02	6.018E+02	6.403E+02	FAIL ABUN
AM-241	9.787E-02	1.635E-01	3.158E-01	NOT IDENT.
CM-243	-2.158E-02	9.944E-02	1.860E-01	FAIL ABUN
BK-247	-8.514E-02	6.822E-02	1.207E-01	FAIL ABUN
CF-249	3.085E-02	3.463E-02	7.356E-02	NOT IDENT.
CF-251	-5.730E-03	1.044E-01	2.106E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	334	10.66*	1.059E+00	1.272E+01	1.272E+01	11.85
MN-54	834.85	19	99.98*	1.673E+00	4.977E-02	9.556E-02	71.97
CD-109	88.03	80	3.70*	4.852E+00	1.912E+00	2.972E+00	74.55
SN-126	64.28	68	9.60	2.482E+00	1.218E+00	1.218E+00	97.07
	86.94	80	8.90	4.852E+00	7.949E-01	7.949E-01	74.55
	87.57	80	37.00*	4.852E+00	1.912E-01	1.912E-01	74.55
TL-208	277.37	31	6.60	4.186E+00	4.795E-01	4.795E-01	164.82
	583.19	135	85.00*	2.233E+00	3.057E-01	3.057E-01	28.18
	860.56	21	12.50	1.635E+00	4.371E-01	4.371E-01	117.87
BI-211	72.87	-----	1.23	3.574E+00	-----	Line Not Found	-----
	351.06	346	12.92*	3.417E+00	3.370E+00	3.370E+00	16.97
PB-212	74.82	158	10.28	3.755E+00	1.765E+00	1.765E+00	48.42
	77.11	214	17.10	3.991E+00	1.347E+00	1.347E+00	33.05
	238.63	497	43.60*	4.702E+00	1.042E+00	1.042E+00	13.04
	300.09	74	3.30	3.912E+00	2.461E+00	2.461E+00	44.99
BI-214	609.32	226	45.49*	2.155E+00	9.933E-01	9.937E-01	17.59
	1120.29	65	14.92	1.323E+00	1.424E+00	1.425E+00	34.02
	1764.49	34	15.30	8.933E-01	1.075E+00	1.075E+00	37.62
PB-214	74.82	158	5.80	3.755E+00	3.128E+00	3.130E+00	48.42
	77.11	214	9.70	3.991E+00	2.375E+00	2.375E+00	33.05
	87.09	80	3.41	4.852E+00	2.075E+00	2.075E+00	74.55
	242.00	143	7.25	4.656E+00	1.819E+00	1.819E+00	37.83
	295.22	205	18.42	3.967E+00	1.204E+00	1.205E+00	28.34
	351.93	346	35.60*	3.417E+00	1.223E+00	1.223E+00	16.97
RN-219	271.23	32	10.80	4.267E+00	2.947E-01	2.947E-01	140.49
	401.81	14	6.60*	3.043E+00	3.069E-01	3.069E-01	224.08
RN-222	609.32	226	45.49*	2.155E+00	9.933E-01	9.937E-01	17.59
	1120.29	65	14.92	1.323E+00	1.424E+00	1.425E+00	34.02
	1764.49	34	15.30	8.933E-01	1.075E+00	1.075E+00	37.62
RA-224	240.99	143	4.10*	4.656E+00	3.216E+00	3.216E+00	37.83
RA-226	609.32	226	45.49*	2.155E+00	9.933E-01	9.937E-01	17.59
	1120.29	65	14.92	1.323E+00	1.424E+00	1.425E+00	34.02
	1764.49	34	15.30	8.933E-01	1.075E+00	1.075E+00	37.62
AC-228	105.21	-----	1.10	5.776E+00	-----	Line Not Found	-----
	338.32	84	11.27	3.533E+00	9.078E-01	9.078E-01	59.76
	794.95	42	4.25	1.742E+00	2.423E+00	2.423E+00	47.83
	835.71	19	1.61	1.673E+00	3.090E+00	3.090E+00	71.97
	911.20	85	25.80*	1.561E+00	9.028E-01	9.028E-01	33.11
	968.97	41	15.80	1.486E+00	7.497E-01	7.497E-01	71.73
RA-228	105.21	-----	1.10	5.776E+00	-----	Line Not Found	-----
	338.32	84	11.27	3.533E+00	9.078E-01	9.078E-01	59.76
	794.95	42	4.25	1.742E+00	2.423E+00	2.423E+00	47.83
	835.71	19	1.61	1.673E+00	3.090E+00	3.090E+00	71.97
	911.20	85	25.80*	1.561E+00	9.028E-01	9.028E-01	33.11
	968.97	41	15.80	1.486E+00	7.497E-01	7.497E-01	71.73
TH-228	74.82	158	10.28	3.755E+00	1.765E+00	1.765E+00	48.42
	77.11	214	17.10	3.991E+00	1.347E+00	1.347E+00	33.05

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	238.63	497	43.60*	4.702E+00	1.042E+00	1.042E+00	13.04
	300.09	74	3.30	3.912E+00	2.461E+00	2.461E+00	44.99
TH-229	85.43	78	14.70	4.615E+00	4.966E-01	4.967E-01	79.31
	88.47	80	24.00	4.852E+00	2.948E-01	2.948E-01	74.55
	193.51	-----	4.41*	5.427E+00	-----	Line Not Found	-----
	210.85	59	2.80	5.154E+00	1.760E+00	1.760E+00	92.62
TH-230	609.32	226	45.49*	2.155E+00	9.933E-01	9.933E-01	17.59
	1120.29	65	14.92	1.323E+00	1.424E+00	1.424E+00	34.02
	1764.49	34	15.30	8.933E-01	1.075E+00	1.075E+00	37.62
PA-231	283.69	-----	1.70	4.097E+00	-----	Line Not Found	-----
	301.36	74	5.35*	3.912E+00	1.518E+00	1.518E+00	44.99
TH-232	105.21	-----	1.10	5.776E+00	-----	Line Not Found	-----
	338.32	84	11.27	3.533E+00	9.078E-01	9.078E-01	59.76
	835.71	19	1.61	1.673E+00	3.090E+00	3.090E+00	71.97
	911.20	85	25.80*	1.561E+00	9.028E-01	9.028E-01	33.11
	968.97	41	15.80	1.486E+00	7.497E-01	7.497E-01	71.73
TH-234	63.29	68	3.70*	2.482E+00	3.160E+00	3.160E+00	97.07
	92.59	135	4.23	5.192E+00	2.639E+00	2.639E+00	55.72
U-234	609.32	226	45.49*	2.155E+00	9.933E-01	9.933E-01	17.59
	1120.29	65	14.92	1.323E+00	1.424E+00	1.424E+00	34.02
	1764.49	34	15.30	8.933E-01	1.075E+00	1.075E+00	37.62
U-235	89.96	101	3.47	5.033E+00	2.479E+00	2.479E+00	42.11
	93.35	135	5.60	5.192E+00	1.994E+00	1.994E+00	55.72
	143.76	-----	10.96*	6.127E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.908E+00	-----	Line Not Found	-----
	185.72	135	57.20	5.554E+00	1.823E-01	1.823E-01	52.89
	205.31	-----	5.01	5.230E+00	-----	Line Not Found	-----
U-238	63.29	68	3.70*	2.482E+00	3.160E+00	3.160E+00	97.07
	92.59	135	4.23	5.192E+00	2.639E+00	2.639E+00	55.72
AM-243	43.53	-----	5.90	2.878E-01	-----	Line Not Found	-----
	74.66	158	67.20*	3.755E+00	2.700E-01	2.700E-01	48.42
CM-247	278.00	-----	3.40	4.166E+00	-----	Line Not Found	-----
	287.50	-----	2.00	4.052E+00	-----	Line Not Found	-----
	402.40	14	72.00*	3.043E+00	2.813E-02	2.813E-02	224.08
ANH-511	511.00	39	100.00*	2.490E+00	6.665E-02	6.665E-02	112.29

Flag: "*" = Keyline

Total number of lines in spectrum 48
Number of unidentified lines 9
Number of lines tentatively identified by NID 39 81.25%

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	1.272E+01	1.272E+01	0.151E+01	11.85	
MN-54	312.05D	1.92	4.977E-02	9.556E-02	6.877E-02	71.97	
CD-109	461.40D	1.55	1.912E+00	2.972E+00	2.216E+00	74.55	
SN-126	2.30E+05Y	1.00	1.912E-01	1.912E-01	1.425E-01	74.55	
TL-208	1.41E+10Y	1.00	3.057E-01	3.057E-01	0.862E-01	28.18	
BI-211	7.04E+08Y	1.00	3.370E+00	3.370E+00	0.572E+00	16.97	
PB-212	1.41E+10Y	1.00	1.042E+00	1.042E+00	0.136E+00	13.04	
BI-214	1600.00Y	1.00	9.933E-01	9.937E-01	1.748E-01	17.59	
PB-214	1600.00Y	1.00	1.223E+00	1.223E+00	0.208E+00	16.97	
RN-219	7.04E+08Y	1.00	3.069E-01	3.069E-01	6.876E-01	224.08	
RN-222	1600.00Y	1.00	9.933E-01	9.937E-01	1.748E-01	17.59	
RA-224	1.41E+10Y	1.00	3.216E+00	3.216E+00	1.216E+00	37.83	
RA-226	1600.00Y	1.00	9.933E-01	9.937E-01	1.748E-01	17.59	
AC-228	1.41E+10Y	1.00	9.028E-01	9.028E-01	2.989E-01	33.11	
RA-228	1.41E+10Y	1.00	9.028E-01	9.028E-01	2.989E-01	33.11	
TH-228	1.41E+10Y	1.00	1.042E+00	1.042E+00	0.136E+00	13.04	
TH-229	7340.00Y	1.00	2.948E-01	2.948E-01	2.198E-01	74.55	K
TH-230	7.54E+04Y	1.00	9.933E-01	9.933E-01	1.748E-01	17.59	
PA-231	7.04E+08Y	1.00	1.518E+00	1.518E+00	0.683E+00	44.99	
TH-232	1.41E+10Y	1.00	9.028E-01	9.028E-01	2.989E-01	33.11	
TH-234	4.47E+09Y	1.00	3.160E+00	3.160E+00	3.068E+00	97.07	
U-234	2.45E+05Y	1.00	9.933E-01	9.933E-01	1.748E-01	17.59	
U-235	7.04E+08Y	1.00	1.823E-01	1.823E-01	0.964E-01	52.89	K
U-238	4.47E+09Y	1.00	3.160E+00	3.160E+00	3.068E+00	97.07	
AM-243	7370.00Y	1.00	2.700E-01	2.700E-01	1.308E-01	48.42	
CM-247	1.56E+07Y	1.00	2.813E-02	2.813E-02	6.303E-02	224.08	
ANH-511	1.00E+09Y	1.00	6.665E-02	6.665E-02	7.484E-02	112.29	

Total Activity : 4.173E+01 4.284E+01

Grand Total Activity : 4.173E+01 4.284E+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
3	69.84	44	291	1.45	139.18	135	22	8.52E-03	****	3.25E+00	T
0	128.68	44	177	0.62	256.75	252	8	9.11E-03	****	6.17E+00	T
0	315.18	16	66	2.17	629.42	624	8	3.63E-03	****	3.75E+00	T
0	438.14	17	33	1.83	875.14	871	8	4.00E-03	****	2.83E+00	T
0	528.15	20	34	3.38	1055.03	1049	11	4.88E-03	****	2.42E+00	T
0	597.29	11	31	1.89	1193.20	1185	10	2.84E-03	****	2.19E+00	T
0	726.96	60	29	1.16	1452.34	1446	12	1.55E-02	45.9	1.87E+00	T
0	838.66	13	8	0.57	1675.58	1672	8	3.33E-03	****	1.67E+00	
0	953.87	15	13	2.61	1905.84	1900	12	3.94E-03	****	1.51E+00	T
0	1003.26	34	9	1.70	2004.55	1997	18	9.17E-03	55.0	1.45E+00	T
0	1058.18	12	8	1.80	2114.32	2110	9	3.35E-03	****	1.39E+00	
0	1074.10	18	13	3.21	2146.13	2139	14	4.76E-03	****	1.37E+00	
0	1087.17	8	14	0.74	2172.26	2163	11	2.12E-03	****	1.36E+00	T
0	1125.22	18	7	2.73	2248.31	2244	10	5.00E-03	73.5	1.32E+00	
0	1232.75	9	14	0.90	2463.23	2457	10	2.49E-03	****	1.22E+00	
0	1334.41	9	7	3.85	2666.45	2661	12	2.60E-03	****	1.14E+00	
0	1379.13	12	17	2.96	2755.82	2748	14	3.32E-03	****	1.11E+00	
0	1589.05	8	6	1.46	3175.44	3166	11	2.43E-03	****	9.83E-01	
0	1847.41	10	0	1.24	3691.91	3687	9	3.06E-03	60.3	8.55E-01	

Flags: "T" = Tentatively associated

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*                                     *
*                               GEL Laboratories LLC                       *
*                               2040 Savage Road                          *
*                               Charleston, SC 29407                      *
*                               *****                                  *
*                               *                                         *
*                               DETECTOR AND SAMPLE DATA                 *
*                               *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235064.CNF;1 *
* Acquisition date   : 3-OCT-2016 05:44:14 Sensitivity      : 3.000        *
* Detector ID        : GAM02 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000        *
* Elapsed real time  : 0 01:00:00.40 Half life ratio : *****        *
* Sample date        : 14-DEC-2015 13:25:00 Nuclide Library : SOLID        *
* Sample ID          : G405235064 Analyst initials: MXR1        *
* Batch Number       : 1596254 Sample Quantity : 1.7464E+02 GRAM        *
* Wet wt corr        : 1.00000 Wet Weight : 0.00000        *
*                               Dry Weight : 0.00000        *
*                               *****                                  *
*                               *                                         *
*                               CALIBRATION INFORMATION                   *
*                               *                                         *
* Eff. Cal. date     : 22-AUG-2016 09:02:05 Eff. Geometry : CAN        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM02 CAN.CNF;15        *
*                               *****                                  *

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	3.073E-01
MN-54	5.055E-02
CD-109	9.283E-01
SN-126	7.183E-02
TL-208	2.564E-02
BI-211	1.442E-01
PB-212	3.922E-02
BI-214	5.837E-02
PB-214	1.522E-01
RN-219	2.976E-01
RN-222	5.837E-02
RA-224	4.205E-01
RA-226	5.837E-02
AC-228	1.070E-01
RA-228	1.070E-01
TH-228	3.922E-02
TH-229	4.254E-01
TH-230	5.835E-02
PA-231	3.261E-01
TH-232	1.070E-01
TH-234	1.170E+00
U-234	5.835E-02
U-235	1.571E-01
U-238	1.170E+00
AM-243	4.477E-02
CM-247	2.732E-02
ANH-511	2.502E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	1.065E+01	NOT IDENT.
NA-22	3.011E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.635E-02	NOT IDENT.

SC-46	3.327E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
CO-56	3.115E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	4.284E-02	NOT IDENT.
CO-58	5.091E-01	NOT IDENT.
FE-59	5.114E+00	NOT IDENT.
CO-60	3.204E-02	NOT IDENT.
ZN-65	1.424E-01	NOT IDENT.
GE-68	1.494E+00	NOT IDENT.
AS-73	9.587E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.526E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.735E-01	FAIL ABUN
KR-85	6.304E+00	NOT IDENT.
SR-85	6.238E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.165E-01	NOT IDENT.
Y-91	4.193E+02	NOT IDENT.
NB-94	2.511E-02	NOT IDENT.
NB-95	6.479E-01	NOT IDENT.
NB-95M	1.772E+00	NOT IDENT.
ZR-95	1.225E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.805E-02	FAIL ABUN
RH-102	5.453E-02	NOT IDENT.
RU-103	4.424E+00	FAIL ABUN
RH-106	4.005E-01	NOT IDENT.
RU-106	4.005E-01	NOT IDENT.
AG-108M	2.133E-02	NOT IDENT.
AG-110M	9.663E-02	NOT IDENT.
SN-113	1.700E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.143E-01	NOT IDENT.
SB-124	9.497E-01	NOT IDENT.
SB-125	7.725E-02	NOT IDENT.
TE-125M	2.088E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.022E-02	FAIL ABUN
I-133	0.000E+00	SHORT HLIF
CS-134	4.809E-02	NOT IDENT.
CS-135	1.417E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.271E-02	NOT IDENT.
CS-137	3.456E-02	NOT IDENT.
CE-139	9.579E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.881E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.691E-01	NOT IDENT.
PM-144	4.304E-02	NOT IDENT.
PR-144	3.719E+00	NOT IDENT.
PM-146	3.746E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.676E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.215E-02	FAIL ABUN
EU-152	8.120E-02	FAIL ABUN
GD-153	1.669E-01	FAIL ABUN
EU-154	7.497E-02	FAIL ABUN
EU-155	9.927E-02	FAIL ABUN
TB-160	1.544E+00	FAIL ABUN
HO-166M	5.435E-02	NOT IDENT.
TM-171	2.577E+01	NOT IDENT.

HF-172	1.914E-01	FAIL ABUN
LU-172	7.073E-02	FAIL ABUN
LU-176	2.067E-02	FAIL ABUN
HF-181	3.519E+00	NOT IDENT.
TA-182	7.150E-01	FAIL ABUN
RE-183	2.817E+00	NOT IDENT.
RE-184	2.863E+01	NOT IDENT.
W-188	9.006E+01	FAIL ABUN
IR-192	3.667E-01	FAIL ABUN
HG-203	1.948E+00	FAIL ABUN
BI-207	2.921E-02	FAIL ABUN
PB-210	4.908E+00	NOT IDENT.
PB-211	5.267E-01	NOT IDENT.
BI-212	6.646E-01	FAIL ABUN
RA-223	4.971E-01	FAIL ABUN
AC-227	1.814E-01	FAIL ABUN
TH-227	1.814E-01	FAIL ABUN
TH-231	4.971E-01	FAIL ABUN
PA-233	4.642E-02	FAIL ABUN
PA-234	2.329E-01	NOT IDENT.
PA-234M	4.031E+00	NOT IDENT.
NP-237	4.642E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.997E-01	FAIL ABUN
PU-239	3.038E+02	FAIL ABUN
AM-241	1.489E-01	NOT IDENT.
CM-243	8.753E-02	FAIL ABUN
BK-247	5.555E-02	FAIL ABUN
CF-249	3.381E-02	NOT IDENT.
CF-251	9.890E-02	NOT IDENT.


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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235064.CNF;1
* Acquisition date   : 3-OCT-2016 05:44:14 Sensitivity      : 3.000
* Detector ID        : GAM02 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.40 Half life ratio : *****
* Sample date        : 14-DEC-2015 13:25:00 Nuclide Library : SOLID
* Sample ID          : G405235064 Analyst initials: MXR1
* Batch Number       : 1596254 Sample Quantity : 1.7464E+02 GRAM
*                               Quantity Err(%) : 1.1452E-03 %
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000
*                               Dry Weight      : 0.00000
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 22-AUG-2016 09:02:05 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM02 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

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---- Identified Nuclides ----
Nuclide      Activity      Act Error      TPU
              (pCi/GRAM )   (1.96-sigma)   (1.96-sigma)
K-40         1.272E+01      1.619E+00      1.619E+00
MN-54        9.556E-02      6.752E-02      6.752E-02
CD-109       1.247E+00      2.236E+00      2.236E+00
SN-126       8.019E-02      1.438E-01      1.438E-01
TL-208       3.057E-01      8.543E-02      8.543E-02
BI-211       5.100E-02      1.098E+00      1.098E+00
PB-212       1.042E+00      1.442E-01      1.442E-01
BI-214       9.937E-01      1.766E-01      1.766E-01
PB-214       1.223E+00      2.098E-01      2.098E-01
RN-219       3.069E-01      6.750E-01      6.750E-01
RN-222       9.937E-01      1.766E-01      1.766E-01
RA-224       1.086E+00      1.339E+00      1.339E+00
RA-226       9.937E-01      1.766E-01      1.766E-01
AC-228       9.028E-01      2.965E-01      2.965E-01
RA-228       9.028E-01      2.965E-01      2.965E-01
TH-228       1.042E+00      1.442E-01      1.442E-01
TH-229       1.250E-01      4.422E-01      4.422E-01
TH-230       9.933E-01      1.765E-01      1.765E-01
PA-231       1.518E+00      7.436E-01      7.436E-01
TH-232       9.028E-01      2.965E-01      2.965E-01
TH-234       3.160E+00      3.087E+00      3.087E+00
U-234        9.933E-01      1.765E-01      1.765E-01
U-235       -7.491E-02      1.839E-01      1.839E-01
U-238        3.160E+00      3.087E+00      3.087E+00
AM-243       1.661E-01      1.324E-01      1.324E-01
CM-247       2.813E-02      6.195E-02      6.195E-02
ANH-511      6.665E-02      7.339E-02      7.339E-02

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

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Nuclide      Key-Line
              Activity      K.L Act error      TPU
              (pCi/GRAM )   (1.96-sigma)   (1.96-sigma)
BE-7         1.088E+01      1.086E+01      1.192E+01 NOT IDENT.
NA-22        -1.702E-02      4.001E-02      4.074E-02 NOT IDENT.
NA-24        1.000E+41      1.322E+41      0.000E+00 SHORT HLIF

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AL-26	-9.232E-03	2.321E-02	2.358E-02	NOT IDENT.
SC-46	-1.475E-02	3.957E-01	3.957E-01	FAIL ABUN
V-48	4.653E+03	1.085E+04	1.105E+04	SHORT HLIF
CR-51	2.221E+02	3.366E+02	3.512E+02	SHORT HLIF
CO-56	-2.600E-01	3.996E-01	4.165E-01	NOT IDENT.
MN-56	-1.000E+41	1.518E+41	0.000E+00	SHORT HLIF
CO-57	-6.523E-03	4.895E-02	4.904E-02	NOT IDENT.
CO-58	3.314E-01	5.278E-01	5.486E-01	NOT IDENT.
FE-59	-1.219E+00	6.201E+00	6.225E+00	NOT IDENT.
CO-60	2.207E-02	3.627E-02	3.761E-02	NOT IDENT.
ZN-65	4.758E-02	1.785E-01	1.798E-01	NOT IDENT.
GE-68	-1.153E+00	2.337E+00	2.394E+00	NOT IDENT.
AS-73	-1.207E+01	1.142E+01	1.265E+01	NOT IDENT.
AS-74	3.580E+03	7.517E+03	7.689E+03	SHORT HLIF
SE-75	-2.044E-01	1.853E-01	2.070E-01	NOT IDENT.
BR-77	3.119E+37	2.644E+38	0.000E+00	SHORT HLIF
SR-82	-2.871E+02	5.437E+02	5.588E+02	SHORT HLIF
RB-83	-1.391E-01	5.713E-01	5.748E-01	FAIL ABUN
KR-85	6.033E+00	7.163E+00	7.662E+00	NOT IDENT.
SR-85	5.946E-01	7.092E-01	7.581E-01	NOT IDENT.
RB-86	-3.928E+03	2.096E+04	2.103E+04	SHORT HLIF
Y-88	-9.246E-02	1.748E-01	1.797E-01	NOT IDENT.
Y-91	-9.496E+01	5.123E+02	5.141E+02	NOT IDENT.
NB-94	3.664E-03	2.747E-02	2.752E-02	NOT IDENT.
NB-95	-8.729E-01	8.371E-01	9.250E-01	NOT IDENT.
NB-95M	2.955E-01	2.090E+00	2.094E+00	NOT IDENT.
ZR-95	8.121E-01	1.262E+00	1.314E+00	NOT IDENT.
NB-97	1.000E+41	2.401E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	1.404E+41	0.000E+00	SHORT HLIF
MO-99	1.398E+31	3.340E+31	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	1.127E+41	0.000E+00	SHORT HLIF
RH-101	5.339E-02	6.682E-02	7.102E-02	FAIL ABUN
RH-102	4.409E-02	5.787E-02	6.118E-02	NOT IDENT.
RU-103	3.718E+00	4.581E+00	4.878E+00	FAIL ABUN
RH-106	-4.159E-01	5.387E-01	5.704E-01	NOT IDENT.
RU-106	-4.159E-01	5.387E-01	5.704E-01	NOT IDENT.
AG-108M	5.923E-04	2.712E-02	2.712E-02	NOT IDENT.
AG-110M	8.109E-02	9.844E-02	1.050E-01	NOT IDENT.
SN-113	-1.032E-01	2.044E-01	2.096E-01	NOT IDENT.
CD-115	6.303E+38	8.129E+38	0.000E+00	SHORT HLIF
SN-117M	2.618E+04	6.483E+04	6.590E+04	SHORT HLIF
TE-123M	4.731E-02	1.162E-01	1.181E-01	NOT IDENT.
SB-124	-2.392E-01	1.213E+00	1.218E+00	NOT IDENT.
SB-125	-3.662E-02	9.282E-02	9.428E-02	NOT IDENT.
TE-125M	-2.925E+02	2.594E+02	2.910E+02	NOT IDENT.
I-126	3.144E+05	6.250E+05	6.408E+05	SHORT HLIF
SB-126	1.351E+05	7.784E+05	7.808E+05	SHORT HLIF
SB-127	-4.343E+21	8.707E+21	0.000E+00	SHORT HLIF
I-131	1.720E+09	2.726E+09	2.834E+09	SHORT HLIF
I-132	1.000E+41	1.827E+42	0.000E+00	SHORT HLIF
TE-132	1.081E+26	1.078E+26	0.000E+00	SHORT HLIF
BA-133	-1.518E-02	4.015E-02	4.073E-02	FAIL ABUN
I-133	1.000E+41	3.479E+41	0.000E+00	SHORT HLIF
CS-134	4.298E-02	5.360E-02	5.699E-02	NOT IDENT.
CS-135	1.528E-01	1.565E-01	1.710E-01	NOT IDENT.
I-135	1.000E+41	7.010E+41	0.000E+00	SHORT HLIF
CS-136	4.291E+04	2.032E+05	2.041E+05	SHORT HLIF
BA-137M	-3.502E-03	3.806E-02	3.810E-02	NOT IDENT.
CS-137	-3.700E-03	4.021E-02	4.025E-02	NOT IDENT.
CE-139	-4.424E-03	1.005E-01	1.005E-01	NOT IDENT.
BA-140	5.977E+05	9.515E+05	9.889E+05	SHORT HLIF
LA-140	-2.225E+04	2.471E+05	2.473E+05	SHORT HLIF
CE-141	7.282E-01	2.150E+01	2.151E+01	NOT IDENT.
CE-143	1.000E+41	5.136E+40	0.000E+00	SHORT HLIF
CE-144	-1.791E-01	3.235E-01	3.334E-01	NOT IDENT.
PM-144	-1.047E-02	4.936E-02	4.959E-02	NOT IDENT.
PR-144	-9.336E-01	4.270E+00	4.290E+00	NOT IDENT.
PM-146	1.112E-02	4.143E-02	4.173E-02	NOT IDENT.
ND-147	6.753E+06	2.362E+07	2.382E+07	SHORT HLIF
PM-147	6.477E+02	8.139E+02	8.647E+02	NOT IDENT.
PM-149	-2.136E+39	6.037E+39	0.000E+00	SHORT HLIF
EU-150	4.356E-03	2.689E-02	2.696E-02	FAIL ABUN
EU-152	2.032E-02	8.834E-02	8.881E-02	FAIL ABUN
GD-153	3.802E-02	1.813E-01	1.821E-01	FAIL ABUN
EU-154	-3.965E-02	9.887E-02	1.005E-01	FAIL ABUN
EU-155	-7.531E-03	1.115E-01	1.116E-01	FAIL ABUN
TB-160	6.434E-01	1.660E+00	1.685E+00	FAIL ABUN
HO-166M	4.141E-02	5.553E-02	5.858E-02	NOT IDENT.

TM-171	-3.264E+00	2.766E+01	2.770E+01	NOT IDENT.
HF-172	-3.543E-02	2.396E-01	2.401E-01	FAIL ABUN
LU-172	4.526E-02	7.515E-02	7.787E-02	FAIL ABUN
LU-176	3.419E-03	2.244E-02	2.249E-02	FAIL ABUN
HF-181	1.829E+00	3.812E+00	3.900E+00	NOT IDENT.
TA-182	-1.155E-01	8.680E-01	8.696E-01	FAIL ABUN
RE-183	-1.869E+00	3.184E+00	3.293E+00	NOT IDENT.
RE-184	2.810E+01	2.969E+01	3.228E+01	NOT IDENT.
W-188	-2.330E+01	1.130E+02	1.134E+02	FAIL ABUN
IR-192	3.450E-01	6.859E-01	7.033E-01	FAIL ABUN
HG-203	-6.008E-01	2.440E+00	2.455E+00	FAIL ABUN
BI-207	-2.806E-02	4.444E-02	4.621E-02	FAIL ABUN
PB-210	1.929E+00	5.091E+00	5.165E+00	NOT IDENT.
PB-211	5.414E-02	6.578E-01	6.583E-01	NOT IDENT.
BI-212	2.079E+00	9.411E-01	1.328E+00	FAIL ABUN
RA-223	-1.002E-01	5.604E-01	5.622E-01	FAIL ABUN
AC-227	-3.852E-02	2.003E-01	2.010E-01	FAIL ABUN
TH-227	-3.852E-02	2.003E-01	2.010E-01	FAIL ABUN
TH-231	-1.002E-01	5.604E-01	5.622E-01	FAIL ABUN
PA-233	-1.392E-02	5.857E-02	5.890E-02	FAIL ABUN
PA-234	7.504E-02	2.692E-01	2.713E-01	NOT IDENT.
PA-234M	-9.695E-02	4.935E+00	4.935E+00	NOT IDENT.
NP-237	-1.392E-02	5.857E-02	5.890E-02	FAIL ABUN
NP-238	-1.062E+40	6.697E+40	0.000E+00	SHORT HLIF
NP-239	-9.472E-02	2.335E-01	2.373E-01	FAIL ABUN
PU-239	4.859E+02	6.022E+02	6.408E+02	FAIL ABUN
AM-241	9.787E-02	1.636E-01	1.695E-01	NOT IDENT.
CM-243	-2.158E-02	9.946E-02	9.993E-02	FAIL ABUN
BK-247	-8.514E-02	7.035E-02	8.014E-02	FAIL ABUN
CF-249	3.085E-02	3.473E-02	3.741E-02	NOT IDENT.
CF-251	-5.730E-03	1.044E-01	1.045E-01	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	85.3859	87.09	112.3177	136.47	82.6104
45.60	87.9392	87.57	134.9020	140.51	0.0000
46.54	74.8432	88.03	94.5115	143.76	89.5613
49.72	0.0000	88.34	94.5660	144.24	93.3011
51.35	84.1319	88.47	94.5884	145.44	92.2199
51.87	90.4867	89.96	100.8687	152.43	100.5022
52.39	87.4844	1093.63	100.9935	153.25	0.0000
52.97	109.5193	91.11	0.0000	323.87	72.1274
53.44	106.5184	92.59	101.3485	156.02	0.0000
54.07	76.3562	93.35	101.4862	158.56	0.0000
57.36	0.0000	94.56	66.7905	159.00	80.0664
57.53	97.0614	94.65	66.8012	162.33	82.9069
57.98	87.6618	94.67	66.8034	162.66	0.0000
59.27	80.5184	94.87	66.8267	163.33	89.7153
59.32	80.5279	97.43	86.9583	165.86	89.1485
59.54	74.9162	98.43	71.0617	176.31	85.9934
60.96	79.4233	98.44	71.0631	176.60	0.0000
61.17	92.2331	99.53	98.7551	177.52	80.9970
62.93	90.8300	100.11	116.0939	181.07	0.0000
63.29	90.9049	102.03	83.0286	181.52	87.3616
63.58	90.9655	103.18	83.1879	184.41	76.0448
64.28	91.1106	103.37	91.3046	143.76	85.1909
66.73	75.4458	105.21	96.2189	193.51	80.7118
67.24	66.8986	105.31	96.2347	197.03	94.0836
125.81	87.8445	106.12	88.2357	198.01	54.9391
67.75	87.8575	106.47	84.8011	201.83	88.4325
69.67	100.8815	109.28	106.1907	203.43	80.6862
70.83	101.1320	111.00	91.2700	205.31	80.4041
72.81	101.5556	111.76	0.0000	210.85	62.3028
72.87	101.5683	114.06	83.4788	215.65	69.2648
74.66	101.9465	116.30	0.0000	222.11	75.0697
74.82	101.9799	116.74	86.1857	227.09	71.8408
74.97	102.0118	119.76	88.9532	227.38	67.3691
77.11	102.4567	121.12	74.8731	228.16	0.0000
78.74	116.4234	121.22	74.8841	228.18	53.9368
79.69	100.4014	121.78	92.7910	116.74	53.9368
80.12	93.0978	122.06	96.4001	235.69	61.1115
80.19	0.0000	122.92	98.9057	235.96	61.1272
80.57	95.3984	123.07	98.9279	238.63	55.3781
81.00	103.6207	265.00	88.2798	238.98	0.0000
81.07	103.6349	125.81	84.5663	240.99	55.4991
81.75	103.7717	127.23	76.7454	242.00	55.5506
83.79	99.7155	127.91	87.6243	244.70	58.8835
84.00	99.7551	129.30	104.2351	252.40	0.0000
85.43	111.9690	131.20	70.7498	252.80	55.1758
86.55	112.2047	133.02	95.5158	254.15	0.0000
86.79	112.2551	133.52	81.0633	256.23	54.4212
86.94	112.2864	136.00	72.8439	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	65.9717	355.39	0.0000	584.27	21.5598
264.80	70.6269	356.01	38.8754	595.83	0.0000
265.00	70.6392	364.49	0.0000	427.87	13.7217
268.22	57.3197	366.42	0.0000	602.52	0.0000
269.46	74.1738	372.51	42.3384	604.72	10.3107
270.03	70.0089	375.05	47.4590	607.14	18.9244
271.23	57.9333	377.52	50.5707	609.32	29.8499
273.65	0.0000	356.01	32.5000	610.33	29.8636
276.40	61.0010	388.16	28.5178	614.28	10.3561
277.37	61.0499	388.63	0.0000	618.01	21.8999
277.60	61.0618	391.69	38.7909	620.36	19.6154
278.00	69.0692	264.66	24.6401	621.93	33.4864
279.20	66.3161	401.81	31.8502	630.19	0.0000
279.54	57.8665	402.40	31.8615	631.29	17.3932
279.70	57.8740	404.85	30.8813	633.25	22.0507
280.46	48.0231	410.95	27.8992	634.78	0.0000
283.69	57.5921	413.71	26.9119	635.95	18.5911
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	54.8364	423.72	0.0000	645.85	29.7593
285.90	0.0000	427.09	35.4810	657.76	22.8754
287.50	42.6178	427.87	32.3661	657.90	0.0000
290.67	58.3932	433.94	26.7202	661.66	27.3208
293.27	0.0000	439.40	26.8069	664.57	0.0000
351.93	38.5941	453.88	28.6243	666.33	0.0000
295.96	38.6172	463.37	28.7803	666.50	0.0000
879.38	25.7981	468.07	28.8567	667.71	0.0000
299.98	41.6096	473.00	0.0000	677.62	25.7325
300.09	41.6132	475.06	26.8239	685.70	0.0000
300.13	41.6140	476.78	20.4055	695.00	0.0000
301.36	40.2184	477.60	21.4893	696.49	23.2531
302.85	37.3885	482.18	25.8525	696.51	23.2531
256.23	48.3800	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	24.1556
306.78	45.1956	497.08	18.4609	697.49	21.4731
308.46	47.1796	505.52	21.2714	702.65	19.7253
311.90	40.5465	507.63	0.0000	706.68	24.2487
316.51	47.9551	511.00	35.0081	711.68	18.8986
319.41	0.0000	514.00	23.0104	720.70	0.0000
320.08	0.0000	514.00	23.0104	721.93	0.0000
321.04	40.8276	520.40	25.2854	722.78	20.2487
323.87	49.6802	520.69	0.0000	722.91	18.8037
325.23	39.9798	522.65	0.0000	723.31	18.8068
328.76	0.0000	527.90	0.0000	724.19	13.0245
333.37	55.9134	528.26	26.4922	727.33	19.0178
333.97	45.6334	529.59	26.5107	733.00	15.5603
334.37	41.2292	529.87	0.0000	735.93	19.0832
338.28	41.3463	531.02	0.0000	333.97	20.9132
338.32	41.3472	537.26	0.0000	739.50	0.0000
311.90	42.8902	546.56	0.0000	747.24	20.0812
340.48	42.8902	552.55	35.7578	748.06	22.8264
340.55	0.0000	563.25	26.9600	752.31	26.5229
344.28	41.5232	569.33	20.2800	753.82	0.0000
345.93	46.0260	946.00	20.2815	756.73	15.5743
351.06	35.7620	569.70	16.9031	756.80	17.4072
351.93	35.7832	583.19	21.5490	884.68	22.9675

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 06:58:23.64

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235065.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM25.CNF;357
Background date    : 2-OCT-2016 11:01:25.
Sample date       : 14-DEC-2015 13:56:00 Acquisition date : 3-OCT-2016 05:57:14.
Sample ID        : G405235065 Sample quantity   : 1.47836E+02 GRAM
Detector name     : GAM25 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.55 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity       : 3.00000
Batch ID          : 1596254 Detector SN#       :
Matrix Spike ID   : LCS ID                   : 1556
*****

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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.44*	40	119	0.86	92.38	89	7	1.10E-02	51.5	
2	0	63.16*	25	241	0.77	125.82	123	8	6.83E-03	115.5	
3	0	77.20*	369	186	0.79	153.89	152	6	1.02E-01	8.0	
4	0	84.17*	35	110	1.21	167.84	166	5	9.62E-03	50.4	
5	0	87.07	109	150	1.36	173.63	171	6	3.04E-02	20.0	
6	4	89.80	70	82	0.89	179.09	177	15	1.95E-02	19.5	1.37E+00
7	4	92.88*	90	190	1.27	185.25	177	15	2.49E-02	30.8	
8	0	128.38	43	118	1.40	256.24	254	8	1.21E-02	45.9	
9	0	143.37*	23	136	0.62	286.21	283	8	6.28E-03	93.7	
10	0	186.18*	92	138	1.08	371.83	367	10	2.55E-02	27.2	
11	0	208.76	42	80	0.99	416.97	414	7	1.16E-02	38.6	
12	7	238.80*	442	73	1.11	477.05	470	19	1.23E-01	5.8	2.17E+00
13	7	241.74	94	101	1.44	482.93	470	19	2.62E-02	22.1	
14	0	270.43	52	53	1.66	540.33	536	9	1.46E-02	29.0	
15	0	295.25*	191	78	1.08	589.95	584	12	5.32E-02	11.9	
16	0	300.81	54	35	1.68	601.08	597	11	1.49E-02	26.0	
17	0	338.56*	117	69	1.25	676.58	670	14	3.24E-02	18.1	
18	0	352.23*	322	62	1.13	703.92	698	12	8.96E-02	7.5	
19	0	463.82	61	24	2.14	927.11	921	14	1.70E-02	21.4	
20	0	481.66	24	31	2.95	962.81	957	11	6.80E-03	48.0	
21	0	493.76	2	16	1.29	987.00	984	6	5.86E-04	317.8	
22	0	511.14*	30	57	1.51	1021.77	1016	15	8.24E-03	65.8	
23	0	567.01	15	9	1.64	1133.53	1130	7	4.18E-03	41.6	
24	0	583.50*	143	34	1.29	1166.52	1160	14	3.97E-02	12.2	
25	0	609.37*	203	45	1.56	1218.28	1211	14	5.63E-02	10.1	
26	0	629.40	13	20	0.64	1258.35	1253	12	3.54E-03	76.8	
27	0	678.03	9	6	1.27	1355.63	1352	7	2.44E-03	59.5	
28	0	703.73	13	36	0.62	1407.06	1398	11	3.71E-03	90.9	
29	0	719.29	15	9	0.56	1438.19	1434	8	4.17E-03	44.2	
30	0	723.13	9	14	0.78	1445.87	1441	9	2.60E-03	78.2	
31	0	728.25	21	30	2.45	1456.11	1449	11	5.70E-03	56.5	
32	0	756.56	16	24	0.95	1512.75	1506	12	4.44E-03	66.1	
33	0	764.38	9	19	0.99	1528.39	1520	11	2.55E-03	98.0	
34	0	768.17	31	13	1.38	1535.97	1531	9	8.52E-03	28.1	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	788.47	30	21	5.45	1576.59	1568	19	8.33E-03	42.7	
36	0	795.50	14	11	1.86	1590.66	1586	9	3.78E-03	52.1	
37	0	860.86	16	24	1.03	1721.44	1711	16	4.58E-03	70.8	
38	0	870.66*	11	15	1.03	1741.04	1737	10	3.10E-03	73.1	
39	0	877.54	13	20	0.85	1754.80	1748	14	3.67E-03	78.1	
40	0	911.22*	102	12	1.80	1822.20	1814	16	2.83E-02	12.8	
41	0	929.74	16	5	1.04	1859.25	1853	9	4.40E-03	35.2	
42	0	969.29*	67	10	1.34	1938.39	1934	11	1.85E-02	16.7	
43	0	1008.96	8	4	2.72	2017.77	2013	8	2.29E-03	54.2	
44	0	1064.60	16	13	4.05	2129.13	2122	16	4.46E-03	54.6	
45	0	1120.51*	56	13	1.51	2241.02	2233	17	1.57E-02	19.9	
46	0	1339.15	8	6	0.64	2678.61	2669	14	2.22E-03	77.6	
47	0	1460.76*	366	9	2.07	2922.03	2913	16	1.02E-01	5.6	
48	0	1571.36	9	3	0.63	3143.45	3137	11	2.59E-03	47.4	
49	0	1730.34	7	4	0.81	3461.74	3455	9	1.84E-03	69.3	
50	2	1763.43	26	8	2.44	3528.00	3519	18	7.29E-03	31.2	9.69E-01
51	2	1765.85*	12	4	1.97	3532.83	3519	18	3.21E-03	52.6	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235065.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 14-DEC-2015 13:56:00 Acquisition date : 3-OCT-2016 05:57:14
Sample ID : G405235065 Sample quantity : 147.84 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA25 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.55 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.131E+00	1.486E+01	1.486E+01	11.10	OK
NB-94	702.65	99.81*	2.143E+00	3.288E-02	3.288E-02	181.73	OK
	871.09	99.89	1.793E+00	3.212E-02	3.212E-02	146.30	OK
NB-95	765.81	99.81*	2.000E+00	2.402E-02	5.772E-01	196.03	OK
ZR-95	724.19	44.27	2.095E+00	5.293E-02	1.272E+00	156.31	OK
	756.73	54.38*	2.017E+00	7.627E-02	1.833E+00	132.29	OK
CD-109	88.03	3.70*	9.279E+00	8.157E-01	1.268E+00	105.12	OK
SN-126	64.28	9.60	9.545E+00	1.744E-01	1.744E-01	231.10	OK
	86.94	8.90	9.279E+00	3.391E-01	3.391E-01	105.12	OK
	87.57	37.00*	9.279E+00	8.157E-02	8.157E-02	105.12	OK
TL-208	277.37	6.60	4.809E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.509E+00	3.592E-01	3.592E-01	24.49	OK
	860.56	12.50	1.810E+00	3.759E-01	3.759E-01	141.57	OK
PB-210	46.54	4.25*	9.121E+00	6.790E-01	6.963E-01	102.93	OK
BI-211	72.87	1.23	9.424E+00	----- Line	Not Found	-----	Absent
	351.06	12.92*	3.891E+00	1.187E-02	1.187E-02	8508.91	OK
PB-212	74.82	10.28	9.405E+00	----- Line	Not Found	-----	Absent
	77.11	17.10	9.382E+00	1.471E+00	1.471E+00	16.04	OK
	238.63	43.60*	5.475E+00	1.078E+00	1.078E+00	11.56	OK
	300.09	3.30	4.476E+00	2.071E+00	2.071E+00	52.03	OK
BI-214	609.32	45.49*	2.419E+00	9.839E-01	9.843E-01	20.11	OK
	1120.29	14.92	1.443E+00	1.318E+00	1.318E+00	39.79	OK
	1764.49	15.30	9.342E-01	8.800E-01	8.803E-01	62.46	OK
PB-214	74.82	5.80	9.405E+00	----- Line	Not Found	-----	Absent
	77.11	9.70	9.382E+00	2.594E+00	2.595E+00	16.04	OK
	87.09	3.41	9.279E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	5.413E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.551E+00	1.304E+00	1.305E+00	23.76	OK
	351.93	35.60*	3.894E+00	----- Line	Not Found	-----	<<INT Reject
RN-222	609.32	45.49*	2.419E+00	9.839E-01	9.843E-01	20.11	OK
	1120.29	14.92	1.443E+00	1.318E+00	1.318E+00	39.79	OK
	1764.49	15.30	9.342E-01	8.800E-01	8.803E-01	62.46	OK
RA-224	240.99	4.10*	5.418E+00	1.653E-01	1.653E-01	738.01	OK
RA-226	609.32	45.49*	2.419E+00	9.839E-01	9.843E-01	20.11	OK
	1120.29	14.92	1.443E+00	1.318E+00	1.318E+00	39.79	OK
	1764.49	15.30	9.342E-01	8.800E-01	8.803E-01	62.46	OK
AC-228	105.21	1.10	8.977E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.030E+00	1.448E+00	1.448E+00	36.11	OK
	794.95	4.25	1.934E+00	8.621E-01	8.621E-01	104.16	OK
	835.71	1.61	1.856E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.725E+00	1.174E+00	1.174E+00	25.50	OK
	968.97	15.80	1.637E+00	1.313E+00	1.313E+00	33.42	OK
RA-228	105.21	1.10	8.977E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	4.030E+00	1.448E+00	1.448E+00	36.11	OK
	794.95	4.25	1.934E+00	8.621E-01	8.621E-01	104.16	OK
	835.71	1.61	1.856E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.725E+00	1.174E+00	1.174E+00	25.50	OK
	968.97	15.80	1.637E+00	1.313E+00	1.313E+00	33.42	OK
TH-228	74.82	10.28	9.405E+00	----- Line	Not Found	-----	Absent

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
	77.11	17.10	9.382E+00	1.471E+00	1.471E+00	16.04	OK
	238.63	43.60*	5.475E+00	1.078E+00	1.078E+00	11.56	OK
	300.09	3.30	4.476E+00	2.071E+00	2.071E+00	52.03	OK
TH-229	85.43	14.70	9.312E+00	1.608E-01	1.608E-01	100.75	OK
	88.47	24.00	9.244E+00	1.997E-01	1.997E-01	38.94	OK
	193.51	4.41*	6.496E+00	-----	Line Not Found	-----	Absent
	210.85	2.80	6.071E+00	-----	Line Not Found	-----	Absent
TH-230	609.32	45.49*	2.419E+00	9.839E-01	9.839E-01	20.11	OK
	1120.29	14.92	1.443E+00	1.318E+00	1.318E+00	39.79	OK
	1764.49	15.30	9.342E-01	8.800E-01	8.800E-01	62.46	OK
PA-231	283.69	1.70	4.715E+00	-----	Line Not Found	-----	Absent
	301.36	5.35*	4.476E+00	1.278E+00	1.278E+00	52.03	OK
TH-232	105.21	1.10	8.977E+00	-----	Line Not Found	-----	Absent
	338.32	11.27	4.030E+00	1.448E+00	1.448E+00	36.11	OK
	835.71	1.61	1.856E+00	-----	Line Not Found	-----	Absent
	911.20	25.80*	1.725E+00	1.174E+00	1.174E+00	25.50	OK
	968.97	15.80	1.637E+00	1.313E+00	1.313E+00	33.42	OK
TH-234	63.29	3.70*	9.545E+00	4.526E-01	4.526E-01	231.10	OK
	92.59	4.23	9.201E+00	1.453E+00	1.453E+00	61.52	OK
U-234	609.32	45.49*	2.419E+00	9.839E-01	9.839E-01	20.11	OK
	1120.29	14.92	1.443E+00	1.318E+00	1.318E+00	39.79	OK
	1764.49	15.30	9.342E-01	8.800E-01	8.800E-01	62.46	OK
U-235	89.96	3.47	9.244E+00	1.381E+00	1.381E+00	38.94	OK
	93.35	5.60	9.201E+00	1.098E+00	1.098E+00	61.52	OK
	143.76	10.96*	7.933E+00	1.581E-01	1.581E-01	187.34	OK
	163.33	5.08	7.333E+00	-----	Line Not Found	-----	Absent
	185.72	57.20	6.688E+00	1.426E-01	1.426E-01	54.41	OK
	205.31	5.01	6.202E+00	-----	Line Not Found	-----	Absent
U-238	63.29	3.70*	9.545E+00	4.526E-01	4.526E-01	231.10	OK
	92.59	4.23	9.201E+00	1.453E+00	1.453E+00	61.52	OK
ANH-511	511.00	100.00*	2.809E+00	5.731E-02	5.731E-02	131.62	OK

Flag: "*" = Keyline

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235065.CNF;1
* Acquisition date   : 3-OCT-2016 05:57:14 Sensitivity      : 3.000
* Detector ID        : GAM25 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.55 Half life ratio : *****
* Sample date        : 14-DEC-2015 13:56:00 Analyst initials: MXR1
* Sample ID          : G405235065 Sample Quantity : 1.4784E+02 GRAM
* Batch Number       : 1596254 Wet Weight : 0.00000
* Wet wt corr        : 1.00000 Dry Weight : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 1-AUG-2016 08:41:33 Eff. Geometry   : CAN
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF.GAM25 CAN.CNF;15
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.486E+01	1.616E+00	7.067E-01
NB-94	3.288E-02	5.856E-02	5.875E-02
NB-95	5.772E-01	1.109E+00	9.378E-01
ZR-95	1.833E+00	2.376E+00	2.466E+00
CD-109	1.268E+00	1.306E+00	1.203E+00
SN-126	8.157E-02	8.404E-02	6.914E-02
TL-208	3.592E-01	8.621E-02	5.023E-02
PB-210	6.963E-01	7.023E-01	5.653E-01
BI-211	1.187E-02	9.898E-01	2.940E-01
PB-212	1.078E+00	1.221E-01	7.821E-02
BI-214	9.843E-01	1.940E-01	1.289E-01
PB-214	1.309E+00	1.920E-01	3.340E-01
RN-222	9.843E-01	1.940E-01	1.289E-01
RA-224	1.653E-01	1.196E+00	8.397E-01
RA-226	9.843E-01	1.940E-01	1.289E-01
AC-228	1.174E+00	2.934E-01	2.334E-01
RA-228	1.174E+00	2.934E-01	2.334E-01
TH-228	1.078E+00	1.221E-01	7.821E-02
TH-229	-1.970E-01	3.778E-01	6.735E-01
TH-230	9.839E-01	1.939E-01	1.289E-01
PA-231	1.278E+00	6.515E-01	6.390E-01
TH-232	1.174E+00	2.934E-01	2.334E-01
TH-234	4.526E-01	1.025E+00	7.537E-01
U-234	9.839E-01	1.939E-01	1.289E-01
U-235	1.581E-01	2.903E-01	2.564E-01
U-238	4.526E-01	1.025E+00	7.537E-01
ANH-511	5.731E-02	7.393E-02	5.250E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-6.901E+00	1.161E+01	1.818E+01	NOT IDENT.
NA-22	-4.344E-03	4.848E-02	9.269E-02	NOT IDENT.
NA-24	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF

AL-26	-1.085E-02	2.661E-02	5.204E-02	NOT IDENT.
SC-46	-5.542E-02	3.828E-01	7.426E-01	FAIL ABUN
V-48	0.000E+00	1.104E+04	0.000E+00	SHORT HLIF
CR-51	0.000E+00	2.892E+02	0.000E+00	SHORT HLIF
MN-54	-3.158E-03	5.967E-02	1.184E-01	NOT IDENT.
CO-56	1.014E-02	4.465E-01	8.920E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	4.635E-03	3.497E-02	6.847E-02	NOT IDENT.
CO-58	3.920E-02	4.089E-01	8.651E-01	NOT IDENT.
FE-59	-1.522E+00	6.602E+00	1.260E+01	NOT IDENT.
CO-60	2.932E-02	4.520E-02	9.091E-02	NOT IDENT.
ZN-65	2.576E-02	1.345E-01	2.573E-01	NOT IDENT.
GE-68	1.431E-01	2.646E+00	5.160E+00	NOT IDENT.
AS-73	-3.791E-02	1.465E+00	2.988E+00	NOT IDENT.
AS-74	0.000E+00	4.502E+03	0.000E+00	SHORT HLIF
SE-75	1.137E-01	1.752E-01	3.437E-01	NOT IDENT.
BR-77	0.000E+00	3.641E+36	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.229E+02	0.000E+00	SHORT HLIF
RB-83	2.900E-01	5.290E-01	1.112E+00	NOT IDENT.
KR-85	-2.600E+00	6.358E+00	1.163E+01	NOT IDENT.
SR-85	-2.606E-01	6.293E-01	1.150E+00	NOT IDENT.
RB-86	0.000E+00	2.452E+04	0.000E+00	SHORT HLIF
Y-88	-8.054E-02	1.823E-01	3.509E-01	NOT IDENT.
Y-91	-2.273E+02	5.631E+02	1.008E+03	NOT IDENT.
NB-95M	2.939E-01	1.931E+00	3.343E+00	NOT IDENT.
NB-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	3.757E+31	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	0.000E+00	4.981E-02	4.539E-02	FAIL ABUN
RH-102	-1.785E-02	5.444E-02	8.725E-02	FAIL ABUN
RU-103	-9.891E-01	6.045E+00	1.001E+01	FAIL ABUN
RH-106	3.707E-01	4.672E-01	9.915E-01	NOT IDENT.
RU-106	3.707E-01	4.672E-01	9.915E-01	NOT IDENT.
AG-108M	5.613E-03	2.548E-02	5.105E-02	FAIL ABUN
AG-110M	1.575E-02	1.022E-01	2.017E-01	FAIL ABUN
SN-113	-8.336E-02	2.169E-01	4.077E-01	NOT IDENT.
CD-115	0.000E+00	3.930E+38	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	5.153E+04	0.000E+00	SHORT HLIF
TE-123M	5.296E-02	9.254E-02	1.856E-01	NOT IDENT.
SB-124	5.497E-02	1.745E+00	3.873E+00	FAIL ABUN
SB-125	-1.972E-02	8.097E-02	1.560E-01	FAIL ABUN
TE-125M	5.498E+01	1.728E+02	3.461E+02	NOT IDENT.
I-126	0.000E+00	6.895E+05	0.000E+00	SHORT HLIF
SB-126	0.000E+00	8.695E+05	0.000E+00	SHORT HLIF
SB-127	0.000E+00	7.675E+21	0.000E+00	SHORT HLIF
I-131	0.000E+00	2.636E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	9.377E+25	0.000E+00	SHORT HLIF
BA-133	1.043E-02	3.553E-02	6.661E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	5.612E-02	5.729E-02	1.050E-01	FAIL ABUN
CS-135	2.022E-02	1.320E-01	2.266E-01	NOT IDENT.
I-135	0.000E+00	1.398E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	2.470E+05	0.000E+00	SHORT HLIF
BA-137M	3.077E-02	3.495E-02	7.330E-02	NOT IDENT.
CS-137	3.251E-02	3.693E-02	7.743E-02	NOT IDENT.
CE-139	-8.346E-02	8.969E-02	1.565E-01	NOT IDENT.
BA-140	0.000E+00	7.917E+05	0.000E+00	SHORT HLIF
LA-140	0.000E+00	2.978E+05	0.000E+00	SHORT HLIF
CE-141	-4.775E+00	1.867E+01	3.237E+01	NOT IDENT.
CE-143	0.000E+00	5.565E+40	0.000E+00	SHORT HLIF
CE-144	-2.116E-01	2.579E-01	4.657E-01	NOT IDENT.
PM-144	-1.456E-02	6.253E-02	9.960E-02	NOT IDENT.
PR-144	-1.218E+00	5.419E+00	8.647E+00	NOT IDENT.
PM-146	1.254E-02	3.599E-02	7.402E-02	NOT IDENT.
ND-147	0.000E+00	2.163E+07	0.000E+00	SHORT HLIF
PM-147	-1.949E+01	6.185E+02	1.197E+03	NOT IDENT.
PM-149	0.000E+00	5.747E+39	0.000E+00	SHORT HLIF
EU-150	1.532E-02	2.339E-02	4.532E-02	FAIL ABUN
EU-152	6.961E-02	7.899E-02	1.597E-01	NOT IDENT.
GD-153	-7.477E-02	1.056E-01	1.809E-01	NOT IDENT.
EU-154	2.279E-02	1.154E-01	2.332E-01	FAIL ABUN
EU-155	4.990E-02	7.185E-02	1.476E-01	FAIL ABUN
TB-160	-4.775E-01	1.793E+00	3.005E+00	FAIL ABUN
HO-166M	-1.525E-02	6.095E-02	1.097E-01	NOT IDENT.
TM-171	1.164E+00	3.402E+00	7.105E+00	NOT IDENT.
HF-172	8.276E-02	1.772E-01	3.322E-01	FAIL ABUN

LU-172	-2.428E-02	8.992E-02	1.664E-01	FAIL ABUN
LU-176	5.709E-04	2.073E-02	3.787E-02	FAIL ABUN
HF-181	6.843E+00	6.438E+00	8.037E+00	FAIL ABUN
TA-182	-1.754E-02	1.012E+00	1.920E+00	FAIL ABUN
RE-183	-5.597E-01	7.075E-01	1.382E+00	NOT IDENT.
RE-184	1.302E+01	3.003E+01	6.065E+01	NOT IDENT.
W-188	-2.242E+01	9.657E+01	1.562E+02	FAIL ABUN
IR-192	-1.148E-01	3.812E-01	7.391E-01	FAIL ABUN
HG-203	4.076E-01	2.104E+00	3.893E+00	NOT IDENT.
BI-207	7.335E-02	7.851E-02	9.962E-02	FAIL ABUN
PB-211	-5.729E-01	5.527E-01	9.563E-01	NOT IDENT.
BI-212	7.749E-01	8.578E-01	1.269E+00	FAIL ABUN
RN-219	9.840E-02	3.435E-01	6.934E-01	FAIL ABUN
RA-223	-1.676E-01	4.941E-01	9.544E-01	FAIL ABUN
AC-227	-1.276E-01	1.984E-01	3.376E-01	FAIL ABUN
TH-227	-1.276E-01	1.984E-01	3.376E-01	FAIL ABUN
TH-231	-1.676E-01	4.941E-01	9.544E-01	FAIL ABUN
PA-233	-2.903E-02	5.116E-02	9.687E-02	FAIL ABUN
PA-234	-8.797E-02	2.785E-01	5.257E-01	NOT IDENT.
PA-234M	2.684E+00	4.477E+00	9.596E+00	NOT IDENT.
NP-237	-2.903E-02	5.116E-02	9.687E-02	FAIL ABUN
NP-238	0.000E+00	6.207E+40	0.000E+00	SHORT HLIF
NP-239	-1.210E-01	1.705E-01	3.152E-01	NOT IDENT.
PU-239	0.000E+00	4.534E+02	4.901E+02	FAIL ABUN
AM-241	5.032E-03	3.900E-02	7.996E-02	NOT IDENT.
AM-243	0.000E+00	3.511E-02	7.741E-02	NOT IDENT.
CM-243	-2.975E-02	6.169E-02	1.175E-01	NOT IDENT.
BK-247	7.139E-02	6.064E-02	1.258E-01	FAIL ABUN
CM-247	5.325E-03	3.107E-02	6.211E-02	NOT IDENT.
CF-249	9.598E-03	3.310E-02	6.711E-02	NOT IDENT.
CF-251	-2.393E-02	9.529E-02	1.755E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	353	10.66*	1.131E+00	1.486E+01	1.486E+01	11.10
NB-94	702.65	14	99.81*	2.143E+00	3.288E-02	3.288E-02	181.73
	871.09	11	99.89	1.793E+00	3.212E-02	3.212E-02	146.30
NB-95	765.81	9	99.81*	2.000E+00	2.402E-02	5.772E-01	196.03
ZR-95	724.19	10	44.27	2.095E+00	5.293E-02	1.272E+00	156.31
	756.73	16	54.38*	2.017E+00	7.627E-02	1.833E+00	132.29
CD-109	88.03	136	3.70*	9.279E+00	2.018E+00	3.136E+00	40.08
SN-126	64.28	31	9.60	9.545E+00	1.744E-01	1.744E-01	231.10
	86.94	136	8.90	9.279E+00	8.388E-01	8.388E-01	40.08
	87.57	136	37.00*	9.279E+00	2.018E-01	2.018E-01	40.08
TL-208	277.37	-----	6.60	4.809E+00	-----	Line Not Found	-----
	583.19	151	85.00*	2.509E+00	3.592E-01	3.592E-01	24.49
	860.56	17	12.50	1.810E+00	3.759E-01	3.759E-01	141.57
PB-210	46.54	52	4.25*	9.121E+00	6.790E-01	6.963E-01	102.93
BI-211	72.87	-----	1.23	9.424E+00	-----	Line Not Found	-----
	351.06	357	12.92*	3.891E+00	3.605E+00	3.605E+00	14.97
PB-212	74.82	-----	10.28	9.405E+00	-----	Line Not Found	-----
	77.11	465	17.10	9.382E+00	1.471E+00	1.471E+00	16.04
	238.63	507	43.60*	5.475E+00	1.078E+00	1.078E+00	11.56
	300.09	60	3.30	4.476E+00	2.071E+00	2.071E+00	52.03
BI-214	609.32	213	45.49*	2.419E+00	9.839E-01	9.843E-01	20.11
	1120.29	56	14.92	1.443E+00	1.318E+00	1.318E+00	39.79
	1764.49	25	15.30	9.342E-01	8.800E-01	8.803E-01	62.46
PB-214	74.82	-----	5.80	9.405E+00	-----	Line Not Found	-----
	77.11	465	9.70	9.382E+00	2.594E+00	2.595E+00	16.04
	87.09	136	3.41	9.279E+00	2.189E+00	2.190E+00	40.08
	242.00	108	7.25	5.418E+00	1.398E+00	1.398E+00	44.11
	295.22	215	18.42	4.551E+00	1.304E+00	1.305E+00	23.76
	351.93	357	35.60*	3.891E+00	1.308E+00	1.309E+00	14.97
RN-222	609.32	213	45.49*	2.419E+00	9.839E-01	9.843E-01	20.11
	1120.29	56	14.92	1.443E+00	1.318E+00	1.318E+00	39.79
	1764.49	25	15.30	9.342E-01	8.800E-01	8.803E-01	62.46
RA-224	240.99	108	4.10*	5.418E+00	2.471E+00	2.471E+00	44.11
RA-226	609.32	213	45.49*	2.419E+00	9.839E-01	9.843E-01	20.11
	1120.29	56	14.92	1.443E+00	1.318E+00	1.318E+00	39.79
	1764.49	25	15.30	9.342E-01	8.800E-01	8.803E-01	62.46
AC-228	105.21	-----	1.10	8.977E+00	-----	Line Not Found	-----
	338.32	130	11.27	4.030E+00	1.448E+00	1.448E+00	36.11
	794.95	14	4.25	1.934E+00	8.621E-01	8.621E-01	104.16
	835.71	-----	1.61	1.856E+00	-----	Line Not Found	-----
	911.20	103	25.80*	1.725E+00	1.174E+00	1.174E+00	25.50
	968.97	67	15.80	1.637E+00	1.313E+00	1.313E+00	33.42
RA-228	105.21	-----	1.10	8.977E+00	-----	Line Not Found	-----
	338.32	130	11.27	4.030E+00	1.448E+00	1.448E+00	36.11
	794.95	14	4.25	1.934E+00	8.621E-01	8.621E-01	104.16
	835.71	-----	1.61	1.856E+00	-----	Line Not Found	-----
	911.20	103	25.80*	1.725E+00	1.174E+00	1.174E+00	25.50

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	968.97	67	15.80	1.637E+00	1.313E+00	1.313E+00	33.42
	74.82	-----	10.28	9.405E+00	-----	Line Not Found	-----
	77.11	465	17.10	9.382E+00	1.471E+00	1.471E+00	16.04
	238.63	507	43.60*	5.475E+00	1.078E+00	1.078E+00	11.56
	300.09	60	3.30	4.476E+00	2.071E+00	2.071E+00	52.03
TH-229	85.43	43	14.70	9.312E+00	1.608E-01	1.608E-01	100.75
	88.47	87	24.00	9.244E+00	1.997E-01	1.997E-01	38.94
	193.51	-----	4.41*	6.496E+00	-----	Line Not Found	-----
	210.85	-----	2.80	6.071E+00	-----	Line Not Found	-----
TH-230	609.32	213	45.49*	2.419E+00	9.839E-01	9.839E-01	20.11
	1120.29	56	14.92	1.443E+00	1.318E+00	1.318E+00	39.79
	1764.49	25	15.30	9.342E-01	8.800E-01	8.800E-01	62.46
PA-231	283.69	-----	1.70	4.715E+00	-----	Line Not Found	-----
	301.36	60	5.35*	4.476E+00	1.278E+00	1.278E+00	52.03
TH-232	105.21	-----	1.10	8.977E+00	-----	Line Not Found	-----
	338.32	130	11.27	4.030E+00	1.448E+00	1.448E+00	36.11
	835.71	-----	1.61	1.856E+00	-----	Line Not Found	-----
	911.20	103	25.80*	1.725E+00	1.174E+00	1.174E+00	25.50
	968.97	67	15.80	1.637E+00	1.313E+00	1.313E+00	33.42
TH-234	63.29	31	3.70*	9.545E+00	4.526E-01	4.526E-01	231.10
	92.59	111	4.23	9.201E+00	1.453E+00	1.453E+00	61.52
U-234	609.32	213	45.49*	2.419E+00	9.839E-01	9.839E-01	20.11
	1120.29	56	14.92	1.443E+00	1.318E+00	1.318E+00	39.79
	1764.49	25	15.30	9.342E-01	8.800E-01	8.800E-01	62.46
U-235	89.96	87	3.47	9.244E+00	1.381E+00	1.381E+00	38.94
	93.35	111	5.60	9.201E+00	1.098E+00	1.098E+00	61.52
	143.76	27	10.96*	7.933E+00	1.581E-01	1.581E-01	187.34
	163.33	-----	5.08	7.333E+00	-----	Line Not Found	-----
	185.72	107	57.20	6.688E+00	1.426E-01	1.426E-01	54.41
	205.31	-----	5.01	6.202E+00	-----	Line Not Found	-----
U-238	63.29	31	3.70*	9.545E+00	4.526E-01	4.526E-01	231.10
	92.59	111	4.23	9.201E+00	1.453E+00	1.453E+00	61.52
ANH-511	511.00	32	100.00*	2.809E+00	5.731E-02	5.731E-02	131.62

Flag: "*" = Keyline

Total number of lines in spectrum 51
Number of unidentified lines 9
Number of lines tentatively identified by NID 42 82.35%

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	1.486E+01	1.486E+01	0.165E+01	11.10	
NB-94	20300.00Y	1.00	3.288E-02	3.288E-02	5.976E-02	181.73	
NB-95	64.03D	24.0	2.402E-02	5.772E-01	11.31E-01	196.03	
ZR-95	64.03D	24.0	7.627E-02	1.833E+00	2.424E+00	132.29	
CD-109	461.40D	1.55	2.018E+00	3.136E+00	1.257E+00	40.08	
SN-126	2.30E+05Y	1.00	2.018E-01	2.018E-01	0.809E-01	40.08	
TL-208	1.41E+10Y	1.00	3.592E-01	3.592E-01	0.880E-01	24.49	
PB-210	22.20Y	1.03	6.790E-01	6.963E-01	7.167E-01	102.93	
BI-211	7.04E+08Y	1.00	3.605E+00	3.605E+00	0.540E+00	14.97	
PB-212	1.41E+10Y	1.00	1.078E+00	1.078E+00	0.125E+00	11.56	
BI-214	1600.00Y	1.00	9.839E-01	9.843E-01	1.979E-01	20.11	
PB-214	1600.00Y	1.00	1.308E+00	1.309E+00	0.196E+00	14.97	
RN-222	1600.00Y	1.00	9.839E-01	9.843E-01	1.979E-01	20.11	
RA-224	1.41E+10Y	1.00	2.471E+00	2.471E+00	1.090E+00	44.11	
RA-226	1600.00Y	1.00	9.839E-01	9.843E-01	1.979E-01	20.11	
AC-228	1.41E+10Y	1.00	1.174E+00	1.174E+00	0.299E+00	25.50	
RA-228	1.41E+10Y	1.00	1.174E+00	1.174E+00	0.299E+00	25.50	
TH-228	1.41E+10Y	1.00	1.078E+00	1.078E+00	0.125E+00	11.56	
TH-229	7340.00Y	1.00	1.997E-01	1.997E-01	0.778E-01	38.94	K
TH-230	7.54E+04Y	1.00	9.839E-01	9.839E-01	1.979E-01	20.11	
PA-231	7.04E+08Y	1.00	1.278E+00	1.278E+00	0.665E+00	52.03	
TH-232	1.41E+10Y	1.00	1.174E+00	1.174E+00	0.299E+00	25.50	
TH-234	4.47E+09Y	1.00	4.526E-01	4.526E-01	10.46E-01	231.10	
U-234	2.45E+05Y	1.00	9.839E-01	9.839E-01	1.979E-01	20.11	
U-235	7.04E+08Y	1.00	1.581E-01	1.581E-01	2.962E-01	187.34	
U-238	4.47E+09Y	1.00	4.526E-01	4.526E-01	10.46E-01	231.10	
ANH-511	1.00E+09Y	1.00	5.731E-02	5.731E-02	7.543E-02	131.62	

Total Activity : 3.883E+01 4.227E+01

Grand Total Activity : 3.883E+01 4.227E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.38	53	142	1.40	256.24	254	8	1.21E-02	91.8	8.38E+00	T
0	208.76	48	93	0.99	416.97	414	7	1.16E-02	77.2	6.12E+00	
0	270.43	59	60	1.66	540.33	536	9	1.46E-02	58.0	4.92E+00	T
0	463.82	66	26	2.14	927.11	921	14	1.70E-02	42.8	3.05E+00	T
0	481.66	26	33	2.95	962.81	957	11	6.80E-03	96.0	2.96E+00	T
0	493.76	2	17	1.29	987.00	984	6	5.86E-04	****	2.89E+00	T
0	567.01	16	9	1.64	1133.53	1130	7	4.18E-03	83.3	2.57E+00	
0	629.40	13	21	0.64	1258.35	1253	12	3.54E-03	****	2.35E+00	T
0	678.03	9	6	1.27	1355.63	1352	7	2.44E-03	****	2.21E+00	T
0	719.29	16	9	0.56	1438.19	1434	8	4.17E-03	88.4	2.10E+00	T
0	728.25	21	32	2.45	1456.11	1449	11	5.70E-03	****	2.08E+00	T
0	768.17	32	14	1.38	1535.97	1531	9	8.52E-03	56.2	1.99E+00	T
0	788.47	31	22	5.45	1576.59	1568	19	8.33E-03	85.3	1.95E+00	
0	877.54	13	20	0.85	1754.80	1748	14	3.67E-03	****	1.78E+00	
0	929.74	16	5	1.04	1859.25	1853	9	4.40E-03	70.4	1.70E+00	T
0	1008.96	8	4	2.72	2017.77	2013	8	2.29E-03	****	1.58E+00	
0	1064.60	16	13	4.05	2129.13	2122	16	4.46E-03	****	1.51E+00	T
0	1339.15	8	6	0.64	2678.61	2669	14	2.22E-03	****	1.23E+00	
0	1571.36	9	3	0.63	3143.45	3137	11	2.59E-03	94.8	1.05E+00	
0	1730.34	6	4	0.81	3461.74	3455	9	1.84E-03	****	9.53E-01	
2	1765.85	11	4	1.97	3532.83	3519	18	3.21E-03	****	9.33E-01	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235065.CNF;1  *
* Acquisition date   : 3-OCT-2016 05:57:14 Sensitivity      : 3.000          *
* Detector ID        : GAM25 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.55 Half life ratio  : *****      *
* Sample date        : 14-DEC-2015 13:56:00 Nuclide Library : SOLID      *
* Sample ID          : G405235065 Analyst initials: MXR1        *
* Batch Number       : 1596254 Sample Quantity : 1.4784E+02 GRAM  *
* Wet wt corr        : 1.00000 Wet Weight      : 0.00000        *
*                               Dry Weight      : 0.00000        *
*****
*                               CALIBRATION INFORMATION                         *
*
* Eff. Cal. date     : 1-AUG-2016 08:41:33 Eff. Geometry   : CAN        *
* Eff. File          : DKA100:[CANBERRA.GAMMA]EFF GAM25 CAN.CNF;15      *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.961E-01
NB-94	2.610E-02
NB-95	3.843E-01
ZR-95	1.080E+00
CD-109	5.681E-01
SN-126	3.243E-02
TL-208	2.181E-02
PB-210	2.630E-01
BI-211	1.329E-01
PB-212	3.610E-02
BI-214	5.807E-02
PB-214	1.619E-01
RN-222	5.807E-02
RA-224	3.877E-01
RA-226	5.807E-02
AC-228	1.010E-01
RA-228	1.010E-01
TH-228	3.610E-02
TH-229	3.116E-01
TH-230	5.805E-02
PA-231	2.896E-01
TH-232	1.010E-01
TH-234	3.560E-01
U-234	5.805E-02
U-235	1.199E-01
U-238	3.560E-01
ANH-511	2.374E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	8.046E+00	NOT IDENT.
NA-22	3.967E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	1.844E-02	NOT IDENT.

SC-46	3.263E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.199E-02	NOT IDENT.
CO-56	3.929E-01	NOT IDENT.
MN-56	0.000E+00	SHORT HLIF
CO-57	3.213E-02	NOT IDENT.
CO-58	3.672E-01	NOT IDENT.
FE-59	5.488E+00	NOT IDENT.
CO-60	3.923E-02	NOT IDENT.
ZN-65	1.068E-01	NOT IDENT.
GE-68	2.274E+00	NOT IDENT.
AS-73	1.400E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.586E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	4.956E-01	NOT IDENT.
KR-85	5.199E+00	NOT IDENT.
SR-85	5.141E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.232E-01	NOT IDENT.
Y-91	4.401E+02	NOT IDENT.
NB-95M	1.546E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.119E-02	FAIL ABUN
RH-102	3.741E-02	FAIL ABUN
RU-103	4.525E+00	FAIL ABUN
RH-106	4.443E-01	NOT IDENT.
RU-106	4.443E-01	NOT IDENT.
AG-108M	2.310E-02	FAIL ABUN
AG-110M	8.859E-02	FAIL ABUN
SN-113	1.857E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	8.641E-02	NOT IDENT.
SB-124	1.500E+00	FAIL ABUN
SB-125	6.910E-02	FAIL ABUN
TE-125M	1.625E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.017E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	4.696E-02	FAIL ABUN
CS-135	1.043E-01	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.312E-02	NOT IDENT.
CS-137	3.499E-02	NOT IDENT.
CE-139	7.277E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.519E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.166E-01	NOT IDENT.
PM-144	4.408E-02	NOT IDENT.
PR-144	3.828E+00	NOT IDENT.
PM-146	3.314E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	5.617E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	2.081E-02	FAIL ABUN
EU-152	7.284E-02	NOT IDENT.
GD-153	8.402E-02	NOT IDENT.
EU-154	1.002E-01	FAIL ABUN
EU-155	6.949E-02	FAIL ABUN
TB-160	1.285E+00	FAIL ABUN
HO-166M	4.873E-02	NOT IDENT.
TM-171	3.333E+00	NOT IDENT.
HF-172	1.558E-01	FAIL ABUN
LU-172	7.313E-02	FAIL ABUN

LU-176	1.720E-02	FAIL ABUN
HF-181	3.656E+00	FAIL ABUN
TA-182	8.462E-01	FAIL ABUN
RE-183	6.498E-01	NOT IDENT.
RE-184	2.702E+01	NOT IDENT.
W-188	7.096E+01	FAIL ABUN
IR-192	3.378E-01	FAIL ABUN
HG-203	1.802E+00	NOT IDENT.
BI-207	4.354E-02	FAIL ABUN
PB-211	4.235E-01	NOT IDENT.
BI-212	5.841E-01	FAIL ABUN
RN-219	3.156E-01	FAIL ABUN
RA-223	4.346E-01	FAIL ABUN
AC-227	1.542E-01	FAIL ABUN
TH-227	1.542E-01	FAIL ABUN
TH-231	4.346E-01	FAIL ABUN
PA-233	4.415E-02	FAIL ABUN
PA-234	2.281E-01	NOT IDENT.
PA-234M	4.278E+00	NOT IDENT.
NP-237	4.415E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
NP-239	1.470E-01	NOT IDENT.
PU-239	2.313E+02	FAIL ABUN
AM-241	3.784E-02	NOT IDENT.
AM-243	3.755E-02	NOT IDENT.
CM-243	5.482E-02	NOT IDENT.
BK-247	5.813E-02	FAIL ABUN
CM-247	2.820E-02	NOT IDENT.
CF-249	3.053E-02	NOT IDENT.
CF-251	8.172E-02	NOT IDENT.

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

Nuclide	Activity (pCi/GRAM)	Act Error (1.96-sigma)	TPU (1.96-sigma)
K-40	1.486E+01	1.793E+00	1.793E+00
NB-94	3.288E-02	5.858E-02	5.858E-02
NB-95	5.772E-01	1.109E+00	1.109E+00
ZR-95	1.833E+00	2.377E+00	2.377E+00
CD-109	1.268E+00	1.331E+00	1.331E+00
SN-126	8.157E-02	8.550E-02	8.550E-02
TL-208	3.592E-01	8.755E-02	8.755E-02
PB-210	6.963E-01	7.049E-01	7.049E-01
BI-211	1.187E-02	1.014E+00	1.014E+00
PB-212	1.078E+00	1.347E-01	1.347E-01
BI-214	9.843E-01	1.985E-01	1.985E-01
PB-214	1.309E+00	1.995E-01	1.995E-01
RN-222	9.843E-01	1.985E-01	1.985E-01
RA-224	1.653E-01	1.205E+00	1.205E+00
RA-226	9.843E-01	1.985E-01	1.985E-01
AC-228	1.174E+00	2.995E-01	2.995E-01
RA-228	1.174E+00	2.995E-01	2.995E-01
TH-228	1.078E+00	1.347E-01	1.347E-01
TH-229	-1.970E-01	3.779E-01	3.779E-01
TH-230	9.839E-01	1.985E-01	1.985E-01
PA-231	1.278E+00	7.062E-01	7.062E-01
TH-232	1.174E+00	2.995E-01	2.995E-01
TH-234	4.526E-01	1.030E+00	1.030E+00
U-234	9.839E-01	1.985E-01	1.985E-01
U-235	1.581E-01	2.904E-01	2.904E-01
U-238	4.526E-01	1.030E+00	1.030E+00
ANH-511	5.731E-02	7.396E-02	7.396E-02

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AL-26	-1.085E-02	2.662E-02	2.706E-02	NOT IDENT.
SC-46	-5.542E-02	3.828E-01	3.836E-01	FAIL ABUN
V-48	-3.132E+03	1.104E+04	1.113E+04	SHORT HLIF
CR-51	-4.443E+01	2.892E+02	2.899E+02	SHORT HLIF
MN-54	-3.158E-03	5.967E-02	5.969E-02	NOT IDENT.
CO-56	1.014E-02	4.465E-01	4.465E-01	NOT IDENT.
MN-56	1.000E+41	3.824E+42	0.000E+00	SHORT HLIF
CO-57	4.635E-03	3.497E-02	3.504E-02	NOT IDENT.
CO-58	3.920E-02	4.089E-01	4.093E-01	NOT IDENT.
FE-59	-1.522E+00	6.603E+00	6.638E+00	NOT IDENT.
CO-60	2.932E-02	4.521E-02	4.711E-02	NOT IDENT.
ZN-65	2.576E-02	1.345E-01	1.350E-01	NOT IDENT.
GE-68	1.431E-01	2.646E+00	2.647E+00	NOT IDENT.
AS-73	-3.791E-02	1.465E+00	1.465E+00	NOT IDENT.
AS-74	-4.534E+02	4.502E+03	4.507E+03	SHORT HLIF
SE-75	1.137E-01	1.753E-01	1.826E-01	NOT IDENT.
BR-77	3.215E+37	2.726E+38	0.000E+00	SHORT HLIF
SR-82	1.189E+02	6.229E+02	6.253E+02	SHORT HLIF
RB-83	2.900E-01	5.305E-01	5.463E-01	NOT IDENT.
KR-85	-2.600E+00	6.359E+00	6.466E+00	NOT IDENT.
SR-85	-2.606E-01	6.294E-01	6.402E-01	NOT IDENT.
RB-86	2.732E+03	2.452E+04	2.455E+04	SHORT HLIF
Y-88	-8.054E-02	1.824E-01	1.860E-01	NOT IDENT.
Y-91	-2.273E+02	5.632E+02	5.724E+02	NOT IDENT.
NB-95M	2.939E-01	1.931E+00	1.935E+00	NOT IDENT.
NB-97	-1.000E+41	1.996E+41	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	3.460E+41	0.000E+00	SHORT HLIF
MO-99	-8.368E+30	3.758E+31	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	3.833E+41	0.000E+00	SHORT HLIF
RH-101	5.539E-02	5.081E-02	5.662E-02	FAIL ABUN
RH-102	-1.785E-02	5.445E-02	5.505E-02	FAIL ABUN
RU-103	-9.891E-01	6.046E+00	6.062E+00	FAIL ABUN
RH-106	3.707E-01	4.678E-01	4.968E-01	NOT IDENT.
RU-106	3.707E-01	4.678E-01	4.968E-01	NOT IDENT.
AG-108M	5.613E-03	2.548E-02	2.561E-02	FAIL ABUN
AG-110M	1.575E-02	1.022E-01	1.025E-01	FAIL ABUN
SN-113	-8.336E-02	2.169E-01	2.201E-01	NOT IDENT.
CD-115	-1.938E+38	3.945E+38	0.000E+00	SHORT HLIF
SN-117M	2.954E+04	5.165E+04	5.334E+04	SHORT HLIF
TE-123M	5.296E-02	9.257E-02	9.560E-02	NOT IDENT.
SB-124	5.497E-02	1.745E+00	1.746E+00	FAIL ABUN
SB-125	-1.972E-02	8.098E-02	8.146E-02	FAIL ABUN
TE-125M	5.498E+01	1.728E+02	1.746E+02	NOT IDENT.
I-126	-1.155E+04	6.895E+05	6.896E+05	SHORT HLIF
SB-126	1.003E+06	8.890E+05	9.974E+05	SHORT HLIF
SB-127	-2.120E+21	8.188E+21	0.000E+00	SHORT HLIF
I-131	-2.499E+08	2.636E+09	2.639E+09	SHORT HLIF
I-132	1.000E+41	1.866E+42	0.000E+00	SHORT HLIF
TE-132	4.300E+25	9.532E+25	0.000E+00	SHORT HLIF
BA-133	1.043E-02	3.553E-02	3.584E-02	NOT IDENT.
I-133	1.000E+41	3.942E+41	0.000E+00	SHORT HLIF
CS-134	5.612E-02	5.734E-02	6.267E-02	FAIL ABUN
CS-135	2.022E-02	1.320E-01	1.323E-01	NOT IDENT.
I-135	-1.000E+41	6.781E+41	0.000E+00	SHORT HLIF
CS-136	-2.961E+04	2.470E+05	2.474E+05	SHORT HLIF
BA-137M	3.077E-02	3.498E-02	3.763E-02	NOT IDENT.
CS-137	3.251E-02	3.695E-02	3.975E-02	NOT IDENT.
CE-139	-8.346E-02	9.125E-02	9.870E-02	NOT IDENT.
BA-140	4.143E+05	7.919E+05	8.136E+05	SHORT HLIF
LA-140	2.034E+05	2.979E+05	3.117E+05	SHORT HLIF
CE-141	-4.775E+00	1.867E+01	1.879E+01	NOT IDENT.
CE-143	1.000E+41	5.654E+40	0.000E+00	SHORT HLIF
CE-144	-2.116E-01	2.581E-01	2.752E-01	NOT IDENT.
PM-144	-1.456E-02	6.253E-02	6.288E-02	NOT IDENT.
PR-144	-1.218E+00	5.420E+00	5.447E+00	NOT IDENT.
PM-146	1.254E-02	3.600E-02	3.644E-02	NOT IDENT.
ND-147	-8.930E+06	2.164E+07	2.201E+07	SHORT HLIF
PM-147	-1.949E+01	6.185E+02	6.185E+02	NOT IDENT.
PM-149	-1.566E+39	5.757E+39	0.000E+00	SHORT HLIF
EU-150	1.532E-02	2.340E-02	2.440E-02	FAIL ABUN
EU-152	6.961E-02	7.909E-02	8.508E-02	NOT IDENT.
GD-153	-7.477E-02	1.057E-01	1.109E-01	NOT IDENT.
EU-154	2.279E-02	1.154E-01	1.158E-01	FAIL ABUN
EU-155	4.990E-02	7.194E-02	7.537E-02	FAIL ABUN
TB-160	-4.775E-01	1.793E+00	1.806E+00	FAIL ABUN
HO-166M	-1.525E-02	6.095E-02	6.134E-02	NOT IDENT.
TM-171	1.164E+00	3.403E+00	3.443E+00	NOT IDENT.
HF-172	8.276E-02	1.777E-01	1.816E-01	FAIL ABUN

LU-172	-2.428E-02	8.996E-02	9.062E-02	FAIL ABUN
LU-176	5.709E-04	2.073E-02	2.073E-02	FAIL ABUN
HF-181	6.843E+00	6.445E+00	7.145E+00	FAIL ABUN
TA-182	-1.754E-02	1.012E+00	1.012E+00	FAIL ABUN
RE-183	-5.597E-01	7.127E-01	7.561E-01	NOT IDENT.
RE-184	1.302E+01	3.019E+01	3.076E+01	NOT IDENT.
W-188	-2.242E+01	9.660E+01	9.713E+01	FAIL ABUN
IR-192	-1.148E-01	3.812E-01	3.847E-01	FAIL ABUN
HG-203	4.076E-01	2.104E+00	2.112E+00	NOT IDENT.
BI-207	7.335E-02	7.856E-02	8.523E-02	FAIL ABUN
PB-211	-5.729E-01	5.534E-01	6.107E-01	NOT IDENT.
BI-212	7.749E-01	8.587E-01	9.270E-01	FAIL ABUN
RN-219	9.840E-02	3.437E-01	3.466E-01	FAIL ABUN
RA-223	-1.676E-01	4.942E-01	5.000E-01	FAIL ABUN
AC-227	-1.276E-01	1.991E-01	2.072E-01	FAIL ABUN
TH-227	-1.276E-01	1.991E-01	2.072E-01	FAIL ABUN
TH-231	-1.676E-01	4.942E-01	5.000E-01	FAIL ABUN
PA-233	-2.903E-02	5.117E-02	5.282E-02	FAIL ABUN
PA-234	-8.797E-02	2.961E-01	2.988E-01	NOT IDENT.
PA-234M	2.684E+00	4.478E+00	4.639E+00	NOT IDENT.
NP-237	-2.903E-02	5.117E-02	5.282E-02	FAIL ABUN
NP-238	4.101E+00	6.210E+00	0.000E+00	SHORT HLIF
NP-239	-1.210E-01	1.708E-01	1.793E-01	NOT IDENT.
PU-239	5.042E+02	4.539E+02	5.077E+02	FAIL ABUN
AM-241	5.032E-03	3.900E-02	3.907E-02	NOT IDENT.
AM-243	1.656E-01	3.655E-02	8.313E-02	NOT IDENT.
CM-243	-2.975E-02	6.175E-02	6.319E-02	NOT IDENT.
BK-247	7.139E-02	6.232E-02	7.014E-02	FAIL ABUN
CM-247	5.325E-03	3.109E-02	3.118E-02	NOT IDENT.
CF-249	9.598E-03	3.311E-02	3.339E-02	NOT IDENT.
CF-251	-2.393E-02	9.533E-02	9.594E-02	NOT IDENT.

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

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
43.53	43.2225	87.09	76.7587	136.47	81.2058
45.60	59.6870	87.57	76.8707	140.51	0.0000
46.54	59.9619	88.03	97.5052	143.76	68.7161
49.72	0.0000	88.34	97.5965	144.24	68.7845
51.35	74.7906	88.47	97.6348	145.44	73.5501
51.87	70.4681	89.96	84.8797	152.43	75.9177
52.39	66.8749	1093.63	85.0506	153.25	0.0000
52.97	67.0474	91.11	0.0000	162.37	61.1471
53.44	71.7157	92.59	85.5377	156.02	0.0000
54.07	74.9415	93.35	85.7258	158.56	0.0000
57.36	0.0000	94.56	86.0247	159.00	49.5720
57.53	90.6494	94.65	86.0465	162.33	66.1733
57.98	98.5142	94.67	86.0518	162.66	0.0000
59.27	83.5621	94.87	86.1007	163.33	58.1368
59.32	95.1872	97.43	69.1454	165.86	80.9528
59.54	95.2726	98.43	52.8850	176.31	59.5127
60.96	111.1378	98.44	52.8864	176.60	0.0000
61.17	111.2309	99.53	64.5389	177.52	66.9619
62.93	96.5634	100.11	61.9849	181.07	0.0000
63.29	96.6986	102.03	61.4189	181.52	68.8295
63.58	96.8069	103.18	75.0016	184.41	69.1679
64.28	97.0678	103.37	75.0400	143.76	64.7222
66.73	100.8901	105.21	69.1227	193.51	62.3348
67.24	107.4656	105.31	69.1409	197.03	51.8804
125.81	100.7129	106.12	65.6884	198.01	60.6211
67.75	101.5384	106.47	81.9605	201.83	63.1658
69.67	115.9398	109.28	71.6703	203.43	62.2324
70.83	122.8900	111.00	77.4508	205.31	55.4793
72.81	237.7312	111.76	0.0000	210.85	83.9252
72.87	237.7802	114.06	86.3084	215.65	60.0612
74.66	133.2836	116.30	0.0000	222.11	57.2645
74.82	128.9833	116.74	81.3318	227.09	66.7216
74.97	118.1129	119.76	65.1668	227.38	72.4063
77.11	179.2810	121.12	78.4520	228.16	0.0000
78.74	78.6349	121.22	78.4706	228.18	53.2336
79.69	85.5456	121.78	73.8968	116.74	53.2336
80.12	77.8777	122.06	74.8816	235.69	47.3092
80.19	0.0000	122.92	83.4735	235.96	47.3268
80.57	86.9042	123.07	79.7498	238.63	48.2664
81.00	94.5558	265.00	79.8626	238.98	0.0000
81.07	94.5773	125.81	65.4634	240.99	48.4215
81.75	83.8791	127.23	70.7263	242.00	48.4875
83.79	84.4223	127.91	67.0412	244.70	61.7952
84.00	90.1099	129.30	68.5195	252.40	0.0000
85.43	69.5810	131.20	67.5364	252.80	57.3845
86.55	76.6324	133.02	78.6818	254.15	0.0000
86.79	76.6880	133.52	77.8075	256.23	49.4052
86.94	76.7237	136.00	77.2607	260.90	0.0000

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
264.66	35.6689	355.39	0.0000	584.27	14.6711
264.80	29.7295	356.01	26.2988	595.83	0.0000
265.00	28.5476	364.49	0.0000	427.87	26.4699
268.22	41.4005	366.42	0.0000	602.52	0.0000
269.46	43.0587	372.51	39.1866	604.72	23.8834
270.03	43.0895	375.05	35.7088	607.14	27.6398
271.23	43.1532	377.52	37.5806	609.32	27.6779
273.65	0.0000	356.01	26.1007	610.33	27.6948
276.40	50.6633	388.16	29.8176	614.28	20.8211
277.37	50.7222	388.63	0.0000	618.01	25.6846
277.60	50.7363	391.69	41.6969	620.36	30.0075
278.00	55.5950	264.66	29.2389	621.93	15.0180
279.20	44.7821	401.81	30.1835	630.19	0.0000
279.54	53.2759	402.40	30.1990	631.29	16.1816
279.70	53.2866	404.85	34.8496	633.25	30.7811
280.46	41.2134	410.95	36.8791	634.78	0.0000
283.69	34.0712	413.71	29.5736	635.95	15.1444
284.31	0.0000	414.70	0.0000	636.99	0.0000
285.41	45.1141	423.72	0.0000	645.85	20.6730
285.90	0.0000	427.09	29.9108	657.76	18.6256
287.50	29.3350	427.87	23.3831	657.90	0.0000
290.67	37.6221	433.94	27.2613	661.66	17.5690
293.27	0.0000	439.40	24.5506	664.57	0.0000
351.93	19.7319	453.88	20.0618	666.33	0.0000
295.96	19.7485	463.37	27.9120	666.50	0.0000
879.38	24.7595	468.07	18.8371	667.71	0.0000
299.98	31.4115	473.00	0.0000	677.62	14.4044
300.09	31.4154	475.06	24.2803	685.70	0.0000
300.13	31.4170	476.78	24.7981	695.00	0.0000
301.36	31.4602	477.60	29.1925	696.49	23.5122
302.85	29.8542	482.18	20.5057	696.51	23.5131
256.23	26.5859	487.02	0.0000	697.00	0.0000
304.85	0.0000	492.35	0.0000	697.30	20.1628
306.78	32.4841	497.08	31.1014	697.49	20.1643
308.46	36.7168	505.52	19.3719	702.65	21.3448
311.90	45.2318	507.63	0.0000	706.68	25.3317
316.51	42.9327	511.00	29.9207	711.68	24.8359
319.41	0.0000	514.00	29.9841	720.70	0.0000
320.08	0.0000	514.00	29.9854	721.93	0.0000
321.04	33.8371	520.40	16.0645	722.78	13.6270
323.87	37.3327	520.69	0.0000	722.91	13.6279
325.23	45.8833	522.65	0.0000	723.31	13.6309
328.76	0.0000	527.90	0.0000	724.19	13.6372
333.37	39.8474	528.26	19.1825	727.33	27.3193
333.97	30.8687	529.59	17.1785	733.00	15.0708
334.37	36.0280	529.87	0.0000	735.93	17.1515
338.28	26.6993	531.02	0.0000	333.97	10.2993
338.32	26.6999	537.26	0.0000	739.50	0.0000
311.90	26.7586	546.56	0.0000	747.24	12.6516
340.48	26.7586	552.55	25.6612	748.06	16.1089
340.55	0.0000	563.25	23.2599	752.31	13.8379
344.28	22.0962	569.33	18.6826	753.82	0.0000
345.93	29.5100	946.00	20.2411	756.73	16.6430
351.06	29.6608	569.70	20.2443	756.80	16.6436
351.93	29.6864	583.19	14.6614	884.68	10.4399

ENERGY	MDA COUNTS	ENERGY	MDA COUNTS	ENERGY	MDA COUNTS
765.81	6.9663	1274.44	15.4409	1620.50	1.8811
766.42	6.9685	1001.03	12.5695	1621.92	3.7635
766.84	6.9700	1002.74	11.0575	1678.03	0.0000
772.60	0.0000	1004.73	23.2390	1690.97	3.8291
776.52	0.0000	507.63	0.0000	1750.46	0.0000
739.50	0.0000	1025.87	0.0000	1764.49	8.7697
778.90	13.1474	1028.54	0.0000	1063.66	16.5883
783.70	0.0000	1037.84	12.7509	1771.35	7.8082
785.37	16.8826	1038.76	0.0000	1791.20	0.0000
792.07	0.0000	631.29	13.7778	1808.65	3.9383
794.95	14.1348	1048.07	0.0000	1810.72	0.0000
795.86	14.1411	1049.04	18.7159	1836.06	3.9631
810.06	10.6787	1050.41	9.8553		
810.29	9.7898	1063.66	20.8000		
344.28	9.7908	1077.00	0.0000		
810.76	9.7922	1077.34	17.9198		
815.77	0.0000	1085.87	7.9897		
1048.07	0.0000	1093.63	21.0320		
832.01	17.9834	1099.45	15.0549		
834.85	18.0072	1112.07	15.1245		
835.71	18.9153	1112.84	16.1367		
836.80	0.0000	1115.54	6.4609		
846.75	0.0000	1120.29	12.1348		
846.77	18.1067	1120.55	12.1362		
856.80	0.0000	1221.41	12.1392		
860.56	9.1107	1129.67	11.1611		
871.09	19.0404	1131.51	0.0000		
873.19	14.6602	1147.95	0.0000		
875.33	0.0000	1173.23	24.7251		
879.38	14.7007	1177.95	14.4460		
880.51	13.2372	1189.05	19.6796		
883.24	13.2535	1204.77	20.8252		
884.68	15.7879	1221.41	18.8470		
889.28	19.3792	1231.02	13.6554		
894.76	15.7258	1235.36	0.0000		
898.04	21.3070	1238.28	24.2171		
900.72	20.4041	1260.41	0.0000		
903.28	16.9782	1271.87	10.6439		
911.20	13.9751	1274.44	10.6525		
912.08	13.9806	1274.54	12.7837		
923.98	0.0000	1291.59	9.6394		
926.50	12.0039	1298.22	0.0000		
929.11	13.5193	1312.11	0.0000		
937.49	18.8434	1332.49	6.9422		
944.13	0.0000	1362.66	0.0000		
946.00	17.9650	1365.19	8.7642		
949.00	13.2536	1368.63	0.0000		
667.71	0.0000	1384.29	3.3052		
962.31	20.9419	1408.01	7.7661		
964.08	16.7659	1457.56	0.0000		
966.17	12.2039	1460.82	9.0107		
911.20	20.0445	1489.16	6.3574		
968.97	20.0445	1505.03	7.2977		
983.53	0.0000	1584.12	6.5218		
984.45	0.0000	1596.21	0.0000		

VAX/VMS Nuclide Identification Report Generated 3-OCT-2016 06:59:13.60

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29407                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235066.CNF;1
Background file    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG GAM33.CNF;235
Background date    : 2-OCT-2016 11:02:02.
Sample date       : 14-DEC-2015 14:00:00 Acquisition date : 3-OCT-2016 05:57:37.
Sample ID        : G405235066 Sample quantity   : 1.57422E+02 GRAM
Detector name     : GAM33 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:00.75 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity       : 3.00000
Batch ID          : 1596254 Detector SN#       :
Matrix Spike ID   : LCS ID : 1556
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BACKGROUND CORRECTED SAMPLE PEAK REPORT

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	74.91*	77	158	1.21	149.90	145	15	2.14E-02	29.0	1.19E+00
2	2	77.25	157	131	1.22	154.58	145	15	4.35E-02	15.3	
3	0	87.89	65	258	1.16	175.82	171	11	1.80E-02	49.8	
4	0	93.42*	92	176	1.16	186.86	182	11	2.55E-02	32.0	
5	0	125.24	25	45	0.94	250.43	249	4	6.95E-03	42.7	
6	0	143.63*	36	103	1.16	287.15	283	8	1.00E-02	54.3	
7	0	186.03*	88	81	1.28	371.86	368	8	2.44E-02	22.9	
8	0	209.91	49	96	1.09	419.56	415	10	1.35E-02	40.5	
9	0	232.51	23	45	0.97	464.70	462	6	6.26E-03	51.6	
10	0	238.60*	292	139	1.00	476.88	473	8	8.12E-02	9.3	
11	0	241.76	98	80	1.44	483.18	481	6	2.72E-02	18.1	
12	0	269.71	57	82	1.73	539.02	533	13	1.60E-02	34.9	
13	0	295.54	205	67	1.28	590.63	585	13	5.68E-02	11.0	
14	0	300.53	27	42	1.79	600.60	598	8	7.38E-03	45.9	
15	4	327.86*	25	45	1.91	655.21	646	37	7.03E-03	55.2	1.28E+00
16	4	332.76	26	28	1.31	665.00	646	37	7.30E-03	41.0	
17	4	338.30*	80	23	1.38	676.08	646	37	2.21E-02	16.4	
18	0	352.00*	256	27	1.34	703.46	700	9	7.12E-02	7.3	
19	0	403.07	8	45	1.03	805.49	800	10	2.33E-03	150.6	
20	0	479.37	12	47	3.51	957.98	945	14	3.44E-03	122.5	
21	0	482.57	7	25	1.47	964.37	960	8	1.93E-03	128.9	
22	0	493.30	16	20	2.85	985.82	980	11	4.34E-03	60.4	
23	0	511.28*	27	80	1.90	1021.76	1014	19	7.51E-03	90.0	
24	0	537.31	18	29	0.55	1073.78	1066	14	5.06E-03	68.9	
25	0	547.20	13	15	0.76	1093.56	1087	10	3.67E-03	61.2	
26	0	550.83	16	15	1.50	1100.81	1098	7	4.55E-03	45.5	
27	0	583.44*	134	24	1.52	1165.99	1159	16	3.72E-02	12.2	
28	0	609.29*	181	43	1.19	1217.67	1211	14	5.03E-02	10.8	
29	0	665.62	66	20	4.94	1330.28	1319	28	1.84E-02	23.0	
30	0	727.48	30	19	0.73	1453.95	1449	10	8.44E-03	32.7	
31	1	761.47	16	24	1.76	1521.90	1507	40	4.46E-03	62.3	2.89E+00
32	1	768.68	22	26	1.77	1536.32	1507	40	6.19E-03	46.4	
33	0	781.60	18	9	1.12	1562.17	1557	9	5.00E-03	38.2	
34	0	822.07	10	13	0.85	1643.08	1636	9	2.77E-03	73.2	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
35	0	831.18	10	9	1.62	1661.31	1656	9	2.77E-03	62.8	
36	0	849.74	12	7	1.61	1698.41	1695	7	3.21E-03	48.4	
37	0	861.28	19	8	2.06	1721.49	1717	11	5.39E-03	36.4	
38	0	873.87	14	1	1.76	1746.67	1744	6	3.81E-03	30.2	
39	0	911.84*	75	43	1.50	1822.62	1815	17	2.09E-02	23.2	
40	0	934.32	28	12	0.99	1867.57	1860	16	7.91E-03	32.9	
41	0	964.85	15	13	1.04	1928.63	1925	8	4.23E-03	49.1	
42	0	969.82*	49	30	1.84	1938.57	1933	16	1.36E-02	28.7	
43	0	1079.64	16	7	1.58	2158.25	2154	10	4.47E-03	40.2	
44	0	1121.57*	16	27	1.67	2242.13	2233	12	4.51E-03	69.7	
45	0	1209.50	16	22	3.74	2418.06	2408	18	4.39E-03	74.7	
46	0	1225.89	11	5	1.39	2450.86	2448	7	3.12E-03	44.7	
47	0	1279.54	10	7	1.01	2558.22	2552	10	2.88E-03	57.6	
48	0	1295.04	11	6	3.42	2589.24	2582	11	2.92E-03	53.1	
49	0	1378.23	12	3	1.29	2755.74	2750	9	3.46E-03	35.9	
50	0	1461.07*	356	4	1.78	2921.53	2914	17	9.90E-02	5.5	
51	0	1764.76*	43	0	1.87	3529.59	3524	11	1.19E-02	16.0	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235066.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,INTERF V2.4
Sample title : MXR1
Sample date : 14-DEC-2015 14:00:00 Acquisition date : 3-OCT-2016 05:57:37
Sample ID : G405235066 Sample quantity : 157.42 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA33 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.75 0.0%
Energy tolerance : 1.50 keV Half life ratio : 10.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Linear Efficiencies at : Peak Energy
Abundance limit : 75.00

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
PB-214	242.00	RA-224	240.99
PB-214	87.09	SN-126	86.94
PB-214	87.09	SN-126	87.57
PB-214	87.09	CD-109	88.03
PB-214	74.82	AM-243	74.66
PB-214	74.82	TH-228	74.82
PB-214	74.82	PB-212	74.82
PB-214	351.93	BI-211	351.06

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.82	10.66*	1.133E+00	1.363E+01	1.363E+01	11.02	OK
CD-109	88.03	3.70*	4.949E+00	8.003E-01	1.244E+00	275.99	OK
SN-126	64.28	9.60	2.578E+00	----- Line	Not Found	-----	Absent
	86.94	8.90	4.949E+00	3.327E-01	3.327E-01	275.99	OK
	87.57	37.00*	4.949E+00	8.003E-02	8.003E-02	275.99	OK
CS-135	268.22	16.00*	4.353E+00	4.598E-01	4.598E-01	69.88	OK
TL-208	277.37	6.60	4.258E+00	----- Line	Not Found	-----	Absent
	583.19	85.00*	2.333E+00	3.468E-01	3.468E-01	24.30	OK
	860.56	12.50	1.726E+00	4.421E-01	4.421E-01	72.71	OK
PB-212	74.82	10.28	3.809E+00	3.818E-01	3.818E-01	194.45	OK
	77.11	17.10	4.047E+00	1.422E+00	1.422E+00	30.55	OK
	238.63	43.60*	4.776E+00	7.919E-01	7.919E-01	18.50	OK
	300.09	3.30	3.995E+00	1.111E+00	1.111E+00	91.90	OK
BI-214	609.32	45.49*	2.255E+00	9.030E-01	9.033E-01	21.54	OK
	1120.29	14.92	1.406E+00	3.689E-01	3.690E-01	139.45	OK
	1764.49	15.30	9.590E-01	1.318E+00	1.318E+00	31.95	OK
PB-214	74.82	5.80	3.800E+00	----- Line	Not Found	-----	<<INT Reject
	77.11	9.70	4.047E+00	2.507E+00	2.508E+00	30.55	OK
	87.09	3.41	4.892E+00	----- Line	Not Found	-----	<<INT Reject
	242.00	7.25	4.727E+00	----- Line	Not Found	-----	<<INT Reject
	295.22	18.42	4.049E+00	1.515E+00	1.516E+00	21.95	OK
	351.93	35.60*	3.512E+00	1.112E+00	1.112E+00	14.65	OK
RN-222	609.32	45.49*	2.255E+00	9.030E-01	9.033E-01	21.54	OK
	1120.29	14.92	1.406E+00	3.689E-01	3.690E-01	139.45	OK
	1764.49	15.30	9.590E-01	1.318E+00	1.318E+00	31.95	OK
RA-224	240.99	4.10*	4.731E+00	1.683E-01	1.683E-01	703.88	OK
RA-226	609.32	45.49*	2.255E+00	9.030E-01	9.033E-01	21.54	OK
	1120.29	14.92	1.406E+00	3.689E-01	3.690E-01	139.45	OK
	1764.49	15.30	9.590E-01	1.318E+00	1.318E+00	31.95	OK
AC-228	105.21	1.10	5.839E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.628E+00	1.061E+00	1.061E+00	32.79	OK
	794.95	4.25	1.835E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.766E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.652E+00	8.612E-01	8.612E-01	46.46	OK
	968.97	15.80	1.575E+00	9.513E-01	9.513E-01	57.44	OK
RA-228	105.21	1.10	5.839E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.628E+00	1.061E+00	1.061E+00	32.79	OK
	794.95	4.25	1.835E+00	----- Line	Not Found	-----	Absent
	835.71	1.61	1.766E+00	----- Line	Not Found	-----	Absent
	911.20	25.80*	1.652E+00	8.612E-01	8.612E-01	46.46	OK
	968.97	15.80	1.575E+00	9.513E-01	9.513E-01	57.44	OK
TH-228	74.82	10.28	3.809E+00	3.818E-01	3.818E-01	194.45	OK
	77.11	17.10	4.047E+00	1.422E+00	1.422E+00	30.55	OK
	238.63	43.60*	4.776E+00	7.919E-01	7.919E-01	18.50	OK
	300.09	3.30	3.995E+00	1.111E+00	1.111E+00	91.90	OK
TH-230	609.32	45.49*	2.255E+00	9.030E-01	9.030E-01	21.54	OK
	1120.29	14.92	1.406E+00	3.689E-01	3.689E-01	139.45	OK
	1764.49	15.30	9.590E-01	1.318E+00	1.318E+00	31.95	OK
PA-231	283.69	1.70	4.183E+00	----- Line	Not Found	-----	Absent

Nuclide Type:

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-232	301.36	5.35*	3.995E+00	6.853E-01	6.853E-01	91.90	OK
	105.21	1.10	5.839E+00	----- Line	Not Found	-----	Absent
	338.32	11.27	3.628E+00	1.061E+00	1.061E+00	32.79	OK
	835.71	1.61	1.766E+00	----- Line	Not Found	-----	Absent
U-234	911.20	25.80*	1.652E+00	8.612E-01	8.612E-01	46.46	OK
	968.97	15.80	1.575E+00	9.513E-01	9.513E-01	57.44	OK
	609.32	45.49*	2.255E+00	9.030E-01	9.030E-01	21.54	OK
	1120.29	14.92	1.406E+00	3.689E-01	3.689E-01	139.45	OK
U-235	1764.49	15.30	9.590E-01	1.318E+00	1.318E+00	31.95	OK
	89.96	3.47	5.092E+00	----- Line	Not Found	-----	Absent
	93.35	5.60	5.306E+00	1.904E+00	1.904E+00	64.00	OK
	143.76	10.96*	6.182E+00	3.160E-01	3.160E-01	108.58	OK
AM-243	163.33	5.08	5.963E+00	----- Line	Not Found	-----	Absent
	185.72	57.20	5.613E+00	1.579E-01	1.579E-01	45.87	OK
	205.31	5.01	5.295E+00	----- Line	Not Found	-----	Absent
	43.53	5.90	2.461E-01	----- Line	Not Found	-----	Absent
CM-247	74.66	67.20*	3.809E+00	5.841E-02	5.842E-02	194.45	OK
	278.00	3.40	4.251E+00	----- Line	Not Found	-----	Absent
ANH-511	287.50	2.00	4.139E+00	----- Line	Not Found	-----	Absent
	402.40	72.00*	3.142E+00	1.980E-02	1.980E-02	301.27	OK
	511.00	100.00*	2.591E+00	5.441E-02	5.441E-02	179.92	OK

Flag: "*" = Keyline

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29407
*****
*
*                               DETECTOR AND SAMPLE DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235066.CNF;1
* Acquisition date   : 3-OCT-2016 05:57:37 Sensitivity      : 3.000
* Detector ID        : GAM33 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 01:00:00.75 Half life ratio : *****
* Sample date       : 14-DEC-2015 14:00:00 Analyst initials: MXR1
* Sample ID         : G405235066 Sample Quantity : 1.5742E+02 GRAM
* Batch Number      : 1596254 Wet Weight      : 0.00000
* Wet wt corr       : 1.00000 Dry Weight       : 0.00000
* Nuclide Library    : SOLID.NLB;6
*****
*
*                               CALIBRATION INFORMATION
*
* Eff. Cal. date    : 10-JUN-2016 07:00:49 Eff. Geometry   : CAN
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM33 CAN.CNF;8
*****

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Combined Activity-MDA Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Cnt uncert (1.96-sigma)	MDA (pCi/GRAM)
K-40	1.363E+01	1.472E+00	5.902E-01
CD-109	1.244E+00	3.365E+00	2.309E+00
SN-126	8.003E-02	2.165E-01	1.495E-01
CS-135	4.598E-01	3.149E-01	2.140E-01
TL-208	3.468E-01	8.259E-02	5.293E-02
PB-212	7.919E-01	1.436E-01	1.133E-01
BI-214	9.033E-01	1.907E-01	9.393E-02
PB-214	1.112E+00	1.597E-01	1.158E-01
RN-222	9.033E-01	1.907E-01	9.393E-02
RA-224	1.683E-01	1.161E+00	1.280E+00
RA-226	9.033E-01	1.907E-01	9.393E-02
AC-228	8.612E-01	3.921E-01	2.092E-01
RA-228	8.612E-01	3.921E-01	2.092E-01
TH-228	7.919E-01	1.436E-01	1.133E-01
TH-230	9.030E-01	1.906E-01	9.390E-02
PA-231	6.853E-01	6.171E-01	6.582E-01
TH-232	8.612E-01	3.921E-01	2.092E-01
U-234	9.030E-01	1.906E-01	9.390E-02
U-235	3.160E-01	3.363E-01	3.024E-01
AM-243	5.842E-02	1.113E-01	9.349E-02
CM-247	1.980E-02	5.846E-02	5.853E-02
ANH-511	5.441E-02	9.595E-02	5.050E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Cnt Uncert (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-7.443E+00	1.216E+01	1.933E+01	NOT IDENT.
NA-22	5.034E-03	3.635E-02	7.094E-02	NOT IDENT.
NA-24	0.000E+00	1.084E+41	0.000E+00	SHORT HLIF
AL-26	1.001E-02	2.018E-02	5.505E-02	NOT IDENT.
SC-46	-1.658E-02	2.739E-01	5.499E-01	FAIL ABUN
V-48	0.000E+00	8.568E+03	0.000E+00	SHORT HLIF
CR-51	0.000E+00	2.904E+02	0.000E+00	SHORT HLIF
MN-54	-9.583E-03	7.195E-02	1.188E-01	NOT IDENT.

CO-56	9.684E-03	3.839E-01	6.840E-01	NOT IDENT.
MN-56	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CO-57	3.917E-02	4.439E-02	9.045E-02	NOT IDENT.
CO-58	3.632E-02	4.861E-01	9.623E-01	NOT IDENT.
FE-59	-1.466E+00	4.479E+00	8.864E+00	NOT IDENT.
CO-60	-2.054E-03	3.394E-02	6.952E-02	NOT IDENT.
ZN-65	8.785E-02	1.742E-01	3.432E-01	NOT IDENT.
GE-68	-7.222E-02	2.336E+00	4.200E+00	NOT IDENT.
AS-73	-8.102E+00	9.377E+00	1.747E+01	NOT IDENT.
AS-74	0.000E+00	4.162E+03	0.000E+00	SHORT HLIF
SE-75	4.292E-03	1.801E-01	3.074E-01	NOT IDENT.
BR-77	0.000E+00	4.280E+36	0.000E+00	SHORT HLIF
SR-82	0.000E+00	6.437E+02	0.000E+00	SHORT HLIF
RB-83	-3.002E-01	6.108E-01	1.125E+00	NOT IDENT.
KR-85	3.992E-01	6.342E+00	1.252E+01	NOT IDENT.
SR-85	3.821E-02	6.279E-01	1.239E+00	NOT IDENT.
RB-86	0.000E+00	2.069E+04	0.000E+00	SHORT HLIF
Y-88	-2.956E-03	1.405E-01	3.267E-01	NOT IDENT.
Y-91	-8.607E+01	4.232E+02	7.321E+02	NOT IDENT.
NB-94	1.978E-02	2.529E-02	5.579E-02	NOT IDENT.
NB-95	3.569E-02	6.525E-01	1.295E+00	NOT IDENT.
NB-95M	-8.355E-02	2.648E+00	3.860E+00	NOT IDENT.
ZR-95	1.340E+00	1.345E+00	2.946E+00	NOT IDENT.
NB-97	0.000E+00	1.626E+41	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
MO-99	0.000E+00	3.769E+31	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
RH-101	-1.292E-02	3.346E-02	5.627E-02	NOT IDENT.
RH-102	9.594E-03	5.214E-02	1.054E-01	NOT IDENT.
RU-103	3.710E+00	4.479E+00	9.260E+00	FAIL ABUN
RH-106	-3.908E-02	4.115E-01	8.046E-01	NOT IDENT.
RU-106	-3.908E-02	4.115E-01	8.046E-01	NOT IDENT.
AG-108M	-5.630E-03	2.295E-02	4.462E-02	NOT IDENT.
AG-110M	-4.578E-02	8.237E-02	1.433E-01	NOT IDENT.
SN-113	-9.855E-02	1.996E-01	3.762E-01	NOT IDENT.
CD-115	0.000E+00	4.335E+38	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	6.958E+04	0.000E+00	SHORT HLIF
TE-123M	-7.498E-02	1.300E-01	2.304E-01	NOT IDENT.
SB-124	-3.960E-01	1.728E+00	3.476E+00	NOT IDENT.
SB-125	-4.793E-02	8.678E-02	1.618E-01	NOT IDENT.
TE-125M	1.504E+02	2.528E+02	5.027E+02	NOT IDENT.
I-126	0.000E+00	1.505E+06	0.000E+00	SHORT HLIF
SB-126	0.000E+00	7.793E+05	0.000E+00	SHORT HLIF
SB-127	0.000E+00	6.305E+21	0.000E+00	SHORT HLIF
I-131	0.000E+00	2.421E+09	0.000E+00	SHORT HLIF
I-132	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
TE-132	0.000E+00	9.296E+25	0.000E+00	SHORT HLIF
BA-133	-5.271E-03	4.182E-02	7.372E-02	NOT IDENT.
I-133	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-134	3.738E-02	5.386E-02	1.113E-01	NOT IDENT.
I-135	0.000E+00	1.960E+41	0.000E+00	SHORT HLIF
CS-136	0.000E+00	1.999E+05	0.000E+00	SHORT HLIF
BA-137M	4.766E-02	3.147E-02	7.311E-02	NOT IDENT.
CS-137	5.035E-02	3.325E-02	7.724E-02	NOT IDENT.
CE-139	3.106E-02	1.101E-01	2.090E-01	NOT IDENT.
BA-140	0.000E+00	1.802E+06	0.000E+00	SHORT HLIF
LA-140	0.000E+00	2.768E+05	0.000E+00	SHORT HLIF
CE-141	-3.102E+00	1.965E+01	3.367E+01	NOT IDENT.
CE-143	0.000E+00	1.727E+41	0.000E+00	SHORT HLIF
CE-144	-8.942E-02	3.272E-01	6.048E-01	NOT IDENT.
PM-144	-5.011E-02	4.621E-02	7.339E-02	NOT IDENT.
PR-144	-4.339E+00	4.001E+00	6.355E+00	NOT IDENT.
PM-146	7.869E-03	4.209E-02	8.461E-02	NOT IDENT.
ND-147	0.000E+00	2.171E+07	0.000E+00	SHORT HLIF
PM-147	4.383E+02	7.779E+02	1.549E+03	NOT IDENT.
PM-149	0.000E+00	5.583E+39	0.000E+00	SHORT HLIF
EU-150	4.121E-02	3.312E-02	4.265E-02	FAIL ABUN
EU-152	-1.339E-02	8.072E-02	1.523E-01	FAIL ABUN
GD-153	-7.730E-02	1.786E-01	3.028E-01	NOT IDENT.
EU-154	2.384E-02	9.217E-02	1.843E-01	FAIL ABUN
EU-155	8.918E-02	9.900E-02	2.042E-01	FAIL ABUN
TB-160	-1.679E+00	1.579E+00	2.394E+00	FAIL ABUN
HO-166M	3.825E-02	4.747E-02	1.048E-01	NOT IDENT.
TM-171	-4.540E+00	2.330E+01	4.649E+01	NOT IDENT.
HF-172	2.887E-01	2.414E-01	4.283E-01	FAIL ABUN
LU-172	4.950E-02	7.020E-02	1.572E-01	FAIL ABUN
LU-176	-1.364E-02	2.107E-02	3.977E-02	FAIL ABUN
HF-181	2.028E+00	5.125E+00	7.441E+00	FAIL ABUN

TA-182	1.052E-01	1.001E+00	1.788E+00	FAIL ABUN
RE-183	1.676E+00	3.108E+00	6.473E+00	NOT IDENT.
RE-184	8.704E-01	2.489E+01	4.835E+01	NOT IDENT.
W-188	-6.511E+00	1.029E+02	1.851E+02	NOT IDENT.
IR-192	1.746E-01	3.605E-01	7.621E-01	FAIL ABUN
HG-203	1.610E-01	2.000E+00	4.038E+00	NOT IDENT.
BI-207	5.367E-03	3.978E-02	8.420E-02	FAIL ABUN
PB-210	4.628E+00	4.679E+00	1.033E+01	NOT IDENT.
BI-211	0.000E+00	4.400E-01	7.767E-01	FAIL ABUN
PB-211	-9.432E-02	6.226E-01	1.093E+00	FAIL ABUN
BI-212	1.163E+00	7.461E-01	1.189E+00	FAIL ABUN
RN-219	2.160E-01	6.377E-01	7.285E-01	FAIL ABUN
RA-223	-2.711E-01	5.497E-01	9.297E-01	FAIL ABUN
AC-227	9.681E-02	2.199E-01	4.205E-01	FAIL ABUN
TH-227	9.681E-02	2.199E-01	4.205E-01	FAIL ABUN
TH-229	-4.881E-01	4.351E-01	7.145E-01	FAIL ABUN
TH-231	-2.711E-01	5.497E-01	9.297E-01	FAIL ABUN
PA-233	1.288E-02	5.506E-02	1.123E-01	FAIL ABUN
PA-234	-2.113E-01	2.665E-01	4.331E-01	FAIL ABUN
PA-234M	3.533E+00	4.433E+00	9.538E+00	NOT IDENT.
TH-234	-2.287E-01	1.460E+00	2.912E+00	FAIL ABUN
NP-237	1.288E-02	5.506E-02	1.123E-01	FAIL ABUN
NP-238	0.000E+00	5.388E+00	0.000E+00	SHORT HLIF
U-238	-2.287E-01	1.460E+00	2.912E+00	FAIL ABUN
NP-239	1.425E-01	2.245E-01	4.513E-01	NOT IDENT.
PU-239	3.127E+02	3.111E+02	6.297E+02	NOT IDENT.
AM-241	6.229E-02	1.526E-01	3.129E-01	NOT IDENT.
CM-243	-9.302E-02	9.417E-02	1.660E-01	NOT IDENT.
BK-247	-2.424E-02	6.537E-02	1.043E-01	NOT IDENT.
CF-249	-1.814E-02	3.201E-02	5.995E-02	FAIL ABUN
CF-251	6.243E-02	1.047E-01	2.058E-01	NOT IDENT.

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	345	10.66*	1.133E+00	1.363E+01	1.363E+01	11.02
CD-109	88.03	84	3.70*	4.949E+00	2.197E+00	3.415E+00	99.57
SN-126	64.28	-----	9.60	2.578E+00	-----	Line Not Found	-----
	86.94	84	8.90	4.949E+00	9.133E-01	9.133E-01	99.57
	87.57	84	37.00*	4.949E+00	2.197E-01	2.197E-01	99.57
CS-135	268.22	67	16.00*	4.353E+00	4.598E-01	4.598E-01	69.88
TL-208	277.37	-----	6.60	4.258E+00	-----	Line Not Found	-----
	583.19	144	85.00*	2.333E+00	3.468E-01	3.468E-01	24.30
	860.56	20	12.50	1.726E+00	4.421E-01	4.421E-01	72.71
BI-211	72.87	-----	1.23	3.591E+00	-----	Line Not Found	-----
	351.06	291	12.92*	3.512E+00	3.064E+00	3.064E+00	14.65
PB-212	74.82	102	10.28	3.809E+00	1.237E+00	1.237E+00	58.08
	77.11	206	17.10	4.047E+00	1.422E+00	1.422E+00	30.55
	238.63	346	43.60*	4.776E+00	7.919E-01	7.919E-01	18.50
	300.09	31	3.30	3.995E+00	1.111E+00	1.111E+00	91.90
BI-214	609.32	194	45.49*	2.255E+00	9.030E-01	9.033E-01	21.54
	1120.29	16	14.92	1.406E+00	3.689E-01	3.690E-01	139.45
	1764.49	41	15.30	9.590E-01	1.318E+00	1.318E+00	31.95
PB-214	74.82	102	5.80	3.809E+00	2.192E+00	2.193E+00	58.08
	77.11	206	9.70	4.047E+00	2.507E+00	2.508E+00	30.55
	87.09	84	3.41	4.949E+00	2.384E+00	2.384E+00	99.57
	242.00	116	7.25	4.731E+00	1.610E+00	1.611E+00	36.10
	295.22	237	18.42	4.049E+00	1.515E+00	1.516E+00	21.95
	351.93	291	35.60*	3.512E+00	1.112E+00	1.112E+00	14.65
RN-222	609.32	194	45.49*	2.255E+00	9.030E-01	9.033E-01	21.54
	1120.29	16	14.92	1.406E+00	3.689E-01	3.690E-01	139.45
	1764.49	41	15.30	9.590E-01	1.318E+00	1.318E+00	31.95
RA-224	240.99	116	4.10*	4.731E+00	2.848E+00	2.848E+00	36.10
RA-226	609.32	194	45.49*	2.255E+00	9.030E-01	9.033E-01	21.54
	1120.29	16	14.92	1.406E+00	3.689E-01	3.690E-01	139.45
	1764.49	41	15.30	9.590E-01	1.318E+00	1.318E+00	31.95
AC-228	105.21	-----	1.10	5.839E+00	-----	Line Not Found	-----
	338.32	91	11.27	3.628E+00	1.061E+00	1.061E+00	32.79
	794.95	-----	4.25	1.835E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.766E+00	-----	Line Not Found	-----
	911.20	77	25.80*	1.652E+00	8.612E-01	8.612E-01	46.46
	968.97	50	15.80	1.575E+00	9.513E-01	9.513E-01	57.44
RA-228	105.21	-----	1.10	5.839E+00	-----	Line Not Found	-----
	338.32	91	11.27	3.628E+00	1.061E+00	1.061E+00	32.79
	794.95	-----	4.25	1.835E+00	-----	Line Not Found	-----
	835.71	-----	1.61	1.766E+00	-----	Line Not Found	-----
	911.20	77	25.80*	1.652E+00	8.612E-01	8.612E-01	46.46
	968.97	50	15.80	1.575E+00	9.513E-01	9.513E-01	57.44
TH-228	74.82	102	10.28	3.809E+00	1.237E+00	1.237E+00	58.08
	77.11	206	17.10	4.047E+00	1.422E+00	1.422E+00	30.55
	238.63	346	43.60*	4.776E+00	7.919E-01	7.919E-01	18.50
	300.09	31	3.30	3.995E+00	1.111E+00	1.111E+00	91.90

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-230	609.32	194	45.49*	2.255E+00	9.030E-01	9.030E-01	21.54
	1120.29	16	14.92	1.406E+00	3.689E-01	3.689E-01	139.45
	1764.49	41	15.30	9.590E-01	1.318E+00	1.318E+00	31.95
PA-231	283.69	-----	1.70	4.183E+00	-----	Line Not Found	-----
	301.36	31	5.35*	3.995E+00	6.853E-01	6.853E-01	91.90
TH-232	105.21	-----	1.10	5.839E+00	-----	Line Not Found	-----
	338.32	91	11.27	3.628E+00	1.061E+00	1.061E+00	32.79
	835.71	-----	1.61	1.766E+00	-----	Line Not Found	-----
	911.20	77	25.80*	1.652E+00	8.612E-01	8.612E-01	46.46
	968.97	50	15.80	1.575E+00	9.513E-01	9.513E-01	57.44
U-234	609.32	194	45.49*	2.255E+00	9.030E-01	9.030E-01	21.54
	1120.29	16	14.92	1.406E+00	3.689E-01	3.689E-01	139.45
	1764.49	41	15.30	9.590E-01	1.318E+00	1.318E+00	31.95
U-235	89.96	-----	3.47	5.092E+00	-----	Line Not Found	-----
	93.35	119	5.60	5.306E+00	1.904E+00	1.904E+00	64.00
	143.76	45	10.96*	6.182E+00	3.160E-01	3.160E-01	108.58
	163.33	-----	5.08	5.963E+00	-----	Line Not Found	-----
	185.72	106	57.20	5.613E+00	1.579E-01	1.579E-01	45.87
	205.31	-----	5.01	5.295E+00	-----	Line Not Found	-----
AM-243	43.53	-----	5.90	2.461E-01	-----	Line Not Found	-----
	74.66	102	67.20*	3.809E+00	1.892E-01	1.892E-01	58.08
CM-247	278.00	-----	3.40	4.251E+00	-----	Line Not Found	-----
	287.50	-----	2.00	4.139E+00	-----	Line Not Found	-----
	402.40	9	72.00*	3.142E+00	1.980E-02	1.980E-02	301.27
ANH-511	511.00	30	100.00*	2.591E+00	5.441E-02	5.441E-02	179.92

Flag: "*" = Keyline

Total number of lines in spectrum 51
Number of unidentified lines 15
Number of lines tentatively identified by NID 36 70.59%

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	1.363E+01	1.363E+01	0.150E+01	11.02	
CD-109	461.40D	1.55	2.197E+00	3.415E+00	3.400E+00	99.57	
SN-126	2.30E+05Y	1.00	2.197E-01	2.197E-01	2.187E-01	99.57	
CS-135	2.30E+06Y	1.00	4.598E-01	4.598E-01	3.213E-01	69.88	
TL-208	1.41E+10Y	1.00	3.468E-01	3.468E-01	0.843E-01	24.30	
BI-211	7.04E+08Y	1.00	3.064E+00	3.064E+00	0.449E+00	14.65	
PB-212	1.41E+10Y	1.00	7.919E-01	7.919E-01	1.465E-01	18.50	
BI-214	1600.00Y	1.00	9.030E-01	9.033E-01	1.946E-01	21.54	
PB-214	1600.00Y	1.00	1.112E+00	1.112E+00	0.163E+00	14.65	
RN-222	1600.00Y	1.00	9.030E-01	9.033E-01	1.946E-01	21.54	
RA-224	1.41E+10Y	1.00	2.848E+00	2.848E+00	1.028E+00	36.10	
RA-226	1600.00Y	1.00	9.030E-01	9.033E-01	1.946E-01	21.54	
AC-228	1.41E+10Y	1.00	8.612E-01	8.612E-01	4.001E-01	46.46	
RA-228	1.41E+10Y	1.00	8.612E-01	8.612E-01	4.001E-01	46.46	
TH-228	1.41E+10Y	1.00	7.919E-01	7.919E-01	1.465E-01	18.50	
TH-230	7.54E+04Y	1.00	9.030E-01	9.030E-01	1.945E-01	21.54	
PA-231	7.04E+08Y	1.00	6.853E-01	6.853E-01	6.297E-01	91.90	
TH-232	1.41E+10Y	1.00	8.612E-01	8.612E-01	4.001E-01	46.46	
U-234	2.45E+05Y	1.00	9.030E-01	9.030E-01	1.945E-01	21.54	
U-235	7.04E+08Y	1.00	3.160E-01	3.160E-01	3.431E-01	108.58	
AM-243	7370.00Y	1.00	1.892E-01	1.892E-01	1.099E-01	58.08	
CM-247	1.56E+07Y	1.00	1.980E-02	1.980E-02	5.965E-02	301.27	
ANH-511	1.00E+09Y	1.00	5.441E-02	5.441E-02	9.790E-02	179.92	
Total Activity :			3.382E+01	3.504E+01			

Grand Total Activity : 3.382E+01 3.504E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit.

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	125.24	32	57	0.94	250.43	249	4	6.95E-03	85.3	6.21E+00	T
0	209.91	58	115	1.09	419.56	415	10	1.35E-02	80.9	5.22E+00	T
0	232.51	27	54	0.97	464.70	462	6	6.26E-03	****	4.87E+00	
4	327.86	29	52	1.91	655.21	646	37	7.03E-03	****	3.72E+00	T
4	332.76	30	33	1.31	665.00	646	37	7.30E-03	82.0	3.68E+00	T
0	479.37	14	51	3.51	957.98	945	14	3.44E-03	****	2.73E+00	
0	482.57	8	28	1.47	964.37	960	8	1.93E-03	****	2.71E+00	T
0	493.30	17	22	2.85	985.82	980	11	4.34E-03	****	2.67E+00	T
0	537.31	20	31	0.55	1073.78	1066	14	5.06E-03	****	2.49E+00	T
0	547.20	14	16	0.76	1093.56	1087	10	3.67E-03	****	2.45E+00	T
0	550.83	18	16	1.50	1100.81	1098	7	4.55E-03	90.9	2.44E+00	
0	665.62	70	21	4.94	1330.28	1319	28	1.84E-02	46.0	2.10E+00	T
0	727.48	32	20	0.73	1453.95	1449	10	8.44E-03	65.5	1.97E+00	T
1	761.47	17	25	1.76	1521.90	1507	40	4.46E-03	****	1.90E+00	
1	768.68	23	27	1.77	1536.32	1507	40	6.19E-03	92.9	1.88E+00	
0	781.60	19	9	1.12	1562.17	1557	9	5.00E-03	76.4	1.86E+00	
0	822.07	10	14	0.85	1643.08	1636	9	2.77E-03	****	1.79E+00	
0	831.18	10	9	1.62	1661.31	1656	9	2.77E-03	****	1.77E+00	T
0	849.74	12	8	1.61	1698.41	1695	7	3.21E-03	96.8	1.74E+00	
0	873.87	14	1	1.76	1746.67	1744	6	3.81E-03	60.5	1.71E+00	T
0	934.32	29	12	0.99	1867.57	1860	16	7.91E-03	65.9	1.62E+00	
0	964.85	16	13	1.04	1928.63	1925	8	4.23E-03	98.3	1.58E+00	T
0	1079.64	16	7	1.58	2158.25	2154	10	4.47E-03	80.3	1.45E+00	
0	1209.50	16	22	3.74	2418.06	2408	18	4.39E-03	****	1.32E+00	
0	1225.89	11	5	1.39	2450.86	2448	7	3.12E-03	89.5	1.31E+00	
0	1279.54	10	7	1.01	2558.22	2552	10	2.88E-03	****	1.27E+00	
0	1295.04	10	5	3.42	2589.24	2582	11	2.92E-03	****	1.25E+00	
0	1378.23	12	2	1.29	2755.74	2750	9	3.46E-03	71.9	1.19E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
*                               DETECTOR AND SAMPLE DATA                       *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G405235066.CNF;1  *
* Acquisition date   : 3-OCT-2016 05:57:37 Sensitivity      : 3.000          *
* Detector ID        : GAM33 Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:00.75 Half life ratio : *****          *
* Sample date       : 14-DEC-2015 14:00:00 Nuclide Library : SOLID        *
* Sample ID         : G405235066 Analyst initials: MXR1         *
* Batch Number      : 1596254 Sample Quantity : 1.5742E+02 GRAM      *
* Wet wt corr       : 1.00000 Wet Weight      : 0.00000          *
*                               Dry Weight      : 0.00000          *
*****
*                               CALIBRATION INFORMATION                       *
*
* Eff. Cal. date    : 10-JUN-2016 07:00:49 Eff. Geometry   : CAN          *
* Eff. File         : DKA100:[CANBERRA.GAMMA]EFF GAM33 CAN.CNF;8          *
*****

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Combined Critical Level Report

NOTE: Not all "Identified Nuclides" are valid.
Please refer to Certificate of Analysis.

---- Identified Nuclides ----

Nuclide	Lc (pCi/GRAM)
K-40	2.413E-01
CD-109	1.096E+00
SN-126	7.093E-02
CS-135	9.730E-02
TL-208	2.310E-02
PB-212	5.339E-02
BI-214	4.047E-02
PB-214	5.248E-02
RN-222	4.047E-02
RA-224	6.051E-01
RA-226	4.047E-02
AC-228	8.915E-02
RA-228	8.915E-02
TH-228	5.339E-02
TH-230	4.046E-02
PA-231	2.973E-01
TH-232	8.915E-02
U-234	4.046E-02
U-235	1.410E-01
AM-243	4.399E-02
CM-247	2.630E-02
ANH-511	2.267E-02

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

Nuclide	Lc (pCi/GRAM)	
BE-7	8.591E+00	NOT IDENT.
NA-22	2.909E-02	NOT IDENT.
NA-24	0.000E+00	SHORT HLIF
AL-26	2.061E-02	NOT IDENT.
SC-46	2.305E-01	FAIL ABUN
V-48	0.000E+00	SHORT HLIF
CR-51	0.000E+00	SHORT HLIF
MN-54	5.223E-02	NOT IDENT.
CO-56	2.893E-01	NOT IDENT.

MN-56	0.000E+00	SHORT HLIF
CO-57	4.246E-02	NOT IDENT.
CO-58	4.162E-01	NOT IDENT.
FE-59	3.644E+00	NOT IDENT.
CO-60	2.884E-02	NOT IDENT.
ZN-65	1.505E-01	NOT IDENT.
GE-68	1.803E+00	NOT IDENT.
AS-73	8.016E+00	NOT IDENT.
AS-74	0.000E+00	SHORT HLIF
SE-75	1.394E-01	NOT IDENT.
BR-77	0.000E+00	SHORT HLIF
SR-82	0.000E+00	SHORT HLIF
RB-83	5.007E-01	NOT IDENT.
KR-85	5.630E+00	NOT IDENT.
SR-85	5.572E-01	NOT IDENT.
RB-86	0.000E+00	SHORT HLIF
Y-88	1.157E-01	NOT IDENT.
Y-91	3.047E+02	NOT IDENT.
NB-94	2.460E-02	NOT IDENT.
NB-95	5.632E-01	NOT IDENT.
NB-95M	1.793E+00	NOT IDENT.
ZR-95	1.320E+00	NOT IDENT.
NB-97	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	SHORT HLIF
MO-99	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	SHORT HLIF
RH-101	2.620E-02	NOT IDENT.
RH-102	4.644E-02	NOT IDENT.
RU-103	4.135E+00	FAIL ABUN
RH-106	3.501E-01	NOT IDENT.
RU-106	3.501E-01	NOT IDENT.
AG-108M	1.980E-02	NOT IDENT.
AG-110M	5.953E-02	NOT IDENT.
SN-113	1.692E-01	NOT IDENT.
CD-115	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	SHORT HLIF
TE-123M	1.077E-01	NOT IDENT.
SB-124	1.336E+00	NOT IDENT.
SB-125	7.168E-02	NOT IDENT.
TE-125M	2.364E+02	NOT IDENT.
I-126	0.000E+00	SHORT HLIF
SB-126	0.000E+00	SHORT HLIF
SB-127	0.000E+00	SHORT HLIF
I-131	0.000E+00	SHORT HLIF
I-132	0.000E+00	SHORT HLIF
TE-132	0.000E+00	SHORT HLIF
BA-133	3.357E-02	NOT IDENT.
I-133	0.000E+00	SHORT HLIF
CS-134	5.012E-02	NOT IDENT.
I-135	0.000E+00	SHORT HLIF
CS-136	0.000E+00	SHORT HLIF
BA-137M	3.300E-02	NOT IDENT.
CS-137	3.486E-02	NOT IDENT.
CE-139	9.816E-02	NOT IDENT.
BA-140	0.000E+00	SHORT HLIF
LA-140	0.000E+00	SHORT HLIF
CE-141	1.562E+01	NOT IDENT.
CE-143	0.000E+00	SHORT HLIF
CE-144	2.820E-01	NOT IDENT.
PM-144	3.094E-02	NOT IDENT.
PR-144	2.679E+00	NOT IDENT.
PM-146	3.831E-02	NOT IDENT.
ND-147	0.000E+00	SHORT HLIF
PM-147	7.260E+02	NOT IDENT.
PM-149	0.000E+00	SHORT HLIF
EU-150	1.938E-02	FAIL ABUN
EU-152	6.875E-02	FAIL ABUN
GD-153	1.413E-01	NOT IDENT.
EU-154	7.647E-02	FAIL ABUN
EU-155	9.576E-02	FAIL ABUN
TB-160	9.815E-01	FAIL ABUN
HO-166M	4.627E-02	NOT IDENT.
TM-171	2.138E+01	NOT IDENT.
HF-172	2.009E-01	FAIL ABUN
LU-172	6.883E-02	FAIL ABUN
LU-176	1.804E-02	FAIL ABUN
HF-181	3.348E+00	FAIL ABUN
TA-182	7.852E-01	FAIL ABUN

RE-183	3.024E+00	NOT IDENT.
RE-184	2.091E+01	NOT IDENT.
W-188	8.493E+01	NOT IDENT.
IR-192	3.474E-01	FAIL ABUN
HG-203	1.864E+00	NOT IDENT.
BI-207	3.600E-02	FAIL ABUN
PB-210	4.800E+00	NOT IDENT.
BI-211	3.737E-01	FAIL ABUN
PB-211	4.898E-01	FAIL ABUN
BI-212	5.439E-01	FAIL ABUN
RN-219	3.319E-01	FAIL ABUN
RA-223	4.198E-01	FAIL ABUN
AC-227	1.944E-01	FAIL ABUN
TH-227	1.944E-01	FAIL ABUN
TH-229	3.290E-01	FAIL ABUN
TH-231	4.198E-01	FAIL ABUN
PA-233	5.164E-02	FAIL ABUN
PA-234	1.824E-01	FAIL ABUN
PA-234M	4.261E+00	NOT IDENT.
TH-234	1.379E+00	FAIL ABUN
NP-237	5.164E-02	FAIL ABUN
NP-238	0.000E+00	SHORT HLIF
U-238	1.379E+00	FAIL ABUN
NP-239	2.114E-01	NOT IDENT.
PU-239	2.973E+02	NOT IDENT.
AM-241	1.465E-01	NOT IDENT.
CM-243	7.714E-02	NOT IDENT.
BK-247	4.699E-02	NOT IDENT.
CF-249	2.682E-02	FAIL ABUN
CF-251	9.599E-02	NOT IDENT.