

AUXIER & ASSOCIATES, INC.

PAP/KAN

**STANDARD LEVEL IV
REPORT OF ANALYSIS**

WORK ORDER #16-06041-OR

July 22, 2016

**Eberline Analytical
Oak Ridge Laboratory
OAK RIDGE, TN**

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**Eberline Services – Oak Ridge Laboratory
LABORATORY DATA SUPPORT CHECKLIST**

MP-001-3

16-06041

Eberline Services Work Order # _____

The checklist items listed below are to be initialed by appropriate staff upon completion/verification.

Date for Partial	Initials	Date	Initials	Checklist Items
		6-9-16	JEB	Sample Log-In
		6/24/16	KBS	Data Compilation
		6-22-16	mtg	First Technical Data Review
		6/28/16	llg	Second Technical Data Review
		7/20/16	g	Data Entry/Electronic Deliverable
		7/21/16	g	Case Narrative
		7/21/16	KBS	Electronic Deliverable Proof
		7/22/16	usg	Samples Analyzed within Holding Time Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/>
		7/22/16	usg	QA/QC Review
		06/24/16	Euy	Client in Possession of Data Electronic or Hard Copy
				Invoiced by Laboratory

Technical/Clerical Corrections, Signatures Needed, Problems, Etc	Date/Initials

Date package approved by:

Laboratory Manager

Date

Copy No. _____

Radiochemistry Services

SECTION I
CHAIN OF CUSTODY



Radiological Health, Safety and Environmental Services
A USA Environmental, L.P. Company

16-06041
REC'D JUN 09 2016

6-9-16 SES
910760 NAF QJRY

Auxier & Associates, Inc.
9821 Cogdill Road
Suite 1
Knoxville, TN 37932
(423) 675-3669

CHAIN OF CUSTODY FORM

Project Name:	PAP/KAN	Project Manager:	Cecilia Greene
Location:	Kansas City, MO	Telephone No.:	865-675-3669
Sample Custodian:	Marsha Joseph	Fax No.:	865-675-3677

SAMPLE IDENTIFICATION	DATE OF COLLECTION	SAMPLE DESCRIPTION	SAMPLE IDENTIFICATION	DATE OF COLLECTION	SAMPLE DESCRIPTION
4 CP-5028,00-02	6/16/16	Soil in Plastic Bag	CP-5031,00-02	6/1/16	Soil in Plastic Bag
5 CP-5028,02-05		Soil in Plastic Bag	CP-5031,02-05		Soil in Plastic Bag
6 CP-5028,05-10		Soil in Plastic Bag	CP-5031,05-10		Soil in Plastic Bag
7 CP-5028,10-15		Soil in Plastic Bag	CP-5031,10-15		Soil in Plastic Bag
8 CP-5029,00-02		Soil in Plastic Bag	CP-5010,00-02	6/7/16	Soil in Plastic Bag
9 CP-5029,02-05		Soil in Plastic Bag	CP-5010,02-05		Soil in Plastic Bag
10 CP-5029,05-10		Soil in Plastic Bag	CP-5010,05-10		Soil in Plastic Bag
11 CP-5029,10-15		Soil in Plastic Bag	CP-5010,10-15		Soil in Plastic Bag
12 CP-5030,00-02		Soil in Plastic Bag	CP-5012,00-02		Soil in Plastic Bag
13 CP-5030,02-05		Soil in Plastic Bag	CP-5012,02-05		Soil in Plastic Bag
14 CP-5030,05-10		Soil in Plastic Bag	CP-5012,05-09		Soil in Plastic Bag
15 CP-5030,10-15		Soil in Plastic Bag	CP-5012,09-15		Soil in Plastic Bag

Relinquished By:	Marsha Joseph	Date Shipped:	6/7/16
Method Of Shipment & Tracking #:	8003 3737 785 F406X	Received In Good Condition By:	James E. Bailey
		Date Received:	6/9/16 @ 0915



EBERLINE
SERVICES
Oak Ridge Laboratory

Internal Chain of Custody

Work Order #	16-06041
Lab Deadline	6/29/2016
Analysis	UIISO - Level 4
Sample Matrix	Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location	
REPORT ON DRY WEIGHT BASIS	04	37	G1.4	
	05	35	G1.4	
	06	33	G1.4	
	07	45	G1.4	
	08	43	G1.4	
	09	41	G1.4	
	10	39	G1.4	
	11	55	G1.4	
	12	51	G1.4	
	13	48	G1.4	
	14	43	G1.4	
	15	48	G1.4	

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	<u>Rough Prep</u>	Prep	Separations	Count Room	0870 Kary Scelci	6-14-16
Relinquished by	Sample Storage	<u>Rough Prep</u>	Prep	Separations	Count Room	0935 Kary Scelci	6-15-16
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0935 Pachelke	6-15-16
Relinquished by	Sample Storage	Rough Prep	<u>Prep</u>	Separations	Count Room	1130 J. R. P. W. H. H.	
Received by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	2011 6-17-16 1130	
Relinquished by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	2011 6-23-16 0758	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	AG 6/23/16	0758
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICD 6/23/16	1443
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		



EBERLINE
SERVICES
Oak Ridge Laboratory

Internal Chain of Custody

Work Order #

16-06041

Lab Deadline

6/29/2016

Analysis

ThISO - Level 4

Sample Matrix

Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location	
REPORT ON DRY WEIGHT BASIS	04	37	G1.4	
	05	35	G1.4	
	06	33	G1.4	
	07	45	G1.4	
	08	43	G1.4	
	09	41	G1.4	
	10	39	G1.4	
	11	55	G1.4	
	12	51	G1.4	
	13	48	G1.4	
	14	43	G1.4	
	15	48	G1.4	

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0840 Kenny Scie	6-14-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0935 Kenny Scie	6-15-16
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	9350 Pacheco	6-15-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	NOPE 6/17/16 1040	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	2016 6-17-16 1040	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	2016 6-23-16 0758	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	AC 6/23/16 0758	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	YB 6/23/16 1440	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		



EBERLINE
SERVICES
Oak Ridge Laboratory

Internal Chain of Custody

Work Order #

16-06041

Lab Deadline

6/29/2016

Analysis

Gamma - Level 4

Sample Matrix


Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location	
REPORT ON DRY WEIGHT BASIS	04	37	G1.4	
	05	35	G1.4	
	06	33	G1.4	
	07	45	G1.4	
	08	43	G1.4	
	09	41	G1.4	
	10	39	G1.4	
	11	55	G1.4	
	12	51	G1.4	
	13	48	G1.4	
	14	43	G1.4	
	15	48	G1.4	
	Report Ac228, Bi214, Pb210/214, Pa231, K40 & positives.			

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	Kenny Solis	6-14-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	Kenny Solis	6-15-16
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	C	6-15-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	C	6-15-16
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

SECTION II
SAMPLE ACKNOWLEDGEMENT

Client Name Auxier & Associates, Inc.			Contract/PO PAP-KAN		Project Type Environmental		Date Received 06/09/2016		Required Turnaround Days 28		Eberline Services Work Order 16-06041							
Project Name PAP-KAN			Client WO PAP/KAN		Sample Disp H		Lab Deadline 06/29/2016		Internal Deadline 07/06/2016		Client Deadline 07/07/2016							
Internal ID	Client ID	Sample Date	Matrix	Storage	Gamma	ThiSO	UISO											
01	LCS	06/09/16	SO	G1.4	X	X	X					3						
02	BLANK	06/09/16	SO	G1.4	X	X	X					3						
03	DUP	06/09/16	SO	G1.4	X	X	X					3						
04	CP-5028 00-02	06/06/16 00:00	SO	G1.4	X	X	X					3						
05	CP-5028 02-05	06/06/16 00:00	SO	G1.4	X	X	X					3						
06	CP-5028 05-10	06/06/16 00:00	SO	G1.4	X	X	X					3						
07	CP-5028 10-15	06/06/16 00:00	SO	G1.4	X	X	X					3						
08	CP-5029 00-02	06/06/16 00:00	SO	G1.4	X	X	X					3						
09	CP-5029 02-05	06/06/16 00:00	SO	G1.4	X	X	X					3						
10	CP-5029 05-10	06/06/16 00:00	SO	G1.4	X	X	X					3						
11	CP-5029 10-15	06/06/16 00:00	SO	G1.4	X	X	X					3						
12	CP-5030 00-02	06/06/16 00:00	SO	G1.4	X	X	X					3						
13	CP-5030 02-05	06/06/16 00:00	SO	G1.4	X	X	X					3						
14	CP-5030 05-10	06/06/16 00:00	SO	G1.4	X	X	X					3						
15	CP-5030 10-15	06/06/16 00:00	SO	G1.4	X	X	X					3						
												0						
												0						
												0						
												0						
												0						
												0						
												0						
Totals Per Analysis (non QA samples)					12	12	12	0	0	0	0	0	0	0	0	0	0	0

 EBERLINE SERVICES Sample Log In Report		Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: (865) 481-0683 Fax: (865) 483-4621		Invoice Accounts Payable Auxier & Associates, Inc. 9821 Cogdill Drive #1 Knoxville, TN 37932 865-675-3669 865-675-3677		Report Data Cecilia Greene Auxier & Associates, Inc. 9821 Cogdill Road, Suite 1 Knoxville, TN 37932 Voice 865-675-3669 Fax 865-675-3677		Contact Harvey Cohen 301-718-8900 301-718-8909	
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Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST

MP-001-2

WORK ORDER # 16-06041

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

WERE SAMPLES:

(CIRCLE EITHER YES, NO, OR N/A)

Received in good condition?	<u>Y</u>	N	
If aqueous, properly preserved	Y	N	<u>N/A</u>

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<u>Y</u>	N
Unbroken on outside of package?	<u>Y</u>	N
Present on samples?	<u>Y</u>	N
Unbroken on samples?	<u>Y</u>	N
Was chain of custody present upon sample receipt?	<u>Y</u>	N

IF THE RESPONSE TO ANY OF THE ABOVE IS NO, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: _____

SIGNATURE: James E. [Signature] DATE: 6-9-16

SECTION III
CASE NARRATIVE



EBERLINE ANALYTICAL CORPORATION
 601 SCARBORO ROAD
 OAK RIDGE, TENNESSEE 37830
 PHONE (865) 481-0683
 FAX (865) 483-4621

EBS-OR-41004

July 22, 2016

Cecilia Greene
 Auxier & Associates, Inc.
 9821 Cogdill Road #1
 Knoxville, TN 37932

CASE NARRATIVE
 Work Order # 16-06041-OR

SAMPLE RECEIPT

This work order contains twelve soil samples received 06/09/2016. These samples were analyzed for Isotopic Uranium, Isotopic Thorium and Gamma Spectroscopy.

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>CLIENT ID</u>	<u>LAB ID</u>
CP-5028 00-02	16-06041-04	CP-5029 05-10	16-06041-10
CP-5028 02-05	16-06041-05	CP-5029 10-15	16-06041-11
CP-5028 05-10	16-06041-06	CP-5030 00-02	16-06041-12
CP-5028 10-15	16-06041-07	CP-5030 02-05	16-06041-13
CP-5029 00-02	16-06041-08	CP-5030 05-10	16-06041-14
CP-5029 02-05	16-06041-09	CP-5030 10-15	16-06041-15

ANALYTICAL METHODS

Isotopic Uranium was analyzed using Method EML U-02 Modified. Isotopic Thorium was analyzed using Method EML Th-01 Modified. Gamma Spectroscopy was performed using Method LANL ER-130 Modified.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 2-sigma value.

Minimum Detectable Activity (MDA) values for data represented in this report are sample-specific. MDA measurements are determined based on factors and conditions including instrument settings, aliquot size and matrix type.

SPECIAL CIRCUMSTANCES

Results are reported on a "dry weight" basis.

ANALYTICAL RESULTS CONTINUED

ISOTOPIC URANIUM

Samples were prepared by removing representative aliquots followed by mixed acid digestions as appropriate. Uranium was selectively extracted by ion exchange. Uranium was eluted, micro-precipitated and mounted on micro-porous filter media. Sample activities were then determined by alpha spectroscopy using energy specific regions of interest for Uranium-234, Uranium-235 and Uranium-238. Chemical recovery was determined by the use of a Uranium-232 tracer. Activity of the Uranium-232 tracer was determined by alpha spectroscopy using an energy specific region of interest.

Samples demonstrated acceptable results for all Uranium analyses. Chemical recovery was acceptable for all samples. The Uranium-234, Uranium-235 and Uranium-238 method blank demonstrated acceptable results. Results for the Uranium-234, Uranium-235 and Uranium-238 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Uranium-234 and Uranium-238 laboratory control sample demonstrated an acceptable percent recovery.

ISOTOPIC THORIUM

Samples were prepared by removing representative aliquots followed by mixed acid digestions as appropriate. Thorium was selectively extracted by ion exchange. Thorium was eluted, micro-precipitated and mounted on micro-porous filter media. Sample activities were then determined by alpha spectroscopy using energy specific regions of interest for Thorium-230 and Thorium-232. Chemical recovery was determined by the use of a Thorium-229 tracer. Activity of the Thorium-229 tracer was determined by alpha spectroscopy using an energy specific region of interest.

Samples demonstrated acceptable results for all Thorium analyses. Chemical recovery was acceptable for all samples. The Thorium-230 and Thorium-232 method blank demonstrated acceptable results. Results for the Thorium-230 and Thorium-232 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Thorium-230 and Thorium-232 laboratory control sample demonstrated an acceptable percent recovery.

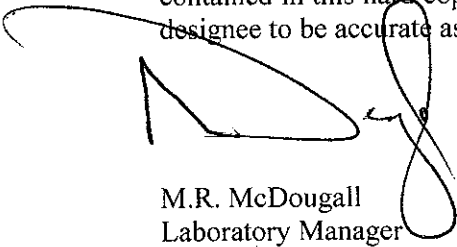
GAMMA SPECTROSCOPY

Samples for Gamma Spectroscopy analysis were prepared by transferring a volumetric aliquot of each sample to a standard geometry container. Samples were counted on High Purity Germanium (HPGe) gamma ray detectors.

Samples demonstrated acceptable results for all gamma-emitting radionuclides as reported. The method blank demonstrated acceptable results for all radionuclides as reported. Results for the Actinium-228, Bismuth-214 and Potassium-40 replicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Cobalt-60 and Cesium-137 laboratory control sample demonstrated an acceptable percent recovery.

CERTIFICATION OF ACCURACY

I certify that this data report is in compliance with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



M.R. McDougall
Laboratory Manager

Date: 7/22/2016

Eberline Analytical wants and encourages your feedback regarding our performance providing radioanalytical services. Please visit <http://www.eberlineservices.com/client.htm> to provide us with feedback on our services.

SECTION IV
ANALYTICAL RESULTS SUMMARY

Eberline Analytical

Final Report of Analysis

Cecilia Greene
Auxier & Associates, Inc.
 9821 Cogdill Road, Suite 1
 Knoxville, TN 37932

SDG: 16-06041
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Work Order Details:

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06041-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/16/2016	16-06041	Cobalt-60	LANL ER-130 Modified	1.37E+02	5.48E+00				pCi/g
16-06041-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/16/2016	16-06041	Cesium-137	LANL ER-130 Modified	8.69E+01	3.48E+00				pCi/g
16-06041-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/16/2016	16-06041	Cobalt-60	LANL ER-130 Modified	1.42E+02	8.32E+00	1.11E+01	8.10E-01	6.52E-01	pCi/g
16-06041-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/16/2016	16-06041	Cesium-137	LANL ER-130 Modified	9.06E+01	8.13E+00	9.37E+00	1.03E+00	5.11E-01	pCi/g
16-06041-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06041	Actinium-228	LANL ER-130 Modified	3.10E-02	6.02E-02	6.02E-02	1.14E-01	4.94E-02	pCi/g
16-06041-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06041	Bismuth-214	LANL ER-130 Modified	2.20E-03	4.05E-02	4.05E-02	6.45E-02	2.89E-02	pCi/g
16-06041-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06041	Potassium-40	LANL ER-130 Modified	1.10E-01	2.07E-01	2.07E-01	4.00E-01	1.71E-01	pCi/g
16-06041-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06041	Protactinium-231	LANL ER-130 Modified	8.64E-02	2.24E-01	2.24E-01	7.87E-01	3.55E-01	pCi/g
16-06041-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-210	LANL ER-130 Modified	1.94E-01	2.91E-01	2.91E-01	4.88E-01	2.28E-01	pCi/g
16-06041-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-212	LANL ER-130 Modified	-1.97E-02	3.48E-02	3.48E-02	3.91E-02	1.79E-02	pCi/g
16-06041-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-214	LANL ER-130 Modified	3.46E-02	4.10E-02	4.10E-02	6.05E-02	3.03E-02	pCi/g
16-06041-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06041	Thallium-208	LANL ER-130 Modified	5.83E-02	5.85E-02	5.86E-02	1.08E-01	4.89E-02	pCi/g
16-06041-03	DUP	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Actinium-228	LANL ER-130 Modified	1.59E+00	3.17E-01	3.27E-01	5.50E-01	2.58E-01	pCi/g
16-06041-03	DUP	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Bismuth-214	LANL ER-130 Modified	1.49E+00	2.46E-01	2.58E-01	3.47E-01	1.67E-01	pCi/g
16-06041-03	DUP	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Potassium-40	LANL ER-130 Modified	2.34E+01	2.89E+00	3.13E+00	1.12E+00	5.03E-01	pCi/g
16-06041-03	DUP	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Protactinium-231	LANL ER-130 Modified	-1.86E+00	2.95E+00	2.95E+00	3.38E+00	1.60E+00	pCi/g
16-06041-03	DUP	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-210	LANL ER-130 Modified	1.57E+00	1.88E+00	1.88E+00	3.14E+00	1.59E+00	pCi/g
16-06041-03	DUP	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-212	LANL ER-130 Modified	1.22E+00	2.86E-01	2.92E-01	3.66E-01	1.79E-01	pCi/g
16-06041-03	DUP	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-214	LANL ER-130 Modified	1.67E+00	2.57E-01	2.71E-01	3.24E-01	1.56E-01	pCi/g
16-06041-03	DUP	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Thallium-208	LANL ER-130 Modified	1.55E+00	2.35E-01	2.48E-01	1.97E-01	2.06E-01	pCi/g
16-06041-04	DO	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Actinium-228	LANL ER-130 Modified	1.71E+00	3.20E-01	3.32E-01	8.97E-01	4.58E-01	pCi/g
16-06041-04	DO	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Bismuth-214	LANL ER-130 Modified	1.49E+00	2.31E-01	2.43E-01	3.22E-01	1.55E-01	pCi/g
16-06041-04	DO	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Potassium-40	LANL ER-130 Modified	2.33E+01	2.94E+00	3.18E+00	1.35E+00	6.18E-01	pCi/g
16-06041-04	DO	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Protactinium-231	LANL ER-130 Modified	5.73E-01	1.19E+00	1.19E+00	3.19E+00	1.51E+00	pCi/g
16-06041-04	DO	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-210	LANL ER-130 Modified	2.08E+00	1.31E+00	1.31E+00	2.12E+00	1.02E+00	pCi/g
16-06041-04	DO	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-212	LANL ER-130 Modified	1.13E+00	2.83E-01	2.89E-01	3.64E-01	1.79E-01	pCi/g
16-06041-04	DO	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-214	LANL ER-130 Modified	1.64E+00	2.77E-01	2.89E-01	2.95E-01	1.42E-01	pCi/g
16-06041-04	DO	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Thallium-208	LANL ER-130 Modified	1.42E+00	2.35E-01	2.46E-01	2.81E-01	1.48E-01	pCi/g

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



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EBERLINE ANALYTICAL CORPORATION

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Eberline Analytical

Final Report of Analysis

Cecilia Greene
Auxier & Associates, Inc.
9821 Cogdill Road, Suite 1
Knoxville, TN 37932

16-06041
PAP-KAN
ENVIRONMENTAL
SO

Report To:

Mark Order Details:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06041-05	TRG	CP-5028 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Actinium-228	LANL ER-130 Modified	1.45E+00	4.02E-01	4.08E-01	7.71E-01	3.69E-01	pCi/g
16-06041-05	TRG	CP-5028 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Bismuth-214	LANL ER-130 Modified	1.33E+00	2.34E-01	2.44E-01	3.17E-01	1.52E-01	pCi/g
16-06041-05	TRG	CP-5028 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Potassium-40	LANL ER-130 Modified	2.26E+01	2.90E+00	3.12E+00	1.75E+00	8.13E-01	pCi/g
16-06041-05	TRG	CP-5028 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Protactinium-231	LANL ER-130 Modified	-1.54E-01	9.53E-01	9.53E-01	3.90E+00	1.87E+00	pCi/g
16-06041-05	TRG	CP-5028 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-210	LANL ER-130 Modified	1.94E+00	1.96E+00	1.96E+00	3.28E+00	1.59E+00	pCi/g
16-06041-05	TRG	CP-5028 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-212	LANL ER-130 Modified	1.90E+00	2.21E-01	2.41E-01	3.24E-01	1.59E-01	pCi/g
16-06041-05	TRG	CP-5028 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-214	LANL ER-130 Modified	1.40E+00	1.88E-01	2.01E-01	3.50E-01	1.70E-01	pCi/g
16-06041-05	TRG	CP-5028 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Thallium-208	LANL ER-130 Modified	1.50E+00	2.62E-01	2.73E-01	2.94E-01	2.18E-01	pCi/g
16-06041-06	TRG	CP-5028 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Actinium-228	LANL ER-130 Modified	8.26E-01	8.53E-01	8.54E-01	1.52E+00	7.11E-01	pCi/g
16-06041-06	TRG	CP-5028 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Bismuth-214	LANL ER-130 Modified	1.41E+00	5.20E-01	5.25E-01	9.85E-01	4.72E-01	pCi/g
16-06041-06	TRG	CP-5028 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Potassium-40	LANL ER-130 Modified	3.58E+01	6.23E+00	6.50E+00	2.77E+00	1.18E+00	pCi/g
16-06041-06	TRG	CP-5028 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Protactinium-231	LANL ER-130 Modified	-7.56E-01	5.13E+00	5.13E+00	9.57E+00	4.58E+00	pCi/g
16-06041-06	TRG	CP-5028 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-210	LANL ER-130 Modified	1.11E+00	1.71E+00	1.71E+00	2.68E+00	1.30E+00	pCi/g
16-06041-06	TRG	CP-5028 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-212	LANL ER-130 Modified	3.33E+00	6.08E-01	6.32E-01	7.07E-01	3.45E-01	pCi/g
16-06041-06	TRG	CP-5028 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-214	LANL ER-130 Modified	1.85E+00	5.26E-01	5.34E-01	8.23E-01	3.97E-01	pCi/g
16-06041-06	TRG	CP-5028 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Thallium-208	LANL ER-130 Modified	2.35E+00	6.65E-01	6.76E-01	1.92E-01	6.76E-01	pCi/g
16-06041-07	TRG	CP-5028 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Actinium-228	LANL ER-130 Modified	1.85E+00	4.81E-01	4.90E-01	9.19E-01	4.41E-01	pCi/g
16-06041-07	TRG	CP-5028 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Bismuth-214	LANL ER-130 Modified	1.85E+00	2.67E-01	2.83E-01	7.29E-01	3.58E-01	pCi/g
16-06041-07	TRG	CP-5028 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Potassium-40	LANL ER-130 Modified	3.21E+01	3.79E+00	4.14E+00	2.84E+00	1.35E+00	pCi/g
16-06041-07	TRG	CP-5028 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Protactinium-231	LANL ER-130 Modified	3.10E+00	2.43E+00	2.43E+00	4.27E+00	2.04E+00	pCi/g
16-06041-07	TRG	CP-5028 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-210	LANL ER-130 Modified	4.37E+00	2.85E+00	2.66E+00	4.28E+00	2.09E+00	pCi/g
16-06041-07	TRG	CP-5028 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-212	LANL ER-130 Modified	2.48E+00	2.84E-01	3.20E-01	4.31E-01	2.11E-01	pCi/g
16-06041-07	TRG	CP-5028 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-214	LANL ER-130 Modified	1.88E+00	2.85E-01	2.85E-01	3.77E-01	1.82E-01	pCi/g
16-06041-07	TRG	CP-5028 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Thallium-208	LANL ER-130 Modified	2.21E+00	3.78E-01	3.94E-01	9.04E-01	5.01E-01	pCi/g
16-06041-08	TRG	CP-5029 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Actinium-228	LANL ER-130 Modified	8.65E-01	2.41E-01	2.45E-01	4.60E-01	2.17E-01	pCi/g
16-06041-08	TRG	CP-5029 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Bismuth-214	LANL ER-130 Modified	1.23E+00	1.71E-01	1.82E-01	1.85E-01	8.69E-02	pCi/g
16-06041-08	TRG	CP-5029 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Potassium-40	LANL ER-130 Modified	1.18E+01	1.81E+00	1.91E+00	1.52E+00	7.10E-01	pCi/g
16-06041-08	TRG	CP-5029 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Protactinium-231	LANL ER-130 Modified	2.38E+00	2.01E+00	2.01E+00	3.16E+00	1.52E+00	pCi/g
16-06041-08	TRG	CP-5029 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-210	LANL ER-130 Modified	1.62E+00	1.27E+00	1.27E+00	2.08E+00	1.01E+00	pCi/g
16-06041-08	TRG	CP-5029 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-212	LANL ER-130 Modified	1.08E+00	1.38E-01	1.49E-01	2.90E-01	1.42E-01	pCi/g
16-06041-08	TRG	CP-5029 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-214	LANL ER-130 Modified	1.22E+00	1.70E-01	1.82E-01	2.38E-01	1.15E-01	pCi/g
16-06041-08	TRG	CP-5029 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Thallium-208	LANL ER-130 Modified	8.59E-01	1.70E-01	1.76E-01	2.22E-01	1.51E-01	pCi/g

CU=Counting Uncertainty, CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



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Eberline Analytical

Final Report of Analysis

Cecilia Greene
Auxier & Associates, Inc.
 9821 Cogdill Road, Suite 1
 Knoxville, TN 37932

SDG: 16-06041
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Work Order Details:

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06041-09	TRG	CP-5029 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Actinium-228	LANL ER-130 Modified	1.85E+00	4.81E-01	4.90E-01	8.59E-01	4.00E-01	pCi/g
16-06041-09	TRG	CP-5029 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Bismuth-214	LANL ER-130 Modified	1.57E+00	4.24E-01	4.32E-01	7.52E-01	3.64E-01	pCi/g
16-06041-09	TRG	CP-5029 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Potassium-40	LANL ER-130 Modified	2.26E+01	4.11E+00	4.27E+00	3.07E+00	1.41E+00	pCi/g
16-06041-09	TRG	CP-5029 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Protactinium-231	LANL ER-130 Modified	1.31E+00	3.04E+00	3.04E+00	5.90E+00	2.83E+00	pCi/g
16-06041-09	TRG	CP-5029 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-210	LANL ER-130 Modified	2.28E-02	1.08E+00	1.08E+00	1.65E+00	8.04E-01	pCi/g
16-06041-09	TRG	CP-5029 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-212	LANL ER-130 Modified	2.19E+00	4.41E-01	4.55E-01	5.73E-01	2.81E-01	pCi/g
16-06041-09	TRG	CP-5029 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-214	LANL ER-130 Modified	1.50E+00	3.44E-01	3.53E-01	5.10E-01	2.46E-01	pCi/g
16-06041-09	TRG	CP-5029 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Thallium-208	LANL ER-130 Modified	1.66E+00	4.03E-01	4.12E-01	6.31E-01	3.36E-01	pCi/g
16-06041-10	TRG	CP-5029 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Actinium-228	LANL ER-130 Modified	1.62E+00	3.14E-01	3.25E-01	6.33E-01	3.02E-01	pCi/g
16-06041-10	TRG	CP-5029 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Bismuth-214	LANL ER-130 Modified	1.88E+00	2.67E-01	2.84E-01	2.86E-01	1.37E-01	pCi/g
16-06041-10	TRG	CP-5029 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Potassium-40	LANL ER-130 Modified	2.46E+01	3.01E+00	3.28E+00	1.62E+00	7.59E-01	pCi/g
16-06041-10	TRG	CP-5029 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Protactinium-231	LANL ER-130 Modified	2.30E+00	2.07E+00	2.08E+00	3.54E+00	1.69E+00	pCi/g
16-06041-10	TRG	CP-5029 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-210	LANL ER-130 Modified	1.08E+00	2.23E+00	2.23E+00	2.95E+00	1.43E+00	pCi/g
16-06041-10	TRG	CP-5029 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-212	LANL ER-130 Modified	1.87E+00	2.29E-01	2.48E-01	3.49E-01	1.71E-01	pCi/g
16-06041-10	TRG	CP-5029 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-214	LANL ER-130 Modified	2.18E+00	2.35E-01	2.60E-01	3.33E-01	1.61E-01	pCi/g
16-06041-10	TRG	CP-5029 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Thallium-208	LANL ER-130 Modified	1.45E+00	2.37E-01	2.48E-01	1.63E-01	2.28E-01	pCi/g
16-06041-11	TRG	CP-5029 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Actinium-228	LANL ER-130 Modified	2.25E+00	4.38E-01	4.53E-01	7.30E-01	3.41E-01	pCi/g
16-06041-11	TRG	CP-5029 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Bismuth-214	LANL ER-130 Modified	2.06E+00	2.97E-01	3.16E-01	3.82E-01	1.80E-01	pCi/g
16-06041-11	TRG	CP-5029 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Potassium-40	LANL ER-130 Modified	2.86E+01	3.81E+00	4.09E+00	1.70E+00	7.62E-01	pCi/g
16-06041-11	TRG	CP-5029 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Protactinium-231	LANL ER-130 Modified	-3.16E+00	4.08E+00	4.08E+00	4.44E+00	2.10E+00	pCi/g
16-06041-11	TRG	CP-5029 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-210	LANL ER-130 Modified	1.95E+00	2.05E+00	2.05E+00	3.41E+00	1.68E+00	pCi/g
16-06041-11	TRG	CP-5029 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-212	LANL ER-130 Modified	2.41E+00	4.48E-01	4.65E-01	4.31E-01	2.10E-01	pCi/g
16-06041-11	TRG	CP-5029 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-214	LANL ER-130 Modified	1.99E+00	3.29E-01	3.44E-01	4.21E-01	2.02E-01	pCi/g
16-06041-11	TRG	CP-5029 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Thallium-208	LANL ER-130 Modified	1.61E+00	3.04E-01	3.15E-01	3.31E-01	2.33E-01	pCi/g
16-06041-12	TRG	CP-5030 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Actinium-228	LANL ER-130 Modified	1.16E+00	2.36E-01	2.43E-01	6.42E-01	3.08E-01	pCi/g
16-06041-12	TRG	CP-5030 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Bismuth-214	LANL ER-130 Modified	1.19E+00	1.78E-01	1.88E-01	2.56E-01	1.23E-01	pCi/g
16-06041-12	TRG	CP-5030 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Potassium-40	LANL ER-130 Modified	1.57E+01	2.03E+00	2.18E+00	1.09E+00	4.96E-01	pCi/g
16-06041-12	TRG	CP-5030 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Protactinium-231	LANL ER-130 Modified	2.24E+00	1.95E+00	1.95E+00	3.09E+00	1.49E+00	pCi/g
16-06041-12	TRG	CP-5030 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-210	LANL ER-130 Modified	2.08E+00	1.44E+00	1.44E+00	1.99E+00	9.69E-01	pCi/g
16-06041-12	TRG	CP-5030 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-212	LANL ER-130 Modified	1.30E+00	1.54E-01	1.68E-01	3.13E-01	1.54E-01	pCi/g
16-06041-12	TRG	CP-5030 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-214	LANL ER-130 Modified	1.27E+00	1.71E-01	1.83E-01	2.50E-01	1.21E-01	pCi/g
16-06041-12	TRG	CP-5030 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Thallium-208	LANL ER-130 Modified	1.01E+00	1.91E-01	1.98E-01	2.34E-01	1.76E-01	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



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Eberline Analytical Final Report of Analysis

**Cecilia Greene
Auxier & Associates, Inc.
9821 Coghill Road, Suite 1
Knoxville, TN 37932**

Report To:

**16-06041
PAP-KAN
ENVIRONMENTAL
SO**

Work Order Details:

SDG:
Project:
Analysis Category:
Sample Matrix:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06041-13	TRG	CP-5030 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Actinium-228	LANL ER-130 Modified	1.58E+00	5.61E-01	5.67E-01	1.07E+00	5.04E-01	pCi/g
16-06041-13	TRG	CP-5030 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Bismuth-214	LANL ER-130 Modified	1.51E+00	3.48E-01	3.57E-01	4.98E-01	2.38E-01	pCi/g
16-06041-13	TRG	CP-5030 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Potassium-40	LANL ER-130 Modified	2.20E+01	3.89E+00	4.05E+00	2.50E+00	1.13E+00	pCi/g
16-06041-13	TRG	CP-5030 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Protactinium-231	LANL ER-130 Modified	1.14E+00	2.72E+00	2.72E+00	5.99E+00	2.88E+00	pCi/g
16-06041-13	TRG	CP-5030 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-210	LANL ER-130 Modified	3.39E-01	1.03E+00	1.03E+00	1.60E+00	7.82E-01	pCi/g
16-06041-13	TRG	CP-5030 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-212	LANL ER-130 Modified	1.91E+00	3.78E-01	3.90E-01	4.75E-01	2.33E-01	pCi/g
16-06041-13	TRG	CP-5030 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-214	LANL ER-130 Modified	1.36E+00	3.50E-01	3.57E-01	5.95E-01	2.89E-01	pCi/g
16-06041-13	TRG	CP-5030 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Thallium-208	LANL ER-130 Modified	1.30E+00	6.24E-01	6.28E-01	9.91E-01	4.78E-01	pCi/g
16-06041-14	TRG	CP-5030 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Actinium-228	LANL ER-130 Modified	2.22E+00	3.92E-01	4.08E-01	8.33E-01	3.98E-01	pCi/g
16-06041-14	TRG	CP-5030 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Bismuth-214	LANL ER-130 Modified	1.69E+00	3.00E-01	3.12E-01	3.43E-01	1.64E-01	pCi/g
16-06041-14	TRG	CP-5030 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Potassium-40	LANL ER-130 Modified	3.30E+01	3.91E+00	4.28E+00	1.66E+00	7.62E-01	pCi/g
16-06041-14	TRG	CP-5030 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Protactinium-231	LANL ER-130 Modified	2.41E+00	2.35E+00	2.35E+00	4.09E+00	1.95E+00	pCi/g
16-06041-14	TRG	CP-5030 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-210	LANL ER-130 Modified	3.53E+00	2.62E+00	2.62E+00	4.29E+00	2.09E+00	pCi/g
16-06041-14	TRG	CP-5030 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-212	LANL ER-130 Modified	1.89E+00	2.84E-01	3.00E-01	4.68E-01	2.29E-01	pCi/g
16-06041-14	TRG	CP-5030 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-214	LANL ER-130 Modified	1.87E+00	2.42E-01	2.60E-01	3.49E-01	1.68E-01	pCi/g
16-06041-14	TRG	CP-5030 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Thallium-208	LANL ER-130 Modified	1.88E+00	2.91E-01	3.07E-01	2.08E-01	2.53E-01	pCi/g
16-06041-15	TRG	CP-5030 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Actinium-228	LANL ER-130 Modified	2.43E+00	4.80E-01	4.96E-01	7.18E-01	3.39E-01	pCi/g
16-06041-15	TRG	CP-5030 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Bismuth-214	LANL ER-130 Modified	1.79E+00	2.94E-01	3.08E-01	5.63E-01	2.99E-01	pCi/g
16-06041-15	TRG	CP-5030 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Potassium-40	LANL ER-130 Modified	2.71E+01	3.80E+00	4.04E+00	2.44E+00	1.12E+00	pCi/g
16-06041-15	TRG	CP-5030 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Protactinium-231	LANL ER-130 Modified	-1.51E-01	1.36E+00	1.36E+00	5.59E+00	2.66E+00	pCi/g
16-06041-15	TRG	CP-5030 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-210	LANL ER-130 Modified	3.45E+00	2.72E+00	2.73E+00	4.47E+00	2.18E+00	pCi/g
16-06041-15	TRG	CP-5030 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-212	LANL ER-130 Modified	2.78E+00	3.27E-01	3.57E-01	4.41E-01	2.15E-01	pCi/g
16-06041-15	TRG	CP-5030 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Lead-214	LANL ER-130 Modified	1.92E+00	2.77E-01	2.94E-01	4.05E-01	1.94E-01	pCi/g
16-06041-15	TRG	CP-5030 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06041	Thallium-208	LANL ER-130 Modified	1.62E+00	3.56E-01	3.60E-01	2.68E-01	3.69E-01	pCi/g

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



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EBERLINE ANALYTICAL CORPORATION

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Eberline Analytical Final Report of Analysis

Cecilia Greene
Auxier & Associates, Inc.
9821 Cogdill Road, Suite 1
Knoxville, TN 37932

16-06041
PAP-KAN
ENVIRONMENTAL
SO

Work Order Details:

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06041-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	5.40E+00	1.46E-01				pCi/g
16-06041-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	6.14E+00	8.82E-01	1.16E+00	6.51E-02	6.73E-02	pCi/g
16-06041-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	4.29E-02	4.78E-02	4.79E-02	6.82E-02	6.40E-02	pCi/g
16-06041-03	DUP	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	1.56E+00	3.53E-01	4.02E-01	5.69E-02	5.59E-02	pCi/g
16-06041-04	DO	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	1.44E+00	3.27E-01	3.72E-01	7.36E-02	6.74E-02	pCi/g
16-06041-05	TRG	CP-5028 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	1.30E+00	2.96E-01	3.37E-01	5.56E-02	5.42E-02	pCi/g
16-06041-06	TRG	CP-5028 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	1.21E+00	2.68E-01	3.07E-01	6.42E-02	5.90E-02	pCi/g
16-06041-07	TRG	CP-5028 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	1.33E+00	2.59E-01	3.07E-01	3.28E-02	3.54E-02	pCi/g
16-06041-08	TRG	CP-5029 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	1.43E+00	3.64E-01	4.05E-01	4.83E-02	6.13E-02	pCi/g
16-06041-09	TRG	CP-5029 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	1.20E+00	2.82E-01	3.19E-01	3.64E-02	4.64E-02	pCi/g
16-06041-10	TRG	CP-5029 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	1.51E+00	3.43E-01	3.90E-01	3.87E-02	4.93E-02	pCi/g
16-06041-11	TRG	CP-5029 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	1.47E+00	3.86E-01	4.27E-01	5.98E-02	6.87E-02	pCi/g
16-06041-12	TRG	CP-5030 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	1.31E+00	3.17E-01	3.56E-01	5.16E-02	5.57E-02	pCi/g
16-06041-13	TRG	CP-5030 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	1.63E+00	3.73E-01	4.24E-01	5.66E-02	5.84E-02	pCi/g
16-06041-14	TRG	CP-5030 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	1.25E+00	2.86E-01	3.25E-01	3.61E-02	4.59E-02	pCi/g
16-06041-15	TRG	CP-5030 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-230	EML Th-01 Modified	1.43E+00	3.30E-01	3.74E-01	5.87E-02	5.74E-02	pCi/g
16-06041-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	4.66E+00	1.68E-01				pCi/g
16-06041-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	5.20E+00	7.70E-01	8.96E-01	4.81E-02	3.01E-03	pCi/g
16-06041-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	2.06E-02	3.35E-02	3.35E-02	5.74E-02	9.01E-03	pCi/g
16-06041-03	DUP	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	1.18E+00	2.85E-01	3.03E-01	5.68E-02	9.99E-03	pCi/g
16-06041-04	DO	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	1.18E+00	2.81E-01	3.00E-01	5.64E-02	9.95E-03	pCi/g
16-06041-05	TRG	CP-5028 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	1.09E+00	2.59E-01	2.76E-01	3.67E-02	2.29E-03	pCi/g
16-06041-06	TRG	CP-5028 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	1.08E+00	2.46E-01	2.64E-01	5.55E-02	1.27E-02	pCi/g
16-06041-07	TRG	CP-5028 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	1.12E+00	2.28E-01	2.49E-01	2.98E-02	2.69E-03	pCi/g
16-06041-08	TRG	CP-5029 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	8.20E-01	2.44E-01	2.54E-01	6.93E-02	1.05E-03	pCi/g
16-06041-09	TRG	CP-5029 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	1.00E+00	2.47E-01	2.62E-01	5.49E-02	9.69E-03	pCi/g
16-06041-10	TRG	CP-5029 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	1.09E+00	2.68E-01	2.84E-01	5.22E-02	7.14E-03	pCi/g
16-06041-11	TRG	CP-5029 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	1.47E+00	3.85E-01	4.06E-01	6.56E-02	7.52E-03	pCi/g
16-06041-12	TRG	CP-5030 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	9.61E-01	2.52E-01	2.66E-01	4.10E-02	2.57E-03	pCi/g
16-06041-13	TRG	CP-5030 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	1.25E+00	3.06E-01	3.25E-01	5.99E-02	9.12E-04	pCi/g
16-06041-14	TRG	CP-5030 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	1.02E+00	2.46E-01	2.62E-01	4.53E-02	5.18E-03	pCi/g
16-06041-15	TRG	CP-5030 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Thorium-232	EML Th-01 Modified	1.06E+00	2.62E-01	2.78E-01	4.88E-02	5.59E-03	pCi/g

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



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Eberline Analytical Final Report of Analysis

Cecilia Greene
Auxier & Associates, Inc.
9821 Cogdill Road, Suite 1
Knoxville, TN 37932

SDG: 16-06041
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Work Order Details:

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06041-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	8.15E+00	2.93E-01	1.25E+00	7.01E-02	1.36E-02	pCi/g
16-06041-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	8.01E+00	1.11E+00	1.25E+00	7.01E-02	1.36E-02	pCi/g
16-06041-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	7.49E-02	5.27E-02	5.30E-02	4.63E-02	9.69E-03	pCi/g
16-06041-03	DUP	CP-5028 00-02	06/08/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	9.98E-01	2.12E-01	2.23E-01	5.68E-02	1.53E-02	pCi/g
16-06041-04	DO	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	9.95E-01	2.23E-01	2.34E-01	5.78E-02	1.39E-02	pCi/g
16-06041-05	TRG	CP-5028 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	1.11E+00	2.29E-01	2.42E-01	5.75E-02	1.42E-02	pCi/g
16-06041-06	TRG	CP-5028 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	8.90E-01	2.38E-01	2.47E-01	7.24E-02	1.63E-02	pCi/g
16-06041-07	TRG	CP-5028 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	9.40E-01	1.99E-01	2.10E-01	3.45E-02	6.28E-03	pCi/g
16-06041-08	TRG	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	9.94E-01	2.15E-01	2.27E-01	4.35E-02	8.41E-03	pCi/g
16-06041-09	TRG	CP-5028 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	1.01E+00	2.72E-01	2.82E-01	9.06E-02	2.30E-02	pCi/g
16-06041-10	TRG	CP-5028 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	1.28E+00	2.45E-01	2.61E-01	3.97E-02	7.73E-03	pCi/g
16-06041-11	TRG	CP-5028 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	1.03E+00	2.06E-01	2.19E-01	3.29E-02	5.97E-03	pCi/g
16-06041-12	TRG	CP-5030 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	1.08E+00	2.44E-01	2.56E-01	5.49E-02	1.15E-02	pCi/g
16-06041-13	TRG	CP-5030 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	1.24E+00	3.33E-01	3.45E-01	1.09E-01	2.94E-02	pCi/g
16-06041-14	TRG	CP-5030 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	7.40E-01	1.91E-01	1.99E-01	6.99E-02	1.97E-02	pCi/g
16-06041-15	TRG	CP-5030 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-234	EML U-02 Modified	8.40E-01	2.62E-01	2.69E-01	9.42E-02	2.12E-02	pCi/g
16-06041-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	5.18E-01	1.99E-01	2.03E-01	8.64E-02	6.63E-03	pCi/g
16-06041-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	1.09E-02	3.02E-02	3.02E-02	6.52E-02	1.01E-03	pCi/g
16-06041-03	DUP	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	1.33E-01	8.00E-02	8.05E-02	7.56E-02	1.42E-02	pCi/g
16-06041-04	DO	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	1.39E-01	8.25E-02	8.31E-02	5.69E-02	4.38E-03	pCi/g
16-06041-05	TRG	CP-5028 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	9.63E-02	6.50E-02	6.54E-02	4.55E-02	2.51E-03	pCi/g
16-06041-06	TRG	CP-5028 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	8.43E-02	7.75E-02	7.77E-02	8.93E-02	1.02E-02	pCi/g
16-06041-07	TRG	CP-5028 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	6.96E-02	5.34E-02	5.37E-02	4.25E-02	2.35E-03	pCi/g
16-06041-08	TRG	CP-5029 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	1.34E-01	8.03E-02	8.09E-02	6.70E-02	1.04E-03	pCi/g
16-06041-09	TRG	CP-5029 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	1.12E-01	1.01E-01	1.01E-01	1.30E-01	2.60E-02	pCi/g
16-06041-10	TRG	CP-5029 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	9.04E-02	6.11E-02	6.14E-02	4.27E-02	2.37E-03	pCi/g
16-06041-11	TRG	CP-5029 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	8.43E-02	5.80E-02	5.84E-02	4.65E-02	3.57E-03	pCi/g
16-06041-12	TRG	CP-5030 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	1.50E-01	8.95E-02	9.01E-02	6.17E-02	4.75E-03	pCi/g
16-06041-13	TRG	CP-5030 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	-3.89E-03	4.40E-02	4.40E-02	1.35E-01	2.15E-02	pCi/g
16-06041-14	TRG	CP-5030 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	1.76E-01	9.75E-02	9.63E-02	7.54E-02	1.16E-03	pCi/g
16-06041-15	TRG	CP-5030 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-235	EML U-02 Modified	1.37E-01	1.09E-01	1.09E-01	9.85E-02	7.59E-03	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



EBERLINE
SERVICES

EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical

Final Report of Analysis

Report To:

Cecilia Greene
Auxier & Associates, Inc.
9821 Cogdill Road, Suite 1
Knoxville, TN 37932

Work Order Details:

SDG: 16-06041
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06041-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	7.89E+00	2.84E-01	1.24E+00	6.98E-02	1.29E-02	pCig
16-06041-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	7.93E+00	1.10E+00	3.88E-02	5.27E-02	4.53E-03	pCig
16-06041-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	3.51E-02	3.87E-02	2.38E-01	7.03E-02	2.49E-02	pCig
16-06041-03	DUP	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	1.10E+00	2.25E-01	2.46E-01	8.58E-02	3.44E-02	pCig
16-06041-04	DO	CP-5028 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	1.07E+00	2.34E-01	2.30E-01	4.21E-02	7.54E-03	pCig
16-06041-05	TRG	CP-5028 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	1.04E+00	2.18E-01	2.39E-01	7.21E-02	1.53E-02	pCig
16-06041-06	TRG	CP-5028 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	8.48E-01	2.31E-01	2.14E-01	4.93E-02	4.25E-03	pCig
16-06041-07	TRG	CP-5028 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	9.70E-01	2.03E-01	2.31E-01	4.73E-02	9.27E-03	pCig
16-06041-08	TRG	CP-5029 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	1.02E+00	2.19E-01	3.30E-01	9.81E-02	2.68E-02	pCig
16-06041-09	TRG	CP-5029 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	1.28E+00	3.17E-01	2.44E-01	4.34E-02	8.52E-03	pCig
16-06041-10	TRG	CP-5029 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	1.16E+00	2.29E-01	1.76E-01	3.28E-02	5.38E-03	pCig
16-06041-11	TRG	CP-5029 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	7.45E-01	1.68E-01	2.87E-01	6.56E-02	1.60E-02	pCig
16-06041-12	TRG	CP-5030 00-02	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	1.16E+00	2.54E-01	2.62E-01	1.13E-01	3.10E-02	pCig
16-06041-13	TRG	CP-5030 02-05	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	8.37E-01	2.62E-01	2.00E-01	4.85E-02	8.65E-03	pCig
16-06041-14	TRG	CP-5030 05-10	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	7.58E-01	1.93E-01	2.51E-01	9.38E-02	2.00E-02	pCig
16-06041-15	TRG	CP-5030 10-15	06/06/16 00:00	6/9/2016	6/23/2016	16-06041	Uranium-238	EML U-02 Modified	7.53E-01	2.45E-01	2.51E-01	9.38E-02	2.00E-02	pCig

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



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SECTION V
ANALYTICAL STANDARD

U-8

QA/QC REVIEWED
Date 1/16/95 Initials [Signature]

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Radionuclide: U-238NAT
Half Life: $(4.468 \pm 0.005) \times 10^9$ years
Catalog No.: 7338
Source No.: 479-50

Customer: TMA EBERLINE
P.O.No.: OR2778
Reference Date: January 1 1995 12:00 PST.
Contained Radioactivity: (Total U) 8.016 μ Ci
Contained Radioactivity: (Total U) 297 kBq

Description of Solution
a. Mass of solution: 65.2896 g in a 50 ml flame sealed ampoule
b. Chemical form: Uranyl Nitrate in H₂O
c. Carrier content: None
d. Density: Approximately 1.3202 g/ml @ 20°C.

Radioimpurities Refer to attached technical data sheet

Radioactive Daughters Refer to attached technical data sheet

Radionuclide Concentration (Total U) 0.1228 μ Ci/g.

Method of Calibration

Activity calculations are based upon known specific activity and mass.

Uncertainty of Measurement
a. Systematic uncertainty in instrument calibration: $\pm 3.0\%$
b. Random uncertainty in assay: $\pm 0.0\%$
c. Random uncertainty in weighing(s): $\pm 2.0\%$
d. Total uncertainty at the 99% confidence level: $\pm 3.6\%$

NIST Traceability
This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)
See reverse side for Leak Test(s) applied to this source.

Notes
1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).

[Signature], ERIC ALLAS
QUALITY CONTROL

29 DECEMBER 1994
Date Signed



ISOTOPE PRODUCTS LABORATORIES
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BURBANK, CALIFORNIA 91504
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QUALITY CONTROL PROGRAM
MP-009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

SOLUTION REFERENCE # IPL 479-50 CURRENT DATE 10/1/2015 0:00
SOLUTION # U-8

Principal Radionuclide ^{234, 235, 238}U Half Life, Years 4.468E+09 Half Life, Days 1.632E+12

Radionuclide ^{234, 235, 238}U Reference Date 1/1/1995 0:00
Certified Activity 8.016E+00 μCi
Certified Concentration $\mu\text{Ci per gram}$

Ampoule /Solution Gross 97.6400 Weight, Grams
Empty Ampoule 32.5020 Weight, Grams
Solution Net 65.1380 Weight, Grams
Total Activity in Ampoule 8.0160 μCi

Chemical Composition of Standard Solution
Uranyl nitrate in dilute HNO₃

Dilution Instructions: Dilution Solvent Used 1M HNO₃

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 8.0160 μCi Which Equals 1.780E+07 dpm at the date listed above

And after dilution the activity of this solution is 1.77955E+04 dpm/ml
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: July 27, 2016

Verified & Approved By [Signature]

Date: 10/1/2015 0:00

QC Approval [Signature]

Date: 10/1/15



QUALITY CONTROL PROGRAM
MP-009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

Solution Reference # MP-009
IPL 479-50

Date 10/1/2015 0:00
Solution # U-8a

Principal Radionuclide

Half Life, Years

Half Life, Days

234, 235, 238 U

4.468E+09

1.632E+12

Radionuclide of Interest

234, 235, 238 U

Reference Date

1/1/1995 0:00

Parent Solution Conc. 1.7796E+04 dpm/ml

Chemical Composition of Standard Solution

Uranly Nitrate in 1M HNO₃

Dilution Instructions:

Dilution Solvent Used

1M HNO₃

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 4.0000 ml

Total Activity: 7.1182E+04 dpm

Final Volume: 1000.00 ml

Final Activity Concentration: 7.1182E+01 dpm/ml

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Isotopic Distribution as:

U-238 Atom % = 48.239 U-238 = 71.182 dpm/ml X 0.48249 = 34.345 dpm/ml
U-235 Atom % = 2.25 U-235 = 71.182 dpm/ml X 0.0225 = 1.602 dpm/ml
U-234 Atom % = 49.501 U-238 = 71.182 dpm/ml X 0.49501 = 35.236 dpm/ml
All values +/- 3.6%

Isotopic ratios from manufacturer's data sheet

Expiration Date: July 27, 2016

Verified & Approved By

Date: 10/1/2015 0:00

QC Approval

Date: 10/1/15

RECORD COPY

Tracer Solution for Environmental Analysis & Disequilibrium Studies

Product Description & Measurement Certificate

Description Principal radionuclide: **uranium 232 (U-232)** Product code: **UDP10050**
Daughter Nuclide: **Th-228** Batch Number: **92/232/67**

Measurement Reference date: **01 March 2000**
Radioactive concentration U-232 **6.739E+03 becquerels per gram of solution**
which is equivalent to **1.821E-01 microcuries per gram of solution**
Mass of solution **5.358 grams**
Volume of solution **5.035 millilitres**
Total activity of U-232 **3.61E+04 becquerels**
which is equivalent to **9.76E-01 microcuries**

Accuracy Method of measurement (see reverse of this certificate)
Random uncertainty is: $\pm 0.7\%$ Systematic uncertainty: $\pm 0.5\%$
Overall uncertainty in the radioactive concentration quoted above: $\pm 1.7\%$
Overall uncertainty is defined on the reverse of this certificate.

Radionuclidic Purity Any radioactive impurities measured are listed below, expressed as percentages of the activity of the principle radionuclide at the reference date .

Th-228 and daughter activity removed 2 Feb 2000
U-232 daughters activity will increase with time. By alpha 88% U-232, 12% daughters on 1/3/00

Isotopic Purity The isotopic composition, expressed as atom per cent at the reference date .

Not measured

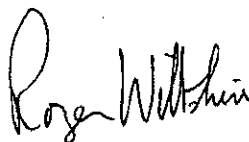
Chemical Composition Calculated weight of U-232, 4.42E-08 grams, as 2M HNO₃ solution in a flame sealed glass vial.
This Tracer solution has been produced 'carrier free'.

Physical Data Recommended half life of uranium 232: 6.980E+01 years
Principle energies of alpha emissions (MeV): 5.263 31.7%, 5.320 68.0%
Branching ratio for alpha emission: 100%
Calculated specific activity of uranium 232: 8.167E+05 Bq per microgram U-232.

Remarks For safety information and notes to ensure correct usage by all persons handling this radioactive Tracer solution please read the instructions accompanying the package.

AEA Technology operates a quality management system which has been independently audited and approved to ISO 9001.

Approved
Signatory



Roger Wiltshire

Project Ref. AE2315

Prepared and characterised in the UK, for world wide distribution by **Isotrak, AEA Technology, QSA.**



QUALITY CONTROL PROGRAM

MP-009

Rev.8; 11/01/03

Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY RADIOACTIVE REFERENCE SOLUTIONS PRIMARY DILUTION RECERTIFICATION MP 009

SOLUTION REFERENCE # AEA/Amersham 92/232/67 CURRENT DATE 10/27/2015 0:00
SOLUTION # U-10

Principal Radionuclide ²³²U Half Life, Years 7.200E+01 Half Life, Days 2.630E+04

Radionuclide ²³²U Reference Date 3/1/2000 0:00
Certified Activity 9.760E-01 μCi
Certified Concentration $\mu\text{Ci per gram}$

Ampoule /Solution Gross Weight, Grams
Empty Ampoule Weight, Grams
Solution Net Weight, Grams
Total Activity in Ampoule 0.9760 μCi

Chemical Composition of Standard Solution
²³²U(NO₃)₆ in 2M HNO₃

Dilution Instructions: Dilution Solvent Used 2M HNO₃

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 0.9760 μCi Which Equals 2.167E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.167E+03 dpm/ml
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: October 26, 2016

Verified & Approved By 

Date: 10/27/2015 0:00

QC Approval 

Date: 10/28/15



QUALITY CONTROL PROGRAM
MP-009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

Solution Reference #		MP-009	Date	10/27/2015 0:00
AEA/Amersham 92/232/67			Solution #	U-10a
Principal Radionuclide	Half Life, Years		Half Life, Days	
²³² U	7.200E+01		2.630E+04	

Radionuclide of Interest	²³² U	Reference Date	3/1/2000 0:00
Parent Solution Conc.	2.167E+03 dpm/ml		

Chemical Composition of Standard Solution
²³²U(NO₃)₆ in 2M HNO₃

Dilution Instructions:	Dilution Solvent Used	2M HNO ₃
------------------------	-----------------------	---------------------


SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution:	10.0000 ml	Final Activity Concentration:	2.1670E+01 dpm/ml
Total Activity:	2.1670E+04 dpm		
Final Volume:	1000.00 ml		

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: October 26, 2016

Verified & Approved By:  Date: 10/27/2015 0:00
QC Approval:  Date: 10/28/15

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Radionuclide:	Th-232	Customer:	TMA EBERLINE
Half Life:	$(1.405 \pm 0.006) \times 10^{10}$ years	P.O.No.:	VH1632
Catalog No.:	7232	Reference Date:	November 1 1993 12:00 PST.
Source No.:	435-104-2	Contained Radioactivity:	(Th-232) 0.0933 μ Ci.
		Contained Radioactivity:	(Th-232) 3.45 kBq.

Description of Solution

- | | |
|----------------------|---|
| a. Mass of solution: | 11.9712 g (in a 10 ml flame sealed ampoule) |
| b. Chemical form: | Th(NO ₃) ₄ in water |
| c. Carrier content: | None added |
| d. Density: | Approx. 1.21 g/ml @ 20°C. |

Radioimpurities: None detected (other than daughters).

Radioactive Daughters

Ra-228, Ac-228, Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Po-212, Tl-208

Radionuclide Concentration

(Th-232) 0.00779 μ Ci/g.

Method of Calibration

Activity calculations are based upon known specific activity and mass.

Uncertainty of Measurement

- | | |
|--|-------|
| a. Systematic uncertainty in instrument calibration: | ±3.0% |
| b. Random uncertainty in assay: | ±0.0% |
| c. Random uncertainty in weighing(s): | ±2.0% |
| d. Total uncertainty at the 99% confidence level: | ±3.6% |

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES
1800 North Keystone Street
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(818) 843 - 7000

Anna U. Khan

QUALITY CONTROL

Nov. 8, 1993

Date Signed



QUALITY CONTROL PROGRAM

MP-009

Rev.8; 1/10/03

Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY RADIOACTIVE REFERENCE SOLUTIONS PRIMARY DILUTION RECERTIFICATION MP 009

SOLUTION REFERENCE # IPL 435-104-2 CURRENT DATE 9/29/2015 0:00
SOLUTION # Th-8

Principal Radionuclide ²³²Th, ²²⁸Th Half Life, Years 1.405E+10 Half Life, Days 5.132E+12

Radionuclide ²³² & ²²⁸Th Reference Date 11/1/1993 0:00
Certified Activity 9.330E-02 μCi
Certified Concentration $\mu\text{Ci per gram}$

Ampoule /Solution Gross 18.8415 Weight, Grams
Empty Ampoule 6.9296 Weight, Grams
Solution Net 11.9119 Weight, Grams
Total Activity in Ampoule 0.0933 μCi

Chemical Composition of Standard Solution
Th(NO₃)₄ in H₂O

Dilution Instructions: Dilution Solvent Used 1% Nitric Acid

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 0.0933 μCi Which Equals 2.071E+05 dpm at the date listed above

And after dilution the activity of this solution is 2.071E+02 dpm/ml This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: August 25, 2016

Verified & Approved By [Signature] Date: 9/29/2015 0:00
QC Approval [Signature] Date: 9/30/15



QUALITY CONTROL PROGRAM
MP-009

Rev.8; 1/10/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

MP-009 Date: 9/29/2015 0:00
Solution Reference # IPL 435-104-2 Solution #: Th-8b

Principal Radionuclide	Half Life, Years	Half Life, Days
²²⁸ & ²³² Th	1.405E+10	5.132E+12

Radionuclide of Interest: ²²⁸ & ²³²Th Reference Date: 11/1/1993 0:00
Parent Solution Conc.: 2.07E+02 dpm/ml

Chemical Composition of Standard Solution
Th(NO₃)₄ in 1% HNO₃

Dilution Instructions: Dilution Solvent Used: 1% Nitric Acid

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 500.0000 ml
Total Activity: 1.0355E+05 dpm Final Activity Concentration: 1.0355E+02 dpm/ml
Final Volume: 1000.00 ml

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: August 25, 2016

Verified & Approved By: 

Date: 9/29/2015 0:00

QC Approval: 

Date: 9/30/15

QA/QC REVIEWED

Date

10/14/91

Initials wt

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Received
OCT 14 1991
TMA/Eberline
Oak Ridge Lab

Radionuclide: Th-230
Half Life: $(7.54 \pm 0.03) \times 10^4$ years
Catalog No.: 7230
Source No.: 388-116

Customer: TMA EBERLINE
P.O.No.: TT4944
Reference Date: November 1 1991
Contained Radioactivity: 1.036 μCi

Description of Solution

- a. Mass of solution: 5.0042 grams.
- b. Chemical form: Th(NO₃)₄ in 0.1N HNO₃
- c. Carrier content: None added
- d. Density: 1.0016 gram/ml @ 20°C.

Radioimpurities

See attached technical data sheet

Radioactive Daughters

See attached technical data sheet

Radionuclide Concentration

0.207 $\mu\text{Ci/gram}$

Method of Calibration

Weighed aliquots of the solution were assayed using a liquid scintillation counter.

Uncertainty of Measurement

- a. Systematic uncertainty in instrument calibration: $\pm 2.0\%$
- b. Random uncertainty in assay: $\pm 0.5\%$
- c. Random uncertainty in weighing(s): $\pm 0.2\%$
- d. Total uncertainty at the 99% confidence level: $\pm 2.7\%$

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Notes

1. Nuclear data were taken from "Table of Isotopes", Seventh Edition, edited by Virginia S. Shirley.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials. (As in NRC Regulatory Guide 4.15)



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[Signature]
QUALITY CONTROL



QUALITY CONTROL PROGRAM
MP-009

Rev.14; 10/10/2012
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

SOLUTION REFERENCE # IPL 388-116 CURRENT DATE 4/15/2015 0:00
SOLUTION # Th-1

Principal Radionuclide ²³⁰Th Half Life, Years 7.540E+04 Half Life, Days 2.754E+07

Radionuclide ²³⁰Thorium Reference Date 11/1/1991 0:00
Certified Activity 1.036E+00 μCi
Certified Concentration $\mu\text{Ci per gram}$

Ampoule /Solution Gross 9.2660 Weight, Grams
Empty Ampoule 4.6218 Weight, Grams
Solution Net 4.6442 Weight, Grams
Total Activity in Ampoule 1.0360 μCi

Chemical Composition of Standard Solution
²³⁰Th(NO₃)₄ in 0.1N HNO₃

Dilution Instructions: Dilution Solvent Used 0.1N HNO₃
Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 1.0360 μCi Which Equals 2.300E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.300E+03 dpm/ml
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: February 12, 2016

Recertified By [Signature]
QC Approval [Signature]

Date: 4/15/2015 0:00
Date: 4/15/15



QUALITY CONTROL PROGRAM
MP-009

Rev.14; 10/10/2012
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

Solution Reference # MP-009 IPL 388-116 Date 4/15/2015 0:00
Solution # Th-1b

Principal Radionuclide	Half Life, Years	Half Life, Days
<u>²³⁰Th</u>	<u>7.540E+04</u>	<u>2.754E+07</u>

Radionuclide of Interest ²³⁰Thorium Reference Date 11/1/1991 0:00
Parent Solution Conc. 2.30E+03 dpm/ml

Chemical Composition of Standard Solution
²³⁰Th(NO₃)₄ in 0.1N HNO₃

Dilution Instructions: Dilution Solvent Used 0.1N HNO₃

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 10.0000 ml
Total Activity: 2.2999E+04 dpm
Final Volume: 1000.00 ml
Final Activity Concentration: 2.2999E+01 dpm/ml

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: February 12, 2016

Recertified By [Signature]

Date: 4/15/2015 0:00

QC Approval [Signature]

Date: 4/15/15



**Isotope Products
Laboratories**

An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

Th-18

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Radionuclide:	Th-229	Customer:	EBERLINE SERVICES		
Half-life:	7340 ± 160 years	P.O. No.:	00009633		
Catalog No.:	7229	Reference Date:	15-Jan-02	12:00	PST
Source No.:	867-54	Contained Radioactivity:	1.013	μCi	37.48 kBq
			(Th-229 only)		

Physical Description:

A. Mass of solution:	5.0147 g in 5 mL flame-sealed ampoule
B. Chemical form:	Th(NO ₃) ₄ in 0.1M HNO ₃
C. Carrier content:	10μg Th/mL
D. Density:	1.0016 g/mL @ 20°C.

Radioimpurities:

None detected (daughters in equilibrium)

Radionuclide Concentration: 0.2020 μCi/g, 7.474 kBq/g

Method of Calibration:

This source was prepared from a weighed aliquot of solution whose activity in μCi/g was determined using gamma ray spectrometry.

Peak energy used for integration:	193.5 keV
Branching ratio used:	0.0441 gammas per decay

Uncertainty of Measurement:

A. Type A (random) uncertainty:	± 0.7 %
B. Type B (systematic) uncertainty:	± 3.0 %
C. Uncertainty in aliquot weighing:	± 0.0 %
D. Total uncertainty at the 99% confidence level:	± 3.1 %

Notes:

- See reverse side for leak test(s) performed on this source.
- IPL participates in a NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).
- Nuclear data was taken from IAEA Technical Report Series No. 261.
- This solution has a working life of 5 years.

Alan U. Khan

Quality Control

9-Jan-02

Date Signed

IPL Ref. No.: 867-54

ISO 9001 CERTIFIED

Medical Imaging Laboratory
24937 Avenue Tibbitts Valencia, California 91355

Industrial Gauging Laboratory
1800 North Keystone Street Burbank, California 91504

: 00037



QUALITY CONTROL PROGRAM
MP-009

Rev.8; 1/10/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

SOLUTION REFERENCE # IPL 867-54 CURRENT DATE 9/29/2015 0:00
SOLUTION # Th-18

Principal Radionuclide ²²⁸Th Half Life, Years 7.340E+03 Half Life, Days 2.681E+06

Radionuclide ²²⁹Th Reference Date 1/15/2002 0:00
Certified Activity 1.013E+00 μCi
Certified Concentration $\mu\text{Ci per gram}$

Ampoule /Solution Gross 8.7752 Weight, Grams
Empty Ampoule 3.7591 Weight, Grams
Solution Net 5.0161 Weight, Grams
Total Activity in Ampoule 1.0130 μCi

Chemical Composition of Standard Solution
²²⁸Th(NO₃)₄ in 0.1M HNO₃

Dilution Instructions: Dilution Solvent Used 0.1 M HNO₃

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 1.0130 μCi Which Equals 2.249E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.249E+03 dpm/ml
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: August 24, 2016

Verified & Approved By [Signature]
QC Approval [Signature]

Date: 9/29/2015 0:00
Date: 9/30/15



QUALITY CONTROL PROGRAM
MP-009

Rev.7; 9/29/99
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

Solution Reference # MP-009 | PL867-54 | Date 9/29/2015 0:00
Solution # Th-18a

Principal Radionuclide	Half Life, Years	Half Life, Days
²²⁹ Th	7.340E+03	2.681E+06

Radionuclide of Interest ²²⁹Th | Reference Date 1/15/2002 0:00
Parent Solution Conc. 2.25E+03 dpm/ml

Chemical Composition of Standard Solution
TH(NO₃)₄ in 0.1M HNO₃

Dilution Instructions: | Dilution Solvent Used 0.1M HNO₃

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution:	<u>10.0000</u> ml	Final Activity Concentration:	<u>2.2490E+01</u> dpm/ml
Total Activity:	<u>2.2490E+04</u> dpm		
Final Volume:	<u>1000.00</u> ml		

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: August 24, 2016

Verified & Approved By

Date: 9/29/2015 0:00

QC Approval

Date: 9/30/15



Eckert & Ziegler

Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404-352-8677
Fax 404-352-2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

GAS-1402

98503

Sand in 16 Ounce PP Taral Jar Filled to Capacity

Customer: Eberline Analytical Corporation
P.O. No.: OR-1405030, Item 6 Product Code: 8401-EG-SAN
Reference Date: 01-Oct-2014 12:00 PM EST Grams of Master Source: 0.017608

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solutions. Additional radionuclides were added gravimetrically from solutions calibrated by gamma-ray spectrometry, ionization chamber, or liquid scintillation counting. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Nuclide	Gamma-Ray Energy (keV)	Half-Life, Days	Master Source* γ ps/gram	This Source γ ps	Uncertainty*, %			Calibration Method*
					u_A	u_B	U	
Am-241	59.5	1.580E+05	—	2.030E+03	0.1	1.8	3.6	4 π LS
Cd-109	88.0	4.614E+02	1.663E+05	2.929E+03	0.5	2.0	4.1	HPGe
Co-57	122.1	2.717E+02	8.913E+04	1.569E+03	0.4	1.7	3.5	HPGe
Ce-139	165.9	1.376E+02	1.241E+05	2.185E+03	0.4	1.7	3.5	HPGe
Hg-203	279.2	4.659E+01	2.875E+05	4.710E+03	0.3	1.7	3.5	HPGe
Sn-113	391.7	1.151E+02	1.796E+05	3.163E+03	0.4	1.9	3.9	HPGe
Cs-137	661.7	1.099E+04	1.111E+05	1.956E+03	0.7	1.9	4.0	HPGe
Y-88	898.0	1.066E+02	4.223E+05	7.435E+03	0.7	1.7	3.7	HPGe
Co-60	1173.2	1.925E+03	2.091E+05	3.683E+03	0.7	1.8	3.9	HPGe
Co-60	1332.5	1.925E+03	2.094E+05	3.687E+03	0.7	1.8	3.9	HPGe
Y-88	1836.1	1.066E+02	4.471E+05	7.872E+03	0.7	1.7	3.7	HPGe

* Master Source refers to Analytics' 8-isotope mixture which is calibrated quarterly.

Calibration Methods: 4 π LS - 4 pi Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber. Uncertainty: U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ANA Form005 Rev. —



SECTION VI
QUALITY CONTROL SAMPLE RESULTS SUMMARY

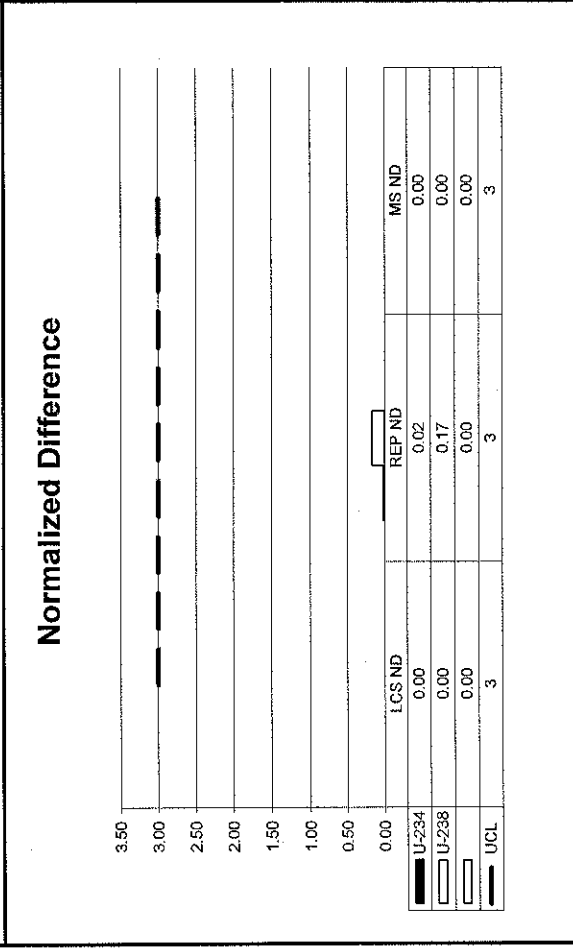
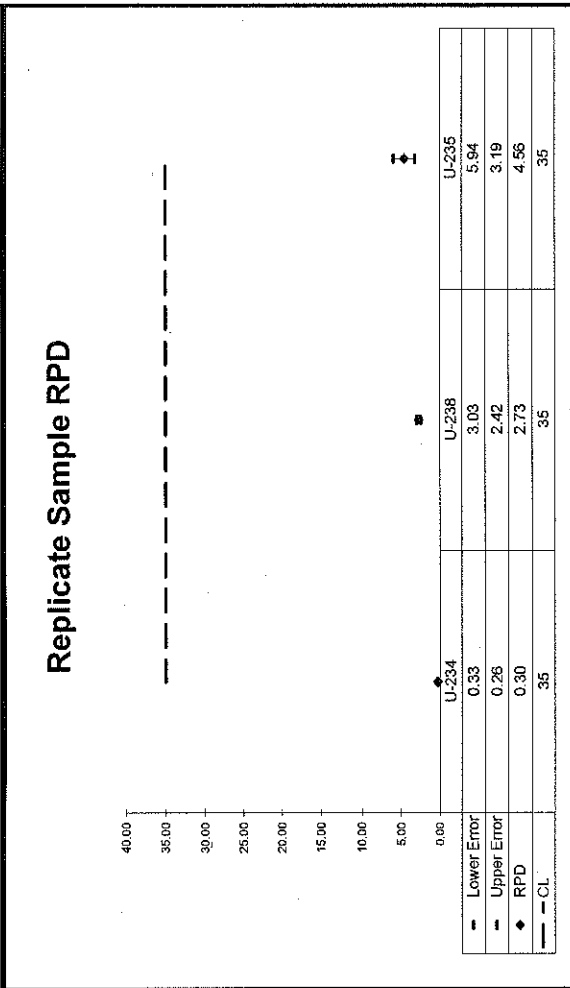
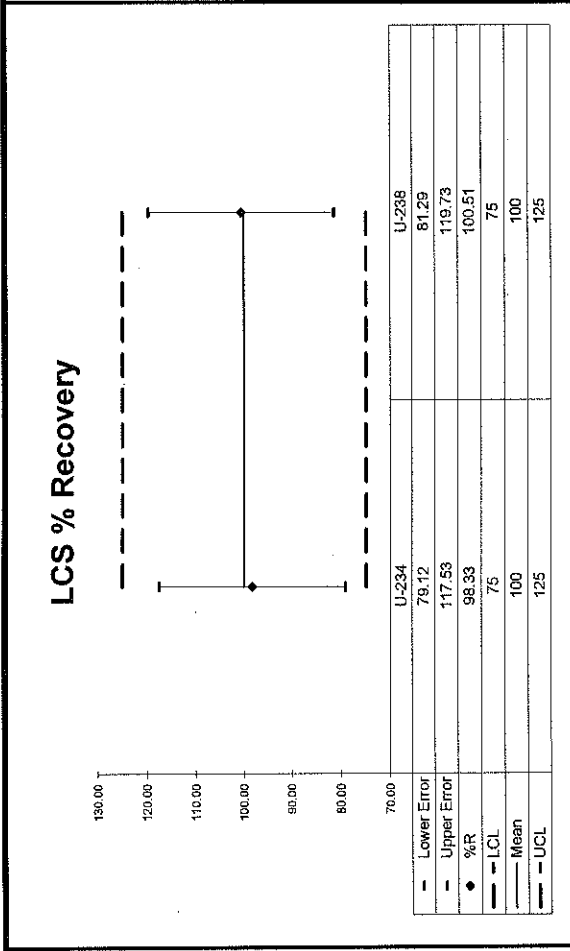
WO	Analysis		Run	Activity Units	Aliquot Units	Client Name	
16-06041	UUISO	1	pCi	g	Auxier & Associates, Inc.		

Laboratory Control Sample												
Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
U-234	98.33%	15.61%	100.00%	3.60%	8.15E+00	2.93E-01	8.01E+00	1.25E+00	U-8a	3.20E+01	3.60E+00	5.65E-01
U-238	100.51%	15.62%	100.00%	3.60%	7.89E+00	2.84E-01	7.93E+00	1.24E+00	U-8a	3.10E+01	3.60E+00	5.65E-01

Matrix Spike													
Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

Replicate Sample										QC Summary			
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND	
U-234	0.02	0.30	9.95E-01	2.34E-01	9.98E-01	2.23E-01	0.98	OK			OK	OK	
U-238	0.17	2.73	1.07E+00	2.46E-01	1.10E+00	2.38E-01	1.01	OK			OK	OK	
U-235	0.10	4.56	1.39E-01	8.31E-02	1.33E-01	8.05E-02		OK			NA	OK	

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06041	UUISO	1	pCi	g	Auxier & Associates, Inc.



No Matrix Spike

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06041	THISO	1	pCi	g	Auxier & Associates, Inc.

Laboratory Control Sample

Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known MS CSU	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
TH-228	122.77%	17.33%	100.00%	3.60%	4.66E+00	1.68E-01	5.72E+00	9.90E-01	Th-8b	1.04E+02	3.60E+00	9.98E-02
TH-230	113.75%	18.94%	100.00%	2.70%	5.40E+00	1.46E-01	6.14E+00	1.16E+00	Th-1b	2.35E+01	2.70E+00	5.10E-01
TH-232	111.77%	17.22%	100.00%	3.60%	4.66E+00	1.68E-01	5.20E+00	8.96E-01	Th-8b	1.04E+02	3.60E+00	9.98E-02

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

Replicate Sample

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
TH-228	0.88	16.33	1.13E+00	2.94E-01	1.33E+00	3.39E-01	1.23	OK			OK	OK
TH-230	0.43	8.02	1.44E+00	3.72E-01	1.56E+00	4.02E-01	1.14	OK			OK	OK
TH-232	0.01	0.15	1.18E+00	3.00E-01	1.18E+00	3.03E-01	1.12	OK			OK	OK

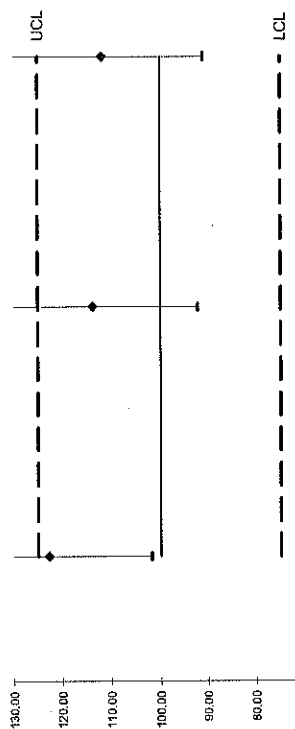
QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
TH-228	0.88	16.33	1.13E+00	2.94E-01	1.33E+00	3.39E-01	1.23	OK			OK	OK
TH-230	0.43	8.02	1.44E+00	3.72E-01	1.56E+00	4.02E-01	1.14	OK			OK	OK
TH-232	0.01	0.15	1.18E+00	3.00E-01	1.18E+00	3.03E-01	1.12	OK			OK	OK



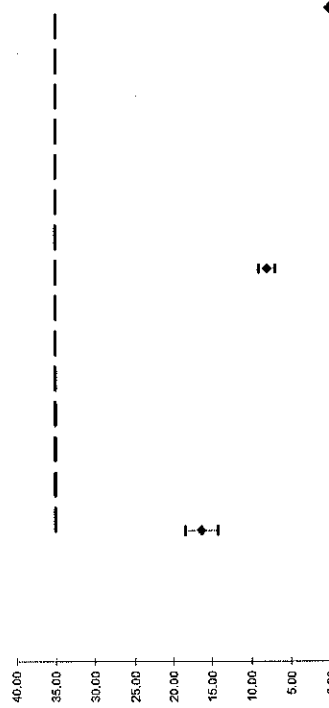
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06041	THISO	1	pCi	g	Auxier & Associates, Inc.

LCS % Recovery



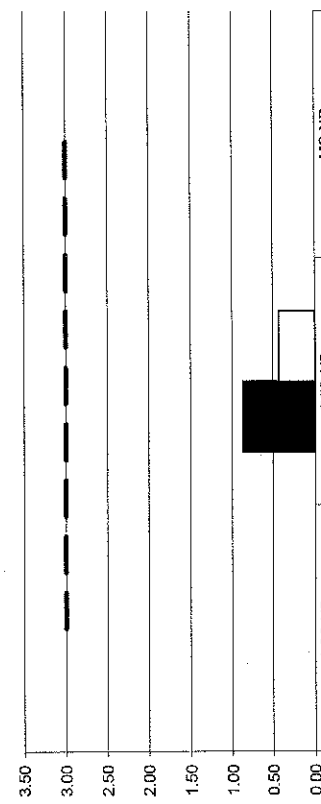
	TH-228	TH-230	TH-232
Lower Error	101.84	92.11	90.95
Upper Error	143.70	136.40	132.59
%R	122.77	113.75	111.77
LCL	75	75	75
Mean	100	100	100
UCL	125	125	125

Replicate Sample RPD



	TH-228	TH-230	TH-232
Lower Error	18.43	9.05	0.17
Upper Error	14.23	6.98	0.13
RPD	16.33	8.02	0.15
-CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
TH-228	0.00	0.88	0.00
TH-230	0.00	0.43	0.00
UCL	3	3	3

No Matrix Spike

WO	Analysis		Run	Activity Units	Aliquot Units	Client Name		
16-06041	Gamma	1	pCi	g	Auxier & Associates, Inc.			

Laboratory Control Sample

Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
CO-60	103.78%	7.78%	100.00%	4.00%	1.37E+02	5.48E+00	1.42E+02	1.11E+01	GAS-1302	1.37E+02	5.48E+00	7.36E+02
CS-137	104.20%	10.34%	100.00%	4.00%	8.69E+01	3.48E+00	9.06E+01	9.37E+00	GAS-1302	8.69E+01	3.48E+00	7.36E+02

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

Replicate Sample

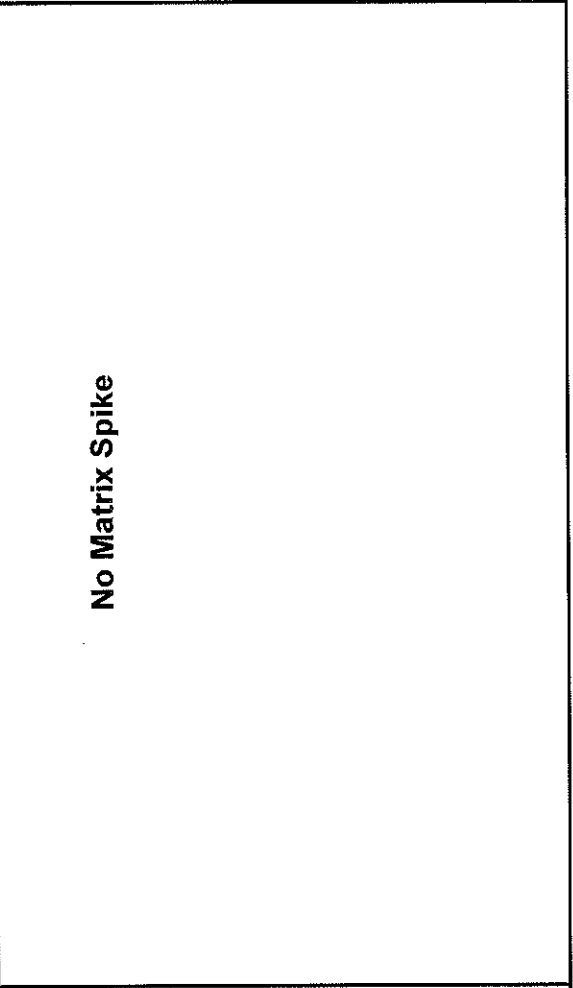
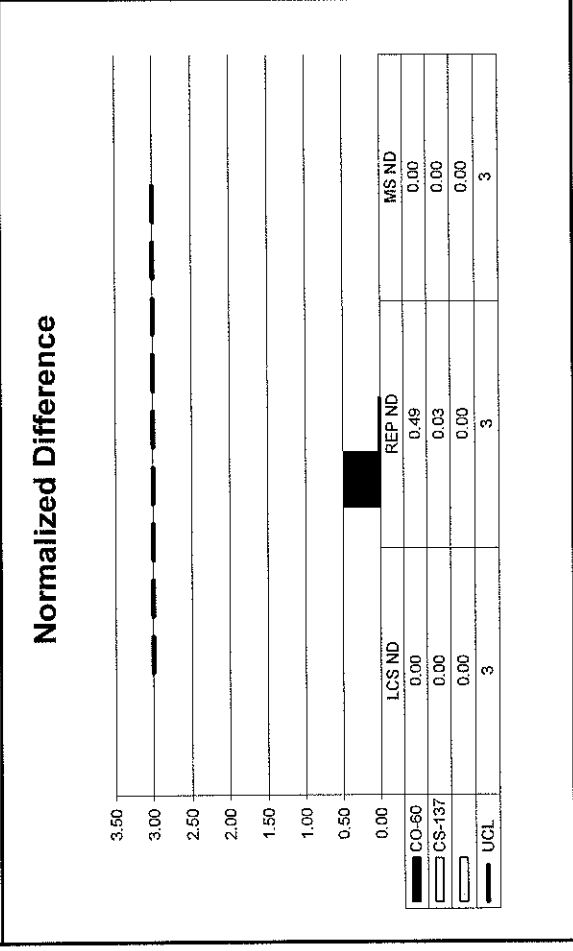
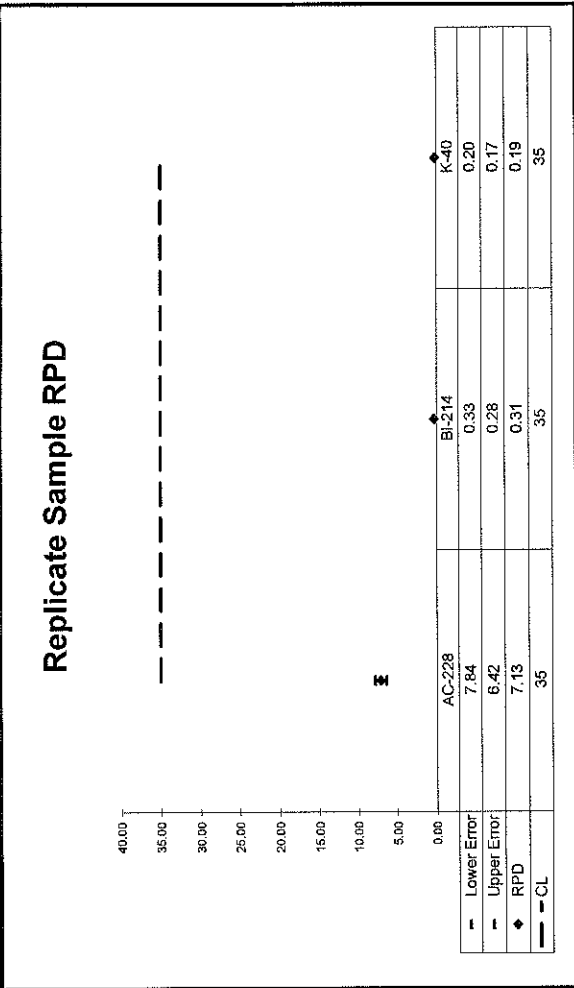
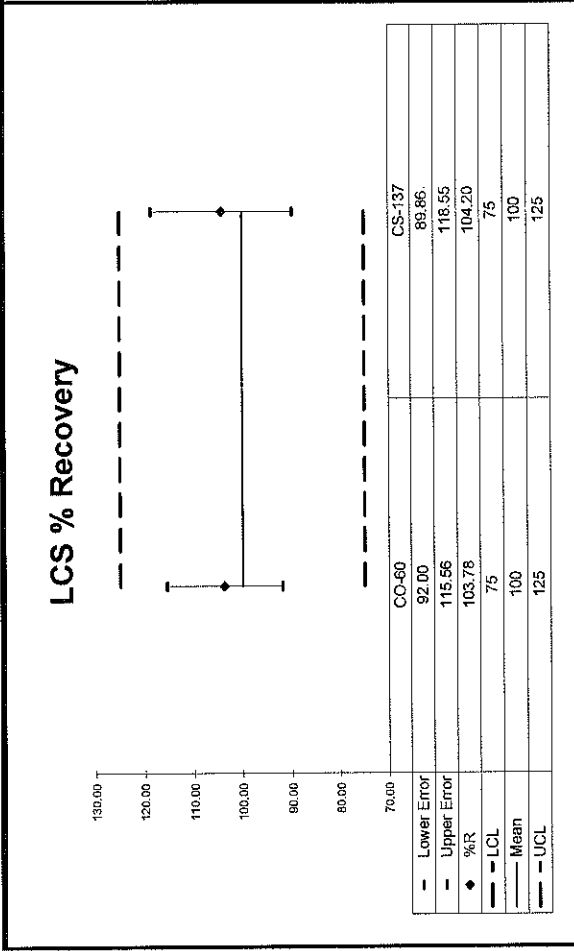
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
AC-228	0.49	7.13	1.71E+00	3.32E-01	1.59E+00	3.27E-01	1.04	OK	<CS-137	AC-228>	OK	
BI-214	0.03	0.31	1.49E+00	2.43E-01	1.49E+00	2.58E-01	1.04	OK	<CO-60	BI-214>	OK	OK
K-40	0.02	0.19	2.33E+01	3.18E+00	2.34E+01	3.13E+00				K-40>	OK	OK

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
AC-228	0.49	7.13	1.71E+00	3.32E-01	1.59E+00	3.27E-01	1.04	OK	<CS-137	AC-228>	OK	
BI-214	0.03	0.31	1.49E+00	2.43E-01	1.49E+00	2.58E-01	1.04	OK	<CO-60	BI-214>	OK	OK
K-40	0.02	0.19	2.33E+01	3.18E+00	2.34E+01	3.13E+00				K-40>	OK	OK



WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06041	Gamma	1	pCi	g	Auxier & Associates, Inc.



SECTION VII


**LABORATORY TECHNICIAN'S NOTES
& RUN LOGS**

ISO U NOTES

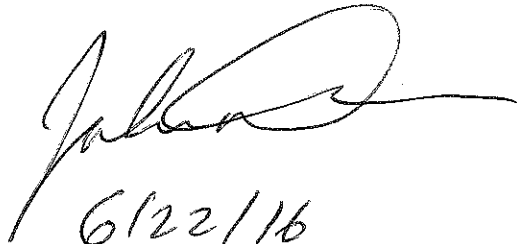
 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	16-06041
		Analysis Code	UUISO
		Run Number	1


#	Date	Dept	User	Notes
1	06/16/16 12:18	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested on low heat with HF. Samples were further digested with a mixed acid digestion on medium heat. Samples were submitted to separations.

6-16-16 JPachella

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	16-06041
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept.	User	Notes
1	06/16/16 12:18	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested on low heat with HF. Samples were further digested with a mixed acid digestion on medium heat. Samples were submitted to separations.
2	06/22/16 16:37	CHEM	JDEMELAS	Added concentrated HCl to sample beakers and heated to dryness; Added 20 ml 8N HCL to samples and transferred to new, labeled C-Tubes, rinsing with 8N HCl to bring volume to ~35 ml; Preconditioned resin columns with 35 ml 8N HCl; Centrifuged samples and loaded onto columns; Rinsed C-Tubes with 20 ml 8N HCl, centrifuged as needed and loaded onto columns; Rinsed columns with 35 ml 8N HCl - 0.1N NH4I, 35 ml of 6.5N HCl - 0.04N HF, and 10 ml of 6.5N HCl; Eluted Uranium with 50 ml of 0.5N HCl into clean, labeled 100 ml beakers; Dried-down samples on hotplate; Dissolved samples in ~10 ml of concentrated HCl; Transferred to new, labeled C-Tubes with DI H2O. Set samples aside for later precipitation and filtering.


 6/22/16

 EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	16-06041
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	06/16/16 12:18	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested on low heat with HF. Samples were further digested with a mixed acid digestion on medium heat. Samples were submitted to separations.
2	06/22/16 16:37	CHEM	JDEMELAS	Added concentrated HCl to sample beakers and heated to dryness; Added 20 ml 8N HCL to samples and transferred to new, labeled C-Tubes, rinsing with 8N HCl to bring volume to ~35 ml; Preconditioned resin columns with 35 ml 8N HCl; Centrifuged samples and loaded onto columns; Rinsed C-Tubes with 20 ml 8N HCl, centrifuged as needed and loaded onto columns; Rinsed columns with 35 ml 8N HCl - 0.1N NH4I, 35 ml of 6.5N HCl - 0.04N HF, and 10 ml of 6.5N HCl; Eluted Uranium with 50 ml of 0.5N HCl into clean, labeled 100 ml beakers; Dried-down samples on hotplate; Dissolved samples in ~10 ml of concentrated HCl; Transferred to new, labeled C-Tubes with DI H2O. Set samples aside for later precipitation and filtering.
3	06/23/16 05:02	CHEM	TSMITH	Followed steps 12.1.7 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Uranium)

*6-23-16
TSM*



Reagents Used in an Analysis

Internal Work Order

16-06041

Analysis Code

Run

UUISO


1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
016569P	Hydrofluoric Acid	Reagent Grade	JPACHELLA	6/16/2016
017533P	Nitric Acid	Reagent Grade	JPACHELLA	6/16/2016
017589P	Perchloric Acid	Reagent Grade	JPACHELLA	6/16/2016
017243P	Sulfuric Acid	Reagent Grade	JPACHELLA	6/16/2016
017115P	Anion Exchange Resin	Reagent Grade	JDEMELAS	6/22/2016
017714S	HCl - HF	6.5N - 0.04N	JDEMELAS	6/22/2016
017638D01	Hydrochloric Acid	0.5N	JDEMELAS	6/22/2016
017645S	Hydrochloric Acid	6.5N	JDEMELAS	6/22/2016
017518P	Hydrochloric Acid	Reagent Grade	JDEMELAS	6/22/2016
017740S	HCl - NH4I	8N - 0.1M	JDEMELAS	6/22/2016
017739S	Hydrochloric Acid	8N	JDEMELAS	6/22/2016
017726S	HCl - HF	6.5N - 0.04N	JDEMELAS	6/22/2016
017728S	Hydrochloric Acid	6.5N	JDEMELAS	6/22/2016
017713S	Carbon substrate	Solution	TSMITH	6/23/2016
017559P	Hydrofluoric Acid	Reagent Grade	TSMITH	6/23/2016
017340S	Neodymium Carrier	1 mg/ml	TSMITH	6/23/2016
017649P	Reagent Alcohol	Reagent Grade	TSMITH	6/23/2016
016606P	Titanous Chloride	Reagent Grade	TSMITH	6/23/2016

Alph #3

Date	Sample #	Client	Location	CT#	Media	Spec
6/21/16	1606058A(1-7)	PCC	0828	2hr 50m	iso-TR	AG
6/21/16	1606031A(1-6)	TN Dept of Health	0832	16 hr	UU	KB
6/21/16	1606029A(8-19)	TN Dept of Health	1132	16 hr	UU	KB
6/21/16	1605079B(1-3,5-7)	Accuwest	1649	2hr 50m	Rele	KB
6/22/16	Daily Pulser	Lab	0622	10 min	NA	AG
6/22/16	1606072A(1-4)	Indust. + Env.	0846	2hr 50m	Rele	KB
6/22/16	1606035A(1-4,7)	UCOR	0846	2hr 50m	ISO-Pu	KB
6/22/16	1606035A(1-4)	UCOR	0847	2hr 50m	NA	KB
6/22/16	1606035A(1-4)	UCOR	0848	2hr 50m	Am ²⁴¹	KB
6/22/16	Regent 30A(1)	Lab	0848	2hr 50m	PuNT	KB
6/22/16	1606035A(1-4)	UCOR	0849	2hr 50m	Am ²⁴³	KB
6/22/16	1606035A(1-4)	UCOR	0850	2hr 50m	Pu ²⁴²	KB
6/22/16	1606040A(15)	Auxier	1159	2hr 50m	ISO-TR	KB
6/22/16	1606035A(1-4)	UCOR	1159	2hr 50m	UU	KB
6/22/16	1606035A(1-4)	UCOR	1200	2hr 50m	ISO-TR	KB
6/22/16	1606045A(1-4)	USA	1201	2hr 50m	UU	KB
6/22/16	1606040A(1-13)	Auxier	1202	2hr 50m	UU	KB
6/22/16	1606040A(14-15)	Auxier	1502	2hr 50m	UU	KB
6/22/16	1606045A(1-4)	USA	1528	2hr 50m	Rele	KB
6/22/16	1606040A(14)	Auxier	1529	2hr 50m	ISO-TR	KB
6/22/16	1606043A(1-10)	MPA	1826	2hr 50m	Rele	KB
6/23/16	Daily Pulser	Lab	0622	10 min	NA	AG
6/23/16	1606091A(1-4,7)	UCOR	0819	2hr 50min	iso-Pu	AG
6/23/16	1606091A(1-4)	UCOR	0819	2hr 50min	Pu-242	AG
6/23/16	1606023B(1-4)	UCOR	0819	2hr 50min	iso-4	AG
6/23/16	1606023NTB(4)	UCOR	0821	2hr 50min	iso-4(ur)	AG
6/23/16	1606035A(1-4)	UCOR	0821	2hr 50min	Th-229	AG
6/23/16	1606091A(1-4)	UCOR	0821	2hr 50min	iso-TR	AG
6/23/16	1606041A(9-11)	Auxier	0829	2hr 50m	ISO-TR	KB
6/23/16	1606041A(12-15)	Auxier	1127	2hr 50m	ISO-TR	KB
6/23/16	1606041A(1-15)	Auxier	1130	2hr 50m	UU	KB

ISO-TH NOTES

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	16-06041
		Analysis Code	ThISO
		Run Number	1


#	Date	Dept	User	Notes
1	06/16/16 12:18	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested on low heat with HF. Samples were further digested with a mixed acid digestion on medium heat. Samples were submitted to separations.

6-16-16 JPachella

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	16-06041
		Analysis Code	ThISO
		Run Number	1


#	Date	Dept	User	Notes
1	06/16/16 12:18	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested on low heat with HF. Samples were further digested with a mixed acid digestion on medium heat. Samples were submitted to separations.
2	06/22/16 16:38	CHEM	JDEMELAS	Added concentrated HNO3 to sample beakers and heated to dryness; Added 20 ml 8N HNO3 to samples and transferred to new, labeled C-Tubes, adding 8N HNO3 to bring volume to ~35 ml; Preconditioned resin columns with 50 ml 8N HNO3; Centrifuged samples as needed, and passed through columns; Rinsed C-Tubes with 20 ml 8N HNO3; Centrifuged rinsates and loaded onto columns; Rinsed columns with 40 ml 8N HNO3; Eluted Thorium with 50 ml of 8N HCl into clean, labeled 100-ml beakers; Dried-down samples on hotplate; Dissolved samples in ~10 ml of concentrated HCl; Transferred to new, labeled C-Tubes with deionized water, bringing volume to ~15ml. Set samples aside for later precipitation and filtering.

J. Demelas
 6/22/16

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	16-06041
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	06/16/16 12:18	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested on low heat with HF. Samples were further digested with a mixed acid digestion on medium heat. Samples were submitted to separations.
2	06/22/16 16:38	CHEM	JDEMELAS	Added concentrated HNO3 to sample beakers and heated to dryness; Added 20 ml 8N HNO3 to samples and transferred to new, labeled C-Tubes, adding 8N HNO3 to bring volume to ~35 ml; Preconditioned resin columns with 50 ml 8N HNO3; Centrifuged samples as needed, and passed through columns; Rinsed C-Tubes with 20 ml 8N HNO3; Centrifuged rinsates and loaded onto columns; Rinsed columns with 40 ml 8N HNO3; Eluted Thorium with 50 ml of 8N HCl into clean, labeled 100-ml beakers; Dried-down samples on hotplate; Dissolved samples in ~10 ml of concentrated HCl; Transferred to new, labeled C-Tubes with deionized water, bringing volume to ~15ml. Set samples aside for later precipitation and filtering.
3	06/23/16 05:04	CHEM	TSMITH	Followed steps 12.2.5 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Thorium)

*6-23-16
TSM*

 Reagents Used in an Analysis		Internal Work Order		
		16-06041		
		Analysis Code		Run
		ThISO		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
017559P	Hydrofluoric Acid	Reagent Grade	JPACHELLA	6/16/2016
017533P	Nitric Acid	Reagent Grade	JPACHELLA	6/16/2016
017589P	Perchloric Acid	Reagent Grade	JPACHELLA	6/16/2016
017243P	Sulfuric Acid	Reagent Grade	JPACHELLA	6/16/2016
017115P	Anion Exchange Resin	Reagent Grade	JDEMELAS	6/22/2016
017518P	Hydrochloric Acid	Reagent Grade	JDEMELAS	6/22/2016
017738S	Nitric Acid	8N	JDEMELAS	6/22/2016
017534P	Nitric Acid	Reagent Grade	JDEMELAS	6/22/2016
017739S	Hydrochloric Acid	8N	JDEMELAS	6/22/2016
017713S	Carbon substrate	Solution	TSMITH	6/23/2016
017491S	Cerrium Carrier	0.1mg/ml	TSMITH	6/23/2016
017559P	Hydrofluoric Acid	Reagent Grade	TSMITH	6/23/2016
017649P	Reagent Alcohol	Reagent Grade	TSMITH	6/23/2016

Alpha #1

Photo	Snapshot	Client	Location	C Time	Amplitude	Notes
6/14/16	1606034A(3)	Ucon	0859	2.5-	Th 750	-
6/14/16	1606139A(3)	Ucon	0859	2.5-	Th 750	-
6/14/16	1606034A(1-4)	Ucon	0900	2.5-	Th 750	-
6/14/16	1606044A(1)	USA	0980	2.5-	NA	-
6/14/16	1605123A(1-7)	Renova	1349	2hr 00-	Rate	KB
6/15	Daily Pulse	LAB	0522	1-	NA	-
6/15	1606025A(2-4)	Ucon	0810	2.5-	Th 750	-
6/15	Daily Pulse	LAB	0520	1-	NA	-
6/16	1606053A(1-4)	Parsons	0818	2.5-	Am 241	-
6/16	1606053A(1-3)	Parsons	0818	2.5-	Th 750	-
6/16/16	1606025A(2-4)	Ucon	1127	2hr 00-	Th 750	KB
6/16/16	1606025A(1-4)	Ucon	1128	2hr 00-	NA	KB
6/17	Daily Pulse	LAB	0459	1-	NA	-
6/17	SEC CALL (1-15)	LAB	1106	2.5-	NA	-
6/17	1606059A(1-7)	USA	0805	2.5-	Th 750	-
6/17/16	System Bkgd	Lab	1619	16.40 hr	-	KB
6/19/16	Daily Pulse	Lab	1027	10 min	NA	AG
6/19/16	1606059A(1-7)	USA	1058	2hr 50 min	Rate 226	AG
6/20/16	Daily Pulse	Lab	0631	0 min	NA	AG
6/20/16	1606002A(1-5)	Minion Tech.	0853	2hr 00-	UU	KB
6/20/16	1606015A(1-2)	Minion Tech	0853	2hr 00-	UU	KB
6/20/16	1606025A(1)	Ucon	1254	2hr 00-	Am 241	KB
6/20/16	1606025A(1)	Ucon	1257	2hr 00-	Am 243	KB
6/21/16	Daily Pulse	Lab	0604	0 min	NA	AG
6/21/16	1606029A(1-7)	TN Dept of Health	1057	16 hr	UU	KB
6/22/16	Daily Pulse	Lab	0622	10 min	NA	AG
6/22/16	1606040A(1-7)	Auxier	0845	2hr 00-	F 50-Th	KB
6/22/16	1606040A(8-14)	Auxier	1158	2hr 00-	I 50-Th	KB
6/23/16	Daily Pulse	Lab	0622	0 min	NA	AG
6/23/16	1606041A(1-7)	Auxier	0828	2hr 00-	I 50-Th	KB

Alph # 3

Date	Sample #	Client	Location	CT #	Media	Spec
6/21/16	1606058A(1-7)	PCC	0828	2hr 50m	iso-TR	AG
6/21/16	1606031A(1-6)	TN Dept of Health	0832	16 hr	UU	KB
6/21/16	1606029A(8-19)	TN Dept of Health	1132	16 hr	UU	KB
6/21/16	1605079B(1-3,5-7)	Accutest	1649	2hr 50m	Rele	KB
6/22/16	Daily Pulser	Lab	0622	10 min	NA	AG
6/22/16	1606072A(1-4)	Indust. + Env.	0846	2hr 50m	Rele	KB
6/22/16	1606035A(1-4,7)	UCOR	0846	2hr 50m	ISO-P4	KB
6/22/16	1606035A(1-4)	UCOR	0847	2hr 50m	NP	KB
6/22/16	1606035A(1-4)	UCOR	0848	2hr 50m	Am ²⁴¹	KB
6/22/16	Regent 30A(1)	Lab	0848	2hr 50m	Pint	KB
6/22/16	1606035A(1-4)	UCOR	0849	2hr 50m	Am ²⁴³	KB
6/22/16	1606035A(1-4)	UCOR	0850	2hr 50m	Pu ²⁴²	KB
6/22/16	1606040A(15)	Auxier	1159	2hr 50m	ISO-TR	KB
6/22/16	1606035A(1-4)	UCOR	1159	2hr 50m	UU	KB
6/22/16	1606035A(1-4)	UCOR	1200	2hr 50m	ISO-TR	KB
6/22/16	1606045A(1-4)	USA	1201	2hr 50m	UU	KB
6/22/16	1606040A(1-13)	Auxier	1202	2hr 50m	UU	KB
6/22/16	1606040A(14-15)	Auxier	1502	2hr 50m	UU	KB
6/22/16	1606045A(1-4)	USA	1528	2hr 50m	Rele	KB
6/22/16	1606040A(14)	Auxier	1529	2hr 50m	ISO-TR	KB
6/22/16	1606043A(1-10)	MPA	1826	2hr 50m	Rele	KB
6/23/16	Daily Pulser	Lab	0622	10 min	NA	AG
6/23/16	1606091A(1-4,7)	UCOR	0819	2hr 50min	iso-Pu	AG
6/23/16	1606091A(1-4)	UCOR	0819	2hr 50min	Pu-242	AG
6/23/16	1606023B(1-4)	UCOR	0819	2hr 50min	iso-4	AG
6/23/16	1606023NTB(4)	UCOR	0821	2hr 50min	iso-4(ur)	AG
6/23/16	1606035A(1-4)	UCOR	0821	2hr 50min	Th-229	AG
6/23/16	1606091A(1-4)	UCOR	0821	2hr 50min	ISO-TR	AG
6/23/16	1606041A(9-11)	Auxier	0829	2hr 50m	ISO-TR	KB
6/23/16	1606041A(12-15)	Auxier	1127	2hr 50m	ISO-TR	KB
6/23/16	1606041A(1-15)	Auxier	1130	2hr 50m	UU	KB

GAMMA NOTES

GE 1

DATE	SAMPLE #	Client	Lab Time	CT-Time	Analysis	Tech
6/11/15	ET714	LAB	0606	15	✓	✓
6/11/15	1606060-07	USA	0734	2L	✓	✓
6/11/15	1606060-11	USA	0836	2L	✓	✓
6/11/15	1606060-15	USA	0939	2L	✓	✓
6/11/15	1606061-03	USA	1112	2L	✓	✓
6/11/15	1606061-04	USA	1213	2L	✓	✓
6/11/15	1606077-07	Texascom	1040	15	Be	✓
6/11/15	1606077-08	Texascom	1015	15	Be	✓
6/15/16	1606061-09	USA	1315	1h	✓	KB
6/15/16	1606061-12	USA	1416	1h	✓	KB
6/15/16	1606061-15	USA	1518	1h	✓	KB
6/15/16	1606040-05	Auxier	1618	1h	✓	KB
6/15/16	1606040-07	Auxier	1719	1h	✓	KB
6/15/16	1606040-11	Auxier	1819	1h	✓	KB
6/11/16	ET714	LAB	0524	15	✓	✓
6/11/16	Ph:4B	LAB	0548	15	✓	✓
6/11/16	ET714	LAB	0607	15	✓	✓
6/11/16	1606041-07	Auxier	0728	2L	✓	✓
6/11/16	1606041-10	Auxier	0830	2L	✓	✓
6/11/16	1606041-14	Auxier	0930	2L	✓	✓
6/11/16	1606041-01	Auxier	1031	2L	✓	✓

DATE	SAMPLE #	Client	LabTime	CTTime	Analysis	Tech
6/14/16	1606059-15	USA	1546	1hr	Y	KB
6/14/16	1606059-11	USA	1647	1hr	Y	KB
6/14/16	1606059-14	USA	1749	1hr	Y	KB
6/15	CS 1401	USA	0520	15	Y	Σ
6/15	DailyR	USA	0544	15	Y	Σ
6/15	1606060-03	USA	0606	2L	Y	Σ
6/15	1606060-04	USA	0707	2L	Y	Σ
6/15	1606060-09	USA	0812	2L	Y	—
6/15	1606060-13	USA	0913	2L	Y	—
6/15	1606060-17	USA	1015	2L	Y	—
6/15	1606060-06	USA	1116	2L	Y	—
6/15/16	1606061-07	USA	1217	1hr	Y	KB
6/15/16	1606061-11	USA	1318	1hr	Y	KB
6/15/16	1606061-13	USA	1419	1hr	Y	KB
6/15/16	1606061-16	USA	1519	1hr	Y	KB
6/15/16	1606040-06	Auxier	1620	1hr	Y	KB
6/15/16	1606040-08	Auxier	1720	1hr	Y	KB
6/15/16	1606040-12	Auxier	1821	1hr	Y	KB
6/16	CS 1401	USA	0524	15	Y	—
6/16	DailyR	USA	0548	15	Y	—
6/16	1606040-14	Auxier	0608	2L	Y	—
6/16	1606041-03	Auxier	0716	2L	Y	—
6/16	1606041-04	Auxier	0817	2L	Y	—
6/16	1606041-11	Auxier	0915	2L	Y	—
6/16	1606041-02	Auxier	1026	2L	Y	—

DATE	SAMPLE #	Client	Load Time	CI-Time	Analysis	Tech
6/11/66	1606041-05	Ampier	0716	IL	✓	C
6/11/66	1606041-08	Ampier	0825	IL	✓	C
6/11/66	1606041-12	Ampier	0925	IL	✓	C
6/11/66	1606041-15	Ampier	1026	IL	✓	C

DATE	SAMPLE #	CLIENT	Lot Time	CT Time	Analysis	Tech
6/14/16	1606059-01	USA	1344	30mins	Y	KB
6/14/16	1606059-02	USA	1416	1hr	Y	KB
6/14/16	1606059-09	USA	1518	1hr	Y	KB
6/14/16	1606059-10	USA	1618	1hr	Y	KB
6/14/16	1606060-02	USA	1724	1hr	Y	KB
6/15	Ctrl 14	USA	0520	15	Y	KB
6/15	Daily R	USA	0544	15	Y	KB
6/15	Ctrl 14	USA USA	0606	15	Y	KB
6/15	1606060-08	USA	0734	2L	Y	KB
6/15	1606060-12	USA	0836	2L	Y	KB
6/15	1606060-16	USA	0939	2L	Y	KB
6/15	1606061-05	USA	1112	2L	Y	KB
6/15	1606033-08	Texcom	1040	15	Be	KB
6/15	1606033-10	Texcom	1055	15	Be	KB
6/15/16	1606061-08	USA	1213	1hr	Y	KB
6/15/16	1606061-10	USA	1315	1hr	Y	KB
6/15/16	1606061-01	USA	1416	30mins	Y	KB
6/15/16	1606061-02	USA	1448	1hr	Y	KB
6/15/16	1606040-02	Auxin	1549	1hr	Y	KB
6/15/16	1606040-01	Auxin	1650	30mins	Y	KB
6/15/16	1606040-09	Auxin	1721	1hr	Y	KB
6/15/16	1606040-13	Auxin	1821	1hr	Y	KB
6/16	Ctrl 14	USA	0524	15	Y	KB
6/16	Daily R	USA	0548	15	Y	KB
6/16	1606040-15	USA Auxin	0608	2L	Y	KB
6/16	1606041-06	Auxin	0716	2L	Y	KB
6/16	1606041-09	Auxin	0823	2L	Y	KB
6/16	1606041-13	Auxin	0925	2L	Y	KB

SECTION VIII
ANALYTICAL DATA (ISOTOPIC URANIUM)

Work Order	16-06041
Analysis Code	UJISO
Run	1
Date Received	6/9/2016
Lab Deadline	6/29/2016
Client	Auxier & Associates, Inc.
Project	PAP-KAN
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EML U-02 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	U-232
Radiometric Sol#	U-10a
Tracer Act (dpm/g)	18.52
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		06/09/16 00:00	1.0000E+00
02	MBL	BLANK		06/09/16 00:00	1.5000E+00
03	DUP	CP-5028 00-02	37	06/06/16 00:00	1.5381E+00
04	DO	CP-5028 00-02	37	06/06/16 00:00	1.5383E+00
05	TRG	CP-5028 02-05	35	06/06/16 00:00	1.5126E+00
06	TRG	CP-5028 05-10	33	06/06/16 00:00	1.5130E+00
07	TRG	CP-5028 10-15	45	06/06/16 00:00	1.5293E+00
08	TRG	CP-5029 00-02	43	06/06/16 00:00	1.5154E+00
09	TRG	CP-5029 02-05	41	06/06/16 00:00	1.5243E+00
10	TRG	CP-5029 05-10	39	06/06/16 00:00	1.6011E+00
11	TRG	CP-5029 10-15	55	06/06/16 00:00	1.5240E+00
12	TRG	CP-5030 00-02	51	06/06/16 00:00	1.5532E+00
13	TRG	CP-5030 02-05	48	06/06/16 00:00	1.5078E+00
14	TRG	CP-5030 05-10	43	06/06/16 00:00	1.5160E+00
15	TRG	CP-5030 10-15	48	06/06/16 00:00	1.5070E+00

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.6668	12.3		0.00								
02	MBL	0.6630	12.3		0.00								
03	DUP	0.6617	12.3		0.00								
04	DO	0.6613	12.2		0.00								
05	TRG	0.6612	12.2		0.00								
06	TRG	0.6599	12.2		0.00								
07	TRG	0.6615	12.3		0.00								
08	TRG	0.6586	12.2		0.00								
09	TRG	0.6603	12.2		0.00								
10	TRG	0.6555	12.1		0.00								
11	TRG	0.6656	12.3		0.00								
12	TRG	0.6598	12.2		0.00								
13	TRG	0.6595	12.2		0.00								
14	TRG	0.6629	12.3		0.00								
15	TRG	0.6611	12.2		0.00								

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
 ** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep 10 Date/Time	Sep 10 By	Sep 11 Date/Time	Sep 11 By
01	LCS			06/16/16 11:59	JPACHELLA				
02	MBL			06/16/16 11:59	JPACHELLA				
03	DUP			06/16/16 11:59	JPACHELLA				
04	DO	06/15/16 08:32	KSALLINGS	06/16/16 11:59	JPACHELLA				
05	TRG	06/15/16 08:32	KSALLINGS	06/16/16 11:59	JPACHELLA				
06	TRG	06/15/16 08:32	KSALLINGS	06/16/16 11:59	JPACHELLA				
07	TRG	06/15/16 08:32	KSALLINGS	06/16/16 11:59	JPACHELLA				
08	TRG	06/15/16 08:32	KSALLINGS	06/16/16 11:59	JPACHELLA				
09	TRG	06/15/16 08:32	KSALLINGS	06/16/16 11:59	JPACHELLA				
10	TRG	06/15/16 08:32	KSALLINGS	06/16/16 11:59	JPACHELLA				
11	TRG	06/15/16 08:32	KSALLINGS	06/16/16 11:59	JPACHELLA				
12	TRG	06/15/16 08:32	KSALLINGS	06/16/16 11:59	JPACHELLA				
13	TRG	06/15/16 08:32	KSALLINGS	06/16/16 11:59	JPACHELLA				
14	TRG	06/15/16 08:32	KSALLINGS	06/16/16 11:59	JPACHELLA				
15	TRG	06/15/16 08:32	KSALLINGS	06/16/16 11:59	JPACHELLA				

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

	Run	1
	Analysis Code	UJISO
Eberline Analytical Work Order	16-06041	
Client	Auxier & Associates, Inc.	

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-234	LCS	LCS	pCi/g	8.01E+00	1.11E+00	7.01E-02	8.15E+00	98.33	OK		OK	
02	U-234	MBL	BLANK	pCi/g	7.49E-02	5.27E-02	4.63E-02					OK	OK
03	U-234	DUP	CP-5028 00-02	pCi/g	9.98E-01	2.12E-01	5.68E-02				OK	OK	
04	U-234	DO	CP-5028 00-02	pCi/g	9.95E-01	2.23E-01	5.78E-02					OK	
05	U-234	TRG	CP-5028 02-05	pCi/g	1.11E+00	2.29E-01	5.57E-02					OK	
06	U-234	TRG	CP-5028 05-10	pCi/g	8.90E-01	2.38E-01	7.24E-02					OK	
07	U-234	TRG	CP-5028 10-15	pCi/g	9.40E-01	1.99E-01	3.45E-02					OK	
08	U-234	TRG	CP-5029 00-02	pCi/g	9.94E-01	2.15E-01	4.33E-02					OK	
09	U-234	TRG	CP-5029 02-05	pCi/g	1.01E+00	2.72E-01	9.06E-02					OK	
10	U-234	TRG	CP-5029 05-10	pCi/g	1.28E+00	2.45E-01	3.97E-02					OK	
11	U-234	TRG	CP-5029 10-15	pCi/g	1.03E+00	2.06E-01	3.29E-02					OK	
12	U-234	TRG	CP-5030 00-02	pCi/g	1.08E+00	2.44E-01	5.49E-02					OK	
13	U-234	TRG	CP-5030 02-05	pCi/g	1.24E+00	3.33E-01	1.09E-01					OK	
14	U-234	TRG	CP-5030 05-10	pCi/g	7.40E-01	1.91E-01	6.99E-02					OK	
15	U-234	TRG	CP-5030 10-15	pCi/g	8.40E-01	2.62E-01	9.42E-02					OK	

	Run	1
	Analysis Code	UJISO
Eberline Analytical Work Order	16-06041	
Client	Auxier & Associates, Inc.	

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-238	LCS	LCS	pCi/g	7.93E+00	1.10E+00	6.98E-02	7.89E+00	100.51	OK		OK	
02	U-238	MBL	BLANK	pCi/g	3.51E-02	3.87E-02	5.27E-02					OK	OK
03	U-238	DUP	CP-5028 00-02	pCi/g	1.10E+00	2.25E-01	7.03E-02				OK	OK	
04	U-238	DO	CP-5028 00-02	pCi/g	1.07E+00	2.34E-01	8.56E-02					OK	
05	U-238	TRG	CP-5028 02-05	pCi/g	1.04E+00	2.18E-01	4.21E-02					OK	
06	U-238	TRG	CP-5028 05-10	pCi/g	8.48E-01	2.31E-01	7.21E-02					OK	
07	U-238	TRG	CP-5028 10-15	pCi/g	9.70E-01	2.03E-01	4.93E-02					OK	
08	U-238	TRG	CP-5029 00-02	pCi/g	1.02E+00	2.19E-01	4.73E-02					OK	
09	U-238	TRG	CP-5029 02-05	pCi/g	1.28E+00	3.17E-01	9.81E-02					OK	
10	U-238	TRG	CP-5029 05-10	pCi/g	1.16E+00	2.29E-01	4.34E-02					OK	
11	U-238	TRG	CP-5029 10-15	pCi/g	7.45E-01	1.68E-01	3.28E-02					OK	
12	U-238	TRG	CP-5030 00-02	pCi/g	1.16E+00	2.54E-01	6.56E-02					OK	
13	U-238	TRG	CP-5030 02-05	pCi/g	8.37E-01	2.62E-01	1.13E-01					OK	
14	U-238	TRG	CP-5030 05-10	pCi/g	7.58E-01	1.93E-01	4.85E-02					OK	
15	U-238	TRG	CP-5030 10-15	pCi/g	7.53E-01	2.45E-01	9.38E-02					OK	

	Run	1
Analysis Code	UUISO	
Eberline Analytical Work Order	16-06041	
Client	Auxier & Associates, Inc.	

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-238	LCS	06/23/16 11:29		A_Spec	Alpha_037	170	5.44 E+02	2.00 E-03	16.5
02	U-238	MBL	06/23/16 11:29		A_Spec	Alpha_038	170	4.00 E+00	0.00 E+00	16
03	U-238	DUP	06/23/16 11:29		A_Spec	Alpha_039	170	1.28 E+02	1.40 E-02	18.6
04	U-238	DO	06/23/16 11:29		A_Spec	Alpha_041	170	1.11 E+02	1.80 E-02	19
05	U-238	TRG	06/23/16 11:29		A_Spec	Alpha_042	170	1.18 E+02	2.00 E-03	17.9
06	U-238	TRG	06/23/16 11:29		A_Spec	Alpha_043	170	6.63 E+01	4.00 E-03	18.9
07	U-238	TRG	06/23/16 11:29		A_Spec	Alpha_044	170	1.18 E+02	0.00 E+00	18.6
08	U-238	TRG	06/23/16 11:29		A_Spec	Alpha_045	170	1.13 E+02	3.00 E-03	17.1
09	U-238	TRG	06/23/16 11:29		A_Spec	Alpha_046	170	8.96 E+01	8.00 E-03	18.1
10	U-238	TRG	06/23/16 11:29		A_Spec	Alpha_047	170	1.40 E+02	3.00 E-03	17
11	U-238	TRG	06/23/16 11:29		A_Spec	Alpha_048	170	9.48 E+01	1.00 E-03	17.6
12	U-238	TRG	06/23/16 11:29		A_Spec	Alpha_049	170	1.11 E+02	6.00 E-03	15.1
13	U-238	TRG	06/23/16 11:29		A_Spec	Alpha_050	170	5.06 E+01	8.00 E-03	14.7
14	U-238	TRG	06/23/16 11:30		A_Spec	Alpha_053	170	7.47 E+01	2.00 E-03	15.2
15	U-238	TRG	06/23/16 11:30		A_Spec	Alpha_054	170	4.53 E+01	4.00 E-03	13.6

	Run	1
	Analysis Code	UUISO
	Eberline Analytical Work Order	16-06041
Client	Auxier & Associates, Inc.	

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-235	LCS	LCS	pCi/g	5.18E-01	1.99E-01	8.64E-02					OK	
02	U-235	MBL	BLANK	pCi/g	1.09E-02	3.02E-02	6.52E-02					OK	OK
03	U-235	DUP	CP-5028 00-02	pCi/g	1.33E-01	8.00E-02	7.56E-02				NA	OK	
04	U-235	DO	CP-5028 00-02	pCi/g	1.39E-01	8.25E-02	5.69E-02					OK	
05	U-235	TRG	CP-5028 02-05	pCi/g	9.63E-02	6.50E-02	4.55E-02					OK	
06	U-235	TRG	CP-5028 05-10	pCi/g	8.43E-02	7.75E-02	8.93E-02					OK	
07	U-235	TRG	CP-5028 10-15	pCi/g	6.96E-02	5.34E-02	4.25E-02					OK	
08	U-235	TRG	CP-5029 00-02	pCi/g	1.34E-01	8.03E-02	6.70E-02					OK	
09	U-235	TRG	CP-5029 02-05	pCi/g	1.12E-01	1.01E-01	1.30E-01					OK	
10	U-235	TRG	CP-5029 05-10	pCi/g	9.04E-02	6.11E-02	4.27E-02					OK	
11	U-235	TRG	CP-5029 10-15	pCi/g	8.43E-02	5.80E-02	4.65E-02					OK	
12	U-235	TRG	CP-5030 00-02	pCi/g	1.50E-01	8.95E-02	6.17E-02					OK	
13	U-235	TRG	CP-5030 02-05	pCi/g	-3.89E-03	4.40E-02	1.35E-01					OK	
14	U-235	TRG	CP-5030 05-10	pCi/g	1.76E-01	9.75E-02	7.54E-02					OK	
15	U-235	TRG	CP-5030 10-15	pCi/g	1.37E-01	1.09E-01	9.85E-02					OK	

Run	1		Client	Auxier & Associates, Inc.
			Eberline Analytical Work Order	16-06041
			Analysis Code	UJISO

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	U-235	LCS	06/09/16 00:00	1.00E+00	110.12	0.00	0.00			
02	U-235	MBL	06/09/16 00:00	1.50E+00	125.37	0.00	0.00			
03	U-235	DUP	06/06/16 00:00	1.54E+00	107.57	0.00	0.00			
04	U-235	DO	06/06/16 00:00	1.54E+00	94.15	0.00	0.00			
05	U-235	TRG	06/06/16 00:00	1.51E+00	111.00	0.00	0.00			
06	U-235	TRG	06/06/16 00:00	1.51E+00	72.31	0.00	0.00			
07	U-235	TRG	06/06/16 00:00	1.53E+00	112.76	0.00	0.00			
08	U-235	TRG	06/06/16 00:00	1.52E+00	113.09	0.00	0.00			
09	U-235	TRG	06/06/16 00:00	1.52E+00	67.11	0.00	0.00			
10	U-235	TRG	06/06/16 00:00	1.60E+00	117.15	0.00	0.00			
11	U-235	TRG	06/06/16 00:00	1.52E+00	125.74	0.00	0.00			
12	U-235	TRG	06/06/16 00:00	1.55E+00	108.25	0.00	0.00			
13	U-235	TRG	06/06/16 00:00	1.51E+00	72.41	0.00	0.00			
14	U-235	TRG	06/06/16 00:00	1.52E+00	113.67	0.00	0.00			
15	U-235	TRG	06/06/16 00:00	1.51E+00	77.43	0.00	0.00			

87000

	Run	1
Analysis Code	UUISO	
Eberline Analytical Work Order	16-06041	
Client	Auxier & Associates, Inc.	

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-235	LCS	06/23/16 11:29		A_Spec	Alpha_037	170	2.87 E+01	2.00 E-03	16.5
02	U-235	MBL	06/23/16 11:29		A_Spec	Alpha_038	170	1.00 E+00	0.00 E+00	16
03	U-235	DUP	06/23/16 11:29		A_Spec	Alpha_039	170	1.25 E+01	9.00 E-03	18.6
04	U-235	DO	06/23/16 11:29		A_Spec	Alpha_041	170	1.17 E+01	2.00 E-03	19
05	U-235	TRG	06/23/16 11:29		A_Spec	Alpha_042	170	8.83 E+00	1.00 E-03	17.9
06	U-235	TRG	06/23/16 11:29		A_Spec	Alpha_043	170	5.32 E+00	4.00 E-03	18.9
07	U-235	TRG	06/23/16 11:29		A_Spec	Alpha_044	170	6.83 E+00	1.00 E-03	18.6
08	U-235	TRG	06/23/16 11:29		A_Spec	Alpha_045	170	1.20 E+01	0.00 E+00	17.1
09	U-235	TRG	06/23/16 11:29		A_Spec	Alpha_046	170	6.30 E+00	1.00 E-02	18.1
10	U-235	TRG	06/23/16 11:29		A_Spec	Alpha_047	170	8.83 E+00	1.00 E-03	17
11	U-235	TRG	06/23/16 11:29		A_Spec	Alpha_048	170	8.66 E+00	2.00 E-03	17.6
12	U-235	TRG	06/23/16 11:29		A_Spec	Alpha_049	170	1.17 E+01	2.00 E-03	15.1
13	U-235	TRG	06/23/16 11:29		A_Spec	Alpha_050	170	-1.90 E-01	7.00 E-03	14.7
14	U-235	TRG	06/23/16 11:30		A_Spec	Alpha_053	170	1.40 E+01	0.00 E+00	15.2
15	U-235	TRG	06/23/16 11:30		A_Spec	Alpha_054	170	6.66 E+00	2.00 E-03	13.6

6/24/16
6/24/16

16-06041-UUISO-1 (pCi/g) in SO
Tracer ID: U-10a

Count Room Report
Client: Auxier Associates, Inc.

16-06041-UUISO-1
 16-06041-UUISO-1

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	06/09/16 00:00	1.0000	0.6668	12.3491		0.00		
02	MBL	BLANK	06/09/16 00:00	1.5000	0.6630	12.2788		0.00		
03	DUP	CP-5028 00-02	06/06/16 00:00	1.5381	0.6617	12.2547		0.00		
04	DO	CP-5028 00-02	06/06/16 00:00	1.5383	0.6613	12.2473		0.00		
05	TRG	CP-5028 02-05	06/06/16 00:00	1.5126	0.6612	12.2454		0.00		
06	TRG	CP-5028 05-10	06/06/16 00:00	1.5130	0.6599	12.2213		0.00		
07	TRG	CP-5028 10-15	06/06/16 00:00	1.5293	0.6615	12.2510		0.00		
08	TRG	CP-5029 00-02	06/06/16 00:00	1.5154	0.6586	12.1973		0.00		
09	TRG	CP-5029 02-05	06/06/16 00:00	1.5243	0.6603	12.2288		0.00		
10	TRG	CP-5029 05-10	06/06/16 00:00	1.6011	0.6555	12.1399		0.00		
11	TRG	CP-5029 10-15	06/06/16 00:00	1.5240	0.6656	12.3269		0.00		
12	TRG	CP-5030 00-02	06/06/16 00:00	1.5532	0.6598	12.2195		0.00		
13	TRG	CP-5030 02-05	06/06/16 00:00	1.5078	0.6595	12.2139		0.00		
14	TRG	CP-5030 05-10	06/06/16 00:00	1.5160	0.6629	12.2769		0.00		
15	TRG	CP-5030 10-15	06/06/16 00:00	1.5070	0.6611	12.2436		0.00		



Internal Work Order		Run	Analysis Code		Date	Technician		Technician Initials		Witness Initials			
16-06041		1	UUIISO		6/16/2016 11:51	JPACHELLA							
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS		MS		LCS		MS		
					Volume Used (g)	0.5653	Volume Used (g)	0.5653	Known pCi	Error Estimate	Known pCi	Error Estimate	Added pCi	Error Estimate
U-234	U-8a	32,000	6/16/2016	0.550	0.5653			8.15	0.293	0.00	0.000	0.00	0.000
U-238	U-8a	31,000	6/16/2016	0.550	0.5653			7.89	0.284	0.00	0.000	0.00	0.000
IC-99 MS IC-2a 22043.636 7/5/2014 0.1													
Tracers													
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Balance Printer Tapes						
01	U-232	U-10a	18,520	6/16/2016	0.6668	0.6500	Tracer						
02	U-232	U-10a	18,520	6/16/2016	0.6630	0.6500	0.6668 g						
03	U-232	U-10a	18,520	6/16/2016	0.6617	0.6500	0.6630 g						
04	U-232	U-10a	18,520	6/16/2016	0.6613	0.6500	0.6617 g						
05	U-232	U-10a	18,520	6/16/2016	0.6612	0.6500	0.6613 g						
06	U-232	U-10a	18,520	6/16/2016	0.6599	0.6500	0.6612 g						
07	U-232	U-10a	18,520	6/16/2016	0.6615	0.6500	0.6599 g						
08	U-232	U-10a	18,520	6/16/2016	0.6586	0.6500	0.6615 g						
09	U-232	U-10a	18,520	6/16/2016	0.6603	0.6500	0.6586 g						
10	U-232	U-10a	18,520	6/16/2016	0.6555	0.6500	0.6603 g						
11	U-232	U-10a	18,520	6/16/2016	0.6656	0.6500	0.6555 g						
12	U-232	U-10a	18,520	6/16/2016	0.6598	0.6500	0.6656 g						
13	U-232	U-10a	18,520	6/16/2016	0.6595	0.6500	0.6598 g						
14	U-232	U-10a	18,520	6/16/2016	0.6629	0.6500	0.6595 g						
15	U-232	U-10a	18,520	6/16/2016	0.6611	0.6500	0.6629 g						
							0.6611 g						
							Matrix Spike						
							LCS						
							0.5653 g						

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
16-06041	1	UUISO	grams	6/29/2016	JPACHELLA

Lab Fraction	Auxier & Associates, Inc.		Sample		Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID		Type		Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS		LCS						1.0000E+00	1.0000E+00					
02	BLANK		MBL						1.5000E+00	1.5000E+00					
03	CP-5028 00-02		DUP						1.5381E+00	1.5381E+00					
04	CP-5028 00-02		DO						1.5383E+00	1.5383E+00					
05	CP-5028 02-05		TRG						1.5126E+00	1.5126E+00					
06	CP-5028 05-10		TRG						1.5130E+00	1.5130E+00					
07	CP-5028 10-15		TRG						1.5293E+00	1.5293E+00					
08	CP-5029 00-02		TRG						1.5154E+00	1.5154E+00					
09	CP-5029 02-05		TRG						1.5243E+00	1.5243E+00					
10	CP-5029 05-10		TRG						1.6011E+00	1.6011E+00					
11	CP-5029 10-15		TRG						1.5240E+00	1.5240E+00					
12	CP-5030 00-02		TRG						1.5532E+00	1.5532E+00					
13	CP-5030 02-05		TRG						1.5078E+00	1.5078E+00					
14	CP-5030 05-10		TRG						1.5160E+00	1.5160E+00					
15	CP-5030 10-15		TRG						1.5070E+00	1.5070E+00					

Comments

Technician: JPachella Date: 6/16/16

Rough Sample Preparation
 Log Book

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
16-06041	6/29/2016	6/14/2016	6/15/2016	6/16/2016	KSALLINGS

Bico Pulverizer SN: 000302

Eberline Fraction	Auxier & Associates, Inc. Client ID	Tare (g)		Gross (g)		Net (g)		Percent		Gamma		Special Info
		Pan Wt		Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	
04	CP-5028 00-02	14.6400		542.0900	456.7000	527.4500	442.0600	16.19%	83.81%	0.0000	0.0000	
05	CP-5028 02-05	14.7000		666.2700	556.2200	651.5700	541.5200	16.89%	83.11%	0.0000	0.0000	
06	CP-5028 05-10	14.6600		418.1700	340.5000	403.5100	325.8400	19.25%	80.75%	0.0000	0.0000	
07	CP-5028 10-15	14.6300		440.6600	348.4500	426.0300	333.8200	21.64%	78.36%	0.0000	0.0000	
08	CP-5029 00-02	14.5700		759.8600	670.6900	745.2900	656.1200	11.96%	88.04%	0.0000	0.0000	
09	CP-5029 02-05	14.5900		675.6600	556.9600	661.0700	542.3700	17.96%	82.04%	0.0000	0.0000	
10	CP-5029 05-10	14.5700		514.3200	421.2600	499.7500	406.6900	18.62%	81.38%	0.0000	0.0000	
11	CP-5029 10-15	14.5800		408.9000	319.8800	394.3200	305.3000	22.58%	77.42%	0.0000	0.0000	
12	CP-5030 00-02	14.5900		846.4200	717.2400	831.8300	702.6500	15.53%	84.47%	0.0000	0.0000	
13	CP-5030 02-05	14.6000		671.2300	564.1400	656.6300	549.5400	16.31%	83.69%	0.0000	0.0000	
14	CP-5030 05-10	14.6300		416.3200	337.6100	401.6900	322.9800	19.59%	80.41%	0.0000	0.0000	
15	CP-5030 10-15	14.5500		461.4500	364.6100	446.9000	350.0600	21.67%	78.33%	0.0000	0.0000	

Comments
Special Codes
H: Hot, O: Organic Hazard, P: PCB Hazard, R: Rush, T: Other (see comments)

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Apex-Alpha™

MS
6/23/16

Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_037
 Chamber Serial Number: 04026478A
 Detector Serial Number: 91133
 Env. Background: System Bkgd 156899
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/23/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:29:09 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.667 mL
 Effective Efficiency: 0.1811 +/- 0.0102
 Counting Efficiency: 0.1645 +/- 0.0029 on 12/11/2015 8:20:53 AM
 Chem. Recovery Factor: 1.1012 +/- 0.0651

Control Certificate Name: NatU_U-8A
 Chem. Recov. of Control: U-238 0.884212 +/- 0.068040
 Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232 T	5.317	377.66	10.09	0.34	0.00E+000	13.4
U-234	4.768	546.66	8.39	0.34	0.00E+000	37.5
U-235	4.408	28.66	36.86	0.34	0.00E+000	3.8
U-238	4.186	543.66	8.41	0.34	0.00E+000	10.4

T = Tracer Peak used for Effective Efficiency

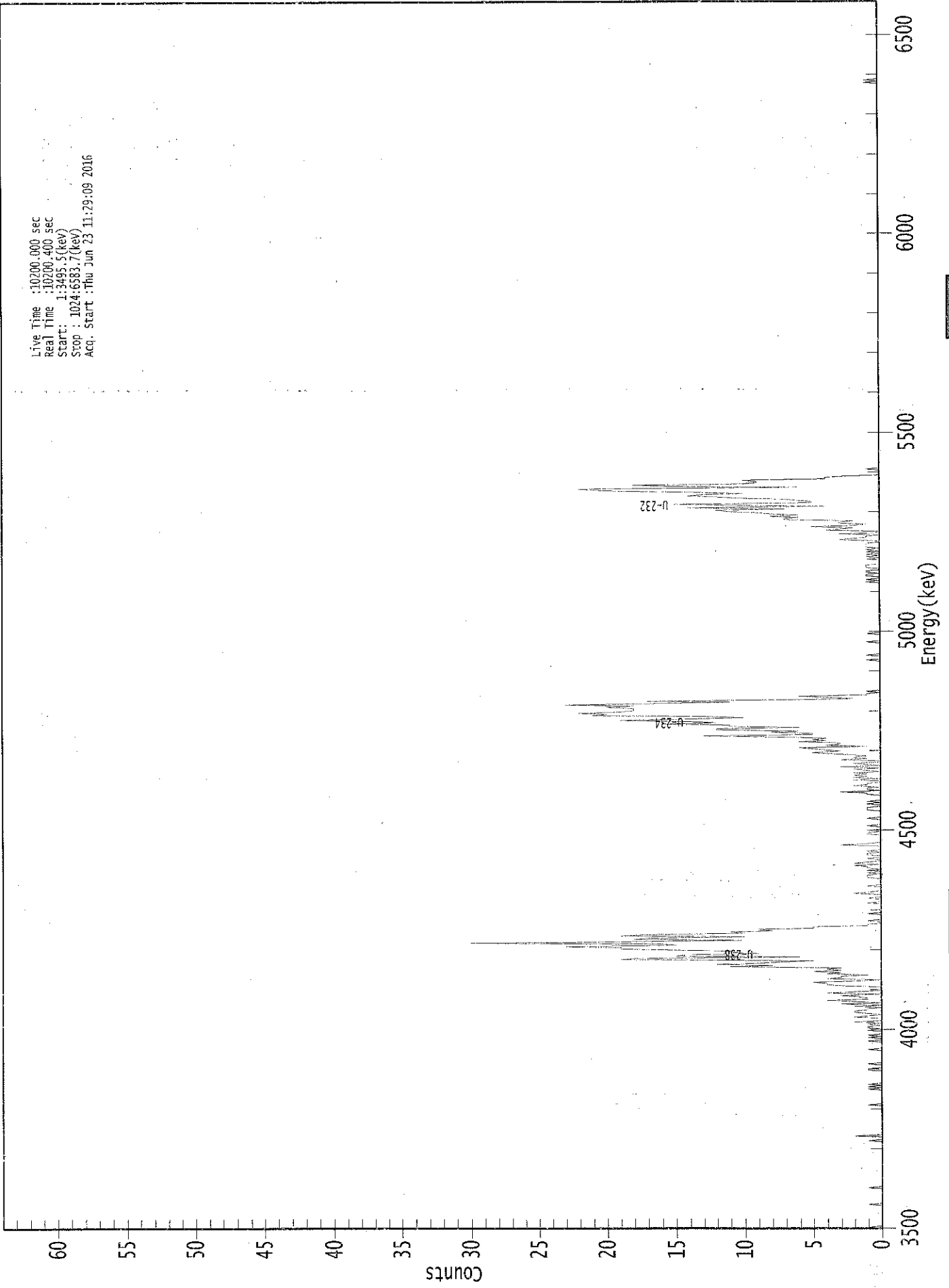
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	5.54E+000 +/- 6.12E-001	7.01E-002 +/- 7.75E-003
U-234	1.000	4761.50*	8.01E+000 +/- 1.11E+000	7.01E-002 +/- 7.75E-003
U-235	0.996	4385.50*	5.18E-001 +/- 1.99E-001	8.64E-002 +/- 9.56E-003
U-238	1.000	4184.40*	7.93E+000 +/- 1.10E+000	6.98E-002 +/- 7.71E-003

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0000155163.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3495.5(kev)
Stop : 1024:6883.7(kev)
Acq. Start :Thu Jun 23 11:29:09 2016



ROI Type: 1

ROI Type: 3

***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 01

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel	1	0	1	0	0	0	0	0	0
1:	0	1	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	1	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	1	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	1	0	0	0	2	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	1
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	1	0	1	0	0
121:	1	0	0	0	0	0	0	0	0
129:	0	0	0	0	1	1	0	0	0
137:	0	1	0	0	0	0	0	0	0
145:	0	0	0	0	0	1	0	0	0
153:	0	0	0	0	1	0	0	0	1
161:	0	1	0	0	0	1	0	0	1
169:	1	0	1	0	2	0	0	0	0
177:	2	1	0	1	2	2	1	1	1
185:	0	2	0	3	0	2	4	1	1
193:	1	2	3	0	4	2	0	0	0
201:	0	0	3	4	4	5	2	0	0
209:	4	3	3	1	4	3	5	3	3
217:	4	3	11	8	12	9	7	5	5
225:	19	18	6	15	14	9	11	11	11
233:	16	19	19	23	15	16	30	19	19
241:	10	18	17	10	19	17	10	11	11
249:	8	9	5	5	1	1	0	0	0
257:	1	0	0	0	0	0	1	0	0
265:	0	0	0	0	0	0	0	1	1
273:	0	0	0	1	0	0	0	2	2
281:	1	0	0	0	0	1	0	0	0
289:	0	0	0	0	1	1	1	0	0
297:	1	0	1	0	1	1	2	0	0
305:	2	1	0	0	1	0	0	1	1
313:	1	0	1	0	0	0	0	3	3
321:	1	0	0	0	0	0	0	0	0
329:	1	1	0	1	0	0	0	1	1
337:	0	0	0	0	0	1	0	0	0
345:	0	0	0	0	1	1	1	0	0
353:	0	1	0	1	0	0	0	0	0
361:	0	1	1	3	0	1	1	0	0

369: 2 1 1 0 0 2 0 2

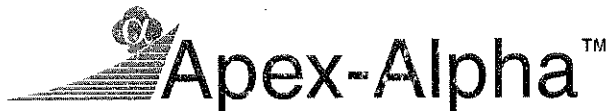
Sample Title: 01

Channel	1	2	3	4	5	6	7	8
377:	1	2	1	2	0	1	2	0
385:	3	0	1	2	0	0	3	1
393:	2	1	2	4	5	3	4	5
401:	6	1	4	3	3	6	4	5
409:	4	8	13	5	5	8	6	12
417:	12	6	11	11	16	12	14	19
425:	13	10	13	21	20	22	19	18
433:	18	18	20	18	23	17	11	17
441:	6	2	4	6	1	1	0	1
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	1	0	0	0	1	0	0
481:	0	0	0	0	0	0	0	0
489:	1	0	0	0	0	0	0	1
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	1	0	1	0	0	1
545:	1	0	1	1	0	0	1	1
553:	1	0	0	0	0	1	0	1
561:	0	1	0	1	0	1	0	1
569:	1	1	1	0	0	3	2	1
577:	1	0	3	0	0	4	3	2
585:	5	2	1	3	3	2	7	7
593:	6	8	6	8	9	11	12	7
601:	14	4	10	15	5	5	6	7
609:	10	12	14	13	10	14	19	21
617:	22	6	15	18	10	9	9	10
625:	4	4	3	0	0	0	0	0
633:	1	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 01

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	1	0	1	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



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Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_038
 Chamber Serial Number: 04026478B
 Detector Serial Number: 91134
 Env. Background: System Bkgd 156900
 Reagent Blank: <not performed>

Sample Size: 1.500E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/23/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:29:10 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.663 mL
 Effective Efficiency: 0.2007 +/- 0.0109
 Counting Efficiency: 0.1601 +/- 0.0028 on 12/11/2015 8:20:51 AM
 Chem. Recovery Factor: 1.2537 +/- 0.0715

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232 T	5.276	415.98	9.62	1.02	0.00E+000	12.9
U-234	4.699	8.49	69.59	0.51	0.00E+000	3.0
U-235	4.432	1.00	277.19	0.00	0.00E+000	3.0
U-238	4.148	4.00	109.57	0.00	0.00E+000	3.0

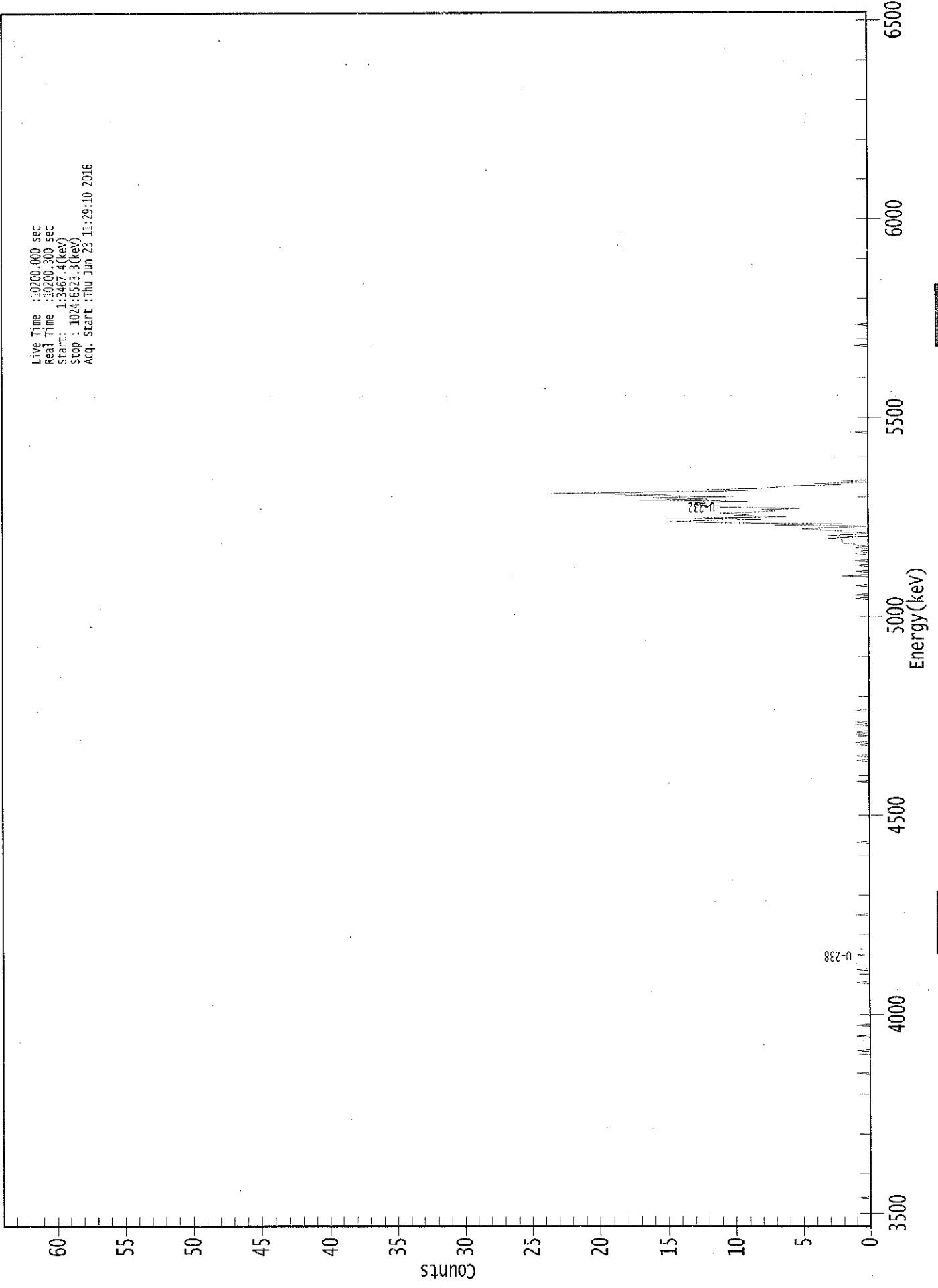
T = Tracer Peak used for Effective Efficiency

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	3.67E+000 +/- 3.90E-001	5.56E-002 +/- 5.91E-003
U-234	0.972	4761.50*	7.49E-002 +/- 5.27E-002	4.63E-002 +/- 4.92E-003
U-235	0.985	4385.50*	1.09E-002 +/- 3.02E-002	6.52E-002 +/- 6.93E-003
U-238	0.990	4184.40*	3.51E-002 +/- 3.87E-002	5.27E-002 +/- 5.60E-003

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0000155160.CNF



Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3467.4(keV)
Stop : 1024.6523.3(keV)
Acq. Start : Thu Jun 23 11:29:10 2016

ROI Type: 1

ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 02

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	1	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	1	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	1	0	0	0
153:	0	0	0	0	0	0	0	0
161:	1	0	0	0	0	0	0	0
169:	0	1	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	1	0	0
209:	0	0	0	0	0	0	0	0
217:	1	0	0	0	0	0	0	0
225:	0	0	0	0	1	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	1	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	1	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 1 0

Sample Title: 02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	1	0	0	0	1	0	0	0
401:	0	0	0	0	0	1	0	1
409:	0	0	0	0	0	0	1	0
417:	1	0	0	0	0	0	1	0
425:	1	0	0	0	0	0	0	0
433:	0	0	1	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	1	0	0	1	0	0	0	0
537:	0	0	0	1	0	0	0	0
545:	0	0	0	2	0	0	0	1
553:	0	0	0	0	1	0	0	0
561:	1	0	0	0	0	0	1	0
569:	1	0	0	1	0	1	1	2
577:	2	2	2	3	1	3	1	0
585:	2	2	4	5	2	0	7	2
593:	11	15	12	8	15	6	10	9
601:	11	8	7	8	5	11	11	13
609:	12	13	9	17	12	16	10	18
617:	15	24	16	9	12	8	7	6
625:	2	4	0	2	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	1	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	1	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	1
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB
6/23/16

Sample Description: CP-5028 00-02 DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_039
 Chamber Serial Number: 06027396A
 Detector Serial Number: 83109
 Env. Background: System Bkgd 156901
 Reagent Blank: <not performed>

Sample Size: 1.538E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:29:12 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.662 mL
 Effective Efficiency: 0.2003 +/- 0.0109
 Counting Efficiency: 0.1862 +/- 0.0032 on 12/11/2015 8:20:49 AM
 Chem. Recovery Factor: 1.0757 +/- 0.0614

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.268	414.30	9.65	1.70	0.00E+000	14.6
U-234	4.713	115.81	18.32	1.19	0.00E+000	4.7
U-235	4.394	12.47	59.35	1.53	0.00E+000	3.0
U-238	4.142	127.62	17.54	2.38	0.00E+000	4.5

T = Tracer Peak used for Effective Efficiency

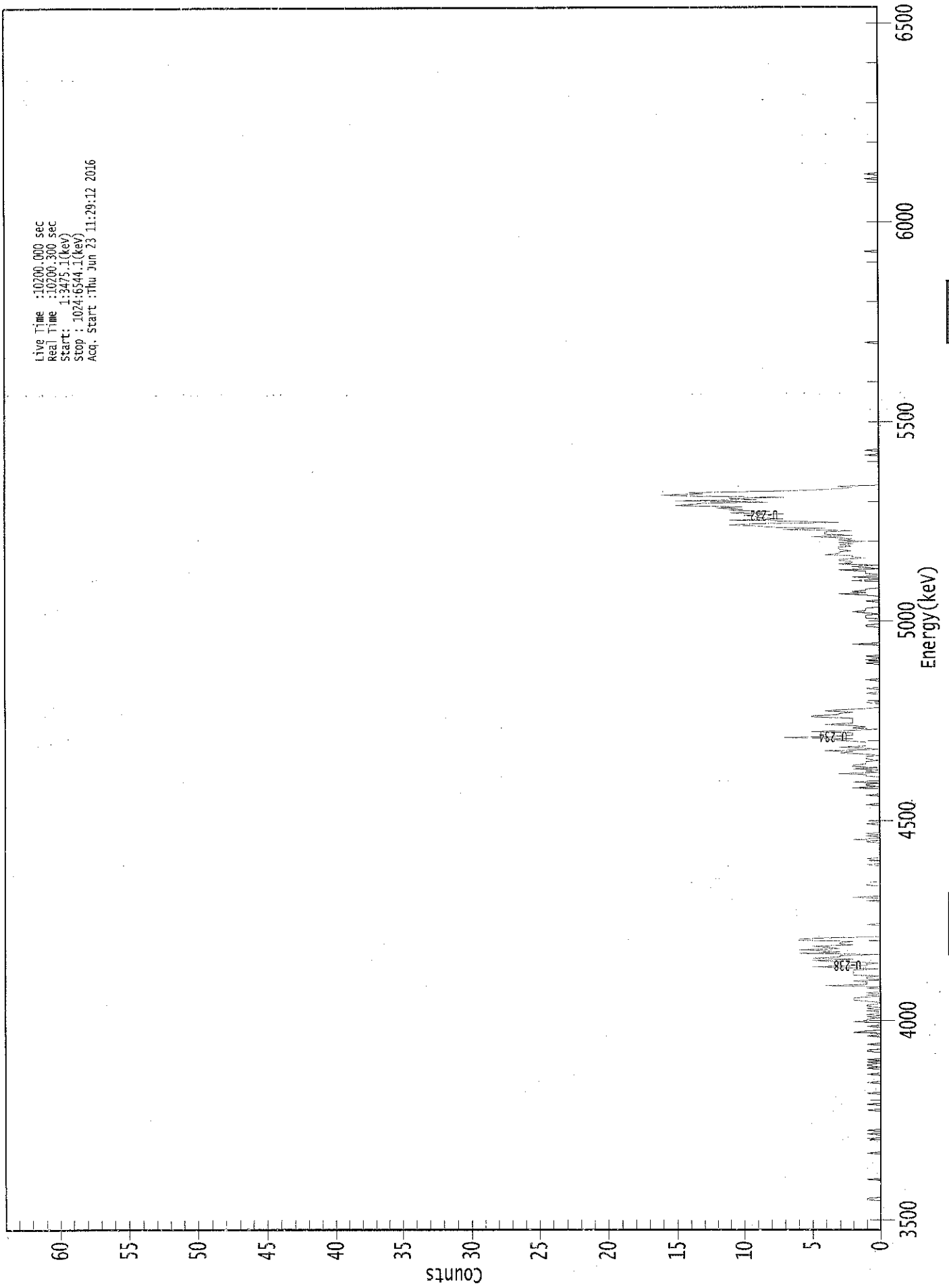
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.992	5302.50*	3.57E+000 +/- 3.81E-001	6.34E-002 +/- 6.75E-003
U-234	0.984	4761.50*	9.98E-001 +/- 2.12E-001	5.68E-002 +/- 6.05E-003
U-235	0.999	4385.50*	1.33E-001 +/- 8.00E-002	7.56E-002 +/- 8.05E-003
U-238	0.987	4184.40*	1.10E+000 +/- 2.25E-001	7.03E-002 +/- 7.50E-003

AK
6/24/16

0000155171.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:34:51.1 (keV)
Stop : 1024:6544.1 (keV)
Acq. Start : Thu Jun 23 11:29:12 2016



ROI Type: 1

ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 03

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	1	1	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	1	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	1	0	0	0	0	0	0	0
73:	0	0	0	0	1	0	0	0
81:	1	0	0	1	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	1	0	0	0
105:	0	1	0	0	0	0	0	0
113:	0	0	1	0	0	0	0	0
121:	0	0	0	1	0	0	0	0
129:	0	0	1	0	0	0	0	1
137:	0	1	1	0	1	0	1	0
145:	0	0	0	0	0	1	1	0
153:	0	0	0	1	0	0	0	0
161:	0	0	1	0	0	2	1	0
169:	0	0	1	0	0	0	2	1
177:	1	0	1	0	1	0	0	1
185:	0	1	0	1	1	0	0	1
193:	2	2	2	0	1	0	1	0
201:	0	0	1	0	4	1	1	1
209:	2	0	1	1	0	2	2	2
217:	2	2	0	3	5	1	1	0
225:	3	5	2	5	3	3	0	6
233:	3	4	6	3	4	5	2	3
241:	3	2	6	6	4	0	0	0
249:	0	0	0	0	0	0	0	1
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	1	0	0	2	0
281:	0	0	0	0	0	0	0	0
289:	1	1	1	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	1	0	0	0	0	1	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	1	0	2	0
329:	0	1	0	1	0	0	0	0
337:	0	0	0	1	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	1	0	0	0	0
361:	0	0	0	1	0	0	0	0

369: 0 2 0 1 1 0 2 0

Sample Title: 03

Channel	1	2	3	4	5	6	7	8
377:	0	0	0	1	1	3	0	1
385:	0	2	0	2	2	1	1	1
393:	0	1	1	1	0	1	3	2
401:	4	0	1	3	1	1	1	1
409:	2	4	2	7	3	2	2	2
417:	5	2	0	2	1	2	4	2
425:	2	2	2	2	5	5	3	3
433:	2	4	3	1	0	0	0	0
441:	1	0	0	0	0	0	0	0
449:	1	0	0	0	1	0	0	0
457:	0	0	0	1	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	1	0	0	1	0	0	1
481:	0	0	0	0	0	0	0	0
489:	0	2	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	1	1	0	0	0	0	0	1
513:	1	1	0	1	2	1	1	1
521:	0	0	0	0	0	1	0	0
529:	0	0	1	3	1	2	1	1
537:	0	0	0	0	0	0	2	0
545:	0	2	0	0	1	1	1	3
553:	0	1	2	0	3	2	2	3
561:	3	1	2	2	4	3	3	2
569:	3	3	3	2	3	2	3	1
577:	3	2	3	5	2	4	4	4
585:	2	7	4	8	9	11	9	3
593:	6	11	7	9	9	10	7	11
601:	8	11	10	12	10	15	14	13
609:	8	15	9	11	7	14	16	13
617:	14	8	5	3	2	3	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	1
649:	0	0	0	1	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	1	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 03

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	1	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	1	0
881:	0	0	1	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



LD
6/23/16

Sample Description: CP-5028 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_041
 Chamber Serial Number: 05026930A
 Detector Serial Number: 91087
 Env. Background: System Bkgd 156902
 Reagent Blank: <not performed>

Sample Size: 1.538E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:29:14 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.661 mL
 Effective Efficiency: 0.1789 +/- 0.0102
 Counting Efficiency: 0.1900 +/- 0.0033 on 12/11/2015 8:21:11 AM
 Chem. Recovery Factor: 0.9415 +/- 0.0560

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.268	369.83	10.19	0.17	0.00E+000	10.4
U-234	4.719	103.15	19.39	0.85	0.00E+000	5.8
U-235	4.411	11.66	58.37	0.34	0.00E+000	3.0
U-238	4.128	110.94	18.91	3.06	0.00E+000	3.7

T = Tracer Peak used for Effective Efficiency

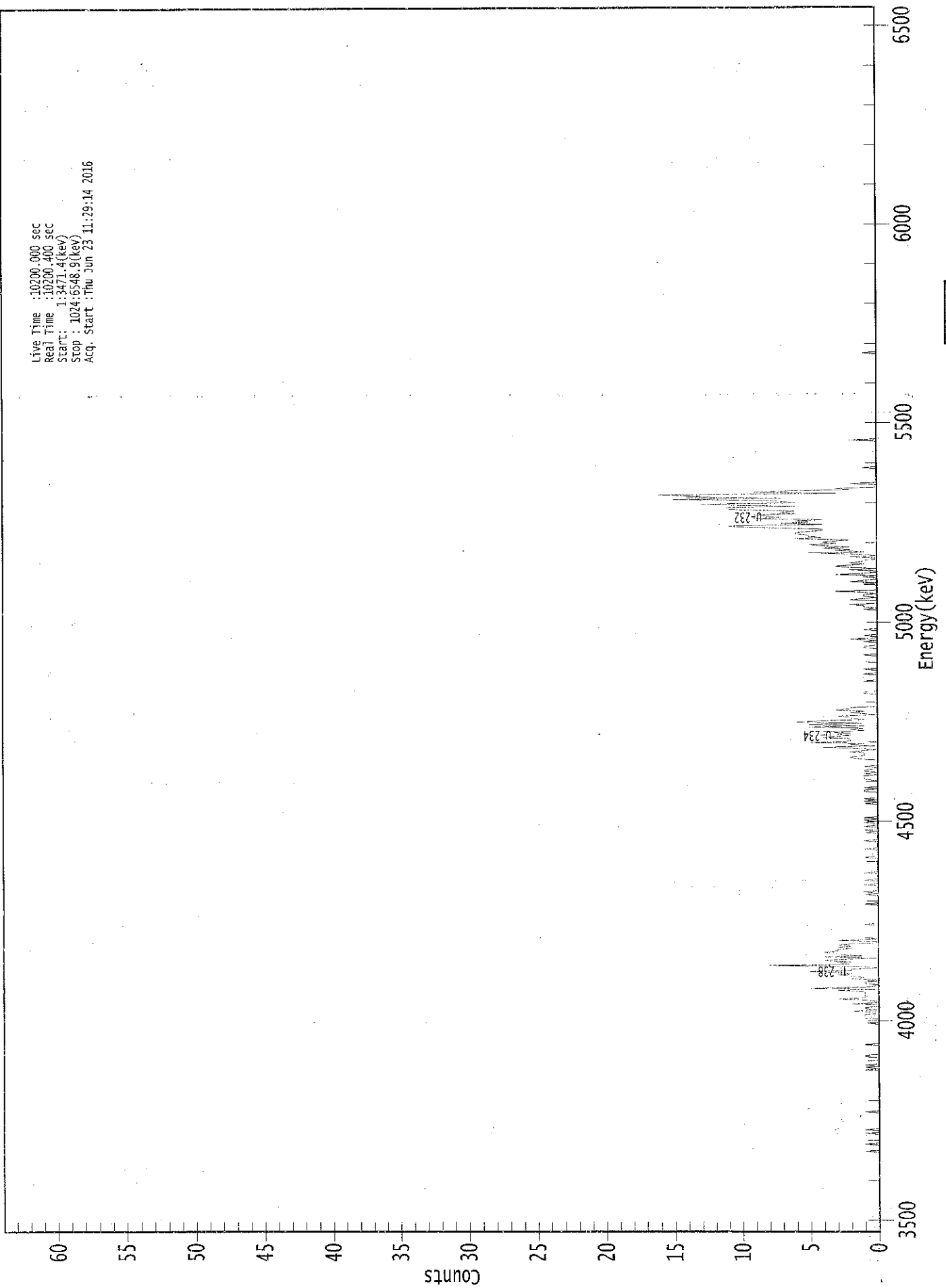
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.991	5302.50*	3.57E+000 +/- 3.98E-001	4.03E-002 +/- 4.49E-003
U-234	0.987	4761.50*	9.95E-001 +/- 2.23E-001	5.78E-002 +/- 6.44E-003
U-235	0.995	4385.50*	1.39E-001 +/- 8.25E-002	5.69E-002 +/- 6.34E-003
U-238	0.978	4184.40*	1.07E+000 +/- 2.34E-001	8.58E-002 +/- 9.57E-003

AG
6/24/16

0000155164.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:34:1.4(kev)
Stop : 1024:6548.9(kev)
Acq. Start :Thu Jun 23 11:29:14 2016



ROI Type: 3

ROI Type: 1

00100

SPECTRAL DATA REPORT

Sample Title: 04

Elapsed Live time: 10200
Elapsed Real Time: 10200

Table with 9 columns and 36 rows of channel data counts. Columns are separated by dashed lines. Values range from 0 to 5.

369: 1 0 1 0 0 0 0 0

Sample Title: 04

Channel	1	2	3	4	5	6	7	8
377:	0	1	1	1	1	0	1	0
385:	1	1	0	0	1	0	0	0
393:	0	0	1	2	2	1	1	1
401:	2	1	0	2	4	0	2	1
409:	5	2	2	2	4	3	2	3
417:	2	4	1	2	1	5	1	5
425:	1	6	4	1	2	2	3	0
433:	1	2	1	3	2	2	0	0
441:	0	0	0	0	0	0	0	0
449:	0	1	1	0	0	0	0	0
457:	0	0	0	1	0	0	0	0
465:	0	1	0	0	0	1	0	0
473:	0	0	0	0	0	0	0	0
481:	0	1	0	0	0	0	0	1
489:	1	0	0	0	1	0	2	0
497:	0	1	0	0	0	0	1	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	1
521:	0	1	1	2	0	0	0	2
529:	1	0	1	1	0	1	3	0
537:	0	0	0	0	1	0	2	1
545:	0	0	1	0	3	1	0	0
553:	2	0	2	3	2	1	2	1
561:	1	0	0	2	0	1	5	1
569:	3	2	4	2	4	5	3	4
577:	3	2	6	4	5	5	6	6
585:	5	4	4	7	10	11	4	7
593:	5	6	4	9	7	8	9	6
601:	7	6	10	11	11	6	10	13
609:	6	7	8	15	7	14	13	16
617:	3	9	7	2	3	0	0	0
625:	2	0	0	0	0	0	0	0
633:	0	0	0	0	0	1	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	2	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	1	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 04

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



10
6/23/16

Sample Description: CP-5028 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_042
 Chamber Serial Number: 05026930B
 Detector Serial Number: 84185
 Env. Background: System Bkgd 156903
 Reagent Blank: <not performed>

Sample Size: 1.513E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:29:16 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.661 mL
 Effective Efficiency: 0.1986 +/- 0.0108
 Counting Efficiency: 0.1789 +/- 0.0031 on 12/11/2015 8:21:10 AM
 Chem. Recovery Factor: 1.1100 +/- 0.0635

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.279	410.49	9.68	0.51	0.00E+000	15.6
U-234	4.727	125.98	17.54	1.02	0.00E+000	6.0
U-235	4.411	8.83	66.70	0.17	0.00E+000	3.0
U-238	4.148	117.66	18.10	0.34	0.00E+000	4.0

T = Tracer Peak used for Effective Efficiency

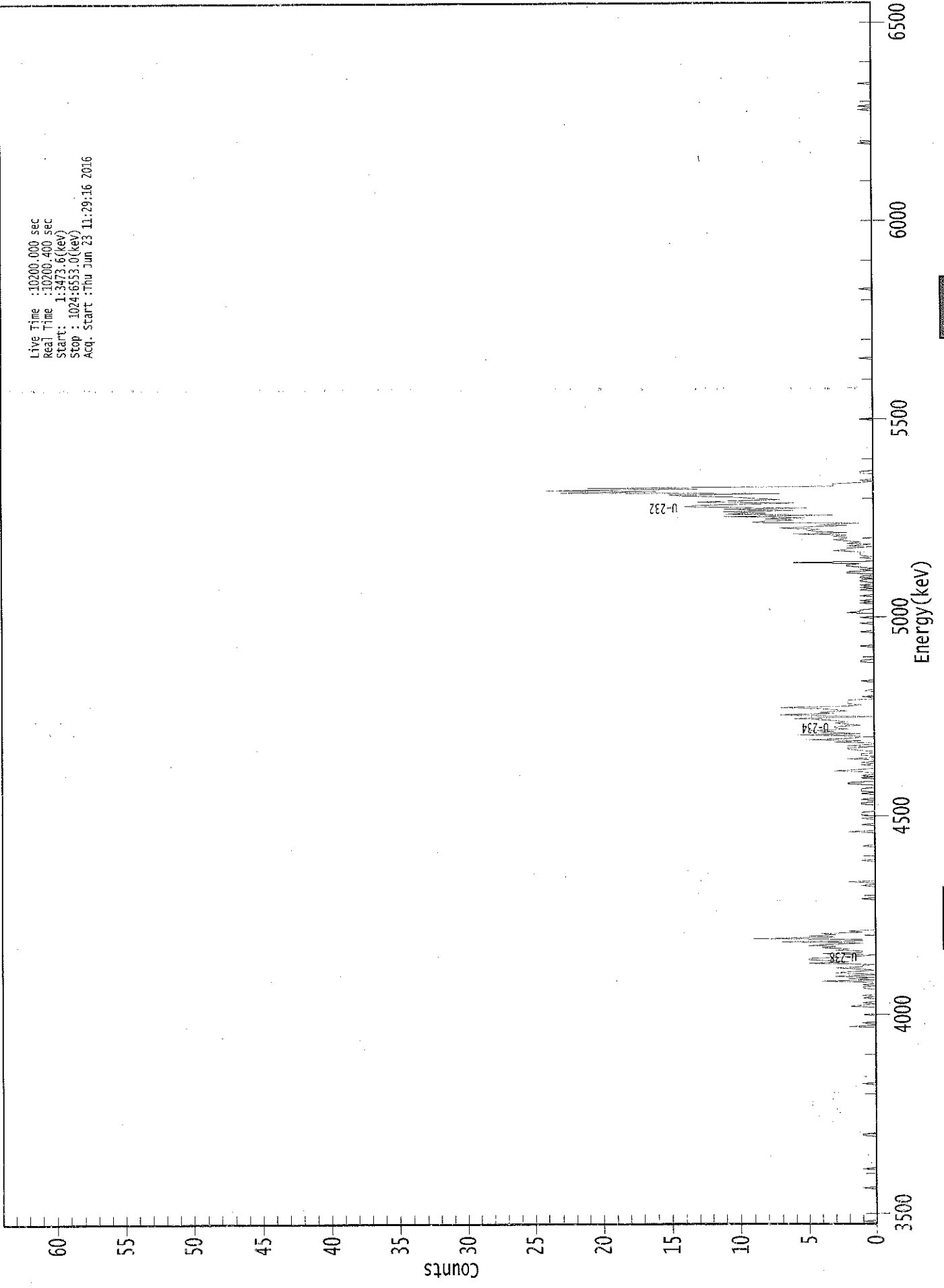
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.63E+000 +/- 3.88E-001	4.64E-002 +/- 4.96E-003
U-234	0.991	4761.50*	1.11E+000 +/- 2.29E-001	5.57E-002 +/- 5.95E-003
U-235	0.995	4385.50*	9.63E-002 +/- 6.50E-002	4.55E-002 +/- 4.86E-003
U-238	0.991	4184.40*	1.04E+000 +/- 2.18E-001	4.21E-002 +/- 4.49E-003

AG
6/24/16

0000155165.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3473.6(kev)
Stop : 1024:6553.0(kev)
Acq. Start :Thu Jun 23 11:29:16 2016



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 05

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	1	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	1	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	1	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	1	1	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	1	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	2	0	0
169:	1	0	0	0	0	0	0	1
177:	0	0	0	0	0	0	2	1
185:	0	1	0	0	0	1	0	1
193:	0	0	0	0	0	1	1	0
201:	1	0	0	4	0	2	0	3
209:	1	0	3	2	0	1	3	1
217:	1	0	5	2	3	5	5	3
225:	1	0	4	1	1	3	2	4
233:	3	5	3	1	7	1	1	9
241:	3	5	3	4	1	2	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	1	0	0	0	0	0	0	0
281:	0	0	0	1	0	0	2	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	1	0	0	0	0	0	0	0
313:	0	0	0	0	1	0	0	0
321:	0	0	0	0	0	0	0	0
329:	2	0	0	0	0	0	1	0
337:	0	0	0	1	0	0	1	1
345:	1	0	0	0	0	0	0	1
353:	1	0	0	1	0	0	0	0
361:	1	0	1	1	1	0	0	0

369: 2 2 0 0 0 1 0 1

Sample Title: 05

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	1	3	1	0	0	0	0
385:	1	0	1	0	0	2	0	0	0
393:	1	1	0	0	1	2	2	0	0
401:	2	0	0	3	1	5	2	1	1
409:	1	6	1	4	3	5	2	3	3
417:	3	1	2	3	2	3	4	6	6
425:	0	4	7	3	4	2	3	4	4
433:	7	2	1	2	2	2	2	0	0
441:	0	1	0	0	0	0	1	0	0
449:	0	0	0	0	0	0	1	0	0
457:	0	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	1	1	1
473:	0	0	0	0	0	0	0	0	0
481:	0	0	0	1	0	0	0	0	0
489:	0	0	0	0	0	0	0	1	1
497:	0	0	0	0	0	0	1	0	0
505:	0	0	0	1	0	0	0	2	2
513:	1	1	0	0	0	0	0	1	1
521:	0	1	0	0	0	1	0	0	0
529:	0	0	1	0	1	0	1	0	0
537:	0	1	1	0	1	1	0	0	0
545:	2	2	0	1	0	1	2	2	2
553:	1	6	0	0	0	1	0	1	1
561:	1	1	1	3	2	2	0	2	2
569:	0	2	1	2	3	2	2	3	3
577:	2	6	2	4	5	4	7	5	5
585:	2	4	1	9	8	6	8	5	5
593:	11	3	11	8	11	6	11	5	5
601:	14	13	10	6	13	10	7	9	9
609:	10	14	15	7	23	16	24	13	13
617:	21	3	3	3	1	0	1	0	0
625:	0	0	0	0	1	1	0	0	0
633:	0	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0	0
673:	0	1	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	1	0	0	0	0
729:	0	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	1	0	0
785:	0	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 05

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	1	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	1	0	0	1
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	1	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



165
6/23/14

Sample Description: CP-5028 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 06
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_043
 Chamber Serial Number: 04026481A
 Detector Serial Number: 91088
 Env. Background: System Bkgd 156904
 Reagent Blank: <not performed>

Sample Size: 1.513E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:29:18 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.660 mL
 Effective Efficiency: 0.1367 +/- 0.0087
 Counting Efficiency: 0.1890 +/- 0.0033 on 12/11/2015 8:21:08 AM
 Chem. Recovery Factor: 0.7231 +/- 0.0479

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.266	281.98	11.70	1.02	0.00E+000	9.3
U-234	4.706	69.32	23.68	0.68	0.00E+000	3.5
U-235	4.402	5.32	91.11	0.68	0.00E+000	3.0
U-238	4.136	66.32	24.21	0.68	0.00E+000	4.4

T = Tracer Peak used for Effective Efficiency

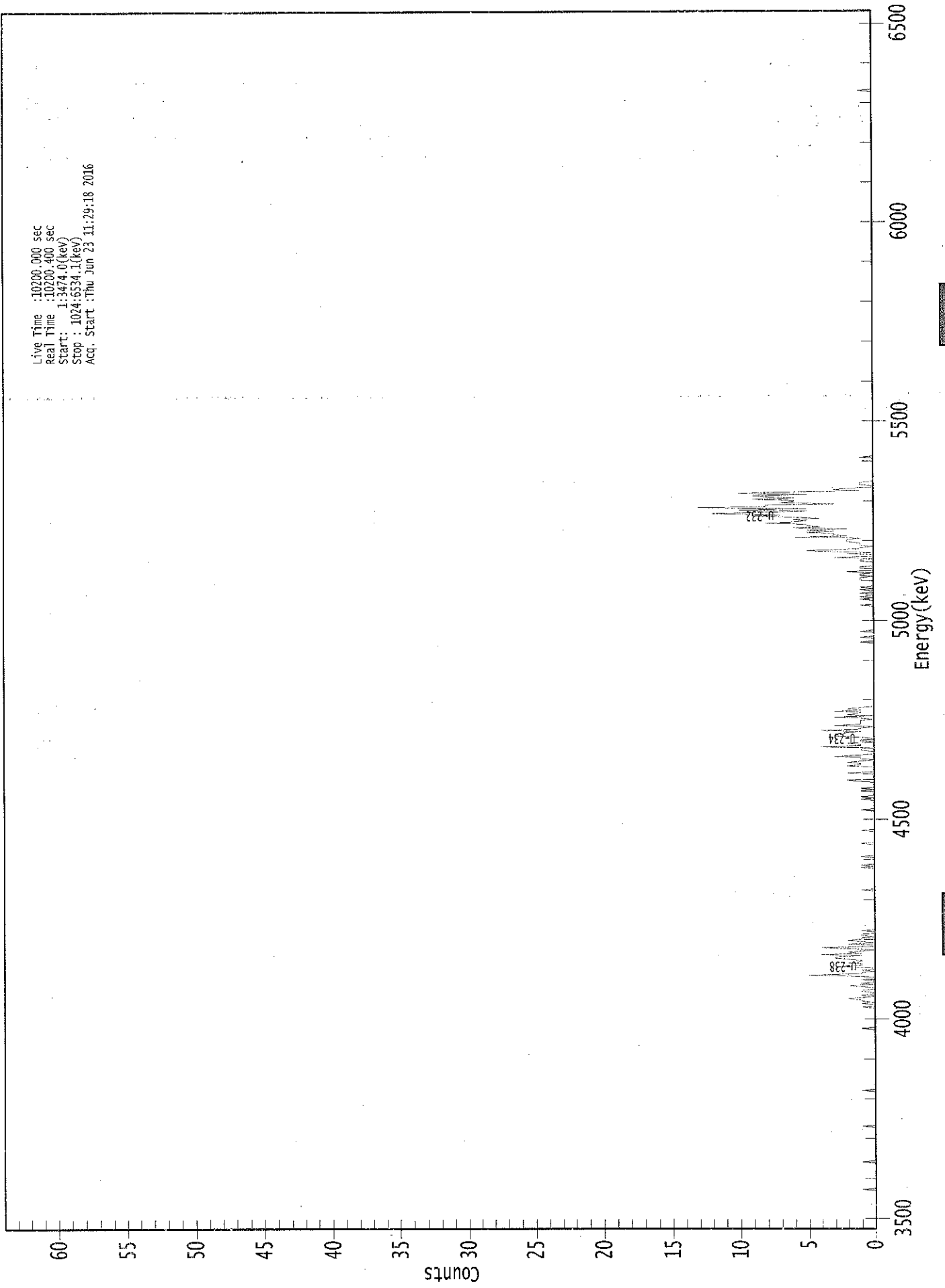
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.990	5302.50*	3.62E+000 +/- 4.54E-001	8.09E-002 +/- 1.01E-002
U-234	0.978	4761.50*	8.90E-001 +/- 2.38E-001	7.24E-002 +/- 9.08E-003
U-235	0.998	4385.50*	8.43E-002 +/- 7.75E-002	8.93E-002 +/- 1.12E-002
U-238	0.984	4184.40*	8.48E-001 +/- 2.31E-001	7.21E-002 +/- 9.04E-003

AG
6/24/16

0000155166.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start: 1:3474.0(kev)
Stop : 1024:6534.1(kev)
Acq. Start :Thu Jun 23 11:29:18 2016



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 06

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	1	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	1	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	1	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	1	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0	0
169:	1	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0	0
185:	0	0	1	0	0	1	0	1	1
193:	1	2	1	0	1	0	0	1	1
201:	1	0	0	1	2	0	1	0	0
209:	0	1	0	0	2	5	1	1	1
217:	0	1	0	0	3	1	1	2	2
225:	1	1	2	3	3	1	4	1	1
233:	2	1	0	2	4	0	0	2	2
241:	0	1	2	1	1	0	1	1	1
249:	0	0	1	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	1	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	1	1
305:	0	1	0	0	0	0	0	0	0
313:	1	0	0	0	0	0	0	0	0
321:	0	0	0	1	0	0	0	0	0
329:	0	0	0	0	0	0	1	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	1	1
353:	0	0	0	0	0	0	0	0	0
361:	1	0	1	0	0	0	0	1	1

369: 0 1 0 0 0 0 0 1

Sample Title: 06

Channel	1	2	3	4	5	6	7	8	9
377:	2	0	0	0	0	0	2	0	
385:	0	0	0	0	2	1	1	2	
393:	1	0	1	1	3	1	0	0	
401:	0	1	1	0	4	1	1	2	
409:	0	1	1	0	1	3	3	3	
417:	2	1	4	1	1	0	3	1	
425:	1	1	1	0	1	3	0	2	
433:	1	1	3	1	2	1	0	0	
441:	0	0	0	0	0	0	0	0	
449:	0	0	0	0	0	0	0	0	
457:	0	0	0	0	0	0	0	0	
465:	0	0	0	0	0	0	0	0	
473:	0	0	0	0	0	0	0	0	
481:	0	0	0	0	0	0	0	0	
489:	0	0	0	0	1	0	0	0	
497:	1	0	0	0	0	1	0	0	
505:	0	0	0	0	0	0	0	0	
513:	0	0	0	0	0	0	0	0	
521:	0	0	0	1	0	0	0	0	
529:	1	0	1	0	0	1	0	0	
537:	1	0	1	0	0	0	0	0	
545:	1	1	1	0	1	1	0	2	
553:	0	0	1	1	0	0	0	0	
561:	1	1	0	3	0	0	2	0	
569:	4	5	1	1	0	1	1	1	
577:	2	2	2	1	6	2	3	3	
585:	5	3	5	2	6	4	5	5	
593:	8	6	5	6	4	6	9	7	
601:	12	8	5	10	5	13	8	8	
609:	3	7	6	6	9	6	8	9	
617:	5	10	8	1	3	2	0	0	
625:	1	1	1	0	0	0	0	0	
633:	0	0	0	0	0	0	0	0	
641:	0	0	0	0	0	0	0	1	
649:	0	0	0	0	0	0	0	0	
657:	0	0	0	0	0	0	0	0	
665:	0	0	0	0	0	0	0	0	
673:	0	0	0	0	0	0	0	0	
681:	0	0	0	0	0	0	0	0	
689:	0	0	0	0	0	0	0	0	
697:	0	0	0	0	0	0	0	0	
705:	0	0	0	0	0	0	0	0	
713:	0	0	0	0	0	0	0	0	
721:	0	0	0	0	0	0	0	0	
729:	0	0	0	0	0	0	0	0	
737:	0	0	0	0	0	0	0	0	
745:	0	0	0	0	0	0	0	0	
753:	0	0	0	0	0	0	0	0	
761:	0	0	0	0	0	0	0	0	
769:	0	0	0	0	0	0	0	0	
777:	0	0	0	0	0	0	0	0	
785:	0	0	0	0	0	0	0	0	
793:	0	0	0	0	0	0	0	0	

801: 0 0 0 0 0 0 0 0

Sample Title: 06

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	1	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



108
6/23/16

Sample Description: CP-5028 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 07
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_044
 Chamber Serial Number: 04026481B
 Detector Serial Number: 84168
 Env. Background: System Bkgd 156905
 Reagent Blank: <not performed>

Sample Size: 1.529E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:29:19 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.661 mL
 Effective Efficiency: 0.2102 +/- 0.0112
 Counting Efficiency: 0.1864 +/- 0.0033 on 12/11/2015 8:21:07 AM
 Chem. Recovery Factor: 1.1276 +/- 0.0631

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.284	434.83	9.40	0.17	0.00E+000	17.6
U-234	4.736	113.83	18.39	0.17	0.00E+000	7.7
U-235	4.392	6.83	76.08	0.17	0.00E+000	3.0
U-238	4.162	118.00	18.12	0.00	0.00E+000	13.5

T = Tracer Peak used for Effective Efficiency

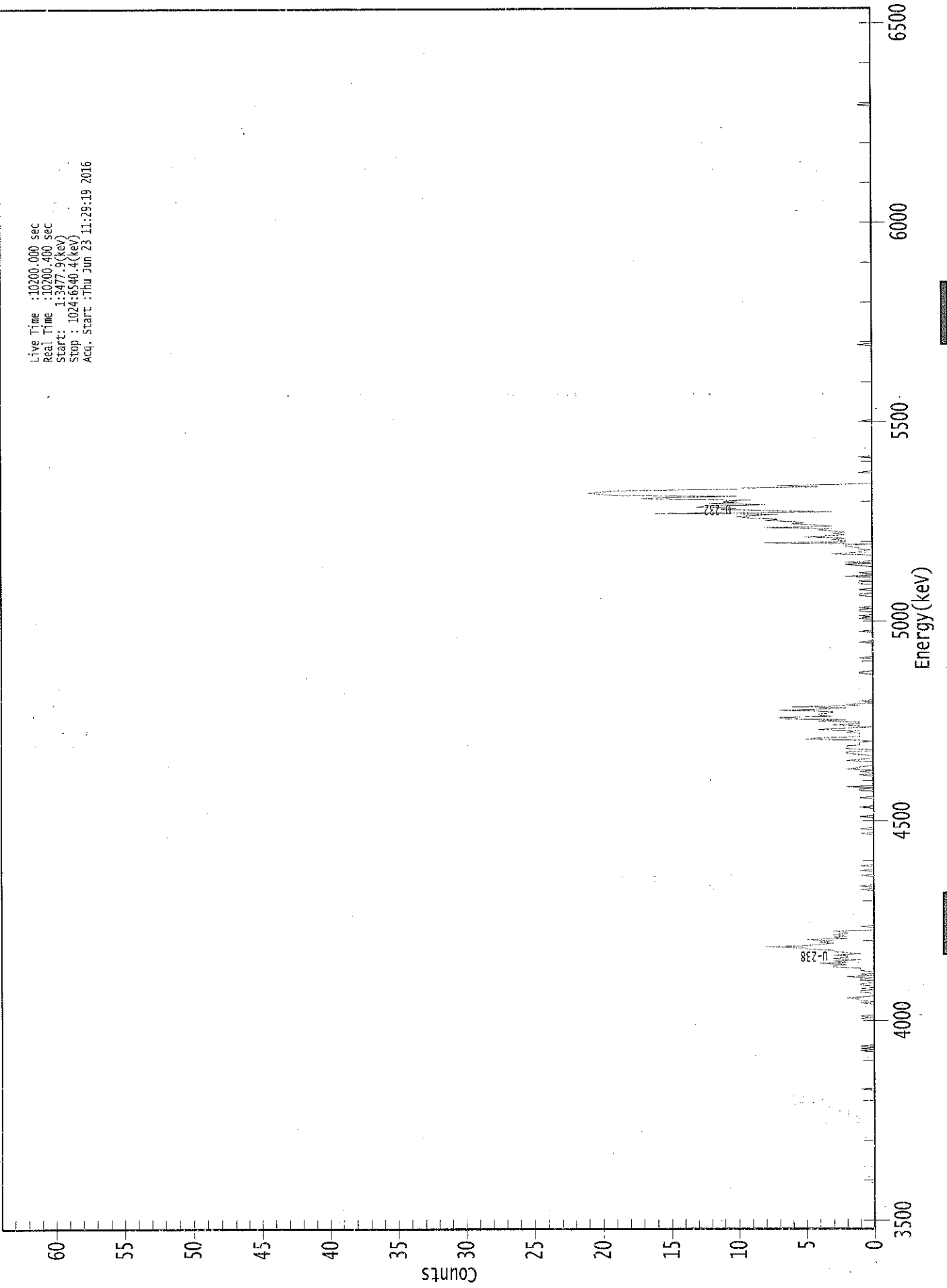
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	3.59E+000 +/- 3.75E-001	3.45E-002 +/- 3.60E-003
U-234	0.995	4761.50*	9.40E-001 +/- 1.99E-001	3.45E-002 +/- 3.59E-003
U-235	1.000	4385.50*	6.96E-002 +/- 5.34E-002	4.25E-002 +/- 4.43E-003
U-238	0.997	4184.40*	9.70E-001 +/- 2.03E-001	4.93E-002 +/- 5.14E-003

AG
6/24/16

0000155167.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3477.9 (keV)
Stop : 1024:6540.4 (keV)
Acq. Start : Thu Jun 23 11:29:19 2016



ROI Type: 3

ROI Type: 1

000115

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 07

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	1	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	1	0	1	1
153:	0	1	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	0
177:	1	0	1	0	0	0	0	0	0
185:	0	0	0	0	0	1	0	1	1
193:	1	2	1	0	0	0	1	1	1
201:	0	1	0	0	1	1	0	0	0
209:	1	1	0	2	0	1	0	0	0
217:	1	1	1	3	3	2	4	2	2
225:	3	1	3	2	2	3	1	2	2
233:	3	3	5	5	8	5	4	3	3
241:	4	3	5	2	3	2	3	2	2
249:	2	3	0	0	0	1	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	1	0	0	1	1
289:	0	0	0	0	0	0	0	0	0
297:	1	0	0	0	1	0	0	0	0
305:	1	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	1	0	0	0	1	1
337:	0	0	0	0	0	0	0	0	0
345:	0	1	0	0	0	0	0	0	0
353:	0	1	0	0	0	0	0	0	0
361:	0	1	0	0	0	0	0	1	1

369: 1 0 2 0 0 0 0 0

Sample Title: 07

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	0	1	0	0	1	
385:	0	2	1	1	0	0	0	0	0
393:	2	1	0	0	0	1	2	2	
401:	0	0	2	2	2	1	1	1	
409:	0	1	5	4	1	1	1	1	
417:	2	1	4	3	0	1	3	1	
425:	1	4	2	7	7	3	4	4	
433:	3	3	7	4	2	6	1	2	
441:	0	1	1	0	0	0	0	0	
449:	0	0	0	0	0	0	0	0	
457:	0	0	0	0	0	0	0	0	
465:	0	1	1	0	0	0	0	0	
473:	0	0	0	0	0	0	1	0	
481:	0	0	0	0	0	0	0	0	
489:	0	0	0	1	0	0	0	0	
497:	0	0	0	0	1	0	0	0	
505:	0	0	0	0	0	0	0	1	
513:	0	1	0	0	0	1	1	0	
521:	1	0	0	0	0	0	0	0	
529:	0	0	1	1	0	0	0	1	
537:	0	0	0	0	1	1	1	0	
545:	0	0	2	0	0	1	0	0	
553:	0	0	0	1	2	0	2	0	
561:	0	0	0	0	0	3	1	1	
569:	0	1	1	2	2	0	8	2	
577:	2	3	2	5	3	2	3	2	
585:	3	4	3	8	3	4	6	5	
593:	6	8	7	9	10	9	7	16	
601:	3	8	11	10	13	12	8	12	
609:	10	11	9	17	16	10	19	20	
617:	21	20	19	10	10	4	7	2	
625:	0	0	0	0	0	0	0	0	
633:	0	1	0	0	0	0	0	0	
641:	0	0	0	0	0	0	1	0	
649:	0	0	0	0	0	0	0	0	
657:	0	0	0	0	0	0	0	0	
665:	0	0	0	0	0	0	0	0	
673:	0	0	0	0	1	0	0	0	
681:	0	0	0	0	0	0	0	0	
689:	0	0	0	0	0	0	0	0	
697:	0	0	0	0	0	0	0	0	
705:	0	0	0	0	0	0	0	0	
713:	0	0	0	0	0	0	0	0	
721:	0	0	0	0	0	0	0	0	
729:	0	0	0	0	0	0	0	0	
737:	0	0	0	0	1	0	0	0	
745:	0	0	0	0	0	0	0	0	
753:	0	0	0	0	0	0	0	0	
761:	0	0	0	0	0	0	0	0	
769:	0	0	0	0	0	0	0	0	
777:	0	0	0	0	0	0	0	0	
785:	0	0	0	0	0	0	0	0	
793:	0	0	0	0	0	0	0	0	

801: 0 0 0 0 0 0 0 0

Sample Title: 07

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	1	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KS
6/23/14

Apex-Alpha™

Sample Description: CP-5029 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 08
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_045
 Chamber Serial Number: 04026482A
 Detector Serial Number: 91131
 Env. Background: System Bkgd 156906
 Reagent Blank: <not performed>

Sample Size: 1.515E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:29:21 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.659 mL
 Effective Efficiency: 0.1934 +/- 0.0107
 Counting Efficiency: 0.1710 +/- 0.0030 on 12/11/2015 8:21:05 AM
 Chem. Recovery Factor: 1.1309 +/- 0.0656

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.270	398.15	9.84	0.85	0.00E+000	24.9
U-234	4.727	109.66	18.75	0.34	0.00E+000	9.0
U-235	4.385	12.00	58.89	0.00	0.00E+000	3.0
U-238	4.148	113.49	18.45	0.51	0.00E+000	10.3

T = Tracer Peak used for Effective Efficiency

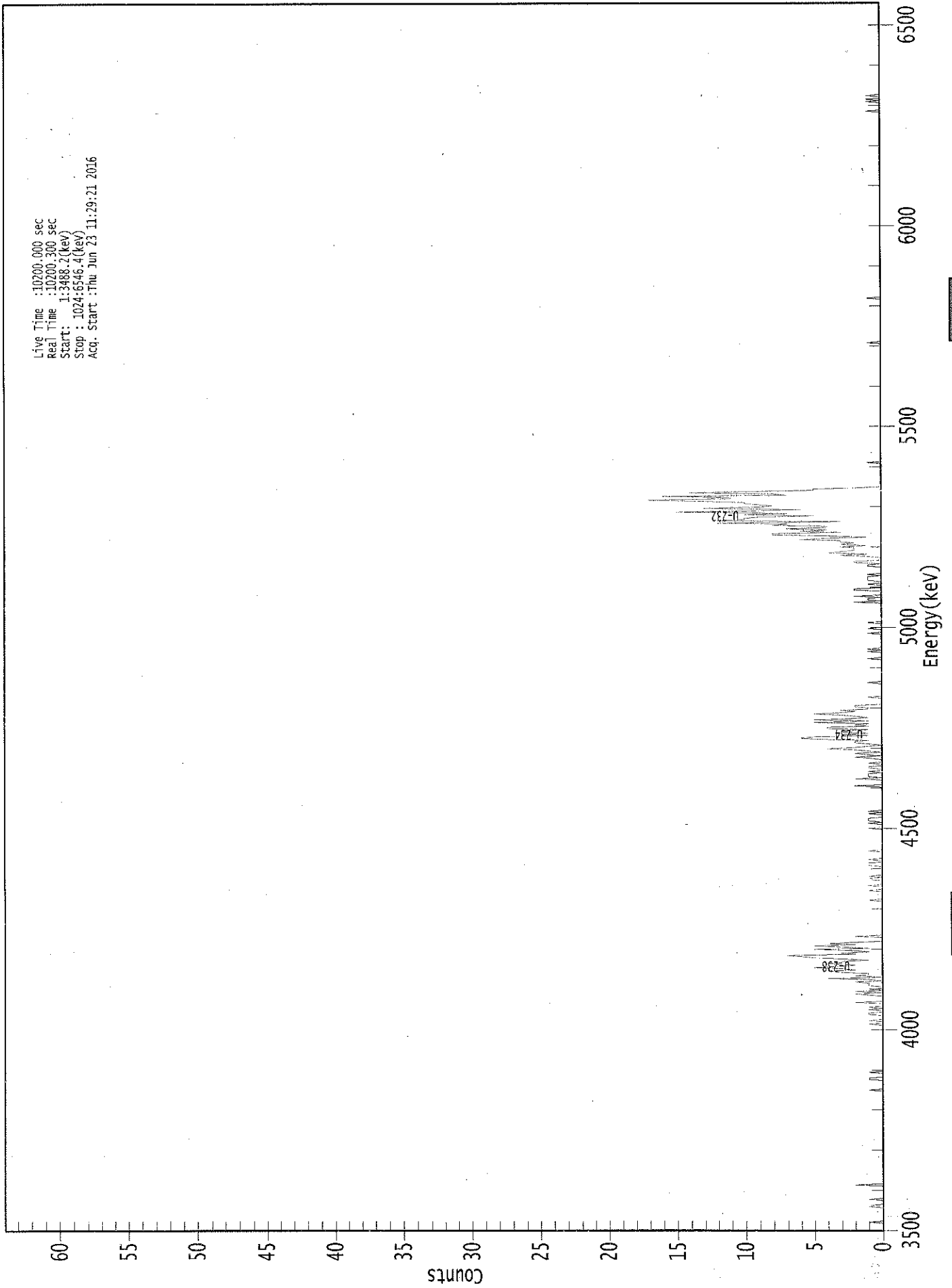
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.992	5302.50*	3.61E+000 +/- 3.91E-001	5.43E-002 +/- 5.87E-003
U-234	0.991	4761.50*	9.94E-001 +/- 2.15E-001	4.33E-002 +/- 4.69E-003
U-235	1.000	4385.50*	1.34E-001 +/- 8.03E-002	6.70E-002 +/- 7.25E-003
U-238	0.991	4184.40*	1.02E+000 +/- 2.19E-001	4.73E-002 +/- 5.12E-003

AG
6/24/16

0000155161.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3488.2(keV)
Stop : 1024:6546.4(keV)
Acq. Start :Thu Jun 23 11:29:21 2016



ROI Type: 3

ROI Type: 1

02100

***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 08

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	1
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	1	1	0	0
25:	0	0	1	0	0	0	0	0
33:	0	0	0	0	0	0	2	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	1	0	0
121:	0	0	0	0	0	0	1	1
129:	0	0	0	0	1	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	1	0	0	1
177:	0	0	0	0	1	1	0	0
185:	1	0	1	0	0	0	2	0
193:	0	0	0	0	1	2	0	2
201:	0	1	0	0	1	1	1	2
209:	0	1	4	0	2	1	1	3
217:	4	2	3	5	3	2	4	3
225:	3	1	3	5	6	7	2	3
233:	1	2	5	1	3	5	2	4
241:	2	0	0	0	0	2	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	1	0	0	0	0
281:	0	0	0	1	0	0	0	1
289:	0	0	0	0	1	1	0	1
297:	0	0	0	0	0	0	0	0
305:	1	1	1	0	0	1	0	0
313:	0	0	0	0	1	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	1
337:	0	0	0	1	0	1	1	1
345:	0	0	0	1	0	1	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369: 0 0 2 0 0 0 0 0

Sample Title: 08

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	2	0	1	1	1	0	1	0
385:	0	1	1	0	0	1	0	0
393:	0	1	2	0	1	2	0	1
401:	2	4	2	1	0	1	2	2
409:	1	5	6	5	1	3	1	3
417:	3	1	4	4	1	2	1	5
425:	1	5	2	1	2	3	5	3
433:	2	3	1	1	2	2	0	0
441:	0	0	0	0	1	0	0	0
449:	0	0	0	0	0	0	0	0
457:	1	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	1	0	0	0
481:	0	0	1	0	1	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	1	0	0	0	1	0	0
505:	0	0	1	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	2	0	1	1	0
529:	2	0	0	0	0	2	2	0
537:	0	0	1	0	0	1	1	1
545:	1	0	1	0	0	0	0	0
553:	0	1	1	0	2	2	0	0
561:	0	1	3	1	4	3	2	2
569:	2	3	1	3	2	3	3	6
577:	4	1	4	8	8	3	6	4
585:	7	4	4	8	7	12	3	12
593:	10	10	9	5	10	7	15	10
601:	6	13	9	8	9	10	10	14
609:	17	11	11	16	7	8	14	10
617:	5	5	2	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	1
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	1	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	1	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 08

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	1	0	0	0
937:	0	0	0	0	1	0	1	0
945:	0	1	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

105
6/23/16

Sample Description: CP-5029 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 09
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha 046
 Chamber Serial Number: 04026482B
 Detector Serial Number: 58762
 Env. Background: System Bkgd 156907
 Reagent Blank: <not performed>

Sample Size: 1.524E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:29:23 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.660 mL
 Effective Efficiency: 0.1212 +/- 0.0082
 Counting Efficiency: 0.1806 +/- 0.0032 on 12/11/2015 8:21:03 AM
 Chem. Recovery Factor: 0.6711 +/- 0.0467

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.263	250.15	12.42	0.85	0.00E+000	7.7
U-234	4.713	69.98	23.63	1.02	0.00E+000	3.6
U-235	4.422	6.30	89.57	1.70	0.00E+000	6.0
U-238	4.140	89.64	20.88	1.36	0.00E+000	3.8

T = Tracer Peak used for Effective Efficiency

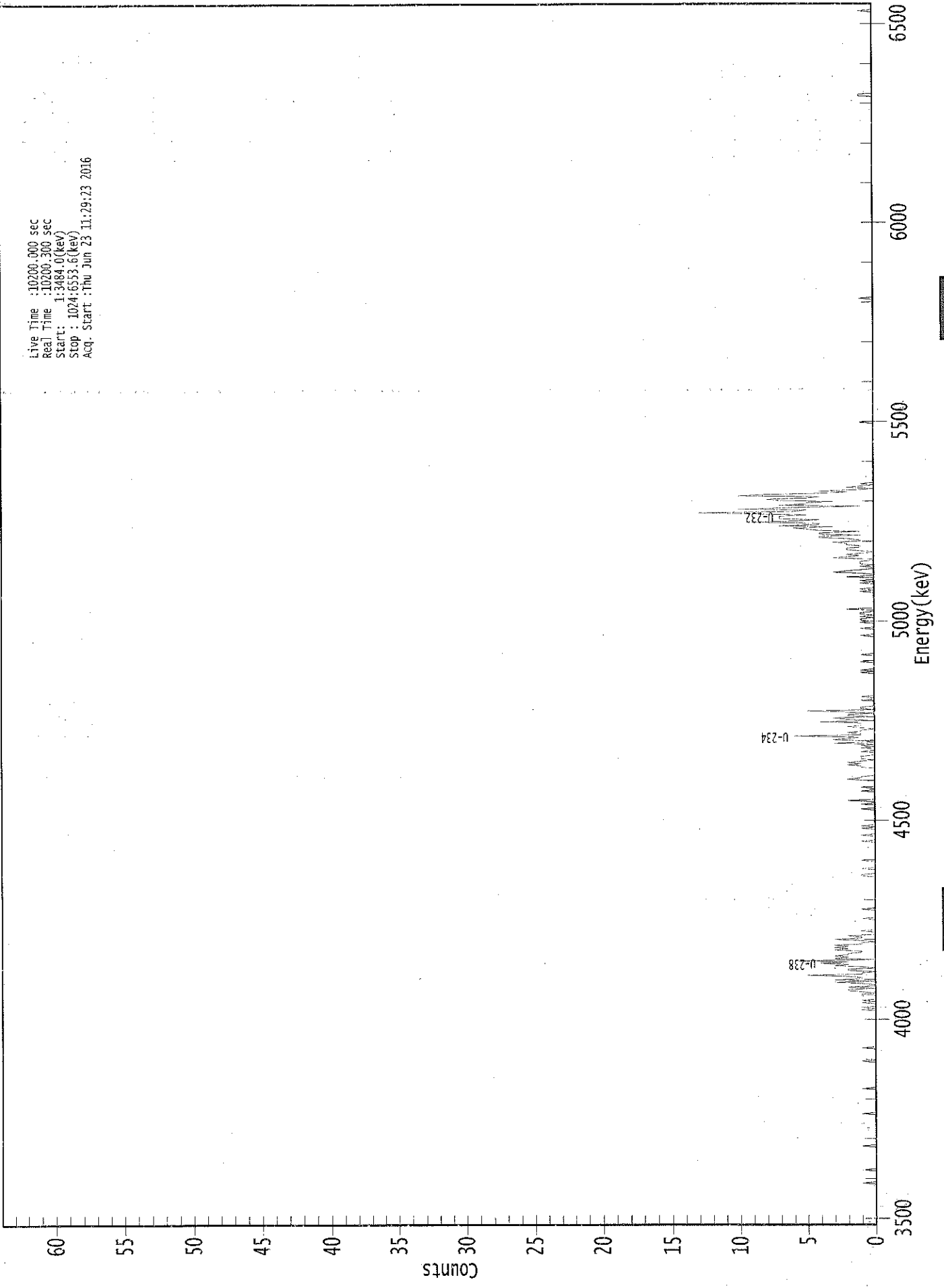
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.989	5302.50*	3.60E+000 +/- 4.75E-001	8.61E-002 +/- 1.14E-002
U-234	0.983	4761.50*	1.01E+000 +/- 2.72E-001	9.06E-002 +/- 1.20E-002
U-235	0.991	4385.50*	1.12E-001 +/- 1.01E-001	1.30E-001 +/- 1.72E-002
U-238	0.986	4184.40*	1.28E+000 +/- 3.17E-001	9.81E-002 +/- 1.30E-002

AG
6/24/16

0000155162.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3484.0(kev)
Stop : 1024:6533.6(kev)
Acq. Start : Thu Jun 23 11:29:23 2016



ROI Type: 3

ROI Type: 1

***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 09

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel									
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	1	0	0	0	0	0
41:	0	0	0	0	0	0	1	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	1	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	1	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	1	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	1	0	0	0	0	0	0	0
145:	0	0	0	0	1	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	0
177:	0	0	0	0	1	0	1	0	0
185:	0	0	1	0	1	0	0	0	0
193:	0	1	0	1	2	2	0	0	2
201:	0	0	1	3	0	3	1	1	1
209:	2	5	1	1	0	2	2	0	0
217:	1	3	2	4	2	6	0	0	3
225:	2	3	2	2	1	1	3	0	2
233:	3	2	3	1	1	0	1	0	3
241:	1	1	2	0	0	0	1	0	0
249:	0	0	0	0	0	0	0	0	0
257:	1	0	0	0	0	0	0	0	0
265:	1	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	1	1	0	0	0
297:	0	0	1	0	0	0	0	0	0
305:	0	1	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	1	0	0	0	0	1	0	0
329:	0	0	0	0	1	0	1	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	0	0	0	1	0	0	0	0
353:	1	0	0	2	0	0	0	0	0
361:	0	0	0	1	0	0	1	0	0

369: 0 0 0 0 1 2 1 1

Sample Title: 09

Channel	1	2	3	4	5	6	7	8
377:	0	0	0	0	0	0	0	1
385:	1	2	1	2	1	0	1	1
393:	1	0	0	0	1	0	0	1
401:	0	1	0	3	0	1	3	2
409:	1	6	1	1	2	1	1	0
417:	1	2	1	1	1	4	0	2
425:	3	0	2	2	0	2	5	0
433:	1	1	0	0	0	0	0	1
441:	0	0	1	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	1	0
465:	1	0	0	0	0	0	0	1
473:	0	0	0	0	0	1	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	1	0	0
497:	0	0	0	1	0	0	0	0
505:	1	0	1	1	0	1	0	1
513:	1	0	0	2	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	1	0	1	0	0	0
537:	0	1	0	1	0	0	2	0
545:	0	1	3	2	1	0	0	1
553:	0	1	1	1	0	0	3	2
561:	1	2	1	0	1	2	2	1
569:	1	2	2	3	1	1	2	4
577:	4	1	4	4	1	4	5	6
585:	3	7	4	4	9	6	4	7
593:	7	7	5	9	13	6	5	10
601:	6	1	7	5	5	3	7	8
609:	5	4	10	8	4	2	4	1
617:	0	2	1	0	1	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	1
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	1
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 09

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	1	1	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	1	0	0	0	0	0	0	0



Apex-Alpha™

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Sample Description: CP-5029 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 10
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_047
 Chamber Serial Number: 02030596A
 Detector Serial Number: 91086
 Env. Background: System Bkgd 156908
 Reagent Blank: <not performed>

Sample Size: 1.601E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:29:25 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.655 mL
 Effective Efficiency: 0.1997 +/- 0.0109
 Counting Efficiency: 0.1705 +/- 0.0030 on 12/11/2015 8:21:02 AM
 Chem. Recovery Factor: 1.1715 +/- 0.0672

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.263	409.32	9.70	0.68	0.00E+000	17.0
U-234	4.711	154.66	15.78	0.34	0.00E+000	4.7
U-235	4.379	8.83	66.70	0.17	0.00E+000	3.0
U-238	4.132	140.49	16.57	0.51	0.00E+000	5.2

T = Tracer Peak used for Effective Efficiency

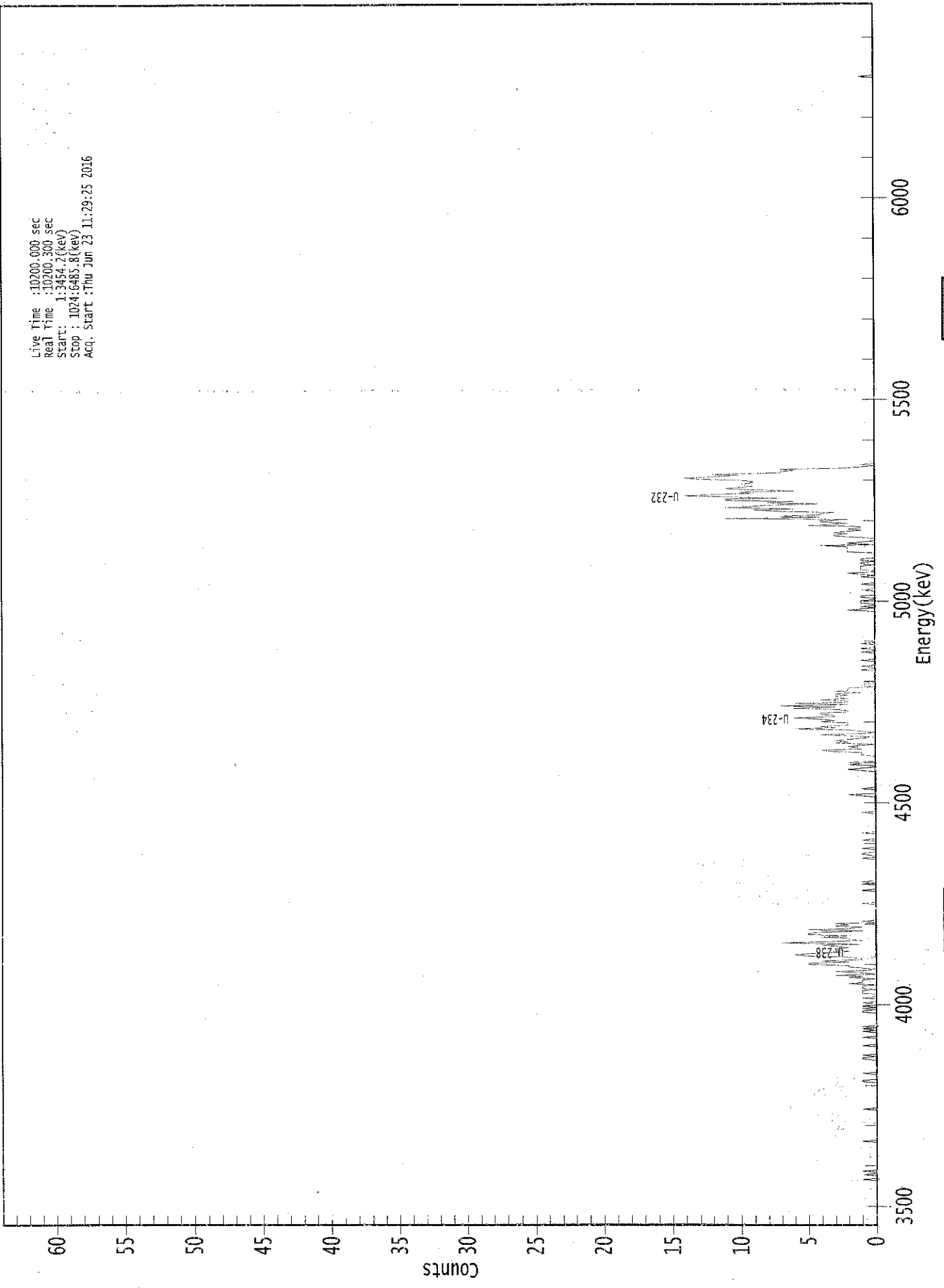
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.989	5302.50*	3.40E+000 +/- 3.54E-001	4.69E-002 +/- 5.01E-003
U-234	0.982	4761.50*	1.28E+000 +/- 2.45E-001	3.97E-002 +/- 4.25E-003
U-235	1.000	4385.50*	9.04E-002 +/- 6.11E-002	4.27E-002 +/- 4.57E-003
U-238	0.981	4184.40*	1.16E+000 +/- 2.29E-001	4.34E-002 +/- 4.64E-003

AG
6/24/16

0000155172.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:34:42.2 (keV)
Stop : 1024:04:55.8 (keV)
Acq. Start : Thu Jun 23 11:29:25 2016



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 10

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	1	0
41:	0	0	1	0	0	0	1	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	1	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	1	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	1	1	0	0	0	0	0	0	1
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	1	1	0	0	1	0
145:	0	0	0	0	0	0	0	1	0
153:	0	0	0	0	0	0	1	0	0
161:	0	0	1	0	1	0	0	1	0
169:	0	0	0	0	0	0	0	0	0
177:	0	0	1	1	0	0	1	0	1
185:	0	0	1	0	0	0	0	1	0
193:	0	0	1	1	1	0	0	1	1
201:	1	0	2	1	1	1	1	0	2
209:	1	3	0	1	3	1	0	0	1
217:	2	2	5	5	2	4	1	1	1
225:	2	5	6	5	3	2	3	3	3
233:	2	3	4	1	7	4	1	1	2
241:	2	4	2	5	5	4	1	1	5
249:	2	1	3	2	3	0	1	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	1	0	0
273:	0	0	0	0	0	0	0	0	0
281:	1	0	0	0	0	0	1	0	1
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0	0
305:	0	0	0	1	0	0	0	1	1
313:	0	0	0	1	0	0	0	0	0
321:	0	0	1	0	0	0	0	0	0
329:	1	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	1	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	1
361:	2	0	0	0	0	0	1	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	1	2	1	0
385:	0	2	1	2	0	0	0	0
393:	0	1	1	1	3	4	1	1
401:	2	1	0	3	2	3	2	1
409:	0	2	4	1	0	1	2	6
417:	3	4	2	2	2	4	3	4
425:	6	3	3	4	4	2	2	3
433:	6	3	7	2	6	2	2	4
441:	2	3	3	2	3	1	3	2
449:	2	2	0	1	1	0	0	0
457:	0	0	0	0	0	0	0	0
465:	1	0	0	1	0	0	0	0
473:	1	0	0	0	0	0	0	1
481:	0	0	1	0	0	0	1	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	2	1	0	1	0	0
521:	1	1	1	0	0	1	1	0
529:	0	0	0	1	0	0	0	0
537:	1	0	0	0	0	0	1	0
545:	1	2	0	0	1	1	1	1
553:	0	1	1	0	1	1	0	0
561:	0	0	0	2	2	2	2	2
569:	4	0	2	1	0	0	0	1
577:	3	3	2	3	2	1	2	1
585:	1	5	3	2	4	4	2	11
593:	4	7	4	4	3	7	9	6
601:	11	9	8	4	8	6	11	11
609:	7	11	14	12	9	10	6	9
617:	11	10	9	10	10	9	9	10
625:	13	14	12	10	12	7	7	6
633:	7	2	1	0	1	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 10

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	1	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



KD
6/23/16

Sample Description: CP-5029 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 11
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha 048
 Chamber Serial Number: 02030596B
 Detector Serial Number: 83111
 Env. Background: System Bkgd 156909
 Reagent Blank: <not performed>

Sample Size: 1.524E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:29:27 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232 UU-10A
 Tracer Quantity: 0.666 mL
 Effective Efficiency: 0.2209 +/- 0.0115
 Counting Efficiency: 0.1756 +/- 0.0031 on 12/11/2015 8:21:00 AM
 Chem. Recovery Factor: 1.2574 +/- 0.0691

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.276	459.64	9.16	1.36	0.00E+000	16.0
U-234	4.726	130.83	17.15	0.17	0.00E+000	3.9
U-235	4.385	8.66	68.12	0.34	0.00E+000	3.0
U-238	4.148	94.83	20.15	0.17	0.00E+000	8.9

T = Tracer Peak used for Effective Efficiency

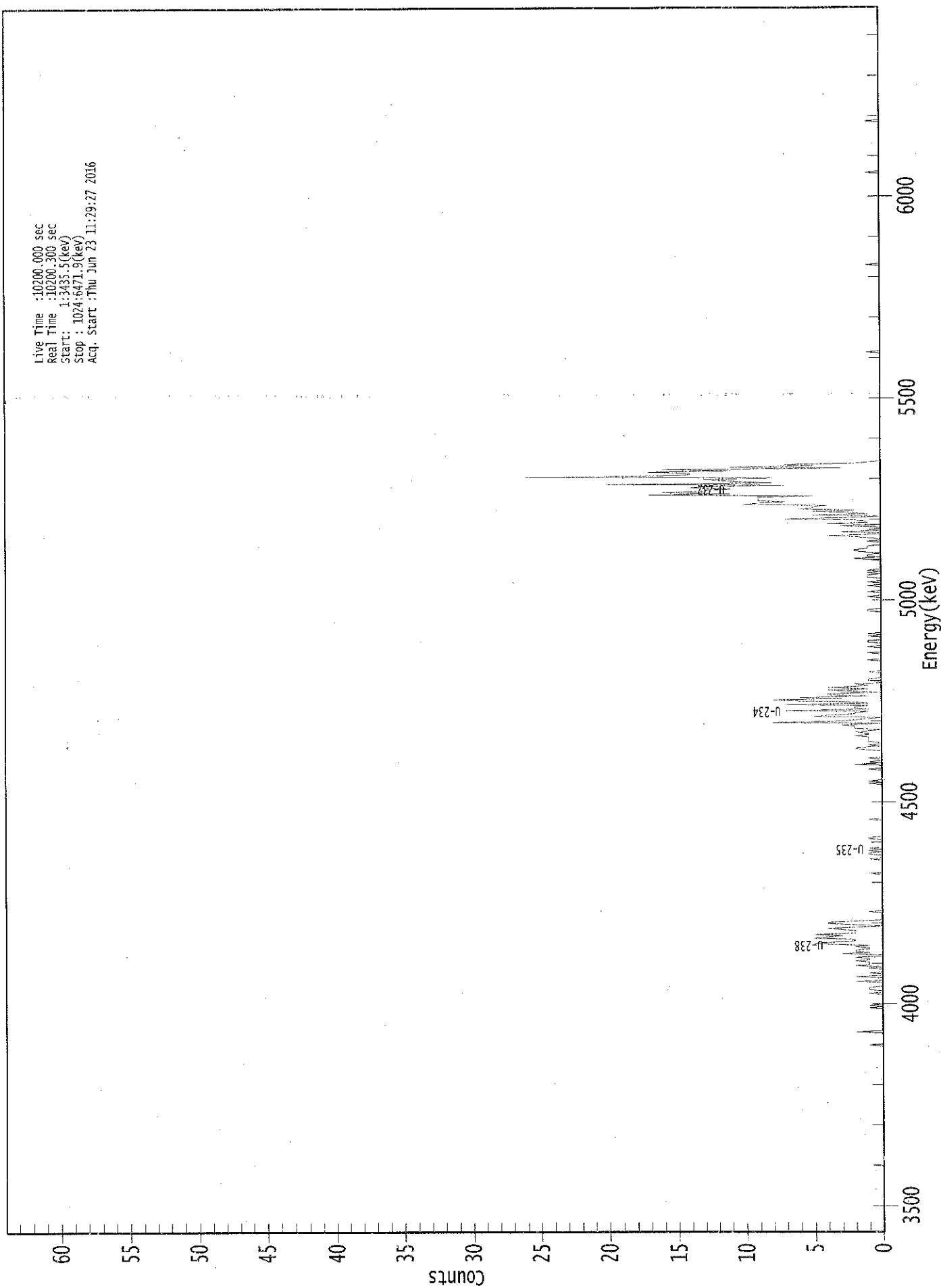
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	3.63E+000 +/- 3.70E-001	5.41E-002 +/- 5.52E-003
U-234	0.991	4761.50*	1.03E+000 +/- 2.06E-001	3.29E-002 +/- 3.36E-003
U-235	1.000	4385.50*	8.43E-002 +/- 5.80E-002	4.65E-002 +/- 4.75E-003
U-238	0.991	4184.40*	7.45E-001 +/- 1.68E-001	3.28E-002 +/- 3.35E-003

AG
6/24/16

0000155173.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3435.5(kev)
Stop : 1024:6471.9(kev)
Acq. Start :Thu Jun 23 11:29:27 2016



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 11

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	1	0	0	0	0
161:	0	0	0	0	0	0	0	0	2
169:	0	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0	0
185:	0	0	0	1	0	1	0	0	0
193:	0	0	0	0	0	0	0	0	1
201:	0	0	1	1	1	0	0	0	0
209:	0	2	0	0	0	2	0	0	0
217:	1	0	0	0	1	0	2	1	0
225:	1	1	2	1	1	2	0	0	0
233:	3	1	2	2	1	1	2	1	0
241:	4	5	3	2	2	5	4	3	0
249:	5	2	2	2	3	4	2	0	0
257:	2	4	4	2	0	0	0	0	0
265:	0	0	0	1	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	1	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	1
313:	0	0	0	1	1	0	1	0	0
321:	1	0	0	0	0	0	0	0	0
329:	1	1	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	1	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 0 1 0

Sample Title: 11

Channel	1	2	3	4	5	6	7	8	9
377:	1	0	0	0	0	0	0	0	0
385:	0	0	1	0	0	0	2	0	0
393:	1	0	0	1	0	0	0	0	0
401:	0	0	1	2	2	0	1	0	0
409:	0	1	1	1	1	1	2	1	1
417:	1	2	1	0	2	2	2	3	3
425:	0	8	3	2	1	0	5	4	4
433:	2	2	1	7	1	2	2	1	1
441:	7	1	2	6	8	3	6	1	1
449:	4	4	0	2	4	1	4	2	2
457:	1	2	0	0	1	1	0	0	0
465:	0	0	0	1	0	0	0	0	0
473:	0	0	0	0	0	1	0	0	0
481:	0	0	0	1	0	0	0	0	0
489:	1	0	0	0	1	1	0	0	0
497:	0	1	0	1	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	1	1	1
521:	0	0	0	0	0	0	0	0	0
529:	0	0	1	0	0	0	1	0	0
537:	0	0	0	1	0	0	1	0	0
545:	0	0	1	1	1	0	1	0	0
553:	1	0	0	0	0	0	0	0	0
561:	0	1	2	0	1	1	0	1	1
569:	2	2	1	1	1	0	0	0	0
577:	1	0	0	1	2	4	0	0	0
585:	3	0	1	0	0	3	0	4	4
593:	1	1	2	7	2	0	5	1	1
601:	2	5	2	6	5	5	4	10	10
609:	9	7	9	9	9	9	5	17	17
617:	11	16	13	13	11	14	13	7	7
625:	20	8	10	12	13	8	26	15	15
633:	14	14	17	11	16	3	11	5	5
641:	7	2	1	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	1	0	0
737:	0	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 1

Sample Title: 11

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	1	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	1
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

7/20/16

123
6/23/16

Apex-Alpha™

Sample Description: CP-5030 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 12
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_049
 Chamber Serial Number: 10006121A
 Detector Serial Number: 49
 Env. Background: System Bkgd 156910
 Reagent Blank: <not performed>

Sample Size: 1.553E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:29:56 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.660 mL
 Effective Efficiency: 0.1635 +/- 0.0097
 Counting Efficiency: 0.1510 +/- 0.0027 on 12/11/2015 11:36:41 AM
 Chem. Recovery Factor: 1.0825 +/- 0.0670

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.275	337.32	10.68	0.68	0.00E+000	24.5
U-234	4.736	103.49	19.32	0.51	0.00E+000	3.8
U-235	4.412	11.66	58.37	0.34	0.00E+000	3.0
U-238	4.157	110.98	18.70	1.02	0.00E+000	4.3

T = Tracer Peak used for Effective Efficiency

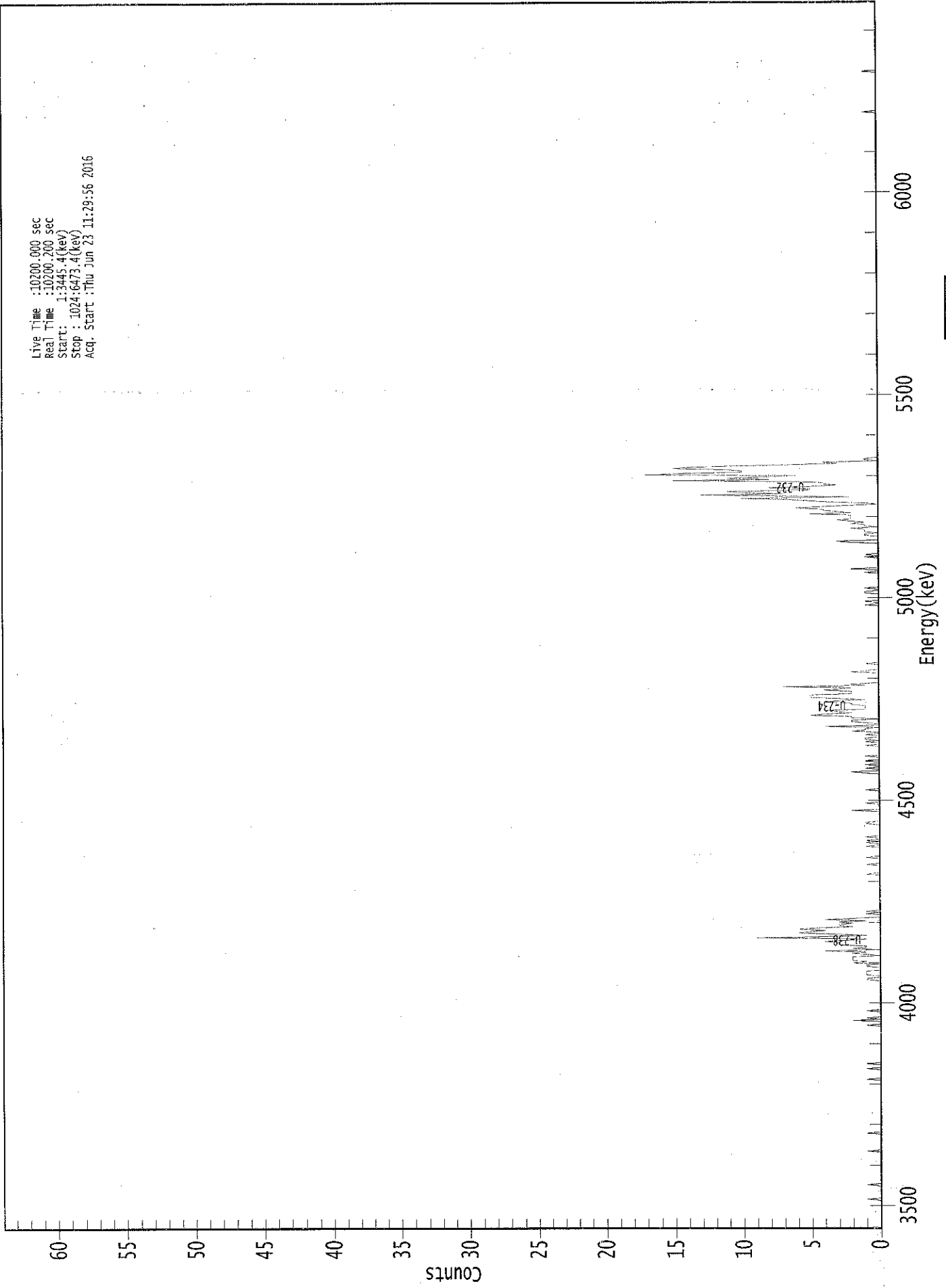
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	3.53E+000 +/- 4.09E-001	5.90E-002 +/- 6.84E-003
U-234	0.995	4761.50*	1.08E+000 +/- 2.44E-001	5.49E-002 +/- 6.36E-003
U-235	0.995	4385.50*	1.50E-001 +/- 8.95E-002	6.17E-002 +/- 7.15E-003
U-238	0.995	4184.40*	1.16E+000 +/- 2.54E-001	6.56E-002 +/- 7.61E-003

AG
6/24/16

0000155174.CNF

Live Time :10200.000 sec
Real Time :10200.200 sec
Start: 1:345.4(kev)
Stop : 1024:0473.4(kev)
Acq. Start :Thu Jun 23 11:29:56 2016



ROI Type: 3

ROI Type: 1

***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 12

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	1	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	1	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	1	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	1
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	1	0	0	0
129:	0	0	0	0	0	0	1	0	0
137:	0	1	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0	0
169:	0	1	0	0	0	0	2	0	1
177:	0	0	0	0	0	0	1	0	0
185:	0	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	1
209:	1	0	0	1	1	1	1	1	0
217:	0	0	1	1	0	2	1	1	2
225:	2	2	2	0	1	2	2	1	4
233:	0	2	1	1	3	3	3	3	4
241:	2	1	9	4	1	3	6	6	5
249:	4	6	5	2	3	3	2	2	3
257:	1	4	2	0	0	0	0	1	0
265:	1	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	1
297:	0	0	0	0	0	0	0	0	1
305:	0	0	0	0	0	0	1	0	0
313:	0	0	0	0	0	0	0	1	0
321:	0	1	0	1	0	0	0	1	0
329:	0	0	0	0	0	0	0	0	0
337:	0	1	1	0	0	0	0	0	0
345:	0	0	0	0	2	0	0	0	0
353:	0	0	1	0	0	0	0	0	0
361:	0	0	0	0	0	0	1	0	0

369: 0 0 0 0 0 0 0 0

Sample Title: 12

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	1	2	0	0	1	
385:	0	0	1	0	0	1	0	0	
393:	0	1	0	0	0	0	0	0	
401:	0	0	1	0	0	1	0	1	
409:	1	0	0	1	0	0	2	1	
417:	1	0	4	0	0	1	2	2	
425:	0	2	2	5	4	2	3	4	
433:	1	1	1	1	2	2	4	3	
441:	1	3	5	5	5	2	2	2	
449:	4	3	2	7	1	2	0	0	
457:	0	0	0	0	0	0	0	2	
465:	1	0	0	0	0	0	1	0	
473:	0	0	0	0	0	0	0	0	
481:	0	0	0	0	0	0	0	0	
489:	0	0	0	0	0	0	0	0	
497:	0	0	0	0	0	0	0	0	
505:	0	0	0	0	0	0	0	0	
513:	0	0	0	0	0	0	0	1	
521:	0	0	1	0	0	0	0	0	
529:	0	1	1	0	0	1	0	0	
537:	0	0	0	0	0	0	0	0	
545:	0	0	1	0	0	2	0	0	
553:	0	0	0	0	0	0	0	1	
561:	0	1	0	0	0	0	0	0	
569:	0	0	0	2	3	0	0	0	
577:	0	1	1	0	1	1	1	2	
585:	0	1	1	2	1	2	3	2	
593:	2	2	2	5	2	3	4	4	
601:	6	4	2	0	1	4	5	7	
609:	10	2	7	13	7	10	11	5	
617:	5	8	5	3	4	4	6	15	
625:	8	11	9	6	17	14	10	10	
633:	11	15	14	11	6	3	4	0	
641:	1	1	0	0	0	0	0	0	
649:	0	0	0	0	0	0	0	0	
657:	0	0	0	0	0	0	0	0	
665:	0	0	0	0	0	0	0	0	
673:	0	0	0	0	0	0	0	0	
681:	0	0	0	0	0	0	0	0	
689:	0	0	0	0	0	0	0	0	
697:	0	0	0	0	0	0	0	0	
705:	0	0	0	0	0	0	0	0	
713:	0	0	0	0	0	0	0	0	
721:	0	0	0	0	0	0	0	0	
729:	0	0	0	0	0	0	0	0	
737:	0	0	0	0	0	0	0	0	
745:	0	0	0	0	0	0	0	0	
753:	0	0	0	0	0	0	0	0	
761:	0	0	0	0	0	0	0	0	
769:	0	0	0	0	0	0	0	0	
777:	0	0	0	0	0	0	0	0	
785:	0	0	0	0	0	0	0	0	
793:	0	0	0	0	0	0	0	0	

801: 0 0 0 0 0 0 0 0

Sample Title: 12

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	1	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	1	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



100
6/23/16

Sample Description: CP-5030 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 13
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_050
 Chamber Serial Number: 10006121B
 Detector Serial Number: 50
 Env. Background: System Bkgd 156911
 Reagent Blank: <not performed>

Sample Size: 1.508E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:29:59 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.660 mL
 Effective Efficiency: 0.1061 +/- 0.0076
 Counting Efficiency: 0.1465 +/- 0.0026 on 12/11/2015 11:36:39 AM
 Chem. Recovery Factor: 0.7241 +/- 0.0535

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.263	218.81	13.29	1.19	0.00E+000	4.8
U-234	4.717	74.81	22.87	1.19	0.00E+000	8.5
U-235	4.351	-0.19	1131.1	1.19	0.00E+000	3.0
U-238	4.134	50.64	27.97	1.36	0.00E+000	3.7

T = Tracer Peak used for Effective Efficiency

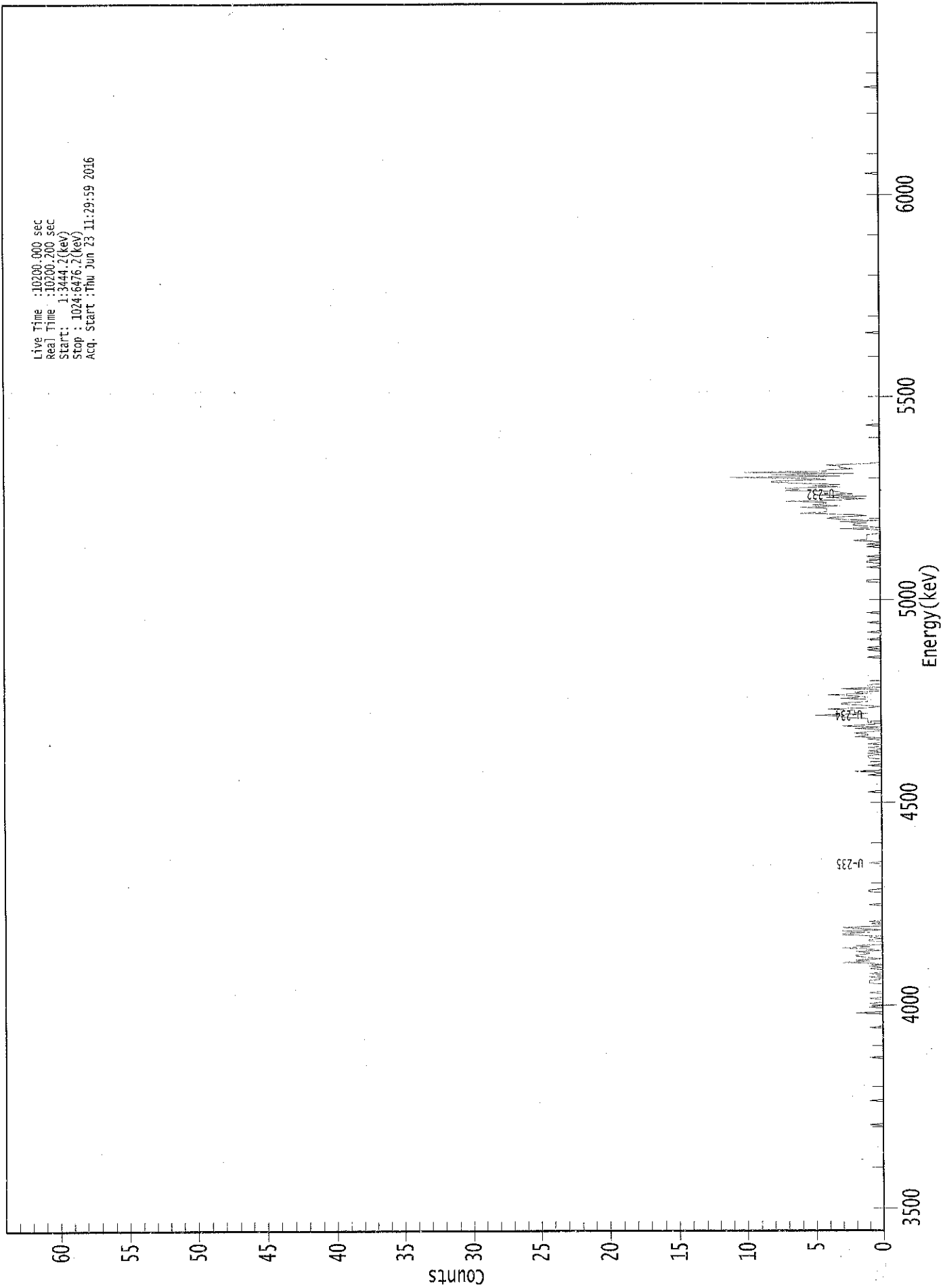
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.989	5302.50*	3.63E+000 +/- 5.10E-001	1.09E-001 +/- 1.54E-002
U-234	0.986	4761.50*	1.24E+000 +/- 3.33E-001	1.09E-001 +/- 1.53E-002
U-235	0.992	4385.50*	-3.89E-003 +/- 4.40E-002	1.35E-001 +/- 1.89E-002
U-238	0.982	4184.40*	8.37E-001 +/- 2.62E-001	1.13E-001 +/- 1.59E-002

AG
6/24/16

0000155168.CNF

Live Time :10200.000 sec
Real Time :10200.200 sec
Start: 1:3444.2(kev)
Stop : 1024.6476.2(kev)
Acq. Start :Thu Jun 23 11:29:59 2016



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 13

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	1	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	1	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	1	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0	0
169:	0	1	0	0	0	0	0	0	0
177:	0	0	0	0	0	2	0	0	0
185:	0	0	1	0	0	1	0	0	0
193:	0	1	0	0	0	0	1	0	0
201:	0	0	0	0	0	0	1	1	0
209:	1	0	0	1	0	0	1	0	0
217:	0	0	1	0	1	0	0	3	0
225:	1	2	0	1	2	2	1	1	0
233:	2	0	1	3	1	2	0	0	0
241:	0	1	1	0	1	0	3	3	0
249:	1	3	0	2	3	0	0	0	0
257:	0	1	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	1	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	1	1	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0	0
305:	0	0	1	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	1	0	0	0

369: 0 0 0 0 0 0 0 0

Sample Title: 13

Channel	1	2	3	4	5	6	7	8
377:	0	0	0	1	0	0	2	0
385:	0	0	0	1	0	0	0	0
393:	0	1	1	1	0	1	0	1
401:	0	0	1	0	0	1	0	0
409:	0	1	0	2	1	1	2	1
417:	0	0	2	0	3	1	0	1
425:	1	1	1	3	3	5	1	2
433:	2	2	4	1	0	1	3	3
441:	1	1	1	3	1	2	4	1
449:	2	0	0	3	0	1	1	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	1	0	0
481:	0	0	0	1	0	1	0	0
489:	0	0	0	0	1	0	0	0
497:	0	0	1	0	0	0	0	0
505:	0	0	1	0	0	0	0	0
513:	0	0	1	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	1	1	0	0
545:	0	0	0	0	0	0	0	0
553:	1	0	0	0	1	1	0	0
561:	0	1	0	0	0	0	0	0
569:	0	1	0	1	0	0	2	1
577:	1	1	1	1	0	0	0	0
585:	3	0	1	2	2	1	3	0
593:	3	4	3	1	2	6	4	4
601:	4	4	6	3	5	4	4	7
609:	3	1	4	1	5	2	3	3
617:	7	6	7	3	5	3	6	8
625:	8	4	5	11	3	8	2	10
633:	4	4	2	3	3	4	1	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	1	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	1	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 13

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	1	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	1	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

105
6/23/16

Apex-Alpha™

Sample Description: CP-5030 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 14
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_053
 Chamber Serial Number: 10006122A
 Detector Serial Number: 53
 Env. Background: System Bkgd 156913
 Reagent Blank: <not performed>

Sample Size: 1.512E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:30:01 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.663 mL
 Effective Efficiency: 0.1723 +/- 0.0100
 Counting Efficiency: 0.1516 +/- 0.0027 on 12/11/2015 11:36:34 AM
 Chem. Recovery Factor: 1.1367 +/- 0.0688

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.265	357.15	10.39	0.85	0.00E+000	14.5
U-234	4.714	72.64	23.25	1.36	0.00E+000	3.3
U-235	4.407	14.00	54.22	0.00	0.00E+000	3.0
U-238	4.129	74.66	22.74	0.34	0.00E+000	5.0

T = Tracer Peak used for Effective Efficiency

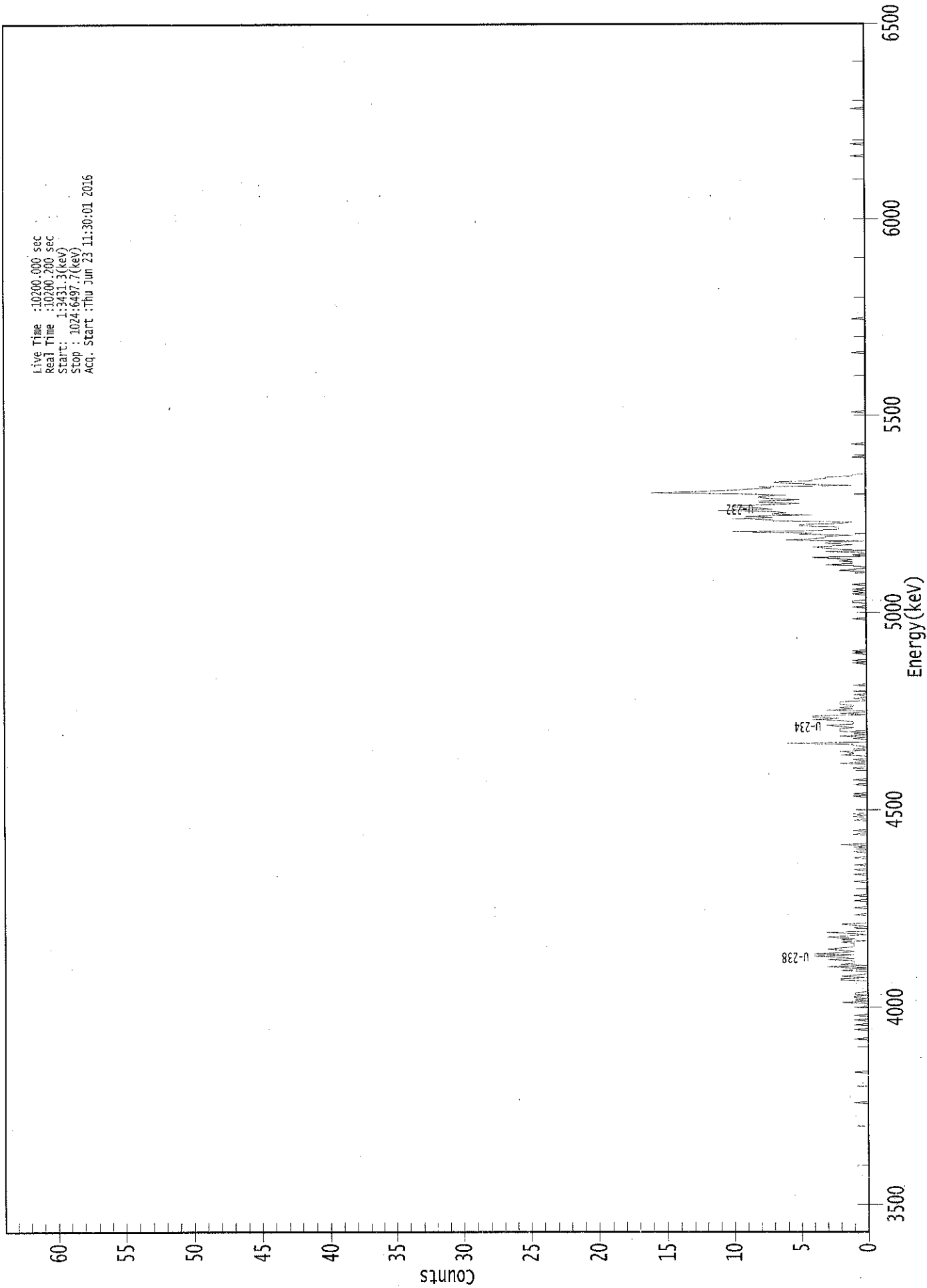
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.990	5302.50*	3.64E+000 +/- 4.12E-001	6.11E-002 +/- 6.91E-003
U-234	0.984	4761.50*	7.40E-001 +/- 1.91E-001	6.99E-002 +/- 7.91E-003
U-235	0.997	4385.50*	1.76E-001 +/- 9.75E-002	7.54E-002 +/- 8.54E-003
U-238	0.979	4184.40*	7.58E-001 +/- 1.93E-001	4.85E-002 +/- 5.49E-003

AG
6/24/16

0000155169.CNF

Live Time : 10200.000 sec
Real Time : 10200.200 sec
Start : 1:34:31.3 (keV)
Stop : 1024:04:57.7 (keV)
Acq. Start : Thu Jun 23 11:30:01 2016



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 14

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	1	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	1
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	1	0	0	0	0
169:	0	0	0	0	1	0	0	0	1
177:	0	0	0	0	1	0	0	0	1
185:	0	0	0	0	0	0	0	1	0
193:	0	0	2	0	0	1	0	1	1
201:	0	1	1	0	0	0	0	0	0
209:	0	0	0	0	0	0	2	2	0
217:	2	1	0	0	0	0	2	0	1
225:	3	0	2	1	1	1	1	3	1
233:	2	4	1	4	2	1	1	2	3
241:	2	1	1	1	1	1	2	0	2
249:	1	3	2	0	0	1	3	0	0
257:	0	1	0	0	1	2	0	0	0
265:	0	0	0	0	0	1	0	0	0
273:	0	0	1	0	0	0	0	0	0
281:	1	0	0	0	0	1	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	1	0	0	0	0	0	0	1	0
305:	0	0	1	0	0	0	0	1	0
313:	0	0	0	0	0	1	0	0	0
321:	0	1	0	0	0	0	1	0	2
329:	0	0	0	0	0	0	0	0	0
337:	1	0	0	0	1	0	0	0	0
345:	0	0	0	0	0	1	0	0	1
353:	0	1	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0	0

369: 1 0 1 0 0 0 0 0 0

Sample Title: 14

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	1	0	0	0	0	1	0
385:	0	0	0	0	0	0	0	0	0
393:	1	0	0	0	0	2	0	0	1
401:	0	0	0	2	1	1	1	2	0
409:	1	0	0	1	1	6	0	0	0
417:	0	1	0	2	0	1	1	0	2
425:	2	2	1	2	3	1	1	1	1
433:	2	4	2	4	4	0	2	2	0
441:	0	3	1	2	1	1	2	2	2
449:	2	0	0	1	0	0	1	1	0
457:	0	1	0	0	0	0	1	1	0
465:	0	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0	0
481:	0	1	0	1	0	0	0	0	0
489:	0	1	0	1	0	0	0	0	0
497:	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	1	1	0
521:	0	0	0	0	0	0	0	0	0
529:	1	0	0	0	1	1	1	0	0
537:	0	0	0	1	0	1	0	0	1
545:	0	0	0	1	0	0	0	0	0
553:	0	0	0	0	0	0	0	0	2
561:	1	0	0	1	3	1	1	1	2
569:	1	2	4	0	1	0	0	0	3
577:	0	2	3	4	2	1	3	3	3
585:	0	6	4	3	3	1	5	4	4
593:	10	4	2	2	2	5	5	5	2
601:	1	7	7	10	7	9	4	7	7
609:	6	7	11	7	8	10	10	7	7
617:	5	8	8	5	7	8	8	6	6
625:	9	16	13	10	9	7	8	1	1
633:	4	6	7	4	4	3	3	1	1
641:	1	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0	1
657:	0	0	0	0	0	0	0	0	0
665:	0	0	1	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	1	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0	1
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	1	0	0	0	0
777:	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 14

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	1	0
913:	0	0	0	0	0	0	0	0
921:	1	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	1	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

105
6/23/14

Apex-Alpha™

Sample Description: CP-5030 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-UU
 Sample Identification: 15
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_054
 Chamber Serial Number: 10006122B
 Detector Serial Number: 54
 Env. Background: System Bkgd 156914
 Reagent Blank: <not performed>

Sample Size: 1.507E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:06:16 AM
 Acquisition Date/Time: 6/23/2016 11:30:03 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.661 mL
 Effective Efficiency: 0.1055 +/- 0.0076
 Counting Efficiency: 0.1363 +/- 0.0025 on 12/11/2015 11:36:32 AM
 Chem. Recovery Factor: 0.7743 +/- 0.0572

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.267	218.15	13.30	0.85	0.00E+000	5.1
U-234	4.717	50.32	27.85	0.68	0.00E+000	8.9
U-235	4.400	6.66	78.18	0.34	0.00E+000	3.0
U-238	4.130	45.32	29.37	0.68	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

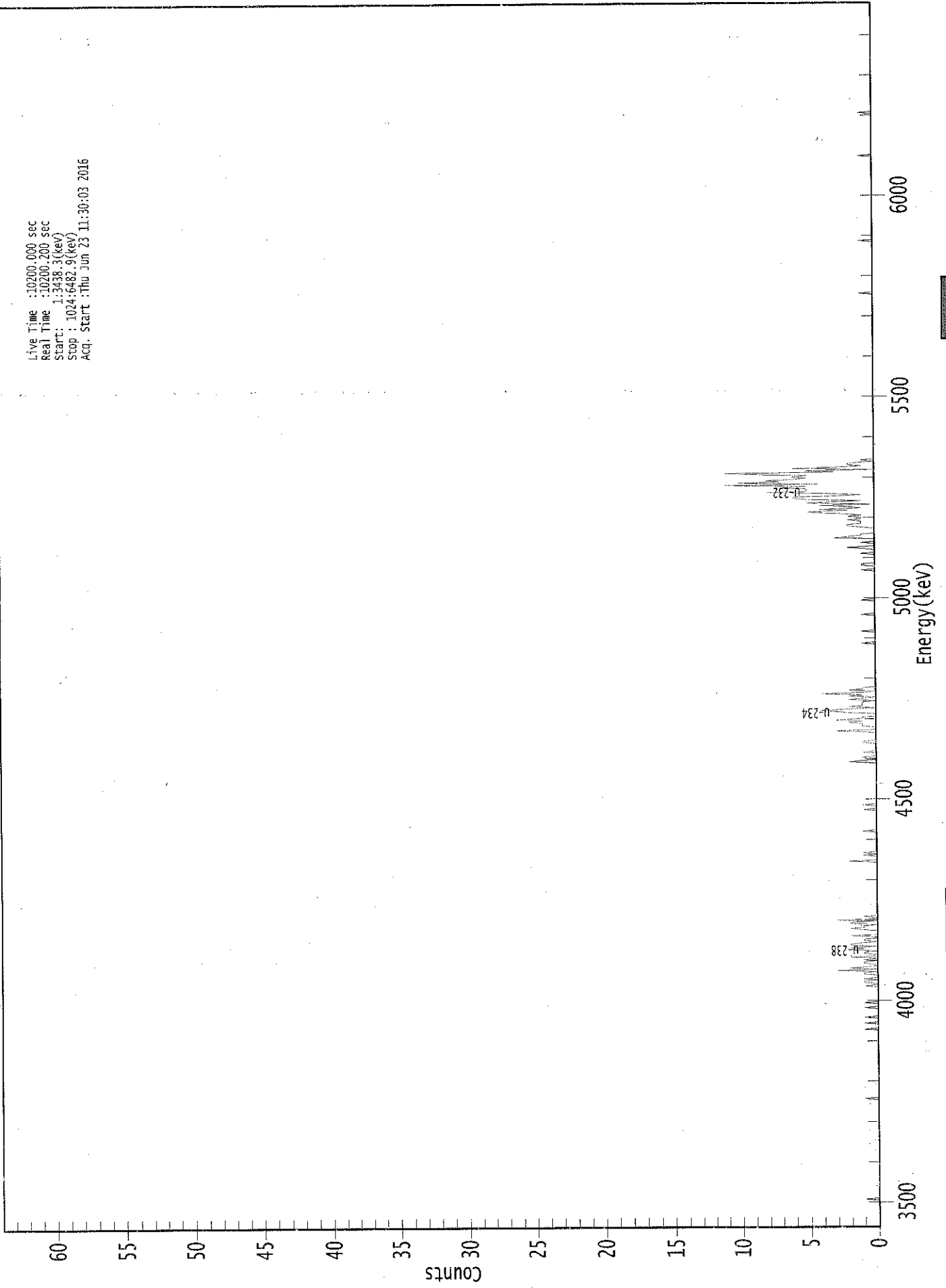
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.991	5302.50*	3.64E+000 +/- 5.12E-001	1.00E-001 +/- 1.40E-002
U-234	0.986	4761.50*	8.40E-001 +/- 2.62E-001	9.42E-002 +/- 1.32E-002
U-235	0.999	4385.50*	1.37E-001 +/- 1.09E-001	9.85E-002 +/- 1.38E-002
U-238	0.979	4184.40*	7.53E-001 +/- 2.45E-001	9.38E-002 +/- 1.32E-002

AG
6/24/16

0000155170.CNF

Live Time :10200.000 sec
Real Time :10200.200 sec
Start: 1:3438.3(kev)
Stop : 1024:0482.9(kev)
Acq. Start :Thu Jun 23 11:30:03 2016



ROI Type: 1

ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 15

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	1
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	1	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	1	0	0	0
169:	0	0	1	0	0	0	0	0	1
177:	0	0	0	0	0	0	0	0	1
185:	0	0	0	1	0	0	0	0	0
193:	0	0	0	0	0	0	0	0	0
201:	0	1	0	0	1	1	0	0	1
209:	0	0	0	1	1	0	3	0	0
217:	2	1	0	0	1	1	0	0	1
225:	0	2	0	0	1	1	0	0	2
233:	1	2	0	2	2	1	0	0	1
241:	1	0	0	2	0	0	0	0	0
249:	1	2	1	1	0	2	2	0	0
257:	3	0	0	1	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0	0
305:	0	2	0	0	0	0	1	0	0
313:	1	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	1	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	0	0	0	1	0	0	0	0
353:	1	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 15

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	0	0	0	0	0	0
385:	0	0	0	0	2	1	0	0	0
393:	1	0	0	0	1	0	0	0	0
401:	0	0	0	0	1	1	0	0	0
409:	0	0	0	0	0	1	3	0	0
417:	0	0	1	1	1	2	1	3	3
425:	1	1	0	0	0	2	3	4	4
433:	2	0	2	1	1	1	1	0	0
441:	2	1	0	2	1	4	1	0	0
449:	2	1	1	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	1	1
489:	0	0	0	0	0	0	0	0	0
497:	0	1	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	1	1
513:	0	0	0	0	0	0	0	0	0
521:	0	0	0	1	0	0	0	0	0
529:	0	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0	0
545:	0	0	0	0	1	0	0	0	0
553:	1	1	0	0	0	0	0	0	0
561:	0	0	1	0	0	0	1	2	2
569:	0	0	0	1	0	0	0	3	3
577:	2	1	1	0	0	0	0	0	0
585:	1	2	2	1	1	1	2	1	1
593:	1	2	1	2	4	5	2	4	4
601:	1	2	4	0	5	3	1	5	5
609:	6	6	3	1	3	8	5	5	5
617:	5	7	5	11	4	10	7	8	8
625:	6	5	6	5	8	11	3	5	5
633:	0	6	3	1	2	2	1	0	0
641:	1	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0	0
777:	0	0	0	1	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 15

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	1
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	1	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	1	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 6/23/2016
Time : 6:36:29 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	6/23/2016 6:21:25 AM
Alpha 004	21f	ALL	Passed	6/23/2016 6:21:26 AM
Alpha 005	21f	ALL	Not Done	
Alpha 006	21f	ALL	Not Done	
Alpha 007	21f	ALL	Not Done	
Alpha 008	21f	ALL	Not Done	
Alpha 009	21f	ALL	Not Done	
Alpha 010	21f	ALL	Passed	6/23/2016 6:21:27 AM
Alpha 011	21f	ALL	Passed	6/23/2016 6:21:27 AM
Alpha 012	21f	ALL	Passed	6/23/2016 6:21:28 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Passed	6/23/2016 6:21:29 AM
Alpha 015	21f	Peak Energy	Action	6/23/2016 6:21:30 AM
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:31 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:33 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:35 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:36 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:38 AM
Alpha 038	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:40 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:42 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:35 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:44 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:46 AM
Alpha 043	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:48 AM
Alpha 044	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:50 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:52 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:55 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:57 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:00 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:03 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:06 AM
Alpha 051	Alpha Analyst100DC	ALL	Not Done	
Alpha 052	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:08 AM
Alpha 053	Alpha Analyst100DC	Peak FWHM	Action	6/23/2016 6:22:11 AM
Alpha 054	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:14 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:16 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:19 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:22 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:25 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 059	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:28 AM
Alpha 060	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:31 AM

APPROVED BY: AG

APPROVAL DATE: 6/23/16

***** LIBRARY LISTING REPORT *****

Nuclide Library Title: Uranium

Nuclide Library Description: U-232, -234, -235, -238

Nuclide Name	Half-Life (Seconds)	Energy (keV)	Energy Uncert. (keV)	Yield (%)	Yield Uncert. (Abs.+)
U-232	2.174E+009	5302.500*	0.000	99.8000	0.0000
U-234	7.731E+012	4761.500*	0.000	99.8000	0.0000
U-235	2.221E+016	4385.500*	0.000	80.9000	0.0000
U-238	1.410E+017	4184.400*	0.000	100.2300	0.0000

* = key line

TOTALS: 4 Nuclides 4 Energy Lines

SECTION IX
ANALYTICAL DATA (ISOTOPIC THORIUM)

Work Order	16-06041
Analysis Code	ThISO
Run	1
Date Received	6/9/2016
Lab Deadline	6/29/2016
Client	Auxier & Associates, Inc.
Project	PAP-KAN
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EML Th-01 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	Th-229
Radiometric Sol#	Th-18a
Tracer Act (dpm/g)	22.46
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		06/09/16 00:00	1.0000E+00
02	MBL	BLANK		06/09/16 00:00	1.5000E+00
03	DUP	CP-5028 00-02	37	06/06/16 00:00	1.6250E+00
04	DO	CP-5028 00-02	37	06/06/16 00:00	1.5133E+00
05	TRG	CP-5028 02-05	35	06/06/16 00:00	1.5264E+00
06	TRG	CP-5028 05-10	33	06/06/16 00:00	1.5478E+00
07	TRG	CP-5028 10-15	45	06/06/16 00:00	1.5425E+00
08	TRG	CP-5029 00-02	43	06/06/16 00:00	1.5363E+00
09	TRG	CP-5029 02-05	41	06/06/16 00:00	1.5721E+00
10	TRG	CP-5029 05-10	39	06/06/16 00:00	1.5442E+00
11	TRG	CP-5029 10-15	55	06/06/16 00:00	1.5114E+00
12	TRG	CP-5030 00-02	51	06/06/16 00:00	1.5362E+00
13	TRG	CP-5030 02-05	48	06/06/16 00:00	1.5173E+00
14	TRG	CP-5030 05-10	43	06/06/16 00:00	1.5194E+00
15	TRG	CP-5030 10-15	48	06/06/16 00:00	1.5573E+00

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

00100

16-06041
ThISO
Run 1

Eberline Services
Oak Ridge Laboratory
Analysis Sheet

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.4536	10.2		0.00								
02	MBL	0.2244	5.0		0.00								
03	DUP	0.2241	5.0		0.00								
04	DO	0.2226	5.0		0.00								
05	TRG	0.2346	5.3		0.00								
06	TRG	0.2344	5.3		0.00								
07	TRG	0.2254	5.1		0.00								
08	TRG	0.2280	5.1		0.00								
09	TRG	0.2255	5.1		0.00								
10	TRG	0.2257	5.1		0.00								
11	TRG	0.2230	5.0		0.00								
12	TRG	0.2242	5.0		0.00								
13	TRG	0.2301	5.2		0.00								
14	TRG	0.2305	5.2		0.00								
15	TRG	0.2299	5.2		0.00								

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
 ** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			06/16/16 12:13	JPACHELLA				
02	MBL			06/16/16 12:13	JPACHELLA				
03	DUP			06/16/16 12:13	JPACHELLA				
04	DO	06/15/16 08:32	KSALLINGS	06/16/16 12:13	JPACHELLA				
05	TRG	06/15/16 08:32	KSALLINGS	06/16/16 12:13	JPACHELLA				
06	TRG	06/15/16 08:32	KSALLINGS	06/16/16 12:13	JPACHELLA				
07	TRG	06/15/16 08:32	KSALLINGS	06/16/16 12:13	JPACHELLA				
08	TRG	06/15/16 08:32	KSALLINGS	06/16/16 12:13	JPACHELLA				
09	TRG	06/15/16 08:32	KSALLINGS	06/16/16 12:13	JPACHELLA				
10	TRG	06/15/16 08:32	KSALLINGS	06/16/16 12:13	JPACHELLA				
11	TRG	06/15/16 08:32	KSALLINGS	06/16/16 12:13	JPACHELLA				
12	TRG	06/15/16 08:32	KSALLINGS	06/16/16 12:13	JPACHELLA				
13	TRG	06/15/16 08:32	KSALLINGS	06/16/16 12:13	JPACHELLA				
14	TRG	06/15/16 08:32	KSALLINGS	06/16/16 12:13	JPACHELLA				
15	TRG	06/15/16 08:32	KSALLINGS	06/16/16 12:13	JPACHELLA				

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-228	LCS	06/23/16 08:27		A_Spec	Alpha_003	170	4.96 E+02	1.20 E-02	16.1
02	TH-228	MBL	06/23/16 08:27		A_Spec	Alpha_004	170	1.32 E+00	4.00 E-03	18.8
03	TH-228	DUP	06/23/16 08:27		A_Spec	Alpha_010	170	1.45 E+02	2.30 E-02	19
04	TH-228	DO	06/23/16 08:27		A_Spec	Alpha_011	170	1.24 E+02	1.80 E-02	19.9
05	TH-228	TRG	06/23/16 08:27		A_Spec	Alpha_012	170	1.35 E+02	1.30 E-02	19.2
06	TH-228	TRG	06/23/16 08:27		A_Spec	Alpha_014	170	1.50 E+02	2.10 E-02	18.2
07	TH-228	TRG	06/23/16 08:27		A_Spec	Alpha_015	170	1.77 E+02	4.00 E-03	22.9
08	TH-228	TRG	06/23/16 08:28		A_Spec	Alpha_057	170	6.77 E+01	2.00 E-03	16.4
09	TH-228	TRG	06/23/16 08:28		A_Spec	Alpha_058	170	1.12 E+02	8.00 E-03	16.8
10	TH-228	TRG	06/23/16 08:28		A_Spec	Alpha_059	170	9.62 E+01	5.00 E-03	17.2
11	TH-228	TRG	06/23/16 08:28		A_Spec	Alpha_060	170	1.14 E+02	4.00 E-03	15.2
12	TH-228	TRG	06/23/16 11:27		A_Spec	Alpha_033	170	9.30 E+01	6.00 E-03	17.6
13	TH-228	TRG	06/23/16 11:27		A_Spec	Alpha_034	170	1.23 E+02	5.00 E-03	17.7
14	TH-228	TRG	06/23/16 11:27		A_Spec	Alpha_035	170	1.30 E+02	4.00 E-03	15.8
15	TH-228	TRG	06/23/16 11:27		A_Spec	Alpha_036	170	1.15 E+02	9.00 E-03	18.7

	Run	1
	Analysis Code	THISO
Eberline Analytical Work Order	16-06041	
Client	Auxier & Associates, Inc.	

09100

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-230	LCS	LCS	pCi/g	6.14E+00	8.82E-01	6.51E-02	5.40E+00	113.75	OK		OK	
02	TH-230	MBL	BLANK	pCi/g	4.29E-02	4.76E-02	6.82E-02					OK	OK
03	TH-230	DUP	CP-5028 00-02	pCi/g	1.56E+00	3.53E-01	5.69E-02				OK	OK	
04	TH-230	DO	CP-5028 00-02	pCi/g	1.44E+00	3.27E-01	7.36E-02					OK	
05	TH-230	TRG	CP-5028 02-05	pCi/g	1.30E+00	2.96E-01	5.55E-02					OK	
06	TH-230	TRG	CP-5028 05-10	pCi/g	1.21E+00	2.68E-01	6.42E-02					OK	
07	TH-230	TRG	CP-5028 10-15	pCi/g	1.33E+00	2.59E-01	3.28E-02					OK	
08	TH-230	TRG	CP-5029 00-02	pCi/g	1.43E+00	3.64E-01	4.83E-02					OK	
09	TH-230	TRG	CP-5029 02-05	pCi/g	1.20E+00	2.82E-01	3.64E-02					OK	
10	TH-230	TRG	CP-5029 05-10	pCi/g	1.51E+00	3.43E-01	3.87E-02					OK	
11	TH-230	TRG	CP-5029 10-15	pCi/g	1.47E+00	3.86E-01	5.98E-02					OK	
12	TH-230	TRG	CP-5030 00-02	pCi/g	1.31E+00	3.17E-01	5.16E-02					OK	
13	TH-230	TRG	CP-5030 02-05	pCi/g	1.63E+00	3.73E-01	5.65E-02					OK	
14	TH-230	TRG	CP-5030 05-10	pCi/g	1.25E+00	2.86E-01	3.61E-02					OK	
15	TH-230	TRG	CP-5030 10-15	pCi/g	1.43E+00	3.30E-01	5.87E-02					OK	

	Run	1
Analysis Code	THISO	
Eberline Analytical Work Order	16-06041	
Client	Auxier & Associates, Inc.	

001001

	Run	1
	Analysis Code	THISO
Eberline Analytical Work Order	16-06041	
Client	Auxier & Associates, Inc.	

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-230	LCS	06/23/16 08:27		A_Spec	Alpha_003	170	5.32 E+02	4.00 E-03	16.1
02	TH-230	MBL	06/23/16 08:27		A_Spec	Alpha_004	170	4.47 E+00	9.00 E-03	18.8
03	TH-230	DUP	06/23/16 08:27		A_Spec	Alpha_010	170	1.73 E+02	6.00 E-03	19
04	TH-230	DO	06/23/16 08:27		A_Spec	Alpha_011	170	1.61 E+02	1.40 E-02	19.9
05	TH-230	TRG	06/23/16 08:27		A_Spec	Alpha_012	170	1.48 E+02	6.00 E-03	19.2
06	TH-230	TRG	06/23/16 08:27		A_Spec	Alpha_014	170	1.55 E+02	1.40 E-02	18.2
07	TH-230	TRG	06/23/16 08:27		A_Spec	Alpha_015	170	2.12 E+02	3.00 E-03	22.9
08	TH-230	TRG	06/23/16 08:28		A_Spec	Alpha_057	170	1.24 E+02	1.00 E-03	16.4
09	TH-230	TRG	06/23/16 08:28		A_Spec	Alpha_058	170	1.38 E+02	1.00 E-03	16.8
10	TH-230	TRG	06/23/16 08:28		A_Spec	Alpha_059	170	1.63 E+02	1.00 E-03	17.2
11	TH-230	TRG	06/23/16 08:28		A_Spec	Alpha_060	170	1.18 E+02	2.00 E-03	15.2
12	TH-230	TRG	06/23/16 11:27		A_Spec	Alpha_033	170	1.33 E+02	3.00 E-03	17.6
13	TH-230	TRG	06/23/16 11:27		A_Spec	Alpha_034	170	1.62 E+02	4.00 E-03	17.7
14	TH-230	TRG	06/23/16 11:27		A_Spec	Alpha_035	170	1.45 E+02	1.00 E-03	15.8
15	TH-230	TRG	06/23/16 11:27		A_Spec	Alpha_036	170	1.54 E+02	6.00 E-03	18.7

	Run	1
	Analysis Code	THISO
	Eberline Analytical Work Order	16-06041
Client	Auxier & Associates, Inc.	

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-232	LCS	LCS	pCi/g	5.20E+00	7.70E-01	4.81E-02	4.66E+00	111.77	OK		OK	
02	TH-232	MBL	BLANK	pCi/g	2.06E-02	3.35E-02	5.74E-02					OK	OK
03	TH-232	DUP	CP-5028 00-02	pCi/g	1.18E+00	2.85E-01	5.68E-02				OK	OK	
04	TH-232	DO	CP-5028 00-02	pCi/g	1.18E+00	2.81E-01	5.64E-02					OK	
05	TH-232	TRG	CP-5028 02-05	pCi/g	1.09E+00	2.59E-01	3.67E-02					OK	
06	TH-232	TRG	CP-5028 05-10	pCi/g	1.08E+00	2.46E-01	5.55E-02					OK	
07	TH-232	TRG	CP-5028 10-15	pCi/g	1.12E+00	2.28E-01	2.98E-02					OK	
08	TH-232	TRG	CP-5029 00-02	pCi/g	8.20E-01	2.44E-01	6.93E-02					OK	
09	TH-232	TRG	CP-5029 02-05	pCi/g	1.00E+00	2.47E-01	5.49E-02					OK	
10	TH-232	TRG	CP-5029 05-10	pCi/g	1.09E+00	2.68E-01	5.22E-02					OK	
11	TH-232	TRG	CP-5029 10-15	pCi/g	1.47E+00	3.85E-01	6.56E-02					OK	
12	TH-232	TRG	CP-5030 00-02	pCi/g	9.61E-01	2.52E-01	4.10E-02					OK	
13	TH-232	TRG	CP-5030 02-05	pCi/g	1.25E+00	3.06E-01	5.99E-02					OK	
14	TH-232	TRG	CP-5030 05-10	pCi/g	1.02E+00	2.46E-01	4.53E-02					OK	
15	TH-232	TRG	CP-5030 10-15	pCi/g	1.06E+00	2.62E-01	4.88E-02					OK	

Count Room Report
Client: Auxier Associates, Inc.
16-06041-ThISO-1 (pCi/g) in SO
Tracer ID: Th-18a

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	06/09/16 00:00	1.0000	0.4536	10.1879		0.00		
02	MBL	BLANK	06/09/16 00:00	1.5000	0.2244	5.0400		0.00		
03	DUP	CP-5028 00-02	06/06/16 00:00	1.6250	0.2241	5.0333		0.00		
04	DO	CP-5028 00-02	06/06/16 00:00	1.5133	0.2226	4.9996		0.00		
05	TRG	CP-5028 02-05	06/06/16 00:00	1.5264	0.2346	5.2691		0.00		
06	TRG	CP-5028 05-10	06/06/16 00:00	1.5478	0.2344	5.2646		0.00		
07	TRG	CP-5028 10-15	06/06/16 00:00	1.5425	0.2254	5.0625		0.00		
08	TRG	CP-5029 00-02	06/06/16 00:00	1.5363	0.2280	5.1209		0.00		
09	TRG	CP-5029 02-05	06/06/16 00:00	1.5721	0.2255	5.0647		0.00		
10	TRG	CP-5029 05-10	06/06/16 00:00	1.5442	0.2257	5.0692		0.00		
11	TRG	CP-5029 10-15	06/06/16 00:00	1.5114	0.2230	5.0086		0.00		
12	TRG	CP-5030 00-02	06/06/16 00:00	1.5362	0.2242	5.0355		0.00		
13	TRG	CP-5030 02-05	06/06/16 00:00	1.5173	0.2301	5.1680		0.00		
14	TRG	CP-5030 05-10	06/06/16 00:00	1.5194	0.2305	5.1770		0.00		
15	TRG	CP-5030 10-15	06/06/16 00:00	1.5573	0.2299	5.1636		0.00		

6/23

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#254

Internal Work Order		Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials
16-06041		1	THISO	6/16/2016 12:02	JPACHELLA	<i>[Signature]</i>	

Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS		MSD		LCS		MS		LCS		MSD	
					Volume Used (g)	0.0998	Volume Used (g)	0.168	Known pCi	Error Estimate	Added pCi	Error Estimate	Known pCi	Error Estimate	Added pCi	Error Estimate
Th-228	Th-8b	103.560	6/16/2016	0.100	0.0998			4.66	0.168	0.00	0.000	0.00	0.000	0.00	0.000	0.000
Th-230	Th-1b	23.520	6/16/2016	0.500	0.5096			5.40	0.146	0.00	0.000	0.00	0.000	0.00	0.000	0.000
Th-232	Th-8b	103.560	6/16/2016	0.100	0.0998			4.66	0.168	0.00	0.000	0.00	0.000	0.00	0.000	0.000

IC-99 MS		IC-2a		22043636		7/5/2014		U-1		
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Balance Printer Tapes			
01	Th-229	Th-18a	22.460	6/16/2016	0.4536	0.2200	Tracer			
02	Th-229	Th-18a	22.460	6/16/2016	0.2244	0.2200	LCS			
03	Th-229	Th-18a	22.460	6/16/2016	0.2241	0.2200	0.4536 g			
04	Th-229	Th-18a	22.460	6/16/2016	0.2226	0.2200	0.2244 g			
05	Th-229	Th-18a	22.460	6/16/2016	0.2346	0.2200	0.2241 g			
06	Th-229	Th-18a	22.460	6/16/2016	0.2344	0.2200	0.2226 g			
07	Th-229	Th-18a	22.460	6/16/2016	0.2254	0.2200	0.2346 g			
08	Th-229	Th-18a	22.460	6/16/2016	0.2280	0.2200	0.2344 g			
09	Th-229	Th-18a	22.460	6/16/2016	0.2255	0.2200	0.2254 g			
10	Th-229	Th-18a	22.460	6/16/2016	0.2257	0.2200	0.2280 g			
11	Th-229	Th-18a	22.460	6/16/2016	0.2230	0.2200	0.2255 g			
12	Th-229	Th-18a	22.460	6/16/2016	0.2242	0.2200	0.2257 g			
13	Th-229	Th-18a	22.460	6/16/2016	0.2301	0.2200	0.2230 g			
14	Th-229	Th-18a	22.460	6/16/2016	0.2305	0.2200	0.2242 g			
15	Th-229	Th-18a	22.460	6/16/2016	0.2299	0.2200	0.2301 g			
							0.2305 g			
							0.2299 g			
							Matrix Spike			

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
16-06041	1	THISO	grams	6/29/2016	JPACHELLA

Lab Fraction	Auxter & Associates, Inc.		Sample		Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID	LCS	Type	TRG	Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist	Aliq
01	LCS		LCS						1.0000E+00	1.0000E+00					
02	BLANK		MBL						1.5000E+00	1.5000E+00					
03	CP-5028 00-02		DUP						1.6250E+00	1.6250E+00					
04	CP-5028 00-02		DO						1.5133E+00	1.5133E+00					
05	CP-5028 02-05		TRG						1.5264E+00	1.5264E+00					
06	CP-5028 05-10		TRG						1.5478E+00	1.5478E+00					
07	CP-5028 10-15		TRG						1.5425E+00	1.5425E+00					
08	CP-5029 00-02		TRG						1.5363E+00	1.5363E+00					
09	CP-5029 02-05		TRG						1.5721E+00	1.5721E+00					
10	CP-5029 05-10		TRG						1.5442E+00	1.5442E+00					
11	CP-5029 10-15		TRG						1.5114E+00	1.5114E+00					
12	CP-5030 00-02		TRG						1.5362E+00	1.5362E+00					
13	CP-5030 02-05		TRG						1.5173E+00	1.5173E+00					
14	CP-5030 05-10		TRG						1.5194E+00	1.5194E+00					
15	CP-5030 10-15		TRG						1.5573E+00	1.5573E+00					

Comments	
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Technician: JPachella Date: 6/16/16

**Rough Sample Preparation
 Log Book**

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
16-06041	6/29/2016	6/14/2016	6/15/2016	6/16/2016	KSALLINGS

Bico Pulverizer SN: 000302

Eberline Fraction	Auxier & Associates, Inc. Client ID	Tare (g)		Gross (g)		Net (g)		Percent		Gamma		Special Info
		Pan Wt		Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	
04	CP-5028 00-02	14.6400		542.0900	456.7000	527.4500	442.0600	16.19%	83.81%	0.0000	0.0000	
05	CP-5028 02-05	14.7000		666.2700	556.2200	651.5700	541.5200	16.89%	83.11%	0.0000	0.0000	
06	CP-5028 05-10	14.6600		418.1700	340.5000	403.5100	325.8400	19.25%	80.75%	0.0000	0.0000	
07	CP-5028 10-15	14.6300		440.6600	348.4500	426.0300	333.8200	21.64%	78.36%	0.0000	0.0000	
08	CP-5029 00-02	14.5700		759.8600	670.6900	745.2900	656.1200	11.96%	88.04%	0.0000	0.0000	
09	CP-5029 02-05	14.5900		675.6600	556.9600	661.0700	542.3700	17.96%	82.04%	0.0000	0.0000	
10	CP-5029 05-10	14.5700		514.3200	421.2600	499.7500	406.6900	18.62%	81.38%	0.0000	0.0000	
11	CP-5029 10-15	14.5800		408.9000	319.8800	394.3200	305.3000	22.58%	77.42%	0.0000	0.0000	
12	CP-5030 00-02	14.5900		846.4200	717.2400	831.8300	702.6500	15.33%	84.67%	0.0000	0.0000	
13	CP-5030 02-05	14.6000		671.2300	564.1400	656.6300	549.5400	16.31%	83.69%	0.0000	0.0000	
14	CP-5030 05-10	14.6300		416.3200	337.6100	401.6900	322.9800	19.59%	80.41%	0.0000	0.0000	
15	CP-5030 10-15	14.5500		461.4500	364.6100	446.9000	350.0600	21.67%	78.33%	0.0000	0.0000	

Comments
Special Codes
H: Hot, O: Organic Hazard, P: PCB Hazard, R: Rush, T: Other (see comments)

YB
6/23/16

Apex-Alpha™

Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-TH
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_003
 Chamber Serial Number:
 Detector Serial Number: 3
 Env. Background: System Bkgd 156888
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/23/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 8:27:47 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.454 mL
 Effective Efficiency: 0.2301 +/- 0.0136
 Counting Efficiency: 0.1612 +/- 0.0029 on 12/11/2015 2:46:09 PM
 Chem. Recovery Factor: 1.4271 +/- 0.0880

Control Certificate Name: NatTh_Th-8
 Chem. Recov. of Control: TH-232 0.218892 +/- 0.017778
 Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.829	10.47	65.55	1.53	0.00E+000	3.0
TH-228	5.358	495.96	8.82	2.04	0.00E+000	26.1
TH-229 T	4.867	398.47	9.84	1.53	0.00E+000	4.4
TH-230	4.621	532.32	8.50	0.68	0.00E+000	22.8
TH-232	3.947	451.83	9.22	0.17	0.00E+000	5.1

T = Tracer Peak used for Effective Efficiency

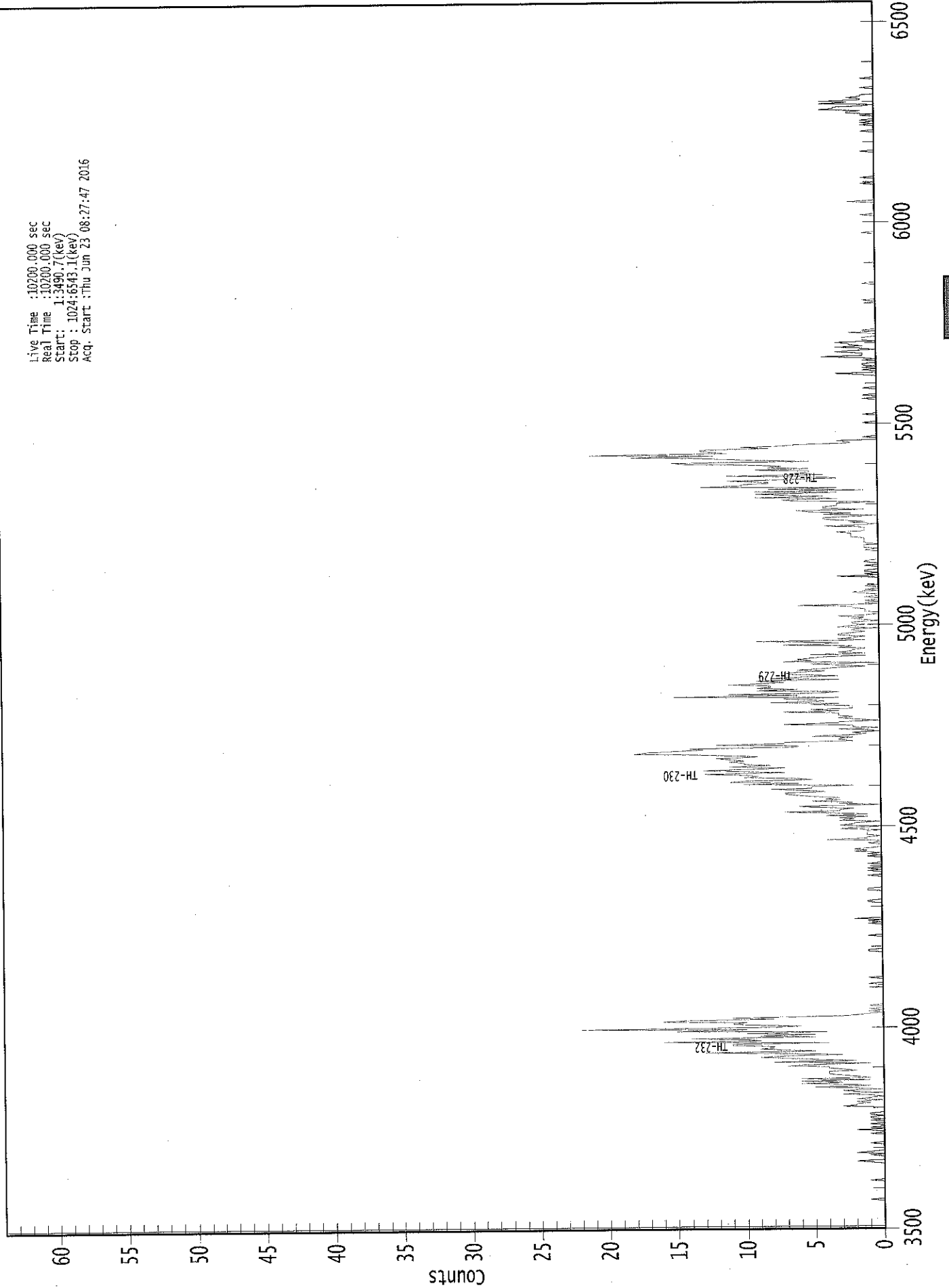
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.998	5850.00*	1.24E-001 +/- 8.23E-002	8.40E-002 +/- 9.71E-003
TH-228	0.991	5400.00*	5.72E+000 +/- 8.31E-001	8.98E-002 +/- 1.04E-002
TH-229	1.000	4872.00*	4.61E+000 +/- 5.33E-001	8.23E-002 +/- 9.51E-003
TH-230	0.987	4672.00*	6.14E+000 +/- 8.82E-001	6.51E-002 +/- 7.53E-003
TH-232	0.987	3997.00*	5.20E+000 +/- 7.70E-001	4.81E-002 +/- 5.56E-003

AG
6/24/16

0000155138.CNF

Live Time :10200.000 sec
Real Time :10200.000 sec
Start: 1:3490.7(kev)
Stop : 1024:6543.1(kev)
Acq. Start :Thu Jun 23 08:27:47 2016



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 01

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	10200	10200	0	0	0	0	0	0	0
1:	10200	10200	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	1	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	1	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	1
57:	2	0	0	0	0	1	0	0	2
65:	1	0	0	0	0	0	0	0	1
73:	0	0	0	0	0	0	0	0	1
81:	0	0	2	0	1	0	0	0	1
89:	0	0	1	0	1	1	0	0	1
97:	1	0	0	0	0	0	3	0	2
105:	2	1	2	0	2	1	0	0	1
113:	3	0	2	3	0	2	5	0	1
121:	2	6	3	6	1	6	1	0	2
129:	3	4	4	4	2	3	4	0	4
137:	7	4	1	8	2	5	7	0	9
145:	7	3	7	13	5	7	9	0	8
153:	8	11	11	4	16	9	10	0	14
161:	5	9	5	10	4	15	10	0	22
169:	8	6	10	11	10	16	14	0	8
177:	11	3	2	1	0	1	0	0	1
185:	0	0	1	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0	0
201:	0	1	0	0	1	0	0	0	0
209:	0	1	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	1
233:	1	0	0	0	0	0	0	0	0
241:	0	0	0	0	1	0	0	0	0
249:	0	0	0	0	0	0	1	0	0
257:	1	0	2	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	1	1	0	0	0	0	0	0	0
281:	0	0	1	1	0	0	0	0	0
289:	0	0	0	0	0	0	1	0	0
297:	0	0	1	0	1	0	0	0	0
305:	1	0	0	0	0	0	1	0	0
313:	1	0	2	1	2	1	0	0	0
321:	0	1	0	0	4	1	1	0	0
329:	1	1	1	1	0	3	2	0	0
337:	3	2	2	0	3	2	3	0	1
345:	4	1	3	7	3	3	2	0	5
353:	6	0	3	2	5	3	4	0	3
361:	5	6	7	7	4	5	8	0	5

369: 5 2 10 6 11 10 5 6

Sample Title: 01

Channel	1	2	3	4	5	6	7	8
377:	10	9	10	13	7	10	13	9
385:	7	11	8	10	10	11	10	11
393:	12	9	10	14	18	17	15	13
401:	14	6	6	12	7	7	2	3
409:	3	2	5	2	1	2	0	1
417:	3	0	2	2	7	3	3	0
425:	2	3	2	3	3	3	7	3
433:	5	2	2	2	5	3	8	4
441:	5	7	3	15	6	11	4	3
449:	9	6	9	8	8	11	8	7
457:	9	3	8	6	3	6	7	6
465:	4	6	4	3	1	3	5	0
473:	7	5	6	5	4	1	5	1
481:	3	2	2	1	3	2	7	3
489:	3	9	1	3	2	1	3	3
497:	2	1	2	2	0	3	2	1
505:	2	2	0	1	2	1	3	1
513:	0	0	1	1	1	2	2	6
521:	0	1	0	1	0	0	1	0
529:	0	1	2	0	1	0	0	1
537:	0	0	0	0	0	0	0	3
545:	0	1	0	1	1	0	0	0
553:	1	0	0	1	1	0	0	0
561:	0	0	0	0	0	1	0	1
569:	1	1	0	1	1	1	1	1
577:	2	2	2	2	3	1	1	1
585:	1	4	1	0	2	1	3	4
593:	4	2	0	4	2	5	6	1
601:	4	4	3	3	3	0	6	7
609:	3	9	4	7	9	3	9	1
617:	8	3	13	10	10	8	8	11
625:	7	3	4	11	4	6	5	5
633:	9	5	8	7	9	14	15	5
641:	9	11	13	18	12	21	11	12
649:	13	13	8	10	7	6	2	2
657:	3	0	0	1	0	0	0	0
665:	0	0	0	0	0	0	0	1
673:	0	0	0	0	0	0	1	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	1	0	0	1	0
697:	0	0	0	0	1	0	0	0
705:	0	0	0	0	0	0	0	1
713:	3	0	0	1	0	1	0	1
721:	1	0	0	1	0	1	4	1
729:	1	1	3	2	0	1	3	1
737:	2	2	3	0	1	1	1	0
745:	0	0	2	0	1	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	1	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	1	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 01

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	1	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	1	0	0	0
849:	0	0	0	0	0	0	0	2
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	1	0
873:	0	0	0	1	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	1	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	1	0	0	0	0	1
921:	0	1	0	1	0	0	0	1
929:	0	2	2	1	4	3	3	1
937:	0	4	2	4	1	1	2	1
945:	1	0	0	0	0	0	1	0
953:	0	0	0	0	0	0	1	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



KB
6/23/16

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-TH
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_004
 Chamber Serial Number:
 Detector Serial Number: 4
 Env. Background: System Bkgd 156889
 Reagent Blank: <not performed>

Sample Size: 1.500E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/23/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 8:27:48 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.224 mL
 Effective Efficiency: 0.1844 +/- 0.0158
 Counting Efficiency: 0.1879 +/- 0.0033 on 12/11/2015 2:46:10 PM
 Chem. Recovery Factor: 0.9815 +/- 0.0858

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.804	0.32	646.91	0.68	0.00E+000	2.9
TH-228	5.269	1.32	215.97	0.68	0.00E+000	2.9
TH-229 T	4.888	157.98	15.65	1.02	0.00E+000	11.7
TH-230	4.596	4.47	109.71	1.53	0.00E+000	2.9
TH-232	3.966	2.15	161.66	0.85	0.00E+000	2.9

T = Tracer Peak used for Effective Efficiency

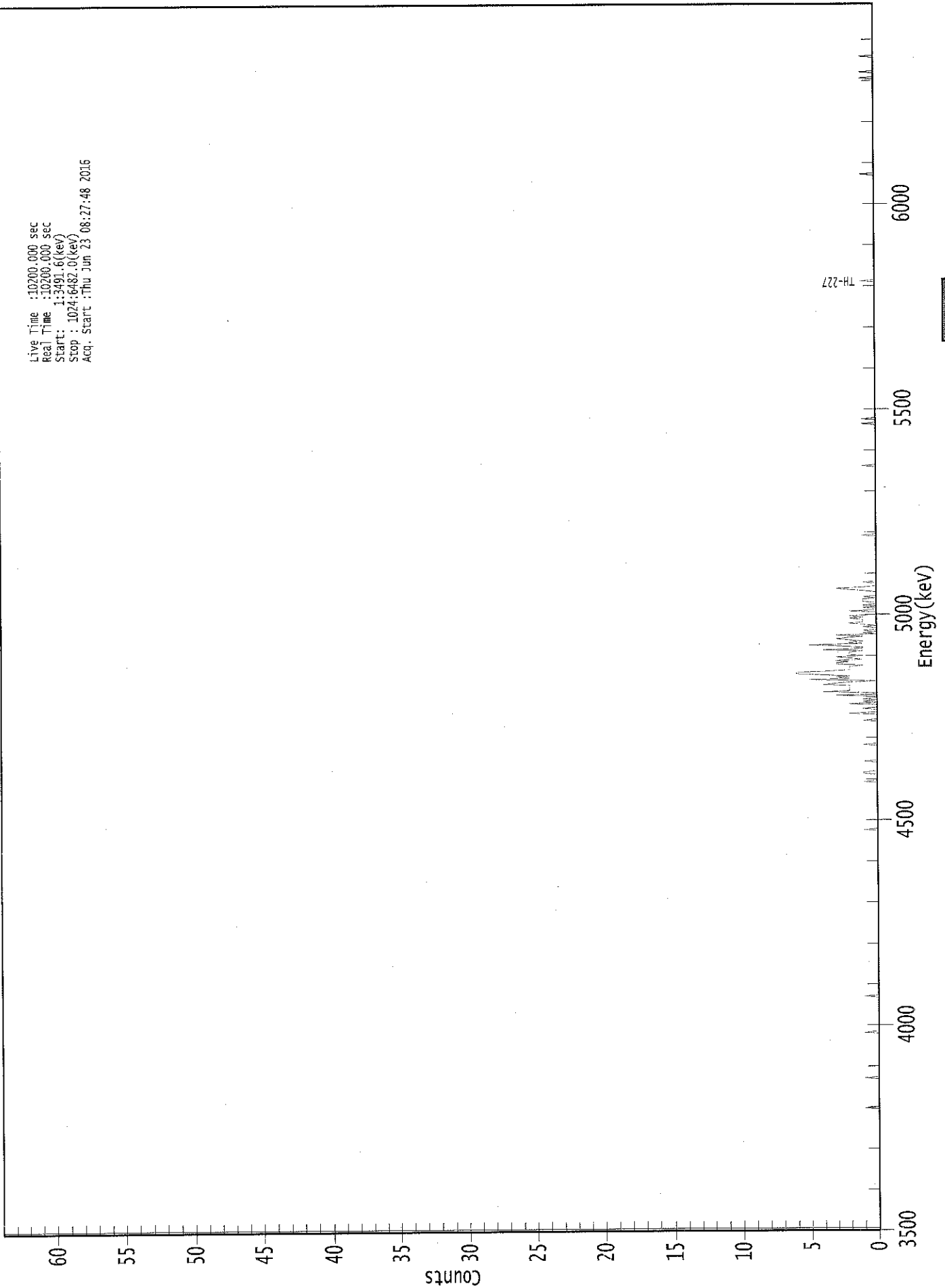
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.989	5850.00*	3.14E-003 +/- 2.03E-002	5.54E-002 +/- 9.31E-003
TH-228	0.914	5400.00*	1.27E-002 +/- 2.74E-002	5.41E-002 +/- 9.08E-003
TH-229	0.999	4872.00*	1.52E+000 +/- 2.55E-001	6.06E-002 +/- 1.02E-002
TH-230	0.970	4672.00*	4.29E-002 +/- 4.76E-002	6.82E-002 +/- 1.15E-002
TH-232	0.995	3997.00*	2.06E-002 +/- 3.35E-002	5.74E-002 +/- 9.63E-003

KA
6/24/16

0000155139.CNF

Live Time : 10200.000 sec
Real Time : 10200.000 sec
Start : 1:34:11.6(keV)
Stop : 1024:6482.0(keV)
Acq. Start : Thu Jun 23 08:27:48 2016



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 02

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10200	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	1	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	1
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	1	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	1	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	1	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 1 0

Sample Title: 02

Channel	1	2	3	4	5	6	7	8
377:	0	0	0	0	0	1	1	0
385:	0	0	0	0	0	0	0	1
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	1	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	1	0	0	0	0	0	2
433:	0	0	0	1	0	0	0	2
441:	0	1	0	1	0	0	3	0
449:	0	4	2	2	2	2	2	4
457:	3	2	0	5	2	3	2	4
465:	6	6	4	2	2	2	2	1
473:	3	3	2	3	1	2	3	1
481:	2	2	2	1	4	1	1	3
489:	5	1	2	1	2	3	2	1
497:	3	0	1	0	1	0	0	1
505:	0	1	2	1	1	1	2	1
513:	2	0	0	0	2	0	0	1
521:	0	1	0	0	1	1	1	0
529:	1	0	0	0	0	1	2	3
537:	1	0	0	0	1	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	1	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	1	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	1	0	0	0	1	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	1
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	1	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	1	0	0	0	0	1	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	1	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

15
6/23/16

Apex-Alpha™

Sample Description: CP-5028 00-02 DUF
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-TH
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_010
 Chamber Serial Number:
 Detector Serial Number: 10
 Env. Background: System Bkgd 156890
 Reagent Blank: <not performed>

Sample Size: 1.625E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 8:27:49 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.224 mL
 Effective Efficiency: 0.1809 +/- 0.0156
 Counting Efficiency: 0.1895 +/- 0.0033 on 12/11/2015 2:46:10 PM
 Chem. Recovery Factor: 0.9545 +/- 0.0842

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.856	9.47	69.45	1.53	0.00E+000	2.9
TH-228	5.354	145.09	16.53	3.91	0.00E+000	5.7
TH-229 T	4.884	154.81	15.82	1.19	0.00E+000	6.6
TH-230	4.622	172.98	14.95	1.02	0.00E+000	7.5
TH-232	3.942	130.98	17.20	1.02	0.00E+000	7.2

T = Tracer Peak used for Effective Efficiency

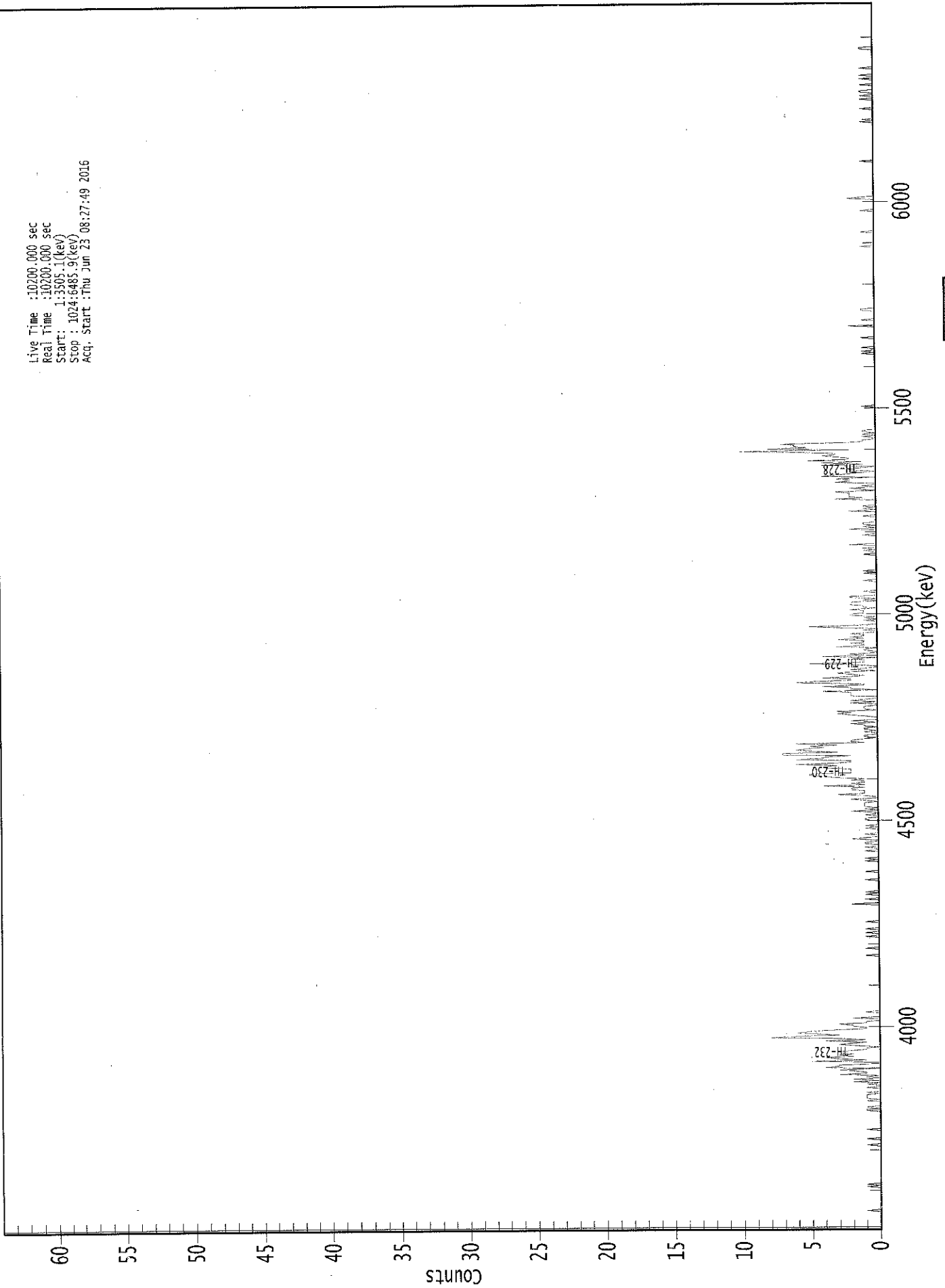
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	8.77E-002 +/- 6.27E-002	6.58E-002 +/- 1.12E-002
TH-228	0.989	5400.00*	1.33E+000 +/- 3.15E-001	8.94E-002 +/- 1.51E-002
TH-229	0.999	4872.00*	1.40E+000 +/- 2.38E-001	5.97E-002 +/- 1.01E-002
TH-230	0.987	4672.00*	1.56E+000 +/- 3.53E-001	5.69E-002 +/- 9.64E-003
TH-232	0.984	3997.00*	1.18E+000 +/- 2.85E-001	5.68E-002 +/- 9.62E-003

AG
6/24/16

0000155140.CNF

Live Time : 10200.000 sec
Real Time : 10200.000 sec
Start : 1:3505.11(kev)
Stop : 1024:6485.9(kev)
Acq. Start : Thu Jun 23 08:27:49 2016



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 03

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10200	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	1	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	1	0	1	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	1
73:	0	0	0	0	1	0	0	0
81:	0	0	0	0	1	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	1	1	0	1
105:	0	0	0	0	1	0	1	1
113:	1	1	0	1	0	0	0	1
121:	0	0	1	0	2	0	2	0
129:	1	0	3	1	1	2	3	0
137:	4	3	3	0	0	5	1	3
145:	4	2	3	2	3	3	2	1
153:	1	0	2	3	2	1	4	1
161:	3	8	6	3	5	6	5	4
169:	1	1	2	2	3	1	1	0
177:	0	2	0	0	0	0	1	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	1	0	0
233:	0	0	0	1	0	0	0	0
241:	0	0	0	0	0	1	0	0
249:	1	0	0	1	0	0	0	0
257:	0	1	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	2	0	0	0	1	0	0	0
281:	1	0	1	0	0	0	0	0
289:	0	0	0	0	1	0	0	0
297:	0	0	0	1	0	0	0	0
305:	0	0	0	0	1	0	1	0
313:	0	0	0	0	1	0	0	1
321:	0	0	1	1	0	0	2	1
329:	0	0	1	0	0	0	0	1
337:	0	1	0	0	0	0	1	1
345:	0	0	1	0	0	2	0	1
353:	0	1	1	1	1	0	1	2
361:	0	0	1	3	1	1	1	2

369: 2 1 4 1 2 1 1 2

Sample Title: 03

Channel	1	2	3	4	5	6	7	8	9
377:	1	3	4	5	5	2	2	2	2
385:	2	4	4	3	6	3	2	2	2
393:	6	4	4	2	7	7	3	5	5
401:	6	5	4	5	3	6	1	2	2
409:	2	1	0	1	1	0	0	1	1
417:	0	1	1	0	1	1	2	0	0
425:	2	0	0	0	1	2	3	2	2
433:	3	0	1	1	1	0	0	2	2
441:	0	2	1	0	0	2	2	2	2
449:	2	4	0	2	2	4	1	1	1
457:	6	5	2	2	4	2	1	2	2
465:	3	2	0	2	1	0	0	2	2
473:	5	1	1	1	2	0	4	1	1
481:	2	0	0	1	1	0	3	1	1
489:	1	2	1	1	3	1	2	1	1
497:	1	2	0	0	1	0	3	5	5
505:	1	0	0	0	1	0	1	0	0
513:	2	2	1	1	1	2	0	1	1
521:	1	2	2	2	0	1	0	2	2
529:	2	0	0	0	1	0	0	0	0
537:	0	0	0	0	0	1	0	0	0
545:	0	0	0	1	0	1	0	0	0
553:	0	0	0	0	0	0	0	0	0
561:	0	0	0	1	0	0	1	0	0
569:	1	0	0	2	0	0	0	0	0
577:	0	0	0	1	0	0	0	0	0
585:	2	0	1	0	1	1	0	0	0
593:	0	0	0	1	0	0	0	2	2
601:	0	1	0	1	0	0	0	0	0
609:	0	3	1	2	2	2	2	3	3
617:	0	1	2	0	1	0	0	3	3
625:	2	2	3	0	4	3	2	1	1
633:	0	2	2	1	0	4	1	4	4
641:	1	5	2	2	3	4	3	3	3
649:	6	10	2	8	5	6	6	7	7
657:	2	1	1	0	0	1	0	1	1
665:	0	1	1	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	1	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	0	0	1	0	1	0	0	1	1
737:	0	0	0	0	0	0	0	1	1
745:	0	0	0	0	0	0	0	0	0
753:	0	2	0	0	0	0	1	0	0
761:	0	0	0	0	0	0	1	1	1
769:	0	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 03

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	1	0	0	0	0
825:	0	0	0	0	0	0	0	1
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	1	0	0	0	0	0	0
857:	0	0	0	2	1	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	1	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	1	0	0	0	0
929:	0	0	0	0	0	0	1	0
937:	0	0	0	0	0	0	1	0
945:	0	1	0	0	1	1	0	0
953:	0	0	1	0	0	0	0	1
961:	0	0	1	0	0	0	0	0
969:	1	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	1	1	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



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6/23/16

Sample Description: CP-5028 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-TH
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_011
 Chamber Serial Number:
 Detector Serial Number: 11
 Env. Background: System Bkgd 156891
 Reagent Blank: <not performed>

Sample Size: 1.513E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 8:27:50 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.1955 +/- 0.0164
 Counting Efficiency: 0.1989 +/- 0.0034 on 12/11/2015 2:46:14 PM
 Chem. Recovery Factor: 0.9830 +/- 0.0843

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.881	16.11	53.71	2.89	0.00E+000	2.6
TH-228	5.378	123.94	17.86	3.06	0.00E+000	4.6
TH-229 T	4.874	166.13	15.31	1.87	0.00E+000	5.3
TH-230	4.636	160.62	15.60	2.38	0.00E+000	4.9
TH-232	3.960	131.98	17.14	1.02	0.00E+000	4.7

T = Tracer Peak used for Effective Efficiency

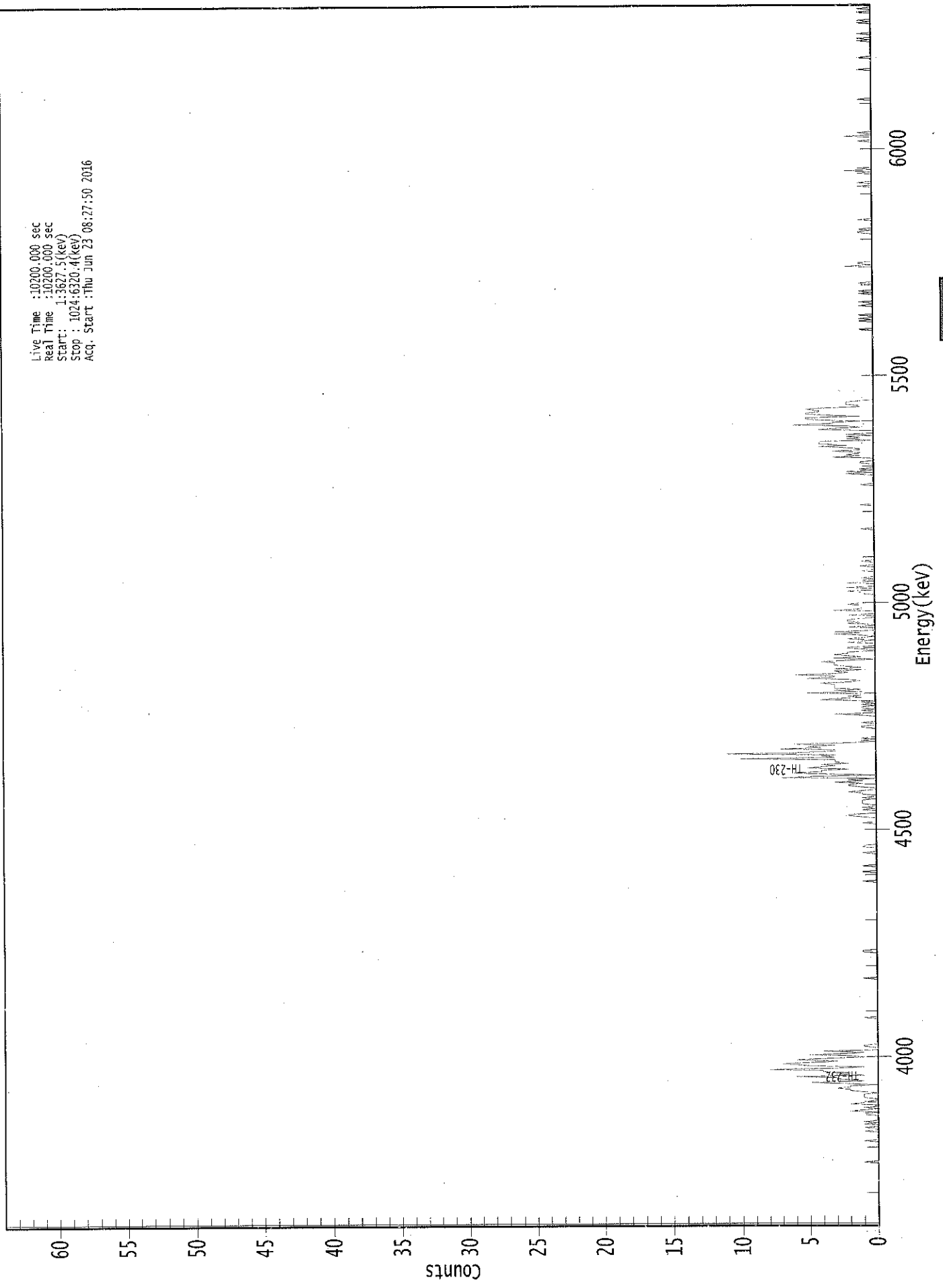
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.995	5850.00*	1.48E-001 +/- 8.33E-002	8.06E-002 +/- 1.33E-002
TH-228	0.998	5400.00*	1.13E+000 +/- 2.74E-001	8.14E-002 +/- 1.34E-002
TH-229	1.000	4872.00*	1.50E+000 +/- 2.46E-001	6.82E-002 +/- 1.12E-002
TH-230	0.993	4672.00*	1.44E+000 +/- 3.27E-001	7.36E-002 +/- 1.21E-002
TH-232	0.993	3997.00*	1.18E+000 +/- 2.81E-001	5.64E-002 +/- 9.29E-003

AG
6/24/16

0000155141.CNF

Live Time : 10200.000 sec
Real Time : 10200.000 sec
Start : 1:3627.5(kev)
Stop : 1024.6320.4(kev)
Acq. Start : Thu Jun 23 08:27:50 2016



ROI Type: 1

ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 04

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10200	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	1	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	1
73:	0	0	0	0	0	0	0	1
81:	0	0	1	0	0	1	0	1
89:	0	0	0	0	0	1	1	0
97:	2	1	0	1	0	0	2	1
105:	1	0	0	1	1	1	1	0
113:	1	2	2	3	2	2	0	3
121:	5	1	2	3	3	6	1	3
129:	2	4	4	8	3	1	5	6
137:	7	4	3	6	4	1	2	5
145:	2	1	4	0	0	0	1	1
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	1	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	1
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	1	1	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	1	0	0	0	0	0	0	0
297:	1	0	0	0	0	1	0	0
305:	0	0	0	0	0	0	0	0
313:	1	0	0	0	0	1	1	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	1	0	0	0	0	1	2
345:	2	0	0	0	1	0	1	0
353:	0	1	1	1	1	0	1	0
361:	0	1	1	2	1	0	0	1

369: 2 2 1 3 1 2 0 7

Sample Title: 04

Channel	1	2	3	4	5	6	7	8
377:	4	0	4	6	4	4	2	5
385:	4	3	4	2	3	3	3	10
393:	3	4	3	11	6	3	3	7
401:	4	5	3	6	2	0	1	0
409:	1	0	0	0	0	0	0	0
417:	0	1	1	0	0	1	0	0
425:	0	0	0	1	3	0	0	1
433:	0	1	1	0	1	0	1	0
441:	4	3	1	2	1	1	5	1
449:	3	1	3	3	3	3	4	2
457:	1	2	5	3	3	6	3	2
465:	3	1	3	1	2	3	3	3
473:	4	2	0	3	1	2	3	2
481:	2	0	0	2	2	0	0	0
489:	2	1	0	2	1	0	1	3
497:	1	3	0	0	0	2	0	0
505:	2	1	2	2	1	0	0	2
513:	0	0	0	3	1	1	1	1
521:	2	1	0	0	0	0	0	0
529:	0	1	1	2	0	0	2	0
537:	0	0	2	0	1	0	1	0
545:	0	0	0	0	1	0	0	0
553:	1	0	0	0	1	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	1
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	1	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	1	0	0	0
625:	0	0	0	0	0	2	0	2
633:	0	1	0	0	0	0	1	1
641:	0	0	0	3	1	2	1	1
649:	3	1	1	2	4	2	4	4
657:	4	0	2	1	2	0	2	0
665:	0	0	4	3	1	2	6	3
673:	3	1	4	5	5	1	3	5
681:	5	4	4	5	4	1	1	2
689:	2	2	1	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	1	0
753:	0	0	0	0	0	1	0	1
761:	0	0	1	0	0	0	0	0
769:	0	0	1	0	0	1	0	0
777:	0	0	0	0	1	0	1	0
785:	0	0	0	0	0	1	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 2 0 1 1 0

Sample Title: 04

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	1
833:	1	0	1	0	0	0	0	0
841:	0	0	1	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	1	0
873:	0	1	0	0	0	0	0	0
881:	0	1	0	2	0	1	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	1	0	0	0
913:	2	0	0	1	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	1
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	1	0	0	0	0	0	0	0
977:	0	0	1	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	1	0	1	0	0	0	1	0
1001:	0	0	0	0	0	0	0	1
1009:	0	1	0	0	0	0	0	0
1017:	1	0	0	1	0	0	1	2



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Sample Description: CP-5028 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-TH
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_012
 Chamber Serial Number:
 Detector Serial Number: 12
 Env. Background: System Bkgd 156892
 Reagent Blank: <not performed>

Sample Size: 1.526E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 8:27:51 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.235 mL
 Effective Efficiency: 0.1976 +/- 0.0161
 Counting Efficiency: 0.1919 +/- 0.0033 on 12/11/2015 2:46:15 PM
 Chem. Recovery Factor: 1.0293 +/- 0.0858

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.845	9.13	72.22	1.87	0.00E+000	3.0
TH-228	5.365	134.79	17.04	2.21	0.00E+000	3.9
TH-229 T	4.876	176.98	14.78	1.02	0.00E+000	4.4
TH-230	4.631	147.98	16.18	1.02	0.00E+000	4.9
TH-232	3.961	123.83	17.63	0.17	0.00E+000	8.9

T = Tracer Peak used for Effective Efficiency

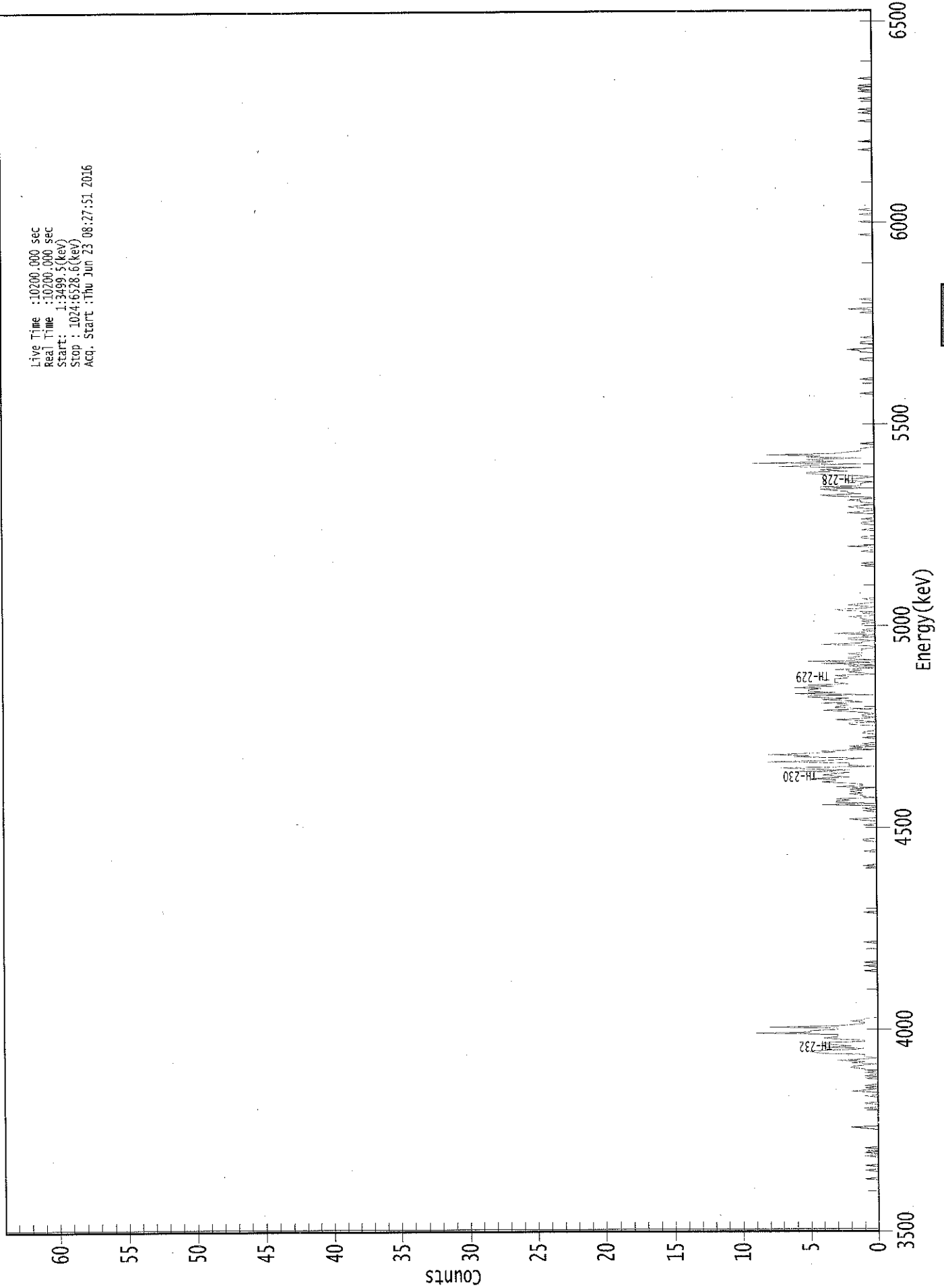
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	8.24E-002 +/- 6.09E-002	6.83E-002 +/- 1.09E-002
TH-228	0.993	5400.00*	1.21E+000 +/- 2.82E-001	7.15E-002 +/- 1.14E-002
TH-229	1.000	4872.00*	1.56E+000 +/- 2.50E-001	5.56E-002 +/- 8.89E-003
TH-230	0.991	4672.00*	1.30E+000 +/- 2.96E-001	5.55E-002 +/- 8.86E-003
TH-232	0.993	3997.00*	1.09E+000 +/- 2.59E-001	3.67E-002 +/- 5.86E-003

AG
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0000155142.CNF

Live Time : 10200.000 sec
Real Time : 10200.000 sec
Start : 1:3499.5(kev)
Stop : 1024:6528.6(kev)
Acq. Start : Thu Jun 23 08:27:51 2016



ROI Type: 1
ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 05

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10200	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	1	0	0	0
49:	0	0	0	1	0	0	0	1
57:	0	0	0	0	0	0	0	1
65:	0	0	1	0	0	0	1	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	1	2
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	1
105:	0	0	0	1	0	0	0	0
113:	0	1	0	0	0	2	1	0
121:	1	0	1	0	0	0	0	0
129:	1	0	1	0	0	1	0	1
137:	1	2	2	1	0	2	1	3
145:	1	0	1	1	1	4	5	5
153:	2	1	4	2	3	4	4	1
161:	1	3	4	3	3	3	9	5
169:	5	3	3	8	3	2	1	1
177:	2	1	1	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	1	0	0	0	1	0
225:	0	1	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	1	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	1	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	1	0	0	0	0	0
313:	0	0	0	0	0	0	1	0
321:	0	0	0	0	0	0	0	1
329:	1	0	0	0	0	0	0	0
337:	0	0	0	0	1	0	0	0
345:	1	2	0	0	0	0	0	0
353:	1	0	1	0	0	4	0	3
361:	3	2	3	0	1	1	2	1

369: 2 1 2 0 3 1 1 2

Sample Title: 05

Channel	1	2	3	4	5	6	7	8
377:	4	3	3	5	2	3	4	3
385:	2	6	2	5	7	0	2	2
393:	2	8	4	2	1	6	5	8
401:	5	3	4	0	2	1	2	0
409:	1	0	0	0	0	1	0	0
417:	0	1	1	0	0	0	0	0
425:	2	2	0	1	3	1	0	1
433:	1	0	1	2	4	0	3	3
441:	2	2	4	1	2	4	2	5
449:	5	0	6	3	5	5	4	6
457:	3	5	2	3	3	3	3	2
465:	2	3	0	1	2	1	3	0
473:	1	2	0	4	0	5	0	2
481:	2	1	1	2	1	1	1	1
489:	0	0	1	4	1	1	0	2
497:	2	0	1	0	3	1	0	1
505:	0	0	0	1	1	0	1	0
513:	1	1	2	0	0	1	0	2
521:	3	1	0	1	2	1	0	0
529:	0	1	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	1	0	1
561:	0	0	0	0	0	0	0	0
569:	0	1	0	0	0	2	0	0
577:	0	0	0	0	1	1	0	0
585:	0	0	0	1	0	0	0	0
593:	1	1	0	0	1	0	0	0
601:	0	2	1	0	0	1	2	1
609:	0	0	1	1	2	0	0	3
617:	4	1	2	2	3	4	0	4
625:	1	1	1	0	2	2	1	0
633:	1	3	5	5	2	4	3	1
641:	7	5	1	9	3	4	5	1
649:	5	4	8	3	2	1	1	1
657:	0	0	0	1	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	1	0	0
705:	0	0	0	0	0	0	0	0
713:	0	1	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	1	1	0	0	0	0	0
737:	1	1	2	0	0	0	0	1
745:	1	0	0	0	1	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	1	0	0	2	0	0	0
777:	0	0	0	0	1	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	1	0	0	0	0	0
841:	0	0	0	0	0	1	0	0
849:	0	0	0	1	0	0	0	1
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	1	0	0	0	0	0	0
913:	1	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	1	0	0	0	0	0	0
937:	1	0	0	1	0	0	0	0
945:	0	0	0	0	1	0	0	0
953:	0	0	1	0	1	1	0	1
961:	0	0	0	0	0	1	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



KB
6/23/14

Sample Description: CP-5028 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-TH
 Sample Identification: 06
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_014
 Chamber Serial Number:
 Detector Serial Number: 14
 Env. Background: System Bkgd 156893
 Reagent Blank: <not performed>

Sample Size: 1.548E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 8:27:52 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.234 mL
 Effective Efficiency: 0.2191 +/- 0.0172
 Counting Efficiency: 0.1824 +/- 0.0032 on 12/11/2015 2:46:16 PM
 Chem. Recovery Factor: 1.2012 +/- 0.0967

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.794	8.47	74.12	1.53	0.00E+000	2.9
TH-228	5.387	150.43	16.20	3.57	0.00E+000	12.1
TH-229 T	4.882	196.09	14.16	3.91	0.00E+000	4.3
TH-230	4.635	154.62	15.90	2.38	0.00E+000	5.5
TH-232	3.958	138.47	16.76	1.53	0.00E+000	7.2

T = Tracer Peak used for Effective Efficiency

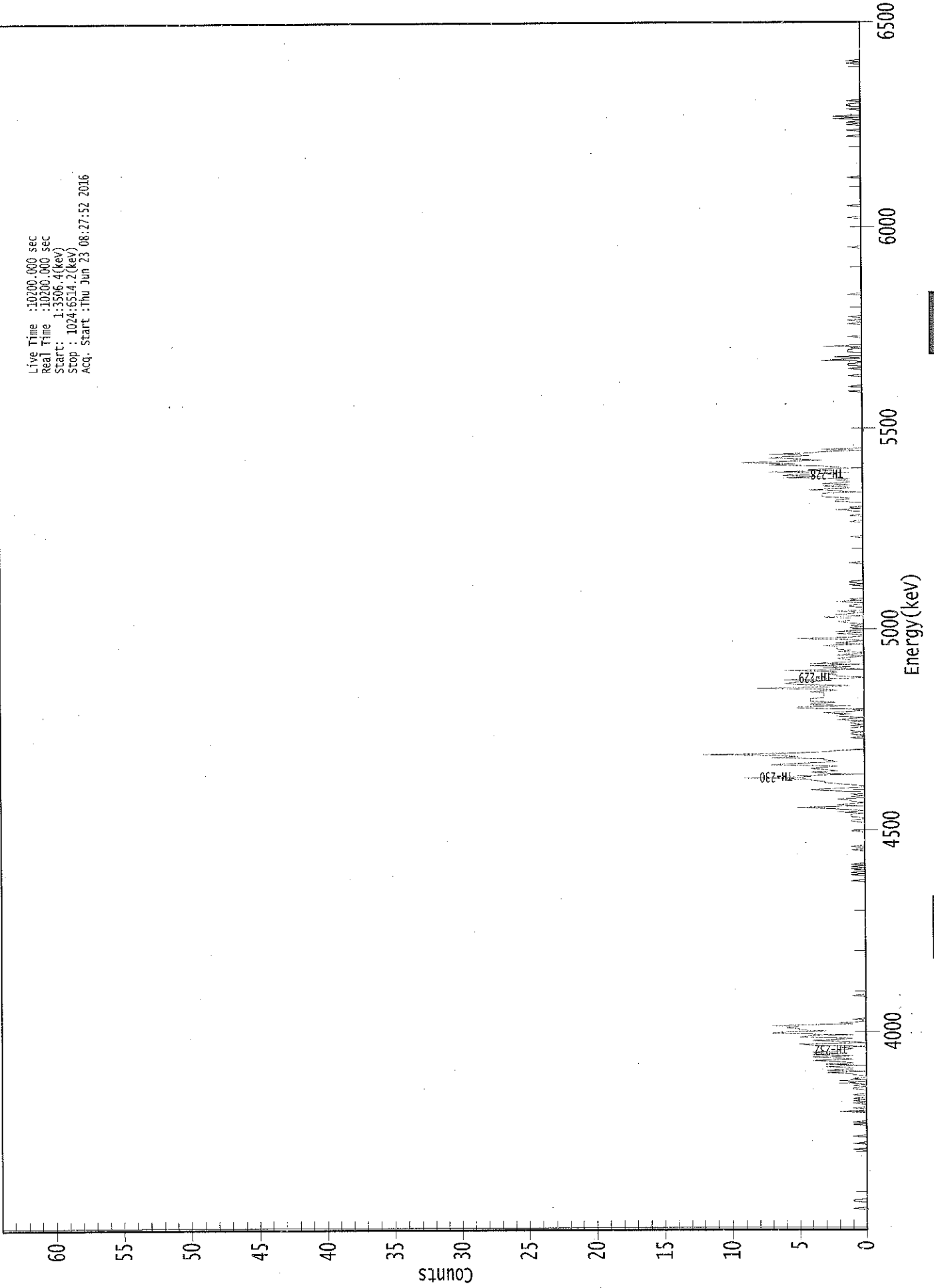
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.984	5850.00*	6.80E-002 +/- 5.15E-002	5.70E-002 +/- 8.79E-003
TH-228	0.999	5400.00*	1.20E+000 +/- 2.67E-001	7.50E-002 +/- 1.16E-002
TH-229	1.000	4872.00*	1.54E+000 +/- 2.37E-001	7.65E-002 +/- 1.18E-002
TH-230	0.993	4672.00*	1.21E+000 +/- 2.68E-001	6.42E-002 +/- 9.88E-003
TH-232	0.992	3997.00*	1.08E+000 +/- 2.46E-001	5.55E-002 +/- 8.56E-003

AG
6/24/16

0000155143.CNF

Live Time :10200.000 sec
Real Time :10200.000 sec
Start : 1:3506.4(keV)
Stop : 1024:6514.2(keV)
Acq. Start :Thu Jun 23 08:27:52 2016



ROI Type: 1

ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 06

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10200	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	1	0	0	0	0	0
25:	1	1	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	1	0	0	0
73:	0	1	0	0	0	0	0	1
81:	0	0	0	0	0	0	0	0
89:	0	1	0	1	0	0	0	0
97:	0	0	0	0	2	0	0	1
105:	0	0	0	1	0	1	0	1
113:	0	0	1	0	0	0	0	1
121:	1	0	1	0	2	0	2	0
129:	1	0	0	1	1	3	0	3
137:	1	1	3	0	3	1	2	4
145:	1	2	4	1	4	2	4	2
153:	2	1	2	0	4	5	0	1
161:	4	2	1	5	4	1	7	7
169:	3	5	5	6	5	7	1	2
177:	0	0	1	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	1	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	1
297:	0	0	0	0	1	0	1	0
305:	0	1	0	1	0	1	0	0
313:	0	0	0	0	0	0	0	0
321:	0	1	0	0	1	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	1	0	0	0	0	0	0
345:	0	1	1	0	0	1	1	1
353:	0	2	0	1	3	5	0	2
361:	1	0	1	1	2	0	1	0

369: 1 0 0 3 4 2 0 0

Sample Title: 06

Channel	1	2	3	4	5	6	7	8	9
377:	1	2	3	3	4	4	9	4	
385:	5	0	3	4	2	3	4	3	
393:	2	7	6	3	2	3	3	7	
401:	5	6	12	5	3	2	0	0	
409:	0	0	0	0	0	0	0	0	
417:	1	0	0	1	1	0	1	1	
425:	1	0	1	0	1	1	0	2	
433:	1	0	2	2	1	3	1	0	
441:	1	5	5	1	4	4	2	4	
449:	4	4	3	3	3	3	3	4	
457:	2	3	8	2	1	5	6	5	
465:	3	6	1	0	2	2	3	2	
473:	2	6	0	3	1	4	0	4	
481:	1	1	1	2	1	0	2	0	
489:	0	2	1	2	2	2	3	0	
497:	2	1	0	1	5	1	0	0	
505:	2	0	2	0	0	1	0	1	
513:	0	1	2	1	1	1	3	0	
521:	2	1	0	2	0	0	0	1	
529:	1	0	0	2	0	1	0	0	
537:	0	0	0	0	0	0	0	0	
545:	0	1	0	1	1	0	0	0	
553:	0	0	0	0	0	0	0	0	
561:	0	0	0	0	1	0	0	0	
569:	0	0	0	0	0	0	0	0	
577:	0	0	0	0	0	0	0	0	
585:	0	0	1	0	0	0	0	0	
593:	0	0	0	0	0	0	0	1	
601:	0	0	0	0	1	0	0	0	
609:	1	2	0	1	0	0	0	0	
617:	2	2	1	1	3	3	3	3	
625:	0	2	4	1	1	3	1	3	
633:	1	1	2	1	6	3	6	5	
641:	1	7	2	4	1	2	3	7	
649:	5	9	6	3	5	7	5	4	
657:	7	4	3	0	3	0	0	0	
665:	0	0	0	0	0	0	0	0	
673:	0	0	0	0	0	0	0	0	
681:	0	0	0	0	0	0	0	0	
689:	0	0	0	0	0	0	0	0	
697:	0	0	0	0	0	0	0	0	
705:	0	0	0	0	0	1	0	0	
713:	0	1	0	0	0	0	0	0	
721:	0	0	1	0	0	0	0	0	
729:	1	0	0	1	1	0	0	3	
737:	1	0	2	0	0	0	1	1	
745:	1	0	0	3	0	0	0	0	
753:	0	0	0	1	0	0	0	0	
761:	0	0	0	0	0	0	1	0	
769:	0	1	0	0	1	0	0	0	
777:	0	0	0	0	0	0	0	0	
785:	0	0	0	0	0	0	0	1	
793:	0	0	0	0	0	0	0	0	

801: 0 0 0 0 0 0 0 0 0

Sample Title: 06

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	1
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	1	0	0	0	0	0	0	0
865:	0	0	1	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	1	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	1	0	0
929:	0	0	1	0	0	0	0	1
937:	0	1	0	0	2	0	2	0
945:	0	0	0	0	1	0	0	1
953:	1	0	0	1	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	1	0	1	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



KB
6/23/14

Sample Description: CP-5028 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-TH
 Sample Identification: 07
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_015
 Chamber Serial Number:
 Detector Serial Number: 15
 Env. Background: System Bkgd 156894
 Reagent Blank: <not performed>

Sample Size: 1.543E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 8:27:53 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.225 mL
 Effective Efficiency: 0.2752 +/- 0.0198
 Counting Efficiency: 0.2292 +/- 0.0039 on 12/11/2015 2:46:18 PM
 Chem. Recovery Factor: 1.2004 +/- 0.0888

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.943	7.64	77.95	1.36	0.00E+000	3.0
TH-228	5.366	177.32	14.75	0.68	0.00E+000	9.7
TH-229 T	4.874	236.83	12.74	0.17	0.00E+000	3.9
TH-230	4.623	212.49	13.46	0.51	0.00E+000	12.7
TH-232	3.944	179.66	14.64	0.34	0.00E+000	4.9

T = Tracer Peak used for Effective Efficiency

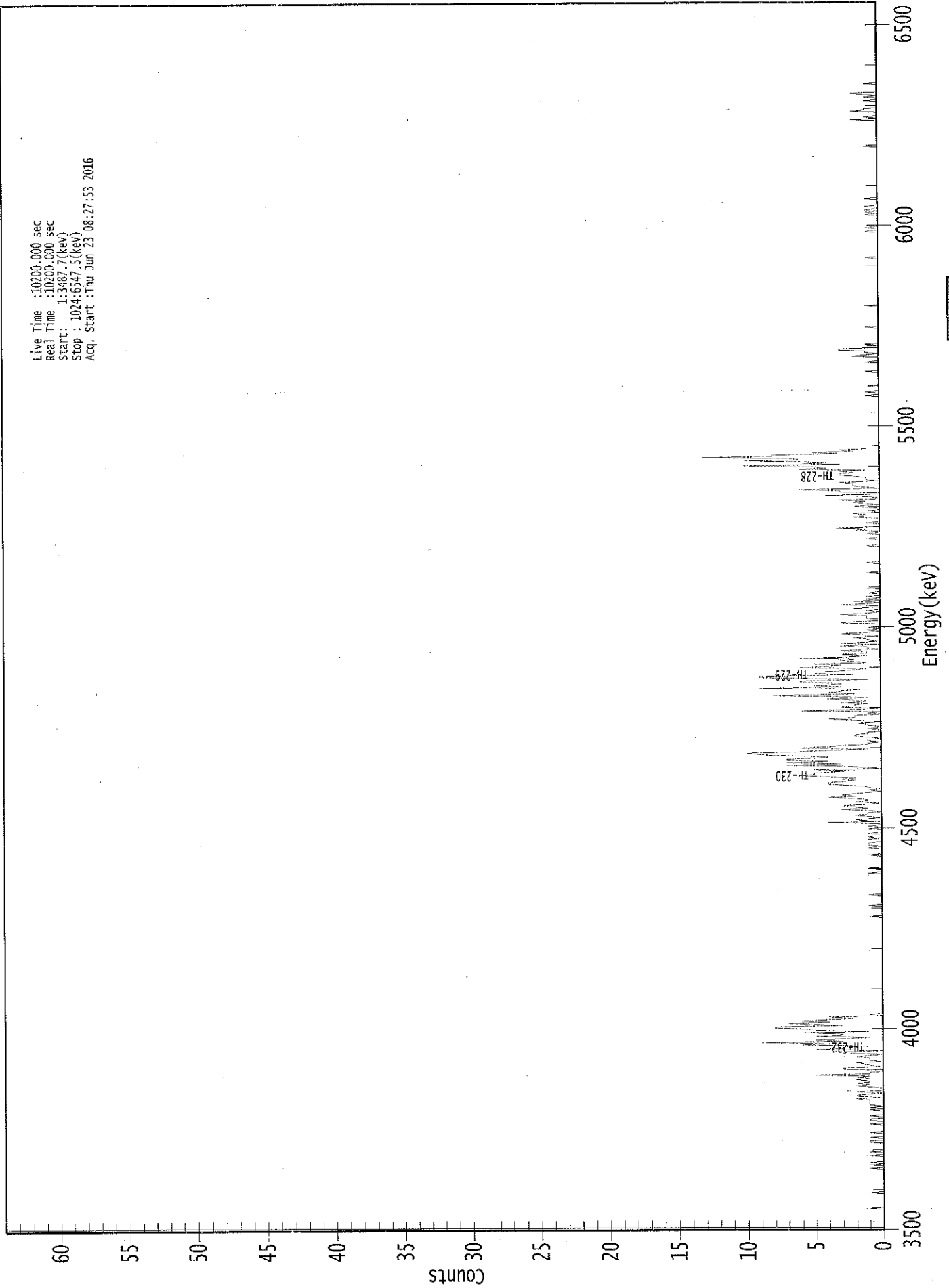
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.956	5850.00*	4.90E-002 +/- 3.88E-002	4.40E-002 +/- 6.21E-003
TH-228	0.994	5400.00*	1.13E+000 +/- 2.30E-001	3.58E-002 +/- 5.06E-003
TH-229	1.000	4872.00*	1.49E+000 +/- 2.10E-001	2.62E-002 +/- 3.70E-003
TH-230	0.987	4672.00*	1.33E+000 +/- 2.59E-001	3.28E-002 +/- 4.63E-003
TH-232	0.986	3997.00*	1.12E+000 +/- 2.28E-001	2.98E-002 +/- 4.21E-003

AG
6/24/16

0000155144.CNF

Live Time : 10200.000 sec
Real Time : 10200.000 sec
Start : 1:3487.7(keV)
Stop : 1024:6547.5(keV)
Acq. Start : Thu Jun 23 08:27:53 2016



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 07

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10200	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	1	0	0	0	0	0
25:	0	0	0	0	0	0	0	1
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	1	0	0	1	0
57:	1	0	0	0	0	0	1	0
65:	0	1	0	0	0	0	0	0
73:	0	1	1	0	0	1	0	0
81:	0	1	0	0	0	0	0	0
89:	1	0	0	1	1	0	0	1
97:	0	0	0	0	1	0	1	0
105:	1	1	1	1	1	2	0	2
113:	2	1	0	2	0	0	0	1
121:	2	1	2	1	1	2	1	2
129:	1	5	1	1	0	0	3	3
137:	0	1	1	2	0	1	1	1
145:	2	1	0	3	3	0	5	3
153:	3	1	6	4	9	3	5	3
161:	1	5	3	3	6	1	5	5
169:	8	8	3	5	7	4	6	4
177:	2	4	0	1	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	1	0	0
265:	0	0	0	0	0	0	1	0
273:	0	0	0	0	0	0	0	1
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	1	0	0	0	1	0	0
305:	0	0	0	0	0	0	0	0
313:	1	0	0	0	0	0	1	0
321:	1	1	1	0	0	1	0	1
329:	0	0	1	0	0	0	1	0
337:	1	0	0	4	0	2	1	0
345:	1	2	1	1	0	1	3	1
353:	2	3	1	0	2	1	1	2
361:	4	2	3	2	1	0	1	0

369: 1 1 3 4 4 3 2 3

Sample Title: 07

Channel	1	2	3	4	5	6	7	8
377:	2	4	6	5	5	4	2	5
385:	0	1	3	7	3	7	4	7
393:	7	4	4	8	9	10	6	4
401:	1	6	4	3	1	1	0	1
409:	1	0	1	2	2	1	1	0
417:	0	1	0	0	1	1	2	0
425:	2	4	2	2	2	0	1	0
433:	6	2	0	3	2	2	1	3
441:	1	2	4	1	4	8	2	4
449:	3	3	1	9	3	5	3	3
457:	6	6	1	6	9	9	2	5
465:	5	3	2	1	6	4	3	5
473:	1	2	3	2	6	2	1	3
481:	1	1	3	0	1	1	3	0
489:	3	1	0	1	1	2	0	1
497:	3	1	0	1	0	1	0	0
505:	0	3	2	0	0	1	1	1
513:	3	1	0	1	0	2	0	0
521:	3	1	0	2	0	1	0	1
529:	0	0	1	0	0	0	1	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	1	0	0	0	0
553:	0	0	0	1	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	1	0	0	0	0	0	1
577:	0	0	0	1	0	0	2	1
585:	4	0	0	0	1	0	0	0
593:	0	2	1	1	2	0	1	0
601:	0	1	2	0	1	2	1	3
609:	0	0	1	4	0	0	3	3
617:	6	0	1	2	2	2	3	0
625:	1	1	1	2	3	3	2	3
633:	1	6	4	5	10	3	6	4
641:	10	6	6	13	8	8	3	5
649:	2	3	1	1	1	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	1	0
697:	0	1	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	1	0	0	0	0	0
721:	0	0	1	0	0	0	0	2
729:	1	0	1	1	3	3	0	0
737:	0	1	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	1
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	1	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 07

Channel	1	2	3	4	5	6	7	8	9
809:	0	1	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0	1
833:	0	0	1	0	0	0	0	0	0
841:	0	0	0	0	0	1	0	0	1
849:	0	1	0	0	1	0	0	0	0
857:	0	0	1	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	1	0	0
905:	0	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0	0
921:	0	0	0	0	2	0	1	0	0
929:	0	0	0	2	1	1	0	0	0
937:	0	0	0	0	1	0	0	0	1
945:	0	1	2	0	0	0	0	0	0
953:	0	0	1	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0



105
6/23/16

Sample Description: CP-5029 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-TH
 Sample Identification: 08
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_057
 Chamber Serial Number: 01017326A
 Detector Serial Number: 57
 Env. Background: System Bkgd 156917
 Reagent Blank: <not performed>

Sample Size: 1.536E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 8:28:28 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.228 mL
 Effective Efficiency: 0.1493 +/- 0.0139
 Counting Efficiency: 0.1636 +/- 0.0029 on 12/11/2015 11:36:28 AM
 Chem. Recovery Factor: 0.9128 +/- 0.0867

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.862	8.00	73.50	0.00	0.00E+000	3.0
TH-228	5.394	67.66	23.90	0.34	0.00E+000	4.2
TH-229 T	4.895	130.00	17.26	0.00	0.00E+000	4.3
TH-230	4.649	123.83	17.63	0.17	0.00E+000	18.4
TH-232	3.978	71.00	23.42	0.00	0.00E+000	12.9

T = Tracer Peak used for Effective Efficiency

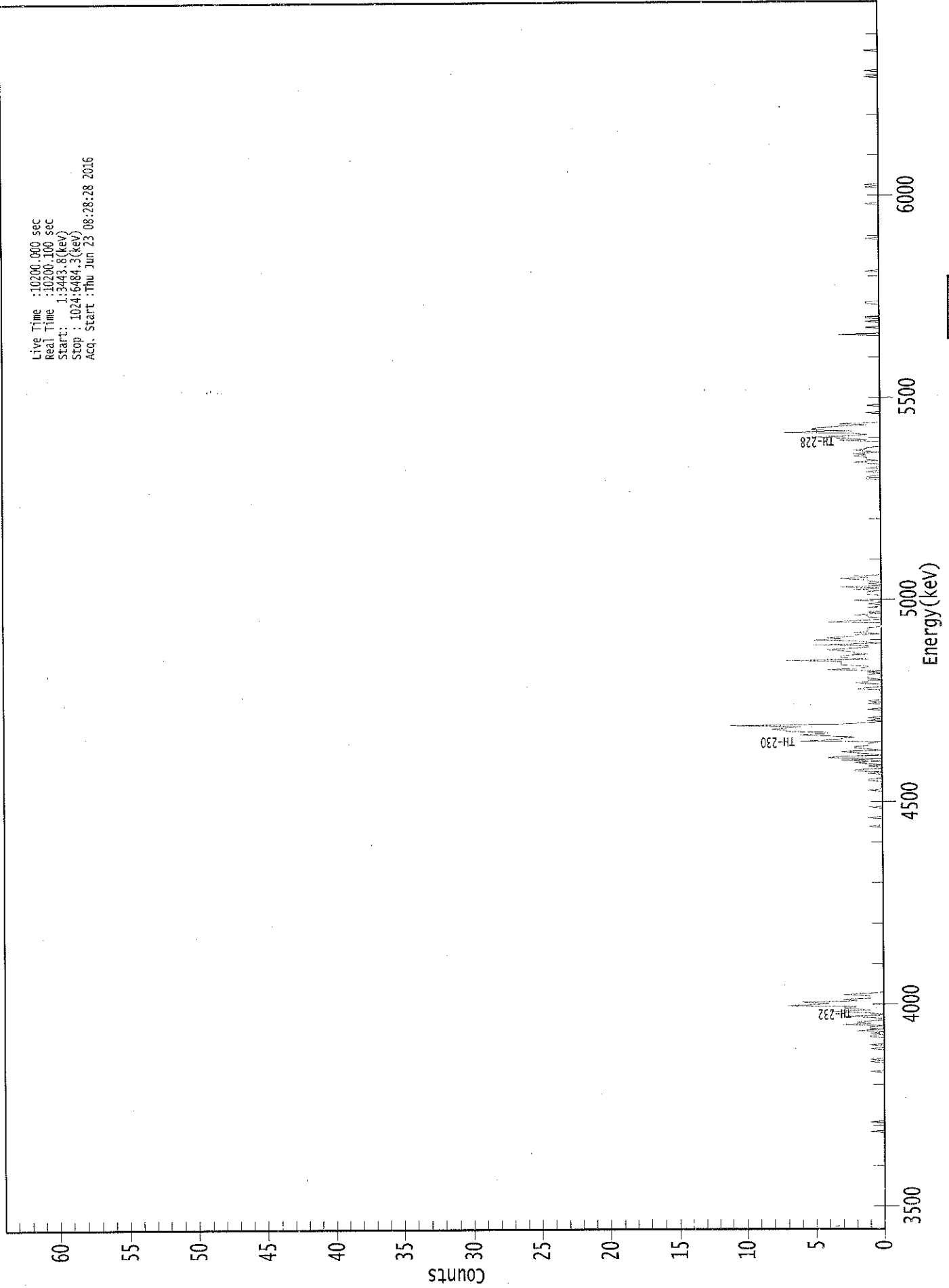
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	9.49E-002 +/- 7.19E-002	7.11E-002 +/- 1.30E-002
TH-228	1.000	5400.00*	7.95E-001 +/- 2.39E-001	5.62E-002 +/- 1.03E-002
TH-229	0.997	4872.00*	1.51E+000 +/- 2.76E-001	6.96E-002 +/- 1.27E-002
TH-230	0.997	4672.00*	1.43E+000 +/- 3.64E-001	4.83E-002 +/- 8.83E-003
TH-232	0.998	3997.00*	8.20E-001 +/- 2.44E-001	6.93E-002 +/- 1.27E-002

AG
6/23/16

0000155145.CNF

Live Time : 10200.000 sec
Real Time : 10200.100 sec
Start : 1:3443.8(keV)
Stop : 1024:6484.3(keV)
Acq. Start : Thu Jun 23 08:28:28 2016



ROI Type: 3

ROI Type: 1

***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 08

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	1	0	0	0	0	0	0	0
89:	0	1	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	1	0	0	0	0	0
137:	0	0	0	1	0	1	0	0	0
145:	0	0	0	0	0	0	1	0	0
153:	0	1	0	0	0	0	0	0	0
161:	1	1	0	1	0	2	0	1	1
169:	1	0	3	1	2	1	0	0	0
177:	1	3	0	0	2	4	1	2	2
185:	3	2	7	5	4	6	2	3	3
193:	1	1	1	3	1	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	1
337:	0	0	0	0	0	0	1	0	0
345:	0	0	0	0	0	0	0	1	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	1	0	0	0

369: 0 0 0 0 0 1 1 0

Sample Title: 08

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	1	0	2	2	0
385:	0	1	0	1	2	1	3	0
393:	4	3	0	1	2	3	0	1
401:	2	2	1	1	1	0	6	3
409:	3	2	4	6	4	4	7	7
417:	8	7	6	11	3	1	0	1
425:	0	1	0	0	0	0	0	0
433:	1	0	0	0	0	1	0	1
441:	0	0	0	0	0	0	0	0
449:	0	2	1	0	0	0	2	1
457:	1	0	1	1	1	1	0	1
465:	0	4	2	1	1	3	3	3
473:	3	7	1	3	3	3	1	2
481:	2	3	4	2	1	1	5	0
489:	1	2	5	3	4	2	2	0
497:	2	1	1	1	1	0	0	0
505:	0	4	2	0	0	1	1	2
513:	0	1	0	0	0	1	0	0
521:	1	0	0	2	0	0	0	0
529:	1	1	1	0	2	0	3	0
537:	0	1	0	1	1	3	1	2
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	1	1	1	0	0	0	1	0
633:	0	1	0	0	0	1	2	0
641:	1	1	1	2	1	2	0	1
649:	2	1	1	0	0	0	0	0
657:	3	1	3	5	2	1	2	7
665:	2	5	5	4	3	1	3	0
673:	0	0	0	0	0	0	0	1
681:	0	0	0	0	0	1	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	3	0	0	0	0	0	1	0
753:	0	0	0	1	0	0	1	1
761:	0	0	0	0	0	0	0	0
769:	0	0	1	1	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	1	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 08

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	1	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	1	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	1	0	1	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	1
961:	0	0	0	0	1	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	1	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

YAS
6/23/16

Apex-Alpha™

Sample Description: CP-5029 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-TH
 Sample Identification: 09
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_058
 Chamber Serial Number: 01017326B
 Detector Serial Number: 58
 Env. Background: System Bkgd 156918
 Reagent Blank: <not performed>

Sample Size: 1.572E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 8:28:29 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.226 mL
 Effective Efficiency: 0.1934 +/- 0.0162
 Counting Efficiency: 0.1680 +/- 0.0030 on 12/11/2015 11:36:26 AM
 Chem. Recovery Factor: 1.1509 +/- 0.0983

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.873	8.98	69.62	1.02	0.00E+000	3.0
TH-228	5.377	111.64	18.68	1.36	0.00E+000	17.9
TH-229 T	4.872	166.49	15.22	0.51	0.00E+000	16.3
TH-230	4.634	137.83	16.71	0.17	0.00E+000	5.5
TH-232	3.966	114.98	18.37	1.02	0.00E+000	10.8

T = Tracer Peak used for Effective Efficiency

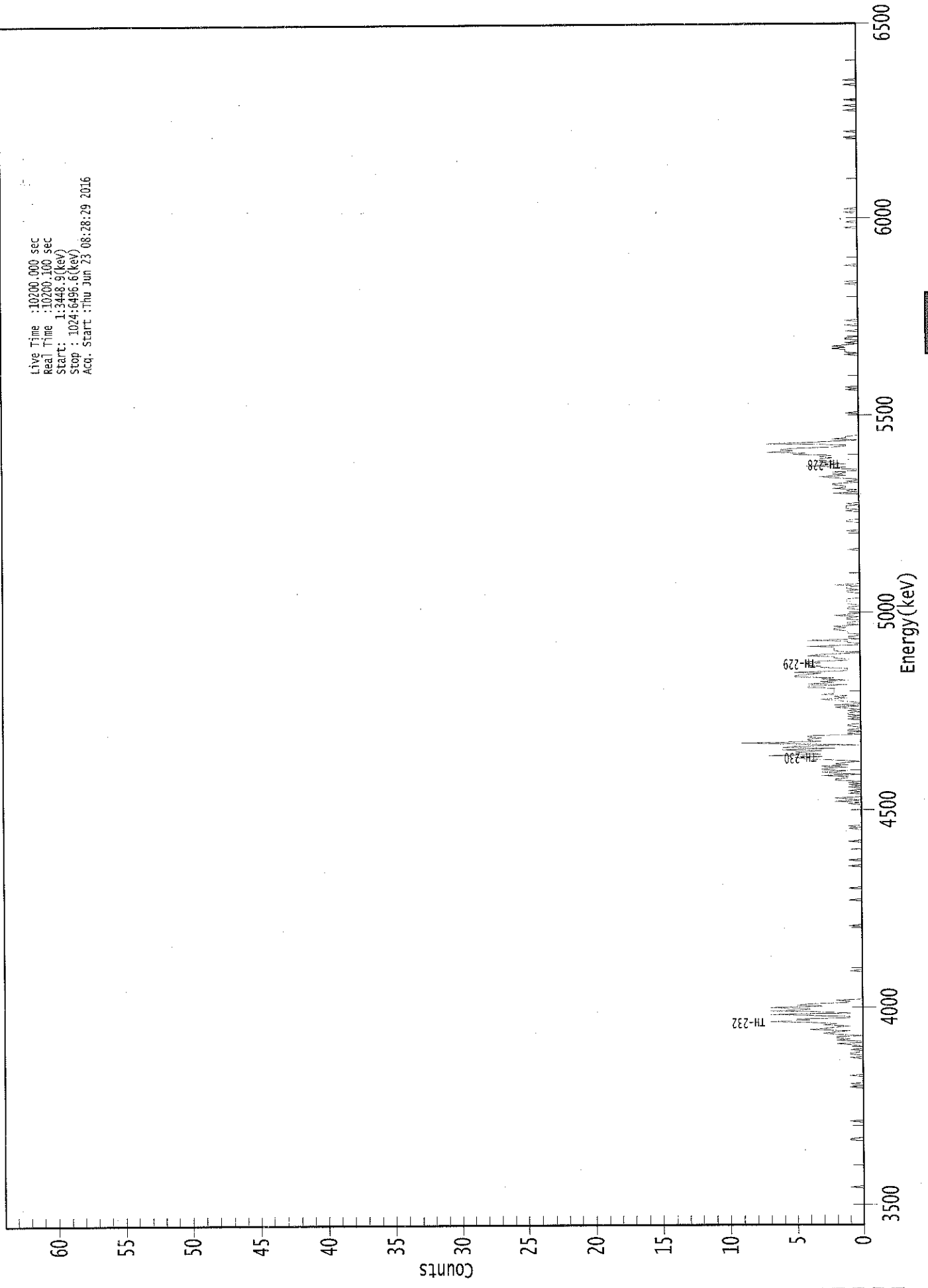
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.997	5850.00*	8.04E-002 +/- 5.75E-002	5.64E-002 +/- 9.24E-003
TH-228	0.997	5400.00*	9.90E-001 +/- 2.46E-001	6.08E-002 +/- 9.96E-003
TH-229	1.000	4872.00*	1.46E+000 +/- 2.39E-001	4.60E-002 +/- 7.53E-003
TH-230	0.993	4672.00*	1.20E+000 +/- 2.82E-001	3.64E-002 +/- 5.97E-003
TH-232	0.995	3997.00*	1.00E+000 +/- 2.47E-001	5.49E-002 +/- 9.00E-003

AG
6/24/16

0000155146.CNF

Live Time :10200.000 sec
Real Time :10200.100 sec
Start : 1:34:48.9(keV)
Stop : 1024:6496.6(keV)
Acq. Start :Thu Jun 23 08:28:29 2016



ROI Type: 3

ROI Type: 1

: 00220

***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 09

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	1	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	1	1	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	1	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	1	0	0
121:	1	0	0	0	0	0	0	0	1
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	1	0
145:	0	1	1	0	0	1	0	0	0
153:	0	1	2	0	0	2	1	1	2
161:	2	0	2	3	2	1	4	3	3
169:	2	1	3	2	4	7	4	5	5
177:	1	1	4	7	1	3	7	4	4
185:	4	7	3	5	4	1	1	2	2
193:	0	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	1	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	1	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	1	0	0	0	0
281:	0	0	0	0	0	0	1	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0	0
305:	0	1	0	0	0	0	1	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	1	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	1	0	1	0	0	0	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	1	0	0
361:	2	0	1	2	0	0	0	1	1

369: 0 1 0 0 1 0 1 0

Sample Title: 09

Channel	1	2	3	4	5	6	7	8	9
377:	1	0	2	2	1	1	3	0	
385:	2	3	1	3	3	1	3	1	
393:	2	1	0	2	4	5	3	7	
401:	3	4	5	3	6	2	6	5	
409:	0	5	9	3	4	4	3	4	
417:	4	0	1	0	1	1	0	0	
425:	1	1	0	0	0	0	1	0	
433:	1	0	1	1	0	1	0	1	
441:	2	0	2	0	0	1	2	3	
449:	1	2	1	3	2	2	2	2	
457:	2	4	4	1	4	2	3	1	
465:	3	2	5	5	4	3	5	1	
473:	1	1	3	3	4	4	3	4	
481:	1	1	2	2	4	3	0	1	
489:	2	2	2	2	4	0	0	1	
497:	1	4	0	1	1	0	0	1	
505:	1	1	2	2	1	2	0	1	
513:	1	0	0	1	1	0	2	1	
521:	0	0	0	0	1	1	0	0	
529:	1	1	1	1	1	0	0	0	
537:	0	0	1	1	0	1	1	0	
545:	2	0	0	0	0	0	0	0	
553:	0	0	0	0	0	0	0	0	
561:	0	0	0	0	0	0	0	0	
569:	0	0	0	0	0	0	1	0	
577:	0	0	0	0	0	0	0	0	
585:	0	0	0	0	0	0	1	0	
593:	0	0	0	0	0	0	1	1	
601:	0	0	0	0	0	0	0	1	
609:	0	1	1	1	0	1	0	0	
617:	0	0	0	0	0	0	2	0	
625:	1	0	2	1	1	2	2	0	
633:	1	0	0	2	3	1	2	1	
641:	2	0	0	2	1	4	2	1	
649:	3	2	3	3	2	3	2	5	
657:	4	7	5	6	5	2	1	1	
665:	7	4	2	0	2	1	1	0	
673:	0	0	0	0	0	0	0	0	
681:	0	0	0	0	0	0	0	0	
689:	0	0	1	0	0	0	0	0	
697:	0	0	0	0	0	0	0	0	
705:	0	0	0	0	0	0	1	0	
713:	1	0	0	0	0	0	0	0	
721:	0	0	0	0	0	0	0	0	
729:	0	0	0	0	0	0	0	0	
737:	0	0	0	0	1	0	1	1	
745:	1	2	1	2	1	0	1	0	
753:	0	1	1	0	0	0	0	0	
761:	1	0	0	0	0	1	0	0	
769:	0	1	0	0	0	0	0	0	
777:	0	0	0	0	0	0	0	0	
785:	0	0	0	0	0	0	0	0	
793:	0	0	0	0	0	0	0	0	

801: 1 0 1 0 0 0 0 0

Sample Title: 09

Channel	1	2	3	4	5	6	7	8	9
809:	0	0	0	0	0	0	0	0	0
817:	1	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0
849:	1	0	0	0	0	1	0	0	0
857:	0	0	0	0	0	1	0	0	0
865:	1	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	1	0	0	0
929:	0	0	1	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0	0
945:	0	0	0	0	1	0	0	0	0
953:	1	0	0	0	0	1	0	0	0
961:	0	0	0	0	0	0	0	0	0
969:	0	0	1	0	0	0	1	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0



Sample Description: CP-5029 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001552
 Batch Identification: 1606041A-TH
 Sample Identification: 10
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_059
 Chamber Serial Number: 10006125A
 Detector Serial Number: 59
 Env. Background: System Bkgd 156919
 Reagent Blank: <not performed>

Sample Size: 1.544E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 8:28:32 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.226 mL
 Effective Efficiency: 0.1853 +/- 0.0158
 Counting Efficiency: 0.1720 +/- 0.0030 on 12/11/2015 11:36:25 AM
 Chem. Recovery Factor: 1.0773 +/- 0.0936

Peak Match Tolerance: 0.175 MeV

 ----- PEAK AREA REPORT -----

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.788	9.32	66.89	0.68	0.00E+000	3.0
TH-228	5.396	96.15	20.09	0.85	0.00E+000	4.2
TH-229 T	4.905	159.66	15.53	0.34	0.00E+000	8.6
TH-230	4.645	162.83	15.37	0.17	0.00E+000	11.5
TH-232	3.971	117.32	18.16	0.68	0.00E+000	9.5

T = Tracer Peak used for Effective Efficiency

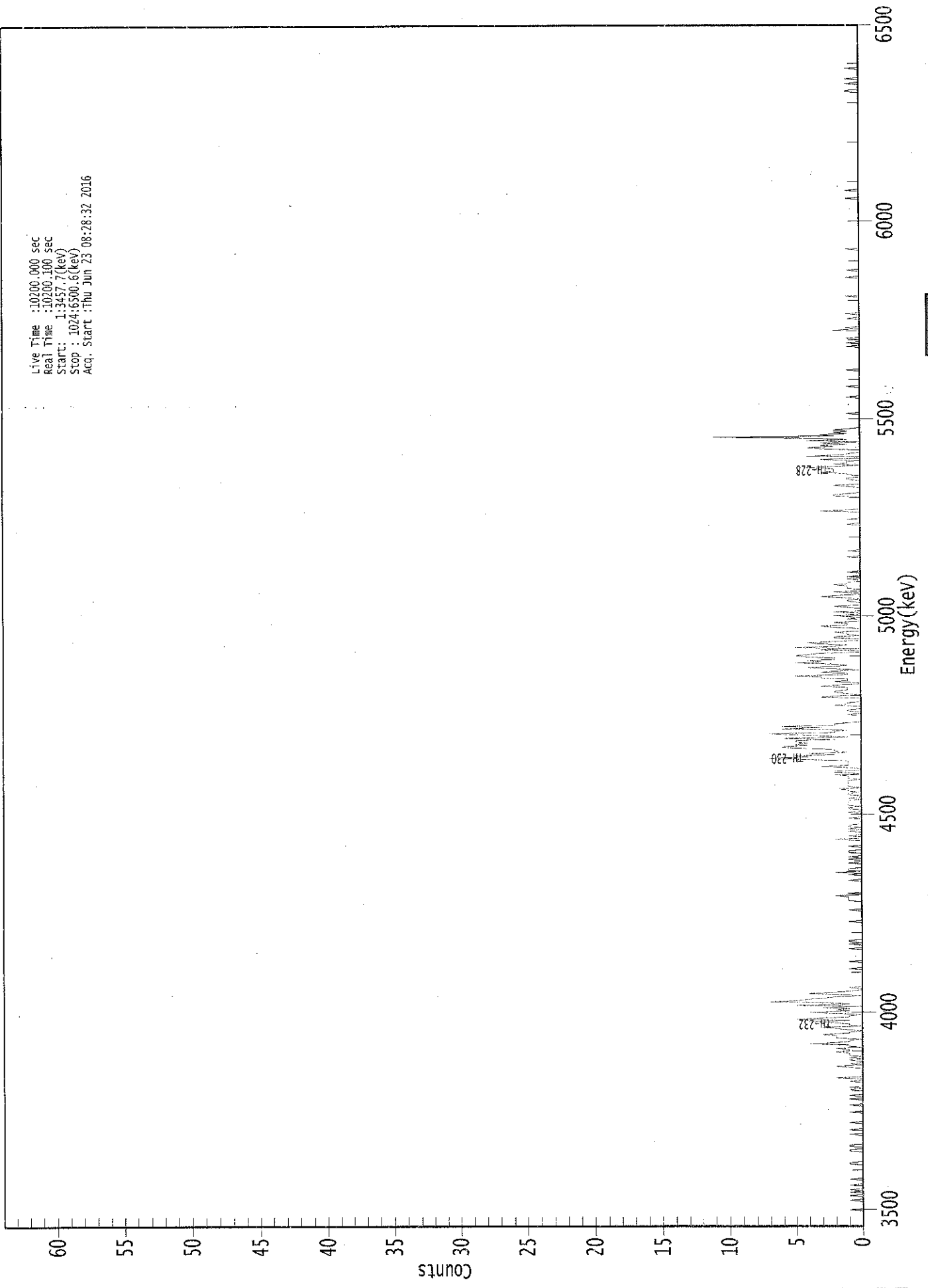
 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.980	5850.00*	8.87E-002 +/- 6.11E-002	5.37E-002 +/- 8.95E-003
TH-228	1.000	5400.00*	9.06E-001 +/- 2.37E-001	5.64E-002 +/- 9.41E-003
TH-229	0.994	4872.00*	1.49E+000 +/- 2.48E-001	4.45E-002 +/- 7.42E-003
TH-230	0.996	4672.00*	1.51E+000 +/- 3.43E-001	3.87E-002 +/- 6.46E-003
TH-232	0.997	3997.00*	1.09E+000 +/- 2.68E-001	5.22E-002 +/- 8.71E-003

AG
6/24/16

0000155147.CNF

Live Time :10200.000 sec
Real Time :10200.100 sec
Start : 1:3457.7(keV)
Stop : 1024:6500.6(keV)
Acq. Start :Thu Jun 23 08:28:32 2016



ROI Type: 1

ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 10

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	1	0
17:	0	0	0	0	0	0	0	1	0
25:	0	0	1	0	0	1	0	0	1
33:	0	0	0	1	0	0	0	0	0
41:	1	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	1	1	1	0
57:	0	0	0	0	0	0	0	0	0
65:	1	1	0	0	1	1	0	0	0
73:	0	0	0	0	0	0	1	1	0
81:	0	0	1	0	0	0	0	0	0
89:	1	0	0	0	0	0	0	0	0
97:	0	1	0	0	0	0	0	0	1
105:	0	0	0	0	1	0	0	0	1
113:	0	0	0	0	1	0	1	1	0
121:	0	0	0	1	0	0	2	0	0
129:	0	0	0	0	0	0	0	0	1
137:	2	0	1	0	0	1	0	1	1
145:	0	1	1	1	2	1	1	1	2
153:	0	1	1	4	2	1	1	1	0
161:	2	2	2	3	1	1	0	1	1
169:	2	3	0	1	1	2	4	1	1
177:	5	3	1	1	0	2	4	1	1
185:	2	1	3	0	5	1	2	7	7
193:	5	4	3	2	0	2	4	2	2
201:	1	0	0	1	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	1	0	0	0	0	0
225:	0	1	0	0	0	0	0	0	0
233:	0	0	0	0	1	0	0	0	0
241:	1	0	1	1	0	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	1	0	0	0	0	0
265:	0	0	0	0	0	1	0	0	0
273:	0	0	0	0	0	1	1	1	1
281:	1	2	0	1	0	0	0	0	0
289:	0	0	0	0	0	0	1	0	0
297:	0	0	0	1	0	2	0	1	1
305:	1	0	0	0	0	1	0	0	0
313:	1	0	1	0	0	0	1	1	1
321:	0	0	0	1	0	0	0	0	0
329:	0	2	0	0	1	0	0	0	0
337:	1	0	1	0	1	1	0	0	0
345:	0	0	0	1	0	0	0	0	0
353:	1	0	0	1	1	0	1	1	1
361:	1	1	1	0	1	0	0	1	1

369: 1 0 1 1 2 0 1 1

Sample Title: 10

Channel	1	2	3	4	5	6	7	8
377:	1	1	1	1	0	1	1	1
385:	2	0	2	2	0	0	1	3
393:	1	1	1	1	1	5	7	4
401:	5	2	4	1	2	2	3	6
409:	6	4	5	4	5	5	2	6
417:	1	3	5	7	2	2	1	6
425:	3	6	2	2	1	0	0	0
433:	0	0	0	1	0	0	1	1
441:	0	0	0	2	1	1	0	0
449:	0	0	3	2	0	1	2	2
457:	1	1	1	3	2	0	0	2
465:	1	1	3	3	5	1	1	3
473:	2	0	2	4	2	1	2	5
481:	3	4	2	2	4	5	4	3
489:	0	0	3	0	5	2	1	3
497:	4	2	0	0	2	2	0	1
505:	1	2	0	0	0	2	3	1
513:	1	2	0	0	1	0	1	2
521:	0	0	2	0	0	0	1	2
529:	0	0	0	1	1	0	1	3
537:	2	0	0	2	0	0	1	1
545:	1	2	1	1	0	0	1	0
553:	1	0	0	0	1	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	1	0	0	0	0	1	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	1	0	0
601:	0	1	0	0	0	0	0	0
609:	3	1	0	0	0	0	0	0
617:	0	0	0	0	0	2	2	1
625:	0	0	0	0	0	1	2	0
633:	0	0	0	1	1	0	0	1
641:	1	3	2	2	2	4	2	0
649:	2	1	1	0	3	1	0	4
657:	1	1	0	0	0	3	4	2
665:	3	1	3	0	4	1	4	11
673:	2	3	1	2	1	2	1	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	1	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	1	0	0	0	0	0	0
713:	0	0	1	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	1	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	1	0	0	1
753:	0	0	0	1	0	0	0	0
761:	0	0	2	0	1	0	0	0
769:	0	0	0	0	1	0	0	0
777:	1	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	1
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 1

Sample Title: 10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	1	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	1
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	1	0	0	0	0	0
881:	0	1	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	1	1	0
969:	0	0	0	0	1	0	0	0
977:	1	0	0	0	0	0	0	0
985:	0	1	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

NS
6/23/16

Apex-Alpha™

Sample Description: CP-5029 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-TH
 Sample Identification: 11
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_060
 Chamber Serial Number: 10006125B
 Detector Serial Number: 60
 Env. Background: System Bkgd 156920
 Reagent Blank: <not performed>

Sample Size: 1.511E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 8:28:33 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.1403 +/- 0.0136
 Counting Efficiency: 0.1522 +/- 0.0027 on 12/11/2015 11:36:23 AM
 Chem. Recovery Factor: 0.9220 +/- 0.0908

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.854	5.81	90.53	1.19	0.00E+000	3.0
TH-228	5.377	114.32	18.40	0.68	0.00E+000	15.5
TH-229 T	4.867	119.49	17.98	0.51	0.00E+000	5.9
TH-230	4.637	117.66	18.10	0.34	0.00E+000	6.9
TH-232	3.963	117.49	18.13	0.51	0.00E+000	4.0

T = Tracer Peak used for Effective Efficiency

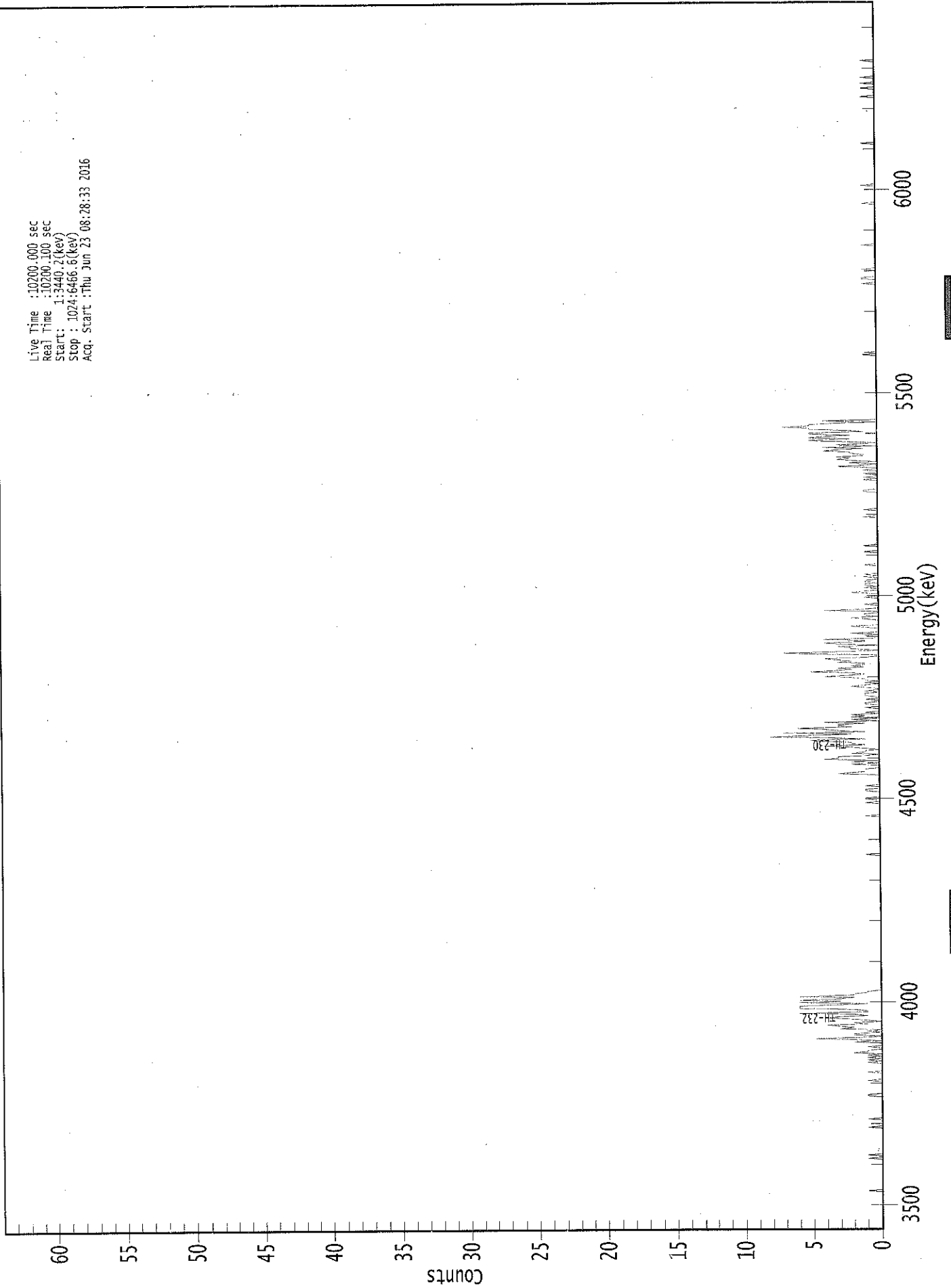
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	7.46E-002 +/- 6.90E-002	8.45E-002 +/- 1.60E-002
TH-228	0.997	5400.00*	1.45E+000 +/- 3.84E-001	7.17E-002 +/- 1.36E-002
TH-229	1.000	4872.00*	1.50E+000 +/- 2.85E-001	6.59E-002 +/- 1.25E-002
TH-230	0.994	4672.00*	1.47E+000 +/- 3.86E-001	5.98E-002 +/- 1.14E-002
TH-232	0.994	3997.00*	1.47E+000 +/- 3.85E-001	6.56E-002 +/- 1.24E-002

AG
6/24/16

0000155148.CNF

Live Time : 10200.000 sec
Real Time : 10200.100 sec
Start : 1:340.2(keV)
Stop : 1024:6466.6(keV)
Acq. Start : Thu Jun 23 08:28:33 2016



ROI Type: 1

ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 11

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	1	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	1	0	0	1	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	1	0	0	0
89:	0	0	0	0	1	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	1
113:	1	0	0	0	0	0	0	0	0
121:	0	0	0	0	1	0	0	0	0
129:	0	0	0	1	0	0	0	0	0
137:	0	0	0	1	0	1	0	1	0
145:	0	1	0	2	1	1	0	0	0
153:	1	0	0	0	2	0	2	5	0
161:	1	0	2	2	0	1	0	3	0
169:	2	3	4	1	2	0	1	2	0
177:	4	3	1	2	6	1	1	2	0
185:	6	6	6	3	1	6	3	6	0
193:	3	2	6	2	2	1	1	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	1	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	1	0	0	0	0	0	0	0	0
353:	0	0	0	1	0	0	1	1	0
361:	0	0	0	0	0	1	1	0	0

369: 0 1 0 0 0 0 0 0 0

Sample Title: 11

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	3	2	1	1	1	1
385:	0	0	0	2	0	2	0	4	4
393:	3	3	1	0	2	1	1	0	0
401:	1	2	4	1	2	2	4	5	5
409:	1	4	8	5	2	7	1	3	3
417:	4	6	2	3	3	1	4	0	0
425:	2	0	2	1	2	0	1	0	0
433:	0	0	1	0	0	1	1	0	0
441:	0	1	0	0	1	1	1	0	0
449:	1	0	0	1	2	1	0	1	1
457:	0	1	1	2	4	2	1	2	2
465:	5	3	2	3	1	2	1	1	1
473:	3	2	3	4	1	0	0	5	5
481:	7	2	0	2	2	3	0	3	3
489:	4	1	1	4	0	0	1	0	0
497:	2	0	0	0	0	1	2	0	0
505:	0	0	0	0	1	2	0	1	1
513:	1	0	0	4	1	0	0	0	0
521:	1	0	0	0	0	0	1	0	0
529:	0	0	2	1	0	0	1	0	0
537:	1	1	0	1	1	0	0	1	1
545:	0	1	0	0	0	0	0	0	0
553:	0	1	0	0	0	0	0	0	0
561:	0	0	0	0	1	0	0	0	0
569:	0	1	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0	0
593:	0	1	0	0	0	0	0	1	1
601:	0	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	1	1	1
617:	0	0	0	0	0	0	0	0	0
625:	1	0	1	0	0	1	0	0	0
633:	1	0	0	3	1	0	2	0	0
641:	2	3	2	3	1	1	2	2	2
649:	4	3	1	4	0	3	1	0	0
657:	4	5	2	5	4	2	5	5	5
665:	1	2	5	5	7	5	5	3	3
673:	0	4	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	1	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0	0
785:	0	0	0	1	0	0	0	1	1
793:	1	0	0	0	0	0	0	1	1

801: 0 0 0 0 0 0 0 0 0

Sample Title: .11

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	1	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	1	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	1	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	1	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	1
945:	0	0	0	0	0	0	1	0
953:	0	0	1	0	0	0	0	1
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	1	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

168
6/23/16

Apex-Alpha™

Sample Description: CP-5030 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-TH
 Sample Identification: 12
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_033
 Chamber Serial Number: 04026479A
 Detector Serial Number: 91132
 Env. Background: System Bkgd 156895
 Reagent Blank: <not performed>

Sample Size: 1.536E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 11:27:51 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.224 mL
 Effective Efficiency: 0.1756 +/- 0.0154
 Counting Efficiency: 0.1762 +/- 0.0031 on 12/11/2015 8:20:59 AM
 Chem. Recovery Factor: 0.9968 +/- 0.0889

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.835	8.15	72.72	0.85	0.00E+000	3.0
TH-228	5.377	92.98	20.46	1.02	0.00E+000	4.9
TH-229 T	4.874	150.32	16.03	0.68	0.00E+000	6.5
TH-230	4.652	133.49	17.00	0.51	0.00E+000	10.2
TH-232	3.980	97.83	19.84	0.17	0.00E+000	5.4

T = Tracer Peak used for Effective Efficiency

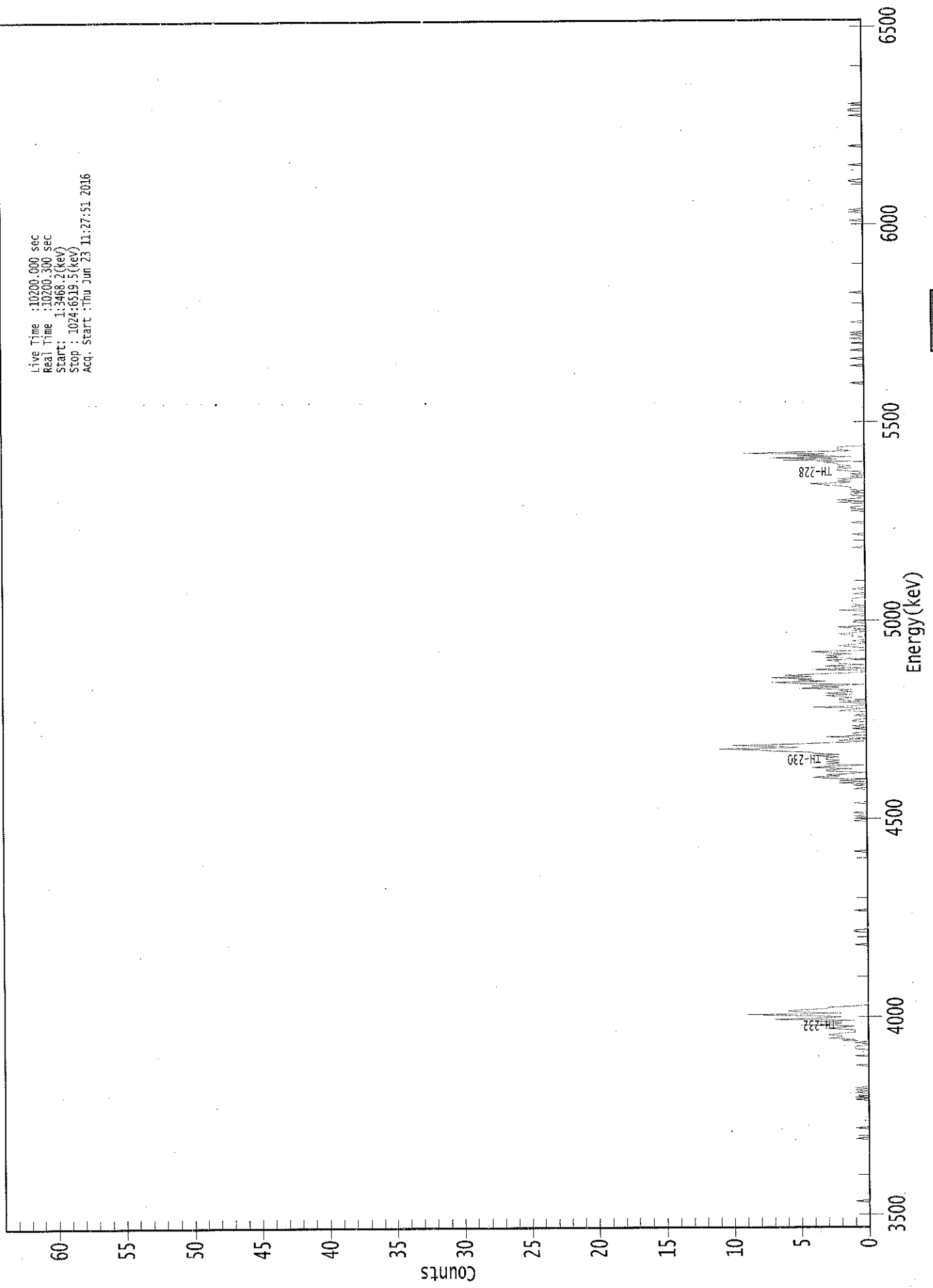
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	8.22E-002 +/- 6.14E-002	6.04E-002 +/- 1.04E-002
TH-228	0.997	5400.00*	9.30E-001 +/- 2.48E-001	6.30E-002 +/- 1.08E-002
TH-229	1.000	4872.00*	1.48E+000 +/- 2.54E-001	5.57E-002 +/- 9.54E-003
TH-230	0.998	4672.00*	1.31E+000 +/- 3.17E-001	5.16E-002 +/- 8.85E-003
TH-232	0.998	3997.00*	9.61E-001 +/- 2.52E-001	4.10E-002 +/- 7.03E-003

AG
6/24/16

0000155156.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3468.2(kev)
Stop : 1024:6519.5(kev)
Acq. Start : Thu Jun 23 11:27:51 2016



ROI Type: 1

ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 12

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	1	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	1	0	0	0	0	0
81:	0	0	0	0	1	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	1	0	1	0	0
113:	0	0	1	0	1	0	1	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	1	0	0	0	0	0	0	0
145:	0	1	0	0	0	0	0	0	1
153:	1	1	0	0	1	0	2	1	1
161:	3	2	2	3	2	1	1	1	1
169:	3	2	1	5	2	2	4	1	1
177:	7	3	2	5	9	2	5	6	6
185:	5	3	3	1	0	0	0	0	0
193:	0	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	1
241:	0	0	0	0	0	0	0	0	0
249:	0	0	1	1	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	1	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	1	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	1	0	1	0	1	0	0	0	1
353:	0	0	0	0	0	0	0	0	1
361:	0	0	0	0	0	0	0	0	0

369: 0 0 0 1 0 0 1 0

Sample Title: 12

Channel	1	2	3	4	5	6	7	8
377:	2	0	2	0	3	4	2	3
385:	1	0	3	3	1	4	3	0
393:	3	2	3	2	3	3	2	4
401:	2	4	4	7	8	11	5	7
409:	10	5	3	0	2	1	0	3
417:	0	1	1	0	0	0	1	0
425:	1	0	0	0	1	1	0	0
433:	0	1	0	0	0	2	1	0
441:	4	1	0	0	2	0	2	2
449:	1	2	3	1	3	1	2	1
457:	5	2	4	0	5	7	3	5
465:	4	7	4	6	4	1	0	0
473:	4	0	2	3	0	2	2	2
481:	3	0	3	2	3	1	3	4
489:	0	0	0	1	2	1	0	0
497:	1	0	0	0	1	1	2	1
505:	0	1	0	1	2	0	0	0
513:	1	0	0	0	0	0	1	0
521:	0	0	2	0	0	1	0	1
529:	1	1	1	1	1	0	0	0
537:	1	0	0	0	1	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	1
577:	0	0	0	0	0	0	0	0
585:	0	0	1	0	0	0	0	0
593:	0	0	0	0	1	0	0	0
601:	0	0	0	0	0	0	1	0
609:	1	1	0	0	0	2	0	2
617:	1	0	0	1	1	0	1	0
625:	1	1	1	2	3	4	1	2
633:	1	2	0	1	0	1	0	0
641:	2	2	1	2	1	2	2	3
649:	1	6	2	7	1	5	3	9
657:	4	1	2	2	2	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	1	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	1	0	0	0	0	0	1
737:	0	0	0	0	0	0	1	0
745:	0	0	0	0	1	0	0	0
753:	1	0	0	1	0	1	0	0
761:	0	0	0	0	0	0	1	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	1
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 12

Channel									
809:	0	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0
849:	0	0	0	0	1	0	0	0	0
857:	0	0	0	1	0	1	0	0	0
865:	0	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	1	1	0	0
889:	0	0	0	0	0	0	0	0	0
897:	0	0	0	1	0	0	0	0	0
905:	0	0	0	0	0	0	0	0	0
913:	0	0	0	1	0	0	0	0	0
921:	0	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	1	0	0	0
945:	0	1	1	0	0	0	0	1	0
953:	0	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0



KB
6/23/16

Sample Description: CP-5030 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-TH
 Sample Identification: 13
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_034
 Chamber Serial Number: 04026479B
 Detector Serial Number: 91136
 Env. Background: System Bkgd 156896
 Reagent Blank: <not performed>

Sample Size: 1.517E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 11:27:53 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.230 mL
 Effective Efficiency: 0.1747 +/- 0.0151
 Counting Efficiency: 0.1772 +/- 0.0031 on 12/11/2015 8:20:57 AM
 Chem. Recovery Factor: 0.9860 +/- 0.0871

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.884	9.49	65.59	0.51	0.00E+000	3.0
TH-228	5.371	123.15	17.73	0.85	0.00E+000	10.1
TH-229 T	4.881	153.49	15.85	0.51	0.00E+000	9.2
TH-230	4.628	162.32	15.42	0.68	0.00E+000	9.6
TH-232	3.976	125.00	17.60	0.00	0.00E+000	5.4

T = Tracer Peak used for Effective Efficiency

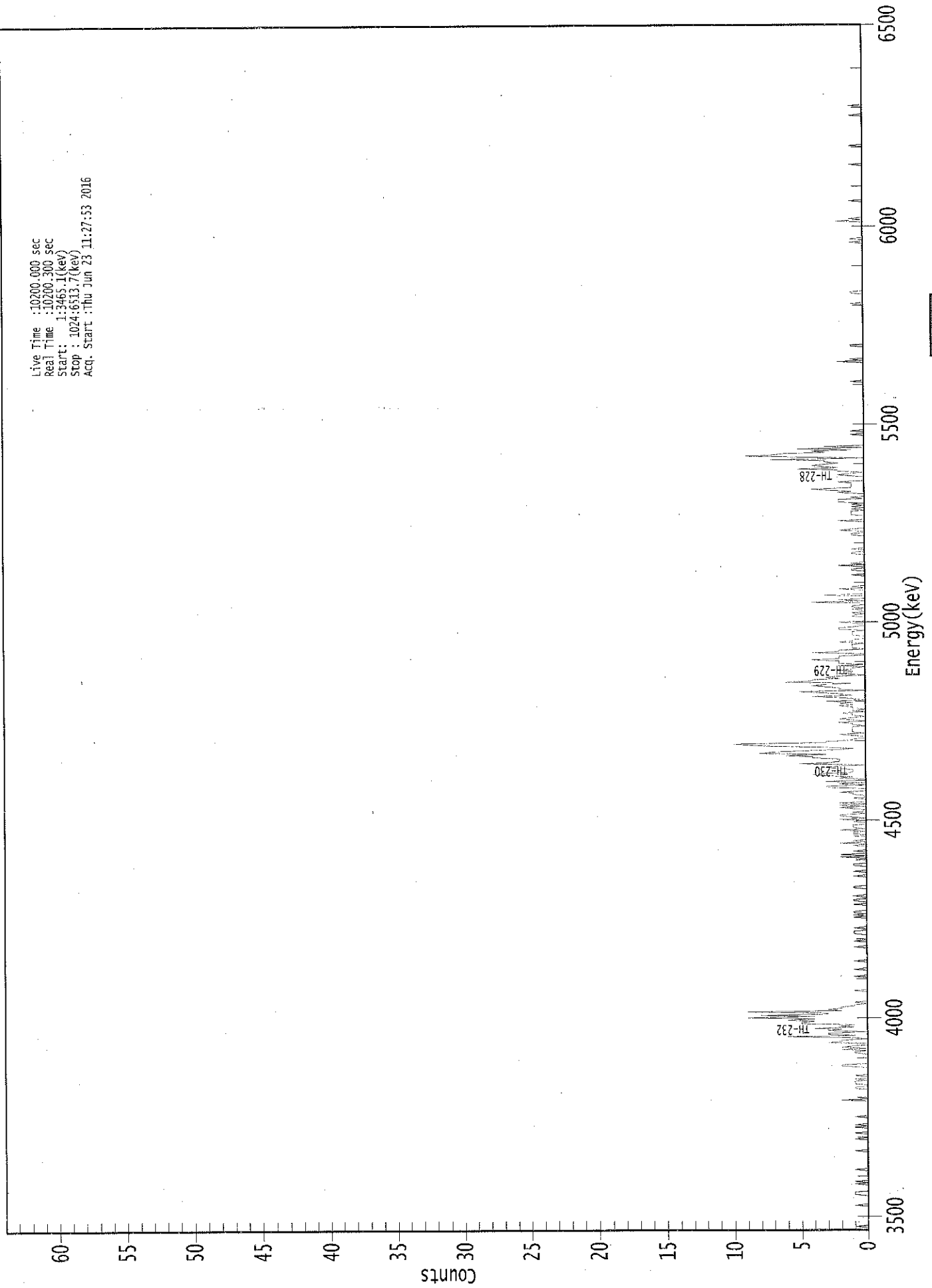
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.994	5850.00*	9.74E-002 +/- 6.60E-002	5.39E-002 +/- 9.15E-003
TH-228	0.996	5400.00*	1.25E+000 +/- 3.08E-001	6.09E-002 +/- 1.03E-002
TH-229	1.000	4872.00*	1.54E+000 +/- 2.62E-001	5.27E-002 +/- 8.95E-003
TH-230	0.990	4672.00*	1.63E+000 +/- 3.73E-001	5.65E-002 +/- 9.59E-003
TH-232	0.998	3997.00*	1.25E+000 +/- 3.06E-001	5.99E-002 +/- 1.02E-002

AG
6/24/16

0000155157.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3465.1(keV)
Stop : 1024:0513.7(keV)
Acq. Start : Thu Jun 23 11:27:53 2016



ROI Type: 1

ROI Type: 3

01200 :

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 13

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	1	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	1	0	0	0
25:	0	0	0	0	0	0	1	1	1
33:	1	0	0	0	0	0	0	1	1
41:	0	1	0	0	0	0	0	0	0
49:	0	0	0	1	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	1	0	0	0	0	0
73:	0	0	0	0	0	1	0	0	0
81:	0	0	1	0	0	0	0	1	1
89:	0	1	0	0	0	0	0	0	0
97:	1	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	2	0	0
113:	0	0	0	0	0	0	0	0	0
121:	1	1	0	0	1	1	1	0	0
129:	1	0	0	1	0	0	0	0	0
137:	0	0	0	2	2	0	0	0	0
145:	0	0	0	0	0	0	1	1	1
153:	0	2	0	2	1	0	0	3	3
161:	2	2	0	1	6	1	3	3	3
169:	0	3	2	4	1	2	1	5	5
177:	5	4	6	4	9	4	8	3	3
185:	3	9	2	3	2	2	1	1	1
193:	0	1	0	0	0	0	0	0	0
201:	0	0	0	1	0	0	0	0	0
209:	0	0	0	0	0	0	0	1	1
217:	0	0	0	0	0	1	0	0	0
225:	0	0	0	0	1	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	1	0	0	0	0	1	0	0	0
249:	0	0	0	1	1	1	0	0	0
257:	1	0	0	0	0	0	0	0	0
265:	0	1	0	1	0	1	1	0	0
273:	0	0	0	0	1	0	0	1	1
281:	1	0	0	1	0	0	0	0	0
289:	0	0	1	1	0	0	0	0	0
297:	0	0	0	0	1	0	0	0	0
305:	1	0	0	0	0	1	1	0	0
313:	0	0	0	0	2	0	2	0	0
321:	0	1	0	0	0	0	1	0	0
329:	2	0	1	0	0	0	1	0	0
337:	1	1	0	2	0	1	1	1	1
345:	0	0	1	0	2	0	1	2	2
353:	2	0	1	0	0	1	2	0	0
361:	2	0	2	0	0	0	1	0	0

369: 0 1 1 2 0 0 0 3

Sample Title: 13

Channel	1	2	3	4	5	6	7	8
377:	3	0	2	0	3	1	0	2
385:	1	3	4	3	1	1	1	2
393:	3	2	0	5	3	2	2	2
401:	4	4	6	3	8	7	5	2
409:	1	3	7	9	10	3	3	1
417:	1	0	0	1	2	0	1	1
425:	1	1	1	0	1	1	2	0
433:	1	2	1	0	1	1	2	0
441:	1	0	1	1	2	1	2	1
449:	3	0	1	2	4	1	2	3
457:	5	0	2	2	3	4	3	1
465:	6	4	4	2	3	2	0	2
473:	1	1	2	1	1	0	2	0
481:	2	2	2	4	2	2	2	0
489:	0	4	2	2	0	1	1	1
497:	1	0	2	1	1	0	0	0
505:	1	1	1	1	0	2	2	1
513:	0	0	1	2	0	0	0	0
521:	1	1	0	1	0	0	1	0
529:	1	1	0	0	4	0	2	0
537:	0	0	3	0	0	0	0	2
545:	0	1	0	0	0	0	0	0
553:	0	0	0	1	0	0	0	1
561:	1	0	0	2	0	1	0	0
569:	0	0	0	0	0	1	1	0
577:	0	1	0	0	0	0	0	0
585:	0	0	0	0	0	1	1	0
593:	0	2	1	0	0	0	0	0
601:	0	2	0	0	0	0	1	1
609:	1	1	0	1	0	1	0	1
617:	0	2	2	2	0	1	0	0
625:	0	2	1	3	4	1	1	1
633:	1	1	2	0	0	0	0	1
641:	2	1	0	2	2	5	2	3
649:	4	3	2	3	3	7	0	4
657:	9	7	6	3	4	1	5	0
665:	3	0	0	0	0	0	0	0
673:	0	0	1	0	0	1	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	1
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	2	0	1	0	0	0	0	0
745:	0	0	0	0	0	1	1	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	1	0	0	0	0	0	0
793:	0	0	1	1	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 13

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	1	0	0
841:	1	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	2
857:	0	1	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	1	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	1
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	1
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	1	0	0	0	0	0	0
953:	0	1	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



268
6/23/16

Sample Description: CP-5030 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-TH
 Sample Identification: 14
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_035
 Chamber Serial Number: 04026477A
 Detector Serial Number: 58771
 Env. Background: System Bkgd 156897
 Reagent Blank: <not performed>

Sample Size: 1.519E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 11:27:48 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.230 mL
 Effective Efficiency: 0.2019 +/- 0.0164
 Counting Efficiency: 0.1575 +/- 0.0028 on 12/11/2015 8:20:56 AM
 Chem. Recovery Factor: 1.2814 +/- 0.1066

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.829	3.64	123.16	1.36	0.00E+000	3.0
TH-228	5.348	130.32	17.22	0.68	0.00E+000	3.8
TH-229 T	4.862	177.66	14.72	0.34	0.00E+000	3.8
TH-230	4.629	144.83	16.30	0.17	0.00E+000	6.2
TH-232	3.952	118.49	18.05	0.51	0.00E+000	5.2

T = Tracer Peak used for Effective Efficiency

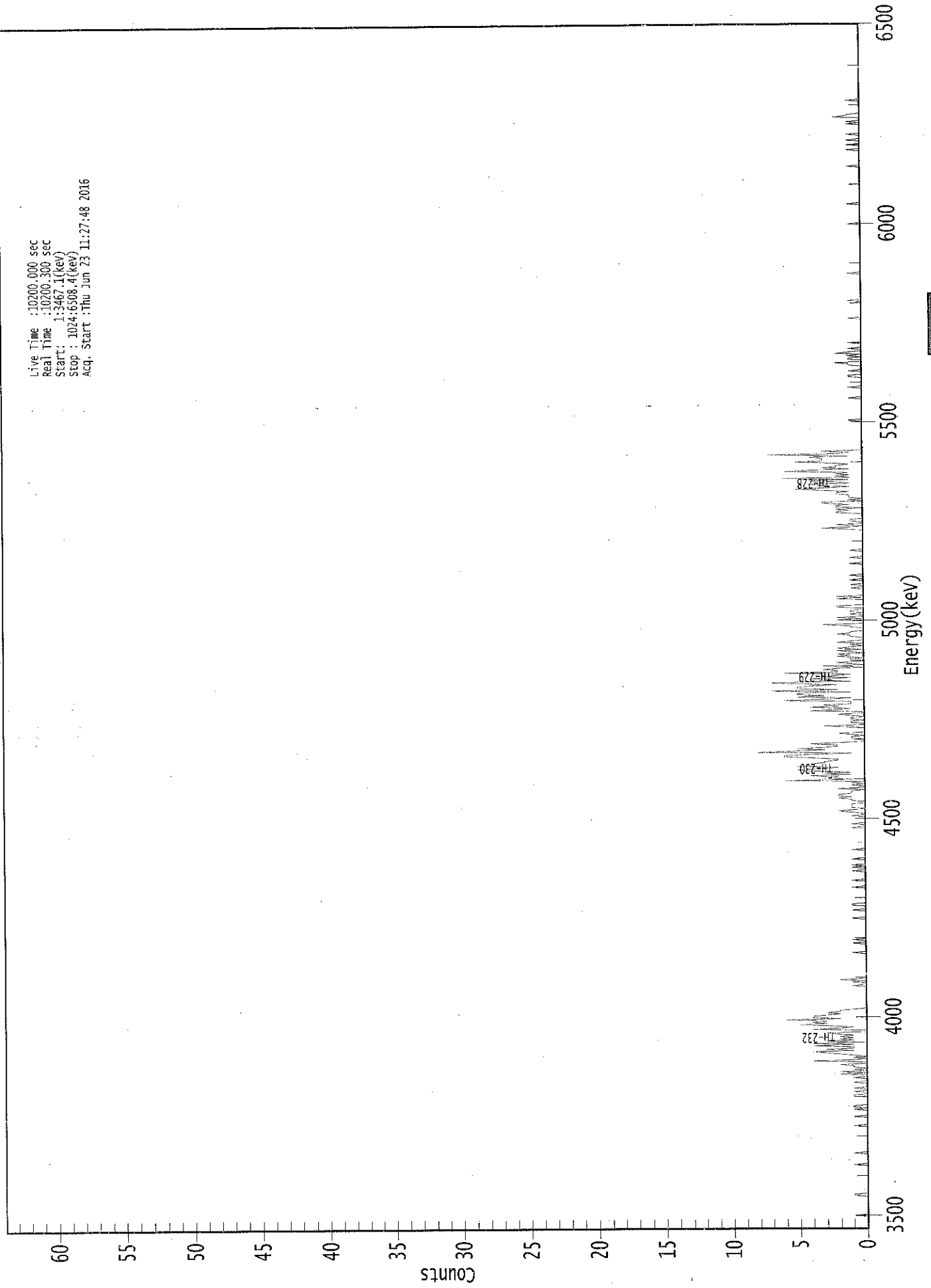
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.998	5850.00*	3.23E-002 +/- 4.01E-002	6.08E-002 +/- 9.69E-003
TH-228	0.986	5400.00*	1.15E+000 +/- 2.69E-001	4.96E-002 +/- 7.90E-003
TH-229	1.000	4872.00*	1.54E+000 +/- 2.46E-001	4.15E-002 +/- 6.61E-003
TH-230	0.991	4672.00*	1.25E+000 +/- 2.86E-001	3.61E-002 +/- 5.75E-003
TH-232	0.990	3997.00*	1.02E+000 +/- 2.46E-001	4.53E-002 +/- 7.22E-003

AG
6/24/16

0000155158.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:34:67.1(keV)
Stop : 1024:6508.4(keV)
Acq. Start : Thu Jun 23 11:27:48 2016



ROI Type: 3

ROI Type: 1

154200

***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 14

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	1	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	1	1	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	1	0
57:	0	0	0	0	0	0	0	0	0
65:	1	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	1
89:	0	0	0	0	0	0	0	0	1
97:	0	0	0	0	0	0	1	0	1
105:	1	0	0	0	0	0	0	0	0
113:	1	1	0	0	0	1	0	0	1
121:	0	0	0	0	0	1	0	0	0
129:	1	0	0	0	2	0	2	0	1
137:	0	1	1	2	0	0	0	4	1
145:	0	1	0	1	2	3	4	4	1
153:	3	1	1	4	1	4	0	0	3
161:	1	2	1	2	1	2	3	3	0
169:	0	4	2	1	3	5	3	3	4
177:	3	6	2	4	4	3	2	2	3
185:	2	2	1	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	1	0
209:	0	1	0	2	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	1	0	0	0	0	0	0
241:	0	0	1	0	0	0	1	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	1
265:	0	0	0	0	0	0	0	1	0
273:	0	0	1	1	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	1	0	0	0	0	0	0	1
297:	0	0	0	0	0	0	0	0	1
305:	0	0	1	0	1	0	0	0	0
313:	0	1	0	0	0	0	0	0	0
321:	0	1	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	1	0	0	1
345:	0	0	0	0	0	0	0	1	0
353:	0	1	2	1	0	1	1	1	1
361:	1	0	0	1	1	2	1	1	2

369: 2 1 1 1 0 2 0 0

Sample Title: 14

Channel	1	2	3	4	5	6	7	8	9
377:	1	0	1	0	6	1	3	2	
385:	4	1	3	1	4	5	3	2	
393:	5	4	4	3	3	2	2	4	
401:	6	6	4	1	8	5	3	5	
409:	3	2	2	4	2	0	0	0	
417:	1	1	0	1	2	0	0	0	
425:	0	1	3	0	0	1	1	0	
433:	1	1	0	1	2	0	0	4	
441:	2	1	4	2	3	1	1	1	
449:	6	3	1	5	3	5	5	1	
457:	7	2	5	5	4	2	5	7	
465:	1	4	4	1	3	2	1	6	
473:	2	2	3	2	0	3	0	1	
481:	2	0	1	1	0	2	1	2	
489:	0	1	2	0	2	1	0	1	
497:	0	2	1	0	0	0	1	1	
505:	2	1	1	0	0	0	1	1	
513:	3	0	0	0	2	0	2	0	
521:	0	1	0	1	1	0	0	2	
529:	2	0	0	0	0	0	2	0	
537:	2	0	0	0	0	0	0	1	
545:	0	0	1	0	0	0	1	0	
553:	0	0	1	0	0	0	0	0	
561:	0	0	0	0	1	0	0	0	
569:	0	1	0	0	0	0	0	1	
577:	0	0	0	0	0	0	0	0	
585:	0	0	0	0	0	0	0	0	
593:	0	1	3	1	0	2	0	0	
601:	1	1	0	0	0	0	0	2	
609:	2	1	2	0	2	2	1	3	
617:	3	0	1	0	1	1	1	2	
625:	2	1	3	5	3	1	3	4	
633:	1	2	4	1	6	1	2	1	
641:	2	1	6	4	1	3	2	2	
649:	1	2	5	3	3	3	4	1	
657:	7	2	1	3	0	0	0	0	
665:	0	0	0	0	0	0	0	0	
673:	0	0	0	0	0	0	0	0	
681:	0	0	0	0	0	1	0	0	
689:	0	0	0	0	0	0	0	0	
697:	0	0	0	0	0	0	0	0	
705:	1	0	0	0	0	0	0	0	
713:	0	1	0	0	0	0	0	0	
721:	0	0	1	1	0	0	0	1	
729:	0	0	0	0	1	1	2	0	
737:	0	1	1	0	1	0	2	1	
745:	0	0	1	0	0	0	0	1	
753:	0	0	0	0	0	0	0	0	
761:	0	0	0	0	0	0	0	0	
769:	0	0	0	0	1	0	0	0	
777:	0	0	0	0	0	0	0	0	
785:	0	0	0	1	0	0	0	0	
793:	0	0	0	0	0	0	0	0	

801: 0 0 0 0 0 0 0 0

Sample Title: 14

Channel								
809:	0	0	1	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	1	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	1	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	1	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	1	0	0	0	1
921:	0	0	0	1	0	0	0	0
929:	1	0	0	0	0	0	0	0
937:	0	1	0	1	0	0	0	2
945:	1	1	0	0	0	0	0	0
953:	0	0	0	0	0	1	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



KLB
6/23/16

Sample Description: CP-5030 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606041A-TH
 Sample Identification: 15
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_036
 Chamber Serial Number: 04026477B
 Detector Serial Number: 84167
 Env. Background: System Bkgd 156898
 Reagent Blank: <not performed>

Sample Size: 1.557E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 7:13:33 AM
 Acquisition Date/Time: 6/23/2016 11:27:50 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.230 mL
 Effective Efficiency: 0.1830 +/- 0.0155
 Counting Efficiency: 0.1870 +/- 0.0033 on 12/11/2015 8:20:54 AM
 Chem. Recovery Factor: 0.9786 +/- 0.0848

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.825	6.83	76.08	0.17	0.00E+000	3.0
TH-228	5.336	115.47	18.38	1.53	0.00E+000	6.2
TH-229 T	4.865	160.66	15.48	0.34	0.00E+000	8.5
TH-230	4.593	153.98	15.86	1.02	0.00E+000	5.9
TH-232	3.944	113.49	18.45	0.51	0.00E+000	4.7

T = Tracer Peak used for Effective Efficiency

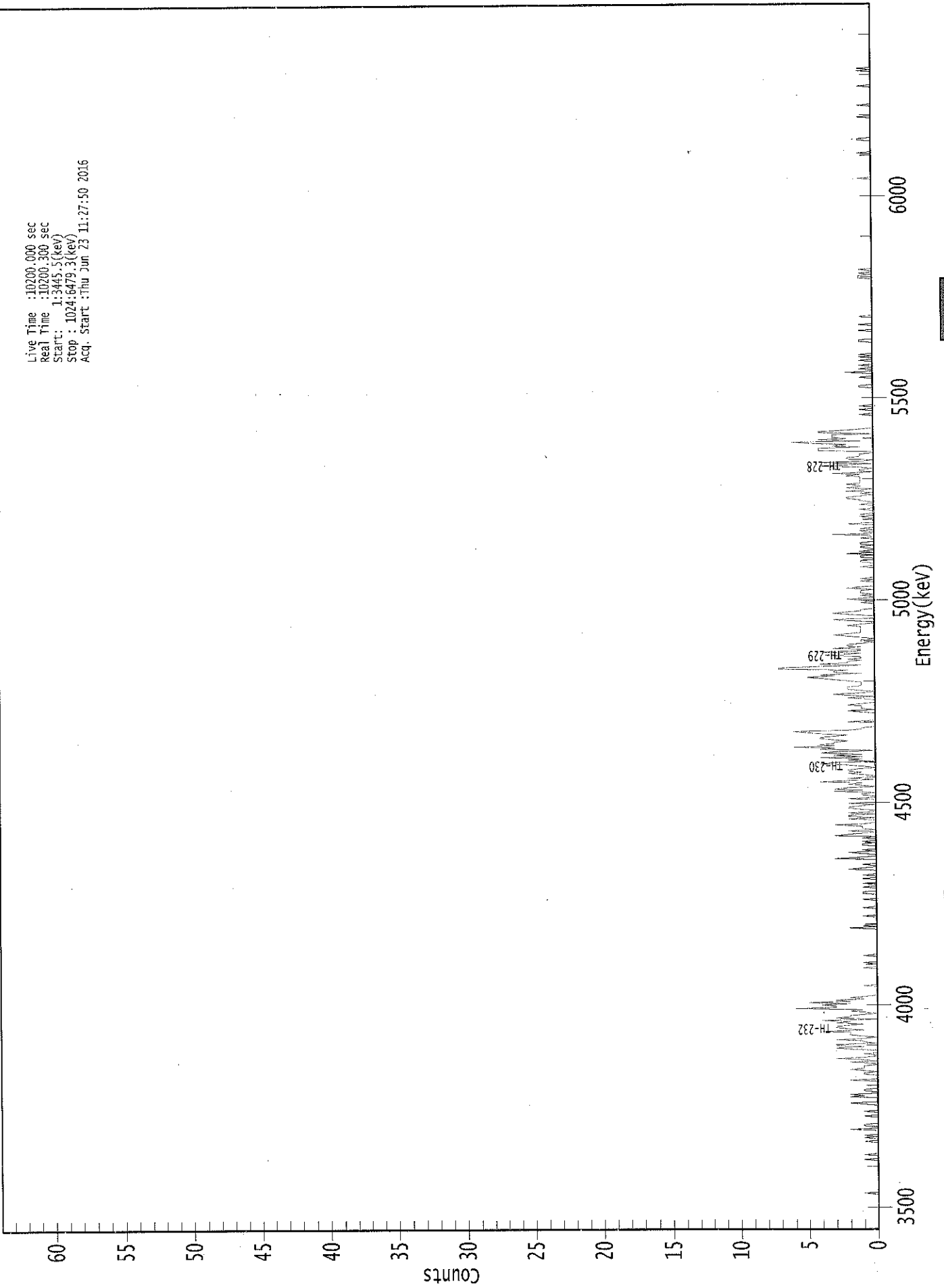
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.997	5850.00*	6.52E-002 +/- 5.08E-002	3.99E-002 +/- 6.63E-003
TH-228	0.979	5400.00*	1.09E+000 +/- 2.71E-001	6.73E-002 +/- 1.12E-002
TH-229	1.000	4872.00*	1.50E+000 +/- 2.50E-001	4.47E-002 +/- 7.43E-003
TH-230	0.968	4672.00*	1.43E+000 +/- 3.30E-001	5.87E-002 +/- 9.76E-003
TH-232	0.986	3997.00*	1.06E+000 +/- 2.62E-001	4.88E-002 +/- 8.11E-003

Ag
6/24/16

0000155159.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3445.5(kev)
Stop : 1024:6479.3(kev)
Acq. Start :Thu Jun 23 11:27:50 2016



ROI Type: 1

ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 15

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	1	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	1	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	1	0	0	0	1	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	1	0	0	1	0	1	0	0
81:	0	0	0	2	0	0	1	1	1
89:	0	0	0	0	0	0	1	0	0
97:	0	0	1	0	0	0	0	0	0
105:	1	2	0	0	0	0	2	1	1
113:	2	0	0	1	1	0	0	0	0
121:	0	0	0	0	2	0	0	0	0
129:	0	1	1	0	1	2	1	1	1
137:	1	0	0	2	0	1	3	1	1
145:	0	0	1	0	0	0	2	3	3
153:	1	3	3	0	1	1	3	1	1
161:	0	1	2	2	2	4	1	2	2
169:	3	3	2	1	3	2	4	0	0
177:	3	2	2	1	0	1	2	1	1
185:	6	3	3	4	2	5	2	3	3
193:	1	2	1	0	0	0	0	0	0
201:	0	0	0	1	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	1	0	0	0	1	0	0
225:	0	0	0	0	1	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	2	0	1	0	0	0
257:	0	0	0	0	0	1	0	0	0
265:	0	0	0	0	1	0	0	0	0
273:	0	0	0	1	0	0	0	0	0
281:	1	1	0	0	0	1	0	0	0
289:	1	0	0	0	1	0	0	1	1
297:	0	0	0	0	2	1	0	0	0
305:	1	0	0	0	0	3	1	0	0
313:	0	1	2	0	1	0	0	0	0
321:	1	1	0	1	0	0	1	0	0
329:	3	2	1	0	2	0	1	1	1
337:	1	3	1	0	0	0	2	0	0
345:	2	2	0	2	0	0	1	2	2
353:	2	1	0	2	0	0	0	2	2
361:	0	0	1	1	0	3	1	3	3

369: 2 0 1 2 1 4 2 0

Sample Title: 15

Channel	1	2	3	4	5	6	7	8
377:	2	0	0	1	2	1	2	2
385:	1	0	1	2	4	3	0	2
393:	1	4	1	3	1	4	3	0
401:	4	3	6	3	4	3	3	2
409:	3	4	4	3	2	4	5	6
417:	2	1	1	0	0	0	0	2
425:	0	0	0	0	0	0	0	1
433:	2	0	1	1	1	2	1	0
441:	0	0	1	2	0	2	3	1
449:	0	1	2	2	2	1	1	1
457:	1	2	3	4	5	3	4	1
465:	3	3	2	7	7	4	1	4
473:	2	2	1	2	1	1	3	2
481:	1	4	1	1	3	1	2	2
489:	1	0	1	1	0	1	2	3
497:	2	1	1	1	1	1	1	2
505:	1	0	0	2	3	0	0	0
513:	2	3	2	1	1	0	0	0
521:	0	0	1	0	1	2	0	0
529:	1	0	1	1	1	0	2	1
537:	0	0	0	0	1	0	1	0
545:	0	0	0	0	0	0	0	0
553:	1	0	0	0	1	1	0	0
561:	1	1	0	2	0	1	0	0
569:	1	1	0	1	1	0	0	0
577:	1	0	0	3	0	0	1	0
585:	1	0	0	0	2	0	0	0
593:	0	0	1	0	1	0	0	0
601:	1	0	0	0	1	0	0	1
609:	1	2	2	1	0	1	0	2
617:	1	0	2	1	1	2	1	1
625:	1	1	1	1	2	1	3	0
633:	1	1	0	1	4	2	0	4
641:	1	0	2	2	1	1	1	0
649:	0	4	4	4	1	3	2	4
657:	6	1	4	2	3	3	3	0
665:	4	4	2	1	0	0	0	0
673:	0	0	0	0	0	0	0	1
681:	0	0	0	1	0	0	1	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	1	1
705:	0	0	0	0	0	0	1	0
713:	0	0	2	0	0	1	0	0
721:	1	0	0	0	1	0	0	1
729:	0	1	0	0	0	0	0	0
737:	0	0	0	0	1	1	0	0
745:	0	0	0	0	0	1	0	0
753:	0	0	1	0	0	0	0	0
761:	0	1	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	1	1	1	0	1	0	0

801: 1 0 0 0 0 0 0 0 0

Sample Title: 15

Channel	1	2	3	4	5	6	7	8	9
809:	0	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	1	0	0	0
881:	0	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0	0
897:	0	1	0	0	0	0	0	0	0
905:	0	0	0	0	0	1	1	0	0
913:	0	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0	1
929:	0	0	0	0	0	0	0	0	0
937:	0	1	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0	0
953:	0	1	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	1	0
969:	1	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0



QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 6/23/2016

Time : 6:36:29 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	6/23/2016 6:21:25 AM
Alpha 004	21f	ALL	Passed	6/23/2016 6:21:26 AM
Alpha 005	21f	ALL	Not Done	
Alpha 006	21f	ALL	Not Done	
Alpha 007	21f	ALL	Not Done	
Alpha 008	21f	ALL	Not Done	
Alpha 009	21f	ALL	Not Done	
Alpha 010	21f	ALL	Passed	6/23/2016 6:21:27 AM
Alpha 011	21f	ALL	Passed	6/23/2016 6:21:27 AM
Alpha 012	21f	ALL	Passed	6/23/2016 6:21:28 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Passed	6/23/2016 6:21:29 AM
Alpha 015	21f	Peak Energy	Action	6/23/2016 6:21:30 AM
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:31 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:33 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:35 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:36 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:38 AM
Alpha 038	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:40 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:42 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:35 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:44 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:46 AM
Alpha 043	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:48 AM
Alpha 044	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:50 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:52 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:55 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:21:57 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:00 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:03 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:06 AM
Alpha 051	Alpha Analyst100DC	ALL	Not Done	
Alpha 052	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:08 AM
Alpha 053	Alpha Analyst100DC	Peak FWHM	Action	6/23/2016 6:22:11 AM
Alpha 054	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:14 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:16 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:19 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:22 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:25 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 059	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:28 AM
Alpha 060	Alpha Analyst100DC	ALL	Passed	6/23/2016 6:22:31 AM

APPROVED BY: AG

APPROVAL DATE: 6/23/16

***** LIBRARY LISTING REPORT *****

Nuclide Library Title: Thorium

Nuclide Library Description: Th-227,-228,-229,-230,-232

Nuclide Name	Half-Life (Seconds)	Energy (keV)	Energy Uncert. (keV)	Yield (%)	Yield Uncert. (Abs.+)
TH-227	6.873E+008	5850.000*	0.000	97.5000	0.0000
TH-228	6.034E+007	5400.000*	0.000	99.9400	0.0000
TH-229	2.487E+011	4872.000*	0.000	99.5200	0.0000
TH-230	2.379E+012	4672.000*	0.000	99.8200	0.0000
TH-232	4.434E+017	3997.000*	0.000	100.0000	0.0000

* = key line

TOTALS: 5 Nuclides 5 Energy Lines

SECTION X
ANALYTICAL DATA (GAMMA SPECTROSCOPY)

Work Order	16-06041
Analysis Code	Gamma
Run	1
Date Received	6/9/2016
Lab Deadline	6/29/2016
Client	Auxier & Associates, Inc.
Project	PAP-KAN
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	LANL ER-130 Modified
Instrument Type	Gamma Spectroscopy
Radiometric Tracer	
Radiometric Sol#	
Tracer Act (dpm/g)	
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		06/09/16 00:00	1.0000E+00
02	MBL	BLANK		06/09/16 00:00	1.0000E+00
03	DUP	CP-5028 00-02	37	06/06/16 00:00	3.8766E+02
04	DO	CP-5028 00-02	37	06/06/16 00:00	3.8766E+02
05	TRG	CP-5028 02-05	35	06/06/16 00:00	4.6556E+02
06	TRG	CP-5028 05-10	33	06/06/16 00:00	2.7589E+02
07	TRG	CP-5028 10-15	45	06/06/16 00:00	2.7374E+02
08	TRG	CP-5029 00-02	43	06/06/16 00:00	5.9509E+02
09	TRG	CP-5029 02-05	41	06/06/16 00:00	4.7350E+02
10	TRG	CP-5029 05-10	39	06/06/16 00:00	3.5000E+02
11	TRG	CP-5029 10-15	55	06/06/16 00:00	2.5030E+02
12	TRG	CP-5030 00-02	51	06/06/16 00:00	6.2341E+02
13	TRG	CP-5030 02-05	48	06/06/16 00:00	4.8356E+02
14	TRG	CP-5030 05-10	43	06/06/16 00:00	2.7428E+02
15	TRG	CP-5030 10-15	48	06/06/16 00:00	2.9401E+02

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS				0.00								
02	MBL				0.00								
03	DUP				0.00								
04	DO				0.00								
05	TRG				0.00								
06	TRG				0.00								
07	TRG				0.00								
08	TRG				0.00								
09	TRG				0.00								
10	TRG				0.00								
11	TRG				0.00								
12	TRG				0.00								
13	TRG				0.00								
14	TRG				0.00								
15	TRG				0.00								

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS								
02	MBL								
03	DUP								
04	DO	06/15/16 08:32	KSALLINGS						
05	TRG	06/15/16 08:32	KSALLINGS						
06	TRG	06/15/16 08:32	KSALLINGS						
07	TRG	06/15/16 08:32	KSALLINGS						
08	TRG	06/15/16 08:32	KSALLINGS						
09	TRG	06/15/16 08:32	KSALLINGS						
10	TRG	06/15/16 08:32	KSALLINGS						
11	TRG	06/15/16 08:32	KSALLINGS						
12	TRG	06/15/16 08:32	KSALLINGS						
13	TRG	06/15/16 08:32	KSALLINGS						
14	TRG	06/15/16 08:32	KSALLINGS						
15	TRG	06/15/16 08:32	KSALLINGS						

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
01	CO-60	LCS	LCS	pCi/g	1.42E+02	8.32E+00	8.10E-01	1.37E+02	103.78	OK		06/09/16 00:00	1.00E+00	06/16/16 10:31	YES
01	CS-137	LCS	LCS	pCi/g	9.06E+01	8.13E+00	1.03E+00	8.69E+01	104.20	OK		06/09/16 00:00	1.00E+00	06/16/16 10:31	YES
02	AC-228	MBL	BLANK	pCi/g	3.10E-02	6.02E-02	1.14E-01					06/09/16 00:00	1.00E+00	06/16/16 10:26	NO
02	BI-214	MBL	BLANK	pCi/g	2.20E-03	4.05E-02	6.45E-02					06/09/16 00:00	1.00E+00	06/16/16 10:26	NO
02	K-40	MBL	BLANK	pCi/g	1.10E-01	2.07E-01	4.00E-01					06/09/16 00:00	1.00E+00	06/16/16 10:26	NO
02	PA-231	MBL	BLANK	pCi/g	8.64E-02	2.24E-01	7.87E-01					06/09/16 00:00	1.00E+00	06/16/16 10:26	NO
02	PB-210	MBL	BLANK	pCi/g	1.94E-01	2.91E-01	4.88E-01					06/09/16 00:00	1.00E+00	06/16/16 10:26	NO
02	PB-212	MBL	BLANK	pCi/g	-1.97E-02	3.48E-02	3.91E-02					06/09/16 00:00	1.00E+00	06/16/16 10:26	NO
02	PB-214	MBL	BLANK	pCi/g	3.46E-02	4.10E-02	6.60E-02					06/09/16 00:00	1.00E+00	06/16/16 10:26	NO
02	TL-208	MBL	BLANK	pCi/g	5.83E-02	5.85E-02	1.08E-01					06/09/16 00:00	1.00E+00	06/16/16 10:26	NO
03	AC-228	DUP	CP-5028 00-02	pCi/g	1.59E+00	3.17E-01	5.50E-01				OK	06/06/16 00:00	3.88E+02	06/16/16 07:16	YES
03	BI-214	DUP	CP-5028 00-02	pCi/g	1.49E+00	2.46E-01	3.47E-01				OK	06/06/16 00:00	3.88E+02	06/16/16 07:16	YES
03	K-40	DUP	CP-5028 00-02	pCi/g	2.34E+01	2.89E+00	1.12E+00				OK	06/06/16 00:00	3.88E+02	06/16/16 07:16	YES
03	PA-231	DUP	CP-5028 00-02	pCi/g	-1.86E+00	2.95E+00	3.36E+00					06/06/16 00:00	3.88E+02	06/16/16 07:16	NO
03	PB-210	DUP	CP-5028 00-02	pCi/g	1.57E+00	1.87E+00	3.14E+00					06/06/16 00:00	3.88E+02	06/16/16 07:16	YES
03	PB-212	DUP	CP-5028 00-02	pCi/g	1.22E+00	2.86E-01	3.66E-01					06/06/16 00:00	3.88E+02	06/16/16 07:16	NO
03	PB-214	DUP	CP-5028 00-02	pCi/g	1.67E+00	2.57E-01	3.24E-01					06/06/16 00:00	3.88E+02	06/16/16 07:16	YES
03	TL-208	DUP	CP-5028 00-02	pCi/g	1.55E+00	2.35E-01	1.97E-01					06/06/16 00:00	3.88E+02	06/16/16 07:16	YES
04	AC-228	DO	CP-5028 00-02	pCi/g	1.71E+00	3.20E-01	8.97E-01					06/06/16 00:00	3.88E+02	06/16/16 08:22	YES
04	BI-214	DO	CP-5028 00-02	pCi/g	1.49E+00	2.31E-01	3.22E-01					06/06/16 00:00	3.88E+02	06/16/16 08:22	YES
04	K-40	DO	CP-5028 00-02	pCi/g	2.33E+01	2.94E+00	1.35E+00					06/06/16 00:00	3.88E+02	06/16/16 08:22	YES
04	PA-231	DO	CP-5028 00-02	pCi/g	5.73E-01	1.19E+00	3.19E+00					06/06/16 00:00	3.88E+02	06/16/16 08:22	NO
04	PB-210	DO	CP-5028 00-02	pCi/g	2.08E+00	1.31E+00	2.12E+00					06/06/16 00:00	3.88E+02	06/16/16 08:22	NO
04	PB-212	DO	CP-5028 00-02	pCi/g	1.13E+00	2.83E-01	3.64E-01					06/06/16 00:00	3.88E+02	06/16/16 08:22	NO
04	PB-214	DO	CP-5028 00-02	pCi/g	1.64E+00	2.77E-01	2.95E-01					06/06/16 00:00	3.88E+02	06/16/16 08:22	YES
04	TL-208	DO	CP-5028 00-02	pCi/g	1.42E+00	2.35E-01	2.81E-01					06/06/16 00:00	3.88E+02	06/16/16 08:22	YES
05	AC-228	TRG	CP-5028 02-05	pCi/g	1.45E+00	4.02E-01	7.71E-01					06/06/16 00:00	4.66E+02	06/16/16 07:16	NO
05	BI-214	TRG	CP-5028 02-05	pCi/g	1.33E+00	2.34E-01	3.17E-01					06/06/16 00:00	4.66E+02	06/16/16 07:16	YES
05	K-40	TRG	CP-5028 02-05	pCi/g	2.26E+01	2.90E+00	1.79E+00					06/06/16 00:00	4.66E+02	06/16/16 07:16	YES
05	PA-231	TRG	CP-5028 02-05	pCi/g	-1.54E-01	9.53E-01	3.90E+00					06/06/16 00:00	4.66E+02	06/16/16 07:16	NO
05	PB-210	TRG	CP-5028 02-05	pCi/g	1.94E+00	1.96E+00	3.25E+00					06/06/16 00:00	4.66E+02	06/16/16 07:16	YES
05	PB-212	TRG	CP-5028 02-05	pCi/g	1.90E+00	2.21E-01	3.24E-01					06/06/16 00:00	4.66E+02	06/16/16 07:16	YES
05	PB-214	TRG	CP-5028 02-05	pCi/g	1.40E+00	1.88E-01	3.50E-01					06/06/16 00:00	4.66E+02	06/16/16 07:16	YES
05	TL-208	TRG	CP-5028 02-05	pCi/g	1.50E+00	2.62E-01	2.94E-01					06/06/16 00:00	4.66E+02	06/16/16 07:16	NO
06	AC-228	TRG	CP-5028 05-10	pCi/g	8.26E-01	8.53E-01	1.52E+00					06/06/16 00:00	2.76E+02	06/16/16 07:16	NO
06	BI-214	TRG	CP-5028 05-10	pCi/g	1.41E+00	5.20E-01	9.85E-01					06/06/16 00:00	2.76E+02	06/16/16 07:16	YES
06	K-40	TRG	CP-5028 05-10	pCi/g	3.58E+01	6.23E+00	2.77E+00					06/06/16 00:00	2.76E+02	06/16/16 07:16	YES
06	PA-231	TRG	CP-5028 05-10	pCi/g	-7.56E-01	5.13E+00	9.57E+00					06/06/16 00:00	2.76E+02	06/16/16 07:16	NO

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
06	PB-210	TRG	CP-5028 05-10	pCi/g	1.11E+00	1.71E+00	2.68E+00					06/06/16 00:00	2.76E+02	06/16/16 07:16	NO
06	PB-212	TRG	CP-5028 05-10	pCi/g	3.33E+00	6.08E-01	7.07E-01					06/06/16 00:00	2.76E+02	06/16/16 07:16	YES
06	PB-214	TRG	CP-5028 05-10	pCi/g	1.85E+00	5.26E-01	8.23E-01					06/06/16 00:00	2.76E+02	06/16/16 07:16	YES
06	TL-208	TRG	CP-5028 05-10	pCi/g	2.35E+00	6.65E-01	1.92E-01					06/06/16 00:00	2.76E+02	06/16/16 07:16	YES
07	AC-228	TRG	CP-5028 10-15	pCi/g	1.85E+00	4.81E-01	9.19E-01					06/06/16 00:00	2.74E+02	06/16/16 07:28	NO
07	Bi-214	TRG	CP-5028 10-15	pCi/g	1.85E+00	2.67E-01	7.29E-01					06/06/16 00:00	2.74E+02	06/16/16 07:28	YES
07	K-40	TRG	CP-5028 10-15	pCi/g	3.21E+01	3.79E+00	2.84E+00					06/06/16 00:00	2.74E+02	06/16/16 07:28	NO
07	PA-231	TRG	CP-5028 10-15	pCi/g	3.10E+00	2.43E+00	4.27E+00					06/06/16 00:00	2.74E+02	06/16/16 07:28	YES
07	PB-210	TRG	CP-5028 10-15	pCi/g	4.37E+00	2.65E+00	4.28E+00					06/06/16 00:00	2.74E+02	06/16/16 07:28	YES
07	PB-212	TRG	CP-5028 10-15	pCi/g	2.48E+00	2.94E-01	4.31E-01					06/06/16 00:00	2.74E+02	06/16/16 07:28	YES
07	PB-214	TRG	CP-5028 10-15	pCi/g	1.86E+00	2.68E-01	3.77E-01					06/06/16 00:00	2.74E+02	06/16/16 07:28	YES
07	TL-208	TRG	CP-5028 10-15	pCi/g	2.21E+00	3.78E-01	9.04E-01					06/06/16 00:00	5.95E+02	06/16/16 08:23	YES
08	AC-228	TRG	CP-5029 00-02	pCi/g	8.65E-01	2.41E-01	4.60E-01					06/06/16 00:00	5.95E+02	06/16/16 08:23	YES
08	Bi-214	TRG	CP-5029 00-02	pCi/g	1.23E+00	1.71E-01	1.85E-01					06/06/16 00:00	5.95E+02	06/16/16 08:23	YES
08	K-40	TRG	CP-5029 00-02	pCi/g	1.18E+01	1.81E+00	1.52E+00					06/06/16 00:00	5.95E+02	06/16/16 08:23	YES
08	PA-231	TRG	CP-5029 00-02	pCi/g	2.38E+00	2.01E+00	3.16E+00					06/06/16 00:00	5.95E+02	06/16/16 08:23	NO
08	PB-210	TRG	CP-5029 00-02	pCi/g	1.62E+00	1.27E+00	2.08E+00					06/06/16 00:00	5.95E+02	06/16/16 08:23	YES
08	PB-212	TRG	CP-5029 00-02	pCi/g	1.08E+00	1.38E-01	2.90E-01					06/06/16 00:00	5.95E+02	06/16/16 08:23	YES
08	PB-214	TRG	CP-5029 00-02	pCi/g	1.22E+00	1.70E-01	2.38E-01					06/06/16 00:00	5.95E+02	06/16/16 08:23	YES
08	TL-208	TRG	CP-5029 00-02	pCi/g	8.59E-01	1.70E-01	2.22E-01					06/06/16 00:00	5.95E+02	06/16/16 08:23	YES
09	AC-228	TRG	CP-5029 02-05	pCi/g	1.85E+00	4.81E-01	8.59E-01					06/06/16 00:00	4.74E+02	06/16/16 08:23	YES
09	Bi-214	TRG	CP-5029 02-05	pCi/g	1.57E+00	4.24E-01	7.52E-01					06/06/16 00:00	4.74E+02	06/16/16 08:23	YES
09	K-40	TRG	CP-5029 02-05	pCi/g	2.26E+01	4.11E+00	3.07E+00					06/06/16 00:00	4.74E+02	06/16/16 08:23	YES
09	PA-231	TRG	CP-5029 02-05	pCi/g	1.31E+00	3.04E+00	5.90E+00					06/06/16 00:00	4.74E+02	06/16/16 08:23	NO
09	PB-210	TRG	CP-5029 02-05	pCi/g	2.28E-02	1.08E+00	1.65E+00					06/06/16 00:00	4.74E+02	06/16/16 08:23	NO
09	PB-212	TRG	CP-5029 02-05	pCi/g	2.19E+00	4.41E-01	5.73E-01					06/06/16 00:00	4.74E+02	06/16/16 08:23	YES
09	PB-214	TRG	CP-5029 02-05	pCi/g	1.50E+00	3.44E-01	5.10E-01					06/06/16 00:00	4.74E+02	06/16/16 08:23	YES
09	TL-208	TRG	CP-5029 02-05	pCi/g	1.66E+00	4.03E-01	6.31E-01					06/06/16 00:00	4.74E+02	06/16/16 08:23	YES
10	AC-228	TRG	CP-5029 05-10	pCi/g	1.62E+00	3.14E-01	6.33E-01					06/06/16 00:00	3.50E+02	06/16/16 08:29	YES
10	Bi-214	TRG	CP-5029 05-10	pCi/g	1.88E+00	2.67E-01	2.86E-01					06/06/16 00:00	3.50E+02	06/16/16 08:29	YES
10	K-40	TRG	CP-5029 05-10	pCi/g	2.46E+01	3.01E+00	1.62E+00					06/06/16 00:00	3.50E+02	06/16/16 08:29	YES
10	PA-231	TRG	CP-5029 05-10	pCi/g	2.30E+00	2.07E+00	3.54E+00					06/06/16 00:00	3.50E+02	06/16/16 08:29	NO
10	PB-210	TRG	CP-5029 05-10	pCi/g	1.08E+00	2.23E+00	2.95E+00					06/06/16 00:00	3.50E+02	06/16/16 08:29	NO
10	PB-212	TRG	CP-5029 05-10	pCi/g	1.87E+00	2.29E-01	3.49E-01					06/06/16 00:00	3.50E+02	06/16/16 08:29	YES
10	PB-214	TRG	CP-5029 05-10	pCi/g	2.18E+00	2.35E-01	3.33E-01					06/06/16 00:00	3.50E+02	06/16/16 08:29	YES
10	TL-208	TRG	CP-5029 05-10	pCi/g	1.45E+00	2.37E-01	1.63E-01					06/06/16 00:00	3.50E+02	06/16/16 08:29	YES
11	AC-228	TRG	CP-5029 10-15	pCi/g	2.25E+00	4.38E-01	7.30E-01					06/06/16 00:00	2.50E+02	06/16/16 09:24	YES
11	Bi-214	TRG	CP-5029 10-15	pCi/g	2.06E+00	2.97E-01	3.82E-01					06/06/16 00:00	2.50E+02	06/16/16 09:24	YES

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Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
11	K-40	TRG	CP-5029 10-15	pCi/g	2.86E+01	3.81E+00	1.70E+00					06/06/16 00:00	2.50E+02	06/16/16 09:24	YES
11	PA-231	TRG	CP-5029 10-15	pCi/g	-3.16E+00	4.08E+00	4.44E+00					06/06/16 00:00	2.50E+02	06/16/16 09:24	NO
11	PB-210	TRG	CP-5029 10-15	pCi/g	1.96E+00	2.05E+00	3.41E+00					06/06/16 00:00	2.50E+02	06/16/16 09:24	YES
11	PB-212	TRG	CP-5029 10-15	pCi/g	2.41E+00	4.48E-01	4.31E-01					06/06/16 00:00	2.50E+02	06/16/16 09:24	YES
11	PB-214	TRG	CP-5029 10-15	pCi/g	1.99E+00	3.29E-01	4.21E-01					06/06/16 00:00	2.50E+02	06/16/16 09:24	YES
11	TL-208	TRG	CP-5029 10-15	pCi/g	1.61E+00	3.04E-01	3.31E-01					06/06/16 00:00	2.50E+02	06/16/16 09:24	YES
12	AC-228	TRG	CP-5030 00-02	pCi/g	1.16E+00	2.36E-01	6.42E-01					06/06/16 00:00	6.23E+02	06/16/16 09:24	YES
12	BI-214	TRG	CP-5030 00-02	pCi/g	1.19E+00	1.78E-01	2.56E-01					06/06/16 00:00	6.23E+02	06/16/16 09:24	YES
12	K-40	TRG	CP-5030 00-02	pCi/g	1.57E+01	2.03E+00	1.09E+00					06/06/16 00:00	6.23E+02	06/16/16 09:24	YES
12	PA-231	TRG	CP-5030 00-02	pCi/g	2.24E+00	1.95E+00	3.09E+00					06/06/16 00:00	6.23E+02	06/16/16 09:24	YES
12	PB-210	TRG	CP-5030 00-02	pCi/g	2.08E+00	1.44E+00	1.99E+00					06/06/16 00:00	6.23E+02	06/16/16 09:24	NO
12	PB-212	TRG	CP-5030 00-02	pCi/g	1.30E+00	1.54E-01	3.13E-01					06/06/16 00:00	6.23E+02	06/16/16 09:24	NO
12	PB-214	TRG	CP-5030 00-02	pCi/g	1.27E+00	1.71E-01	2.50E-01					06/06/16 00:00	6.23E+02	06/16/16 09:24	NO
12	TL-208	TRG	CP-5030 00-02	pCi/g	1.01E+00	1.91E-01	2.34E-01					06/06/16 00:00	6.23E+02	06/16/16 09:24	YES
13	AC-228	TRG	CP-5030 02-05	pCi/g	1.58E+00	5.61E-01	1.07E+00					06/06/16 00:00	4.84E+02	06/16/16 09:24	YES
13	BI-214	TRG	CP-5030 02-05	pCi/g	1.51E+00	3.48E-01	4.99E-01					06/06/16 00:00	4.84E+02	06/16/16 09:24	YES
13	K-40	TRG	CP-5030 02-05	pCi/g	2.20E+01	3.89E+00	2.50E+00					06/06/16 00:00	4.84E+02	06/16/16 09:24	NO
13	PA-231	TRG	CP-5030 02-05	pCi/g	1.14E+00	2.72E+00	5.99E+00					06/06/16 00:00	4.84E+02	06/16/16 09:24	NO
13	PB-210	TRG	CP-5030 02-05	pCi/g	3.39E-01	1.03E+00	1.60E+00					06/06/16 00:00	4.84E+02	06/16/16 09:24	YES
13	PB-212	TRG	CP-5030 02-05	pCi/g	1.91E+00	3.78E-01	4.75E-01					06/06/16 00:00	4.84E+02	06/16/16 09:24	YES
13	PB-214	TRG	CP-5030 02-05	pCi/g	1.36E+00	3.50E-01	5.95E-01					06/06/16 00:00	4.84E+02	06/16/16 09:24	YES
13	TL-208	TRG	CP-5030 02-05	pCi/g	1.30E+00	6.24E-01	9.91E-01					06/06/16 00:00	2.74E+02	06/16/16 09:30	YES
14	AC-228	TRG	CP-5030 05-10	pCi/g	2.22E+00	3.92E-01	8.33E-01					06/06/16 00:00	2.74E+02	06/16/16 09:30	YES
14	BI-214	TRG	CP-5030 05-10	pCi/g	1.69E+00	3.00E-01	3.43E-01					06/06/16 00:00	2.74E+02	06/16/16 09:30	YES
14	K-40	TRG	CP-5030 05-10	pCi/g	3.30E+01	3.91E+00	1.66E+00					06/06/16 00:00	2.74E+02	06/16/16 09:30	YES
14	PA-231	TRG	CP-5030 05-10	pCi/g	2.41E+00	2.35E+00	4.09E+00					06/06/16 00:00	2.74E+02	06/16/16 09:30	NO
14	PB-210	TRG	CP-5030 05-10	pCi/g	3.53E+00	2.62E+00	4.29E+00					06/06/16 00:00	2.74E+02	06/16/16 09:30	YES
14	PB-212	TRG	CP-5030 05-10	pCi/g	1.89E+00	2.84E-01	4.66E-01					06/06/16 00:00	2.74E+02	06/16/16 09:30	NO
14	PB-214	TRG	CP-5030 05-10	pCi/g	1.87E+00	2.42E-01	3.49E-01					06/06/16 00:00	2.74E+02	06/16/16 09:30	YES
14	TL-208	TRG	CP-5030 05-10	pCi/g	1.88E+00	2.91E-01	2.08E-01					06/06/16 00:00	2.74E+02	06/16/16 09:30	YES
15	AC-228	TRG	CP-5030 10-15	pCi/g	2.43E+00	4.80E-01	7.18E-01					06/06/16 00:00	2.94E+02	06/16/16 10:26	YES
15	BI-214	TRG	CP-5030 10-15	pCi/g	1.79E+00	2.94E-01	5.63E-01					06/06/16 00:00	2.94E+02	06/16/16 10:26	YES
15	K-40	TRG	CP-5030 10-15	pCi/g	2.71E+01	3.80E+00	2.44E+00					06/06/16 00:00	2.94E+02	06/16/16 10:26	NO
15	PA-231	TRG	CP-5030 10-15	pCi/g	-1.51E-01	1.36E+00	5.55E+00					06/06/16 00:00	2.94E+02	06/16/16 10:26	YES
15	PB-210	TRG	CP-5030 10-15	pCi/g	3.45E+00	2.72E+00	4.47E+00					06/06/16 00:00	2.94E+02	06/16/16 10:26	YES
15	PB-212	TRG	CP-5030 10-15	pCi/g	2.78E+00	3.27E-01	4.41E-01					06/06/16 00:00	2.94E+02	06/16/16 10:26	YES
15	PB-214	TRG	CP-5030 10-15	pCi/g	1.92E+00	2.77E-01	4.05E-01					06/06/16 00:00	2.94E+02	06/16/16 10:26	YES
15	TL-208	TRG	CP-5030 10-15	pCi/g	1.62E+00	3.50E-01	2.68E-01					06/06/16 00:00	2.94E+02	06/16/16 10:26	YES

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Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	06/09/16 00:00	1.0000				0.00		
02	MBL	BLANK	06/09/16 00:00	1.0000				0.00		
03	DUP	CP-5028 00-02	06/06/16 00:00	387.6600				0.00		
04	DO	CP-5028 00-02	06/06/16 00:00	387.6600				0.00		
05	TRG	CP-5028 02-05	06/06/16 00:00	465.5600				0.00		
06	TRG	CP-5028 05-10	06/06/16 00:00	275.8900				0.00		
07	TRG	CP-5028 10-15	06/06/16 00:00	273.7400				0.00		
08	TRG	CP-5029 00-02	06/06/16 00:00	595.0900				0.00		
09	TRG	CP-5029 02-05	06/06/16 00:00	473.5000				0.00		
10	TRG	CP-5029 05-10	06/06/16 00:00	350.0000				0.00		
11	TRG	CP-5029 10-15	06/06/16 00:00	250.3000				0.00		
12	TRG	CP-5030 00-02	06/06/16 00:00	623.4100				0.00		
13	TRG	CP-5030 02-05	06/06/16 00:00	483.5600				0.00		
14	TRG	CP-5030 05-10	06/06/16 00:00	274.2800				0.00		
15	TRG	CP-5030 10-15	06/06/16 00:00	294.0100				0.00		

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
16-06041	1	Gamma	grams	6/29/2016	KSALLINGS

Lab Fraction	Auxier & Associates, Inc.		Muffle Data		Dilution Data			Aliquot Data			MS Aliquot Data		H-3 Solids Only	
	Client ID	Sample Type	Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq		
01	LCS	LCS					1.0000E+00	1.0000E+00						
02	BLANK	MBL					1.0000E+00	1.0000E+00						
03	CP-5028 00-02	DUP					3.8766E+02	3.8766E+02						
04	CP-5028 00-02	DO					3.8766E+02	3.8766E+02						
05	CP-5028 02-05	TRG					4.6556E+02	4.6556E+02						
06	CP-5028 05-10	TRG					2.7589E+02	2.7589E+02						
07	CP-5028 10-15	TRG					2.7374E+02	2.7374E+02						
08	CP-5029 00-02	TRG					5.9509E+02	5.9509E+02						
09	CP-5029 02-05	TRG					4.7350E+02	4.7350E+02						
10	CP-5029 05-10	TRG					3.5000E+02	3.5000E+02						
11	CP-5029 10-15	TRG					2.5030E+02	2.5030E+02						
12	CP-5030 00-02	TRG					6.2341E+02	6.2341E+02						
13	CP-5030 02-05	TRG					4.8356E+02	4.8356E+02						
14	CP-5030 05-10	TRG					2.7428E+02	2.7428E+02						
15	CP-5030 10-15	TRG					2.9401E+02	2.9401E+02						

Comments	
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Technician: Kenny Saeg Date: 6/15/16

Rough Sample Preparation
 Log Book

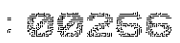
Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
16-06041	6/29/2016	6/14/2016	6/15/2016	6/16/2016	KSALLINGS

Bico Pulverizer SN: 000302

Eberline Fraction	Auxier & Associates, Inc. Client ID	Tare (g)		Gross (g)		Net (g)		Percent		Gamma		Special Info
		Pan Wt		Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	
04	CP-5028 00-02	14.6400		542.0900	456.7000	527.4500	442.0600	16.19%	83.81%	0.0000	0.0000	
05	CP-5028 02-05	14.7000		666.2700	556.2200	651.5700	541.5200	16.89%	83.11%	0.0000	0.0000	
06	CP-5028 05-10	14.6600		418.1700	340.5000	403.5100	325.8400	19.25%	80.75%	0.0000	0.0000	
07	CP-5028 10-15	14.6300		440.6600	348.4500	426.0300	333.8200	21.64%	78.36%	0.0000	0.0000	
08	CP-5029 00-02	14.5700		759.8600	670.6900	745.2900	656.1200	11.96%	88.04%	0.0000	0.0000	
09	CP-5029 02-05	14.5900		675.6600	556.9600	661.0700	542.3700	17.96%	82.04%	0.0000	0.0000	
10	CP-5029 05-10	14.5700		514.3200	421.2600	499.7500	406.8900	18.62%	81.38%	0.0000	0.0000	
11	CP-5029 10-15	14.5800		408.9000	319.8800	394.3200	305.3000	22.58%	77.42%	0.0000	0.0000	
12	CP-5030 00-02	14.5900		846.4200	717.2400	831.8300	702.6500	15.53%	84.47%	0.0000	0.0000	
13	CP-5030 02-05	14.6000		671.2300	564.1400	656.6300	549.5400	16.31%	83.69%	0.0000	0.0000	
14	CP-5030 05-10	14.6300		416.3200	337.6100	401.6900	322.9800	19.59%	80.41%	0.0000	0.0000	
15	CP-5030 10-15	14.5500		461.4500	364.6100	446.9000	350.0600	21.67%	78.33%	0.0000	0.0000	

Comments
Special Codes
H: Hot, O: Organic Hazard, P: PCB Hazard, R: Rush, T: Other (see comments)

Technician: Kenny Seis



CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

GAS-1302

94268

Sand in 16 Ounce PP Taral Jar Filled to Top

Customer: Eberline Analytical Corporation
P.O. No.: 1304009, Item 7 **Product Code:** 8401-EG-SAN
Reference Date: 01-Jul-2013 12:00 PM EST **Grams of Master Source:** 0.017994

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solutions. Additional radionuclides were added gravimetrically from solutions calibrated by gamma-ray spectrometry, ionization chamber, or liquid scintillation counting. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Nuclide	Gamma-Ray Energy (keV)	Half-Life, Days	Master Source* γ ps/gram	This Source γ ps	Uncertainty* , %			Calibration Method*
					u_A	u_B	U	
Am-241	59.5	1.580E+05	—	2.094E+03	0.1	1.7	3.5	4 π LS
Cd-109	88.0	4.626E+02	1.641E+05	2.952E+03	0.5	2.3	4.7	HPGe
Co-57	122.1	2.718E+02	8.865E+04	1.595E+03	0.4	2.0	4.1	HPGe
Ce-139	165.9	1.376E+02	1.243E+05	2.236E+03	0.4	1.9	3.9	HPGe
Hg-203	279.2	4.661E+01	2.627E+05	4.727E+03	0.3	1.9	3.8	HPGe
Sn-113	391.7	1.151E+02	1.736E+05	3.124E+03	0.4	1.9	3.9	HPGe
Cs-137	661.7	1.098E+04	1.120E+05	2.015E+03	0.7	1.9	4.0	HPGe
Y-88	898.0	1.066E+02	4.197E+05	7.553E+03	0.5	1.9	3.9	HPGe
Co-60	1173.2	1.925E+03	2.074E+05	3.732E+03	0.6	1.9	4.0	HPGe
Co-60	1332.5	1.925E+03	2.074E+05	3.732E+03	0.7	1.9	4.0	HPGe
Y-88	1836.1	1.066E+02	4.444E+05	7.996E+03	0.7	1.9	4.0	HPGe

* Master Source refers to Analytistics' 8-isotope mixture which is calibrated quarterly.

Calibration Methods: 4 π LS - 4 pi Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber. **Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)



Analysis Report for 1606041-01
GAS 1302

6/16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-01
Sample Description : GAS 1302
Sample Type : SOIL

Sample Size : 7.360E+02 grams
Facility : Countroom

Sample Taken On : 7/1/2013 4:28:50PM
Acquisition Started : 6/16/2016 10:31:34AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 1800.0 seconds
Real Time : 1824.6 seconds

Dead Time : 1.35 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 18 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 38988

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Ag
6/16/16

Analysis Report for 1606041-01

GAS 1302

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 11:02:03AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096
 Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	32.57	32.93	0.0000	0.00
2	36.99	37.35	0.0000	0.00
3	50.07	50.42	0.0000	0.00
4	60.05	60.40	0.0000	0.00
5	68.51	68.85	0.0000	0.00
6	88.55	88.89	0.0000	0.00
7	122.58	122.91	0.0000	0.00
8	136.97	137.30	0.0000	0.00
9	166.02	166.33	0.0000	0.00
10	187.98	188.28	0.0000	0.00
11	239.34	239.63	0.0000	0.00
12	352.61	352.86	0.0000	0.00
13	392.08	392.31	0.0000	0.00
14	511.73	511.93	0.0000	0.00
15	662.26	662.40	0.0000	0.00
16	726.46	726.58	0.0000	0.00
17	761.16	761.27	0.0000	0.00
18	888.82	888.88	0.0000	0.00
19	980.59	980.62	0.0000	0.00
20	1077.38	1077.37	0.0000	0.00
21	1173.94	1173.90	0.0000	0.00
22	1280.21	1280.13	0.0000	0.00
23	1333.23	1333.13	0.0000	0.00
24	1837.21	1836.93	0.0000	0.00
25	1956.61	1956.28	0.0000	0.00
26	2103.06	2102.68	0.0000	0.00
27	2288.86	2288.41	0.0000	0.00
28	2372.86	2372.38	0.0000	0.00
29	2382.90	2382.41	0.0000	0.00
30	2391.02	2390.52	0.0000	0.00
31	2506.33	2505.79	0.0000	0.00
32	2615.01	2614.42	0.0000	0.00

? = Adjacent peak noted
 Errors quoted at 2.000sigma

Analysis Report for 1606041-01

GAS 1302

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 11:02:03AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	32.57	31 -	35	32.93	2.06E+03	218.93	8.85E+03	1.33
2	36.99	36 -	39	37.35	4.60E+02	184.01	8.08E+03	1.51
3	50.07	45 -	66	50.42	6.34E+03	364.51	1.92E+04	1.70
4	60.05	45 -	66	60.40	8.94E+04	695.58	1.71E+04	1.73
5	68.51	67 -	72	68.85	4.84E+02	318.91	2.00E+04	4.30
6	88.55	85 -	92	88.89	3.06E+04	512.06	2.30E+04	1.28
7	122.58	119 -	126	122.91	5.20E+03	333.11	1.50E+04	1.28
8	136.97	134 -	140	137.30	6.48E+02	259.20	1.17E+04	1.72
9	166.02	164 -	169	166.33	5.15E+02	215.13	8.82E+03	2.05
10	187.98	186 -	191	188.28	2.55E+02	224.41	9.87E+03	3.45
11	239.34	238 -	243	239.63	2.15E+02	214.59	9.04E+03	1.25
12	352.61	351 -	355	352.86	1.29E+02	151.31	4.97E+03	1.59
13	392.08	389 -	395	392.31	2.44E+02	192.33	6.55E+03	3.05
14	511.73	509 -	515	511.93	2.29E+02	163.83	4.71E+03	2.49
15	662.26	656 -	667	662.40	3.25E+04	424.00	6.22E+03	1.96
16	726.46	724 -	730	726.58	1.25E+02	126.94	2.86E+03	3.22
17	761.16	759 -	764	761.27	9.88E+01	115.48	2.59E+03	2.56
18	888.82	886 -	893	888.88	1.35E+02	160.82	4.23E+03	3.09
19	980.59	978 -	983	980.62	1.36E+02	123.52	2.93E+03	3.60
20	1077.38	1074 -	1081	1077.37	2.12E+02	142.06	3.23E+03	3.85
21	1173.94	1168 -	1179	1173.90	2.76E+04	366.11	2.96E+03	1.99
22	1280.21	1269 -	1296	1280.13	2.01E+02	146.37	1.29E+03	24.72
23	1333.23	1327 -	1338	1333.13	2.51E+04	328.40	9.07E+02	2.03
24	1837.21	1833 -	1843	1836.93	7.00E+01	30.66	8.80E+01	2.39
25	1956.61	1952 -	1961	1956.28	2.77E+01	29.56	1.07E+02	2.92
26	2103.06	2099 -	2107	2102.68	1.98E+01	20.07	5.04E+01	1.60
27	2288.86	2286 -	2291	2288.41	2.14E+01	16.37	3.73E+01	3.44
28	2372.86	2370 -	2375	2372.38	9.18E+00	9.11	9.64E+00	3.57
29	2382.90	2378 -	2386	2382.41	1.04E+01	11.17	1.13E+01	2.09
30	2391.02	2387 -	2394	2390.52	1.09E+01	8.25	4.23E+00	2.14
31	2506.33	2500 -	2511	2505.79	3.41E+02	38.21	1.15E+01	2.86
32	2615.01	2610 -	2619	2614.42	2.10E+01	12.41	1.00E+01	3.07

M
m

Analysis Report for 1606041-01

GAS 1302

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 11:02:03AM

Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	32.57	31 -	35	2.06E+03	218.93	8.85E+03	1.64E+02
2	36.99	36 -	39	4.60E+02	184.01	8.08E+03	1.47E+02
M 3	50.07	45 -	66	6.34E+03	364.51	1.92E+04	2.28E+02
m 4	60.05	45 -	66	8.94E+04	695.58	1.71E+04	2.15E+02
5	68.51	67 -	72	4.84E+02	318.91	2.00E+04	2.60E+02
6	88.55	85 -	92	3.06E+04	512.06	2.30E+04	3.08E+02
7	122.58	119 -	126	5.20E+03	333.11	1.50E+04	2.47E+02
8	136.97	134 -	140	6.48E+02	259.20	1.17E+04	2.09E+02
9	166.02	164 -	169	5.15E+02	215.13	8.82E+03	1.73E+02
10	187.98	186 -	191	2.55E+02	224.41	9.87E+03	1.83E+02
11	239.34	238 -	243	2.15E+02	214.59	9.04E+03	1.75E+02
12	352.61	351 -	355	1.29E+02	151.31	4.97E+03	1.23E+02
13	392.08	389 -	395	2.44E+02	192.33	6.55E+03	1.56E+02
14	511.73	509 -	515	2.29E+02	163.83	4.71E+03	1.32E+02
15	662.26	656 -	667	3.25E+04	424.00	6.22E+03	1.83E+02
16	726.46	724 -	730	1.25E+02	126.94	2.86E+03	1.03E+02
17	761.16	759 -	764	9.88E+01	115.48	2.59E+03	9.35E+01
18	888.82	886 -	893	1.35E+02	160.82	4.23E+03	1.31E+02
19	980.59	978 -	983	1.36E+02	123.52	2.93E+03	9.97E+01
20	1077.38	1074 -	1081	2.12E+02	142.06	3.23E+03	1.14E+02
21	1173.94	1168 -	1179	2.76E+04	366.11	2.96E+03	1.27E+02
22	1280.21	1269 -	1296	2.01E+02	146.37	1.29E+03	3.94E+01
23	1333.23	1327 -	1338	2.51E+04	328.40	9.07E+02	7.00E+01
24	1837.21	1833 -	1843	7.00E+01	30.66	8.80E+01	2.11E+01
25	1956.61	1952 -	1961	2.77E+01	29.56	1.07E+02	2.27E+01
26	2103.06	2099 -	2107	1.98E+01	20.07	5.04E+01	1.48E+01
27	2288.86	2286 -	2291	2.14E+01	16.37	3.73E+01	1.11E+01
28	2372.86	2370 -	2375	9.18E+00	9.11	9.64E+00	5.59E+00
29	2382.90	2378 -	2386	1.04E+01	11.17	1.13E+01	7.50E+00
30	2391.02	2387 -	2394	1.09E+01	8.25	4.23E+00	4.07E+00
31	2506.33	2500 -	2511	3.41E+02	38.21	1.15E+01	8.01E+00

: 00271

Analysis Report for 1606041-01

GAS 1302

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2615.01	2610 -	2619	2.10E+01	12.41	1.00E+01	6.88E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 11:02:03AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	32.57	31 -	35	32.93	2.06E+03	218.93	8.85E+03	.....
2	36.99	36 -	39	37.35	4.60E+02	184.01	8.08E+03	PM-145
M 3	50.07	45 -	66	50.42	6.34E+03	364.51	1.92E+04	TH-227 TE-132
m 4	60.05	45 -	66	60.40	8.94E+04	695.58	1.71E+04	AM-241
5	68.51	67 -	72	68.85	4.84E+02	318.91	2.00E+04	TI-44 TA-182 TH-230
6	88.55	85 -	92	88.89	3.06E+04	512.06	2.30E+04	LU-176 CD-109 SN-126
7	122.58	119 -	126	122.91	5.20E+03	333.11	1.50E+04	EU-154 CO-57 EU-152
8	136.97	134 -	140	137.30	6.48E+02	259.20	1.17E+04	CO-57 SE-75
9	166.02	164 -	169	166.33	5.15E+02	215.13	8.82E+03	CE-139
10	187.98	186 -	191	188.28	2.55E+02	224.41	9.87E+03	.....
11	239.34	238 -	243	239.63	2.15E+02	214.59	9.04E+03	PB-212
12	352.61	351 -	355	352.86	1.29E+02	151.31	4.97E+03	PB-214
13	392.08	389 -	395	392.31	2.44E+02	192.33	6.55E+03	SN-113
14	511.73	509 -	515	511.93	2.29E+02	163.83	4.71E+03	.....
15	662.26	656 -	667	662.40	3.25E+04	424.00	6.22E+03	CS-137
16	726.46	724 -	730	726.58	1.25E+02	126.94	2.86E+03	BI-212

: 00272

Analysis Report for 1606041-01

GAS 1302

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
17	761.16	759 -	764	761.27	9.88E+01	115.48	2.59E+03	.....
18	888.82	886 -	893	888.88	1.35E+02	160.82	4.23E+03	SC-46
19	980.59	978 -	983	980.62	1.36E+02	123.52	2.93E+03	.....
20	1077.38	1074 -	1081	1077.37	2.12E+02	142.06	3.23E+03	.....
21	1173.94	1168 -	1179	1173.90	2.76E+04	366.11	2.96E+03	CO-60
22	1280.21	1269 -	1296	1280.13	2.01E+02	146.37	1.29E+03	.....
23	1333.23	1327 -	1338	1333.13	2.51E+04	328.40	9.07E+02	CO-60
24	1837.21	1833 -	1843	1836.93	7.00E+01	30.66	8.80E+01	.....
25	1956.61	1952 -	1961	1956.28	2.77E+01	29.56	1.07E+02	.....
26	2103.06	2099 -	2107	2102.68	1.98E+01	20.07	5.04E+01	.....
27	2288.86	2286 -	2291	2288.41	2.14E+01	16.37	3.73E+01	.....
28	2372.86	2370 -	2375	2372.38	9.18E+00	9.11	9.64E+00	.....
29	2382.90	2378 -	2386	2382.41	1.04E+01	11.17	1.13E+01	.....
30	2391.02	2387 -	2394	2390.52	1.09E+01	8.25	4.23E+00	.....
31	2506.33	2500 -	2511	2505.79	3.41E+02	38.21	1.15E+01	.....
32	2615.01	2610 -	2619	2614.42	2.10E+01	12.41	1.00E+01	TL-208

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 11:02:03AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	32.57	2.06E+03	218.93	6.41E-03	1.78E-03
2	36.99	4.60E+02	184.01	9.77E-03	1.78E-03
M	3	50.07	6.34E+03	1.90E-02	1.78E-03
m	4	60.05	8.94E+04	2.38E-02	1.80E-03
5	68.51	4.84E+02	318.91	2.63E-02	2.08E-03
6	88.55	3.06E+04	512.06	2.85E-02	2.73E-03
7	122.58	5.20E+03	333.11	2.72E-02	2.07E-03
8	136.97	6.48E+02	259.20	2.61E-02	2.11E-03
9	166.02	5.15E+02	215.13	2.38E-02	2.17E-03
10	187.98	2.55E+02	224.41	2.23E-02	2.01E-03
11	239.34	2.15E+02	214.59	1.92E-02	1.63E-03
12	352.61	1.29E+02	151.31	1.47E-02	1.19E-03
13	392.08	2.44E+02	192.33	1.37E-02	1.11E-03
14	511.73	2.29E+02	163.83	1.12E-02	9.90E-04

: 00273

Analysis Report for 1606041-01

GAS 1302

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
15	662.26	3.25E+04	424.00	9.21E-03	8.34E-04
16	726.46	1.25E+02	126.94	8.56E-03	7.76E-04
17	761.16	9.88E+01	115.48	8.25E-03	7.45E-04
18	888.82	1.35E+02	160.82	7.29E-03	6.31E-04
19	980.59	1.36E+02	123.52	6.74E-03	5.79E-04
20	1077.38	2.12E+02	142.06	6.26E-03	5.29E-04
21	1173.94	2.76E+04	366.11	5.85E-03	4.79E-04
22	1280.21	2.01E+02	146.37	5.47E-03	4.60E-04
23	1333.23	2.51E+04	328.40	5.31E-03	4.51E-04
24	1837.21	7.00E+01	30.66	4.30E-03	3.26E-04
25	1956.61	2.77E+01	29.56	4.16E-03	3.26E-04
26	2103.06	1.98E+01	20.07	4.02E-03	3.26E-04
27	2288.86	2.14E+01	16.37	3.90E-03	3.26E-04
28	2372.86	9.18E+00	9.11	3.86E-03	3.26E-04
29	2382.90	1.04E+01	11.17	3.86E-03	3.26E-04
30	2391.02	1.09E+01	8.25	3.85E-03	3.26E-04
31	2506.33	3.41E+02	38.21	3.82E-03	3.26E-04
32	2615.01	2.10E+01	12.41	3.79E-03	3.26E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 11:02:03AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038676.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	32.57	2.06E+03	218.93			2.06E+03	2.19E+02
2	36.99	4.60E+02	184.01			4.60E+02	1.84E+02
M	3	6.34E+03	364.51			6.34E+03	3.65E+02
m	4	8.94E+04	695.58			8.94E+04	6.96E+02
	5	4.84E+02	318.91			4.84E+02	3.19E+02
	6	3.06E+04	512.06			3.06E+04	5.12E+02
	7	5.20E+03	333.11			5.20E+03	3.33E+02
	8	6.48E+02	259.20			6.48E+02	2.59E+02
	9	5.15E+02	215.13			5.15E+02	2.15E+02
	10	2.55E+02	224.41			2.55E+02	2.24E+02
	11	2.15E+02	214.59	9.05E+00	2.88E+00	2.06E+02	2.15E+02
	12	1.29E+02	151.31	3.62E+00	2.43E+00	1.25E+02	1.51E+02

: 00274

Analysis Report for 1606041-01

GAS 1302

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
13	392.08	2.44E+02	192.33			2.44E+02	1.92E+02
14	511.73	2.29E+02	163.83	3.79E+01	2.69E+00	1.91E+02	1.64E+02
15	662.26	3.25E+04	424.00			3.25E+04	4.24E+02
16	726.46	1.25E+02	126.94			1.25E+02	1.27E+02
17	761.16	9.88E+01	115.48			9.88E+01	1.15E+02
18	888.82	1.35E+02	160.82			1.35E+02	1.61E+02
19	980.59	1.36E+02	123.52			1.36E+02	1.24E+02
20	1077.38	2.12E+02	142.06			2.12E+02	1.42E+02
21	1173.94	2.76E+04	366.11			2.76E+04	3.66E+02
22	1280.21	2.01E+02	146.37			2.01E+02	1.46E+02
23	1333.23	2.51E+04	328.40	3.87E-01	1.19E+00	2.51E+04	3.28E+02
24	1837.21	7.00E+01	30.66			7.00E+01	3.07E+01
25	1956.61	2.77E+01	29.56			2.77E+01	2.96E+01
26	2103.06	1.98E+01	20.07			1.98E+01	2.01E+01
27	2288.86	2.14E+01	16.37			2.14E+01	1.64E+01
28	2372.86	9.18E+00	9.11			9.18E+00	9.11E+00
29	2382.90	1.04E+01	11.17			1.04E+01	1.12E+01
30	2391.02	1.09E+01	8.25			1.09E+01	8.25E+00
31	2506.33	3.41E+02	38.21			3.41E+02	3.82E+01
32	2615.01	2.10E+01	12.41	2.48E+00	6.75E-01	1.85E+01	1.24E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 11:02:03AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\WOR-GAMMA1\ApexRoot\Countroom\Data\0000038676.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	32.57	2.06E+03	218.93			2.06E+03	2.19E+02
2	36.99	4.60E+02	184.01			4.60E+02	1.84E+02
M	3	6.34E+03	364.51			6.34E+03	3.65E+02
m	4	8.94E+04	695.58			8.94E+04	6.96E+02
	5	4.84E+02	318.91			4.84E+02	3.19E+02
	6	88.55	512.06			3.06E+04	5.12E+02
	7	122.58	333.11			5.20E+03	3.33E+02
	8	136.97	259.20			6.48E+02	2.59E+02

: 00275

Analysis Report for 1606041-01

GAS 1302

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
9	166.02	5.15E+02	215.13			5.15E+02	2.15E+02
10	187.98	2.55E+02	224.41			2.55E+02	2.24E+02
11	239.34	2.15E+02	214.59	9.05E+00	2.88E+00	2.06E+02	2.15E+02
12	352.61	1.29E+02	151.31	3.62E+00	2.43E+00	1.25E+02	1.51E+02
13	392.08	2.44E+02	192.33			2.44E+02	1.92E+02
14	511.73	2.29E+02	163.83	3.79E+01	2.69E+00	1.91E+02	1.64E+02
15	662.26	3.25E+04	424.00			3.25E+04	4.24E+02
16	726.46	1.25E+02	126.94			1.25E+02	1.27E+02
17	761.16	9.88E+01	115.48			9.88E+01	1.15E+02
18	888.82	1.35E+02	160.82			1.35E+02	1.61E+02
19	980.59	1.36E+02	123.52			1.36E+02	1.24E+02
20	1077.38	2.12E+02	142.06			2.12E+02	1.42E+02
21	1173.94	2.76E+04	366.11			2.76E+04	3.66E+02
22	1280.21	2.01E+02	146.37			2.01E+02	1.46E+02
23	1333.23	2.51E+04	328.40	3.87E-01	1.19E+00	2.51E+04	3.28E+02
24	1837.21	7.00E+01	30.66			7.00E+01	3.07E+01
25	1956.61	2.77E+01	29.56			2.77E+01	2.96E+01
26	2103.06	1.98E+01	20.07			1.98E+01	2.01E+01
27	2288.86	2.14E+01	16.37			2.14E+01	1.64E+01
28	2372.86	9.18E+00	9.11			9.18E+00	9.11E+00
29	2382.90	1.04E+01	11.17			1.04E+01	1.12E+01
30	2391.02	1.09E+01	8.25			1.09E+01	8.25E+00
31	2506.33	3.41E+02	38.21			3.41E+02	3.82E+01
32	2615.01	2.10E+01	12.41	2.48E+00	6.75E-01	1.85E+01	1.24E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-57	0.885	122.06 *	85.51	7.25E+01	7.27E+00
		136.48 *	10.60	7.59E+01	3.11E+01
CO-60	0.916	1173.22 *	100.00	1.42E+02	1.18E+01
		1332.49 *	100.00	1.43E+02	1.22E+01
CD-109	0.932	88.03 *	3.72	2.95E+03	3.37E+02
SN-113	0.594	255.12	1.93		
		391.69 *	64.90	3.76E+02	2.99E+02

: 00276

Analysis Report for 1606041-01
GAS 1302

<i>Nuclide Name</i>	<i>Id Confidence</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Activity Uncertainty</i>
SN-126	0.857	87.57 *	37.00	5.91E+01	5.74E+00
CS-137	0.943	661.65 *	85.12	9.06E+01	8.30E+00
CE-139	0.731	165.85 *	80.35	1.27E+02	5.42E+01
BI-212	0.703	727.17 *	11.80	2.52E+00	2.57E+00
		1620.62	2.75		
PB-212	0.822	238.63 *	44.60	4.91E-01	5.13E-01
		300.09	3.41		
PB-214	0.385	295.21	19.19		
		351.92 *	37.19	4.65E-01	5.65E-01
AM-241	0.959	59.54 *	35.90	2.14E+02	1.63E+01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 11:02:03AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Peak Size (CPS)</i>	<i>Peak CPS (%) Uncertainty</i>	<i>Peak Type</i>	<i>Tolerance Nuclide</i>
1	32.57	1.14675E+00	5.30		
2	36.99	2.55341E-01	20.02	Tol.	PM-145
M 3	50.07	3.52116E+00	2.88	Tol.	PM-145 TE-132 TH-227
5	68.51	2.69051E-01	32.93	Tol.	TA-182 TH-230
10	187.98	1.41627E-01	44.01		
14	511.73	1.06039E-01	42.92		
17	761.16	5.48910E-02	58.44		
18	888.82	7.51852E-02	59.42		
19	980.59	7.57639E-02	45.29		
20	1077.38	1.17921E-01	33.46		
22	1280.21	1.11525E-01	36.46		
24	1837.21	3.88889E-02	21.90		
25	1956.61	1.53909E-02	53.36		
26	2103.06	1.10000E-02	50.68		
27	2288.86	1.18750E-02	38.29		

Analysis Report for 1606041-01

GAS 1302

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
28	2372.86	5.09921E-03	49.63		
29	2382.90	5.76389E-03	53.83		
30	2391.02	6.04701E-03	37.88		
31	2506.33	1.89593E-01	5.60	Sum	
32	2615.01	1.02916E-02	33.54	Tol.	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-57	0.88	122.06 *	85.51	7.25E+01	7.27E+00
		136.48 *	10.60	7.59E+01	3.11E+01
CO-60	0.91	1173.22 *	100.00	1.42E+02	1.18E+01
		1332.49 *	100.00	1.43E+02	1.22E+01
CD-109	0.93	88.03 *	3.72	2.95E+03	3.37E+02
SN-113	0.59	255.12	1.93		
		391.69 *	64.90	3.76E+02	2.99E+02
SN-126	0.85	87.57 *	37.00	5.91E+01	5.74E+00
CS-137	0.94	661.65 *	85.12	9.06E+01	8.30E+00
CE-139	0.73	165.85 *	80.35	1.27E+02	5.42E+01
BI-212	0.70	727.17 *	11.80	2.52E+00	2.57E+00
		1620.62	2.75		
PB-212	0.82	238.63 *	44.60	4.91E-01	5.13E-01
		300.09	3.41		
PB-214	0.38	295.21	19.19		
		351.92 *	37.19	4.65E-01	5.65E-01
AM-241	0.95	59.54 *	35.90	2.14E+02	1.63E+01

Analysis Report for 1606041-01

GAS 1302

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 @ = Energy line not used for Weighted Mean Activity
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
CO-57	0.885	7.27E+01	7.08E+00	
CO-60	0.916	1.42E+02	8.49E+00	
? CD-109	0.932	2.95E+03	3.37E+02	
SN-113	0.594	3.76E+02	2.99E+02	
? SN-126	0.857	5.91E+01	5.74E+00	
CS-137	0.943	9.06E+01	8.30E+00	
CE-139	0.731	1.27E+02	5.42E+01	
BI-212	0.703	2.52E+00	2.57E+00	
PB-212	0.822	4.91E-01	5.13E-01	
PB-214	0.385	4.65E-01	5.65E-01	
AM-241	0.959	2.14E+02	1.63E+01	

? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1606041-01

GAS 1302

 UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 11:02:03AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	32.57	1.14675E+00	5.30		
2	36.99	2.55341E-01	20.02	Tol.	PM-145
					PM-145
M 3	50.07	3.52116E+00	2.88	Tol.	TE-132
					TH-227
5	68.51	2.69051E-01	32.93	Tol.	TA-182
					TH-230
10	187.98	1.41627E-01	44.01		
14	511.73	1.06039E-01	42.92		
17	761.16	5.48910E-02	58.44		
18	888.82	7.51852E-02	59.42		
19	980.59	7.57639E-02	45.29		
20	1077.38	1.17921E-01	33.46		
22	1280.21	1.11525E-01	36.46		
24	1837.21	3.88889E-02	21.90		
25	1956.61	1.53909E-02	53.36		
26	2103.06	1.10000E-02	50.68		
27	2288.86	1.18750E-02	38.29		
28	2372.86	5.09921E-03	49.63		
29	2382.90	5.76389E-03	53.83		
30	2391.02	6.04701E-03	37.88		
31	2506.33	1.89593E-01	5.60	Sum	
32	2615.01	1.02916E-02	33.54	Tol.	TL-208

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

Analysis Report for 1606041-01

GAS 1302

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	BE-7	477.59	10.42	7.23E+05	5.40E+06	5.40E+06
+	NA-22	1274.54	99.94	6.26E-02	6.08E-01	6.08E-01
+	@ NA-24	1368.53	99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09	99.86	0.00E+00		1.00E+26
+	AL-26	1808.65	99.76	4.03E-02	1.86E-01	1.86E-01
+	K-40	1460.81	10.67	3.35E-01	1.87E+00	1.87E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.75E-01	3.45E-01	3.68E-01
		78.34	96.00	9.38E-03		3.45E-01
+	SC-46	889.25	99.98	2.83E+03	4.42E+03	4.48E+03
		1120.51	99.99	-2.25E+02		4.42E+03
+	@ V-48	983.52	99.98	1.00E+26	1.00E+26	1.00E+26
	@	1312.10	97.50	1.00E+26		1.00E+26
+	CR-51	320.08	9.83	2.19E+10	1.77E+12	1.77E+12
+	MN-54	834.83	99.97	3.25E-01	5.74E+00	5.74E+00
+	CO-56	846.75	99.96	-5.00E+02	3.16E+03	7.17E+03
		1037.75	14.03	1.36E+04		5.67E+04
		1238.25	67.00	2.19E+03		6.27E+03
		1771.40	15.51	-2.13E+03		1.27E+04
		2598.48	16.90	4.30E+02		3.16E+03
+	CO-57	122.06	* 85.51	7.25E+01	6.92E+00	6.92E+00
		136.48	* 10.60	7.59E+01		4.93E+01
+	CO-58	810.76	99.40	-5.86E+03	1.97E+04	1.97E+04
+	FE-59	1099.22	56.50	-5.86E+06	1.15E+07	2.15E+07
		1291.56	43.20	-1.70E+06		1.15E+07
+	CO-60	1173.22	* 100.00	1.42E+02	8.10E-01	1.32E+00
		1332.49	* 100.00	1.43E+02		8.10E-01
+	ZN-65	1115.52	50.75	1.04E+01	2.60E+01	2.60E+01
+	@ GA-67	93.31	35.70	1.00E+26	1.00E+26	1.00E+26
	@	208.95	2.24	1.00E+26		1.00E+26
	@	300.22	16.00	1.00E+26		1.00E+26
+	SE-75	121.11	16.70	7.77E+03	2.24E+02	1.05E+03
		136.00	59.20	4.19E+02		2.24E+02
		264.65	59.80	-1.57E+02		2.61E+02
		279.53	25.20	-1.97E+01		6.24E+02
		400.65	11.40	2.04E+02		1.58E+03
+	RB-82	776.52	13.00	-6.08E+12	1.98E+13	1.98E+13
+	RB-83	520.41	46.00	4.80E+03	5.48E+03	5.48E+03
		529.64	30.30	1.14E+03		8.03E+03
		552.65	16.40	2.19E+03		1.49E+04
+	KR-85	513.99	0.43	-7.68E+00	1.20E+02	1.20E+02
+	SR-85	513.99	99.27	-2.89E+03	4.53E+04	4.53E+04

Analysis Report for 1606041-01

GAS 1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	93.40	2.78E+02	2.64E+02	7.29E+02
		1836.01	99.38	2.96E+02		2.64E+02
+	NB-93M	16.57	9.43	-1.24E+03	4.68E+02	4.68E+02
+	NB-94	702.63	100.00	-3.61E-02	4.29E-01	4.29E-01
		871.10	100.00	3.65E-02		5.65E-01
+	NB-95	765.79	99.81	8.56E+07	8.80E+08	8.80E+08
+	@ NB-95M	235.69	25.00	1.00E+26	1.00E+26	1.00E+26
+	ZR-95	724.18	43.70	2.42E+04	9.94E+04	1.22E+05
		756.72	55.30	-5.68E+04		9.94E+04
+	@ MO-99	181.06	6.20	1.00E+26	1.00E+26	1.00E+26
	@	739.58	12.80	1.00E+26		1.00E+26
	@	778.00	4.50	1.00E+26		1.00E+26
+	RU-103	497.08	89.00	3.03E+07	8.80E+07	8.80E+07
+	RU-106	621.84	9.80	-7.13E+00	3.28E+01	3.28E+01
+	AG-108M	433.93	89.90	-9.20E-03	4.71E-01	4.99E-01
		614.37	90.40	-3.12E-01		4.71E-01
		722.95	90.50	1.03E-01		4.90E-01
+	CD-109	88.03	* 3.72	2.95E+03	5.98E+01	5.98E+01
+	AG-110M	657.75	93.14	-1.30E+03	1.56E+01	1.56E+01
		677.61	10.53	-5.14E+00		8.08E+01
		706.67	16.46	-1.96E+01		5.25E+01
		763.93	21.98	-3.28E+00		4.26E+01
		884.67	71.63	-6.54E+00		1.60E+01
		1384.27	23.94	2.86E+00		1.75E+01
+	CD-113M	263.70	0.02	1.12E+02	1.52E+03	1.52E+03
+	SN-113	255.12	1.93	8.63E+03	4.86E+02	1.07E+04
		391.69	* 64.90	3.76E+02		4.86E+02
+	TE123M	159.00	84.10	4.40E+01	1.54E+02	1.54E+02
+	SB-124	602.71	97.87	2.32E+04	9.08E+04	1.10E+05
		645.85	7.26	7.14E+05		1.53E+06
		722.78	11.10	2.09E+05		9.97E+05
		1691.02	49.00	1.42E+04		9.08E+04
+	I-125	35.49	6.49	-2.29E+07	3.26E+06	3.26E+06
+	SB-125	176.33	6.89	4.23E+00	3.11E+00	7.84E+00
		427.89	29.33	-9.71E-01		3.11E+00
		463.38	10.35	2.21E+00		9.67E+00
		600.56	17.80	-1.33E+00		4.93E+00
		635.90	11.32	5.16E-02		7.90E+00
+	@ SB-126	414.70	83.30	1.00E+26	1.00E+26	1.00E+26
	@	666.33	99.60	1.00E+26		1.00E+26
	@	695.00	99.60	1.00E+26		1.00E+26
	@	720.50	53.80	1.00E+26		1.00E+26
+	SN-126	87.57	* 37.00	5.91E+01	1.20E+00	1.20E+00
+	@ SB-127	473.00	25.00	1.00E+26	1.00E+26	1.00E+26
	@	685.20	35.70	1.00E+26		1.00E+26
	@	783.80	14.70	1.00E+26		1.00E+26
+	I-129	29.78	57.00	-1.89E+01	2.66E+00	2.66E+00
		33.60	13.20	1.87E+01		8.20E+00

Analysis Report for 1606041-01

GAS 1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	-1.19E+01	2.66E+00	8.38E+00
+	@ I-131	284.30	6.05	1.00E+26	1.00E+26	1.00E+26
	@	364.48	81.20	1.00E+26		1.00E+26
	@	636.97	7.26	1.00E+26		1.00E+26
	@	722.89	1.80	1.00E+26		1.00E+26
+	@ TE-132	49.72	13.10	1.00E+26	1.00E+26	1.00E+26
	@	228.16	88.00	1.00E+26		1.00E+26
+	BA-133	81.00	33.00	-6.63E-01	6.55E-01	1.17E+00
		302.84	17.80	-7.66E-01		2.08E+00
		356.01	60.00	-3.52E-01		6.55E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	@ XE-133	81.00	38.00	1.00E+26	1.00E+26	1.00E+26
+	CS-134	563.23	8.38	7.19E+00	1.18E+00	1.34E+01
		569.32	15.43	-1.53E+00		6.99E+00
		604.70	97.60	-9.28E-01		1.18E+00
		795.84	85.40	-5.90E-01		1.52E+00
		801.93	8.73	1.03E+01		1.55E+01
+	CS-135	268.24	16.00	1.35E-02	1.89E+00	1.89E+00
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	@ CS-136	153.22	7.46	1.00E+26	1.00E+26	1.00E+26
	@	163.89	4.61	1.00E+26		1.00E+26
	@	176.55	13.56	1.00E+26		1.00E+26
	@	273.65	12.66	1.00E+26		1.00E+26
	@	340.57	48.50	1.00E+26		1.00E+26
	@	818.50	99.70	1.00E+26		1.00E+26
	@	1048.07	79.60	1.00E+26		1.00E+26
	@	1235.34	19.70	1.00E+26		1.00E+26
+	CS-137	661.65	* 85.12	9.06E+01	1.03E+00	1.03E+00
+	LA-138	788.74	34.00	-4.59E-01	2.83E-01	1.43E+00
		1435.80	66.00	7.39E-02		2.83E-01
+	CE-139	165.85	* 80.35	1.27E+02	8.57E+01	8.57E+01
+	@ BA-140	162.64	6.70	1.00E+26	1.00E+26	1.00E+26
	@	304.84	4.50	1.00E+26		1.00E+26
	@	423.70	3.20	1.00E+26		1.00E+26
	@	437.55	2.00	1.00E+26		1.00E+26
	@	537.32	25.00	1.00E+26		1.00E+26
+	@ LA-140	328.77	20.50	1.00E+26	1.00E+26	1.00E+26
	@	487.03	45.50	1.00E+26		1.00E+26
	@	815.85	23.50	1.00E+26		1.00E+26
	@	1596.49	95.49	1.00E+26		1.00E+26
+	CE-141	145.44	48.40	-2.44E+08	5.08E+09	5.08E+09
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	1.38E+00	3.09E+01	3.09E+01
+	PM-144	476.78	42.00	3.46E+00	3.38E+00	8.68E+00

Analysis Report for 1606041-01

GAS 1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	618.01	98.60	9.89E-01	3.38E+00	3.38E+00
		696.49	99.49	2.47E-01		3.38E+00
+	PM-145	36.85	21.70	-2.36E+00	2.01E+00	3.76E+00
		37.36	39.70	2.96E-01		2.01E+00
		42.30	15.10	-4.46E+00		4.65E+00
		72.40	2.31	-5.28E+00		1.59E+01
+	PM-146	453.90	39.94	1.12E+00	1.70E+00	1.70E+00
		735.90	14.01	-2.14E+00		4.51E+00
		747.13	13.10	-2.74E+00		5.07E+00
+	@ ND-147	91.11	28.90	1.00E+26	1.00E+26	1.00E+26
	@	531.02	13.10	1.00E+26		1.00E+26
+	@ PM-149	285.90	3.10	1.00E+26	1.00E+26	1.00E+26
+	EU-152	121.78	20.50	2.21E+01	1.43E+00	1.97E+00
		244.69	5.40	-1.29E+00		6.51E+00
		344.27	19.13	-2.21E-01		1.95E+00
		778.89	9.20	-3.47E+00		6.03E+00
		964.01	10.40	-6.66E-01		7.30E+00
		1085.78	7.22	4.43E+00		1.00E+01
		1112.02	9.60	3.17E+00		7.70E+00
		1407.95	14.94	5.82E-01		1.43E+00
+	GD-153	97.43	31.30	5.95E-01	1.62E+01	1.62E+01
		103.18	22.20	-5.44E+00		2.30E+01
+	EU-154	123.07	40.50	1.22E+01	9.82E-01	1.09E+00
		723.30	19.70	5.87E-01		2.80E+00
		873.19	11.50	-2.49E+00		6.19E+00
		996.32	10.30	6.22E+00		7.64E+00
		1004.76	17.90	4.73E-01		4.26E+00
		1274.45	35.50	1.01E-01		9.82E-01
+	EU-155	86.50	30.90	7.57E+01	1.69E+00	3.07E+00
		105.30	20.70	5.37E-01		1.69E+00
+	@ EU-156	811.77	10.40	1.00E+26	1.00E+26	1.00E+26
	@	1153.47	7.20	1.00E+26		1.00E+26
	@	1230.71	8.90	1.00E+26		1.00E+26
+	HO-166M	184.41	72.60	1.35E-01	3.79E-01	3.79E-01
		280.45	29.60	-4.48E-02		1.02E+00
		410.94	11.10	-1.72E-01		3.80E+00
		711.69	54.10	4.65E-01		8.23E-01
+	TM-171	66.72	0.14	-1.39E+03	6.98E+02	6.98E+02
+	HF-172	81.75	4.52	-2.81E+01	6.70E+00	2.10E+01
		125.81	11.30	-1.72E+00		6.70E+00
+	@ LU-172	181.53	20.60	1.00E+26	1.00E+26	1.00E+26
	@	810.06	16.63	1.00E+26		1.00E+26
	@	912.12	15.25	1.00E+26		1.00E+26
	@	1093.66	62.50	1.00E+26		1.00E+26
+	LU-173	100.72	5.24	-3.77E+00	6.36E+00	1.96E+01
		272.11	21.20	4.05E-01		6.36E+00
+	HF-175	343.40	84.00	6.03E+03	1.71E+04	1.71E+04
+	LU-176	88.34	13.30	1.62E+02	3.30E-01	4.84E+00
		201.83	86.00	-1.51E-01		3.30E-01

Analysis Report for 1606041-01

GAS 1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-176	306.78	94.00	6.88E-02	3.30E-01	3.33E-01
+	TA-182	67.75	41.20	2.71E+02	5.70E+02	5.70E+02
		1121.30	34.90	4.13E+02		1.15E+03
		1189.05	16.23	2.27E+02		1.83E+03
		1221.41	26.98	2.94E+02		8.83E+02
		1231.02	11.44	-1.68E+03		1.89E+03
+	IR-192	308.46	29.68	4.85E+03	2.49E+04	2.64E+04
		468.07	48.10	7.90E+03		2.49E+04
+	HG-203	279.19	77.30	1.35E+06	3.76E+06	3.76E+06
+	BI-207	569.67	97.72	-7.51E-02	4.33E-01	4.33E-01
		1063.62	74.90	1.15E-02		8.62E-01
+	TL-208	583.14	30.22	6.65E-01	3.96E-01	1.40E+00
		860.37	4.48	3.73E+00		1.22E+01
		2614.66	35.85	3.22E-01		3.96E-01
+	BI-210M	262.00	45.00	1.35E-01	6.72E-01	6.72E-01
		300.00	23.00	-6.85E-02		1.32E+00
+	PB-210	46.50	4.25	-1.36E+02	1.70E+01	1.70E+01
+	PB-211	404.84	2.90	-6.53E+00	1.20E+01	1.20E+01
		831.96	2.90	-4.21E+00		1.80E+01
+	BI-212	727.17	* 11.80	2.52E+00	4.21E+00	4.21E+00
		1620.62	2.75	-4.08E-01		5.70E+00
+	PB-212	238.63	* 44.60	4.91E-01	8.41E-01	8.41E-01
		300.09	3.41	-4.62E-01		8.91E+00
+	BI-214	609.31	46.30	7.66E-01	9.42E-01	9.42E-01
		1120.29	15.10	-1.96E-01		3.86E+00
		1764.49	15.80	6.66E-02		1.06E+00
		2204.22	4.98	1.68E+00		3.73E+00
+	PB-214	295.21	19.19	4.52E-01	9.27E-01	1.62E+00
		351.92	* 37.19	4.65E-01		9.27E-01
+	RN-219	401.80	6.50	-6.92E-01	5.33E+00	5.33E+00
+	RA-223	323.87	3.88	2.40E+00	8.12E+00	8.12E+00
+	RA-224	240.98	3.95	8.54E+00	8.02E+00	8.02E+00
+	@ RA-225	40.00	31.00	1.00E+26	1.00E+26	1.00E+26
+	RA-226	186.21	3.28	4.94E+00	8.60E+00	8.60E+00
+	TH-227	50.10	8.40	3.71E+01	2.68E+00	8.86E+00
		236.00	11.50	-6.99E-01		2.68E+00
		256.20	6.30	3.63E+00		4.87E+00
+	AC-228	338.32	11.40	5.27E-01	2.25E+00	2.80E+00
		911.07	27.70	-1.69E+00		2.25E+00
		969.11	16.60	-1.44E-01		3.73E+00
+	TH-230	48.44	16.90	8.00E+00	4.37E+00	4.37E+00
		62.85	4.60	4.90E+02		1.91E+01
		67.67	0.37	4.34E+01		9.12E+01
+	PA-231	283.67	1.60	-4.50E+00	1.32E+01	1.89E+01
		302.67	2.30	-4.88E+00		1.32E+01
+	TH-231	25.64	14.70	-3.03E+03	5.16E+00	6.08E+01
		84.21	6.40	-1.71E+00		5.16E+00
+	PA-233	311.98	38.60	2.07E+11	9.18E+11	9.18E+11

Analysis Report for 1606041-01

GAS 1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-234	131.20	20.40	2.46E-01	1.17E+00	1.17E+00
		733.99	8.80	8.06E-01		4.98E+00
		946.00	12.00	-2.39E+00		5.55E+00
+	PA-234M	1001.03	0.92	2.29E+01	6.69E+01	6.69E+01
+	TH-234	63.29	3.80	-1.40E+03	1.02E+01	1.02E+01
+	U-235	143.76	10.50	1.29E+00	2.29E+00	2.29E+00
		163.35	4.70	2.25E-01		5.39E+00
		205.31	4.70	-1.43E+00		6.14E+00
+	NP-237	86.50	12.60	1.23E+02	4.98E+00	4.98E+00
+	@ NP-239	106.10	22.70	1.00E+26	1.00E+26	1.00E+26
	@	228.18	10.70	1.00E+26		1.00E+26
	@	277.60	14.10	1.00E+26		1.00E+26
+	AM-241	59.54 *	35.90	2.14E+02	3.74E+00	3.74E+00
+	AM-243	74.67	66.00	-3.69E-01	4.88E-01	4.88E-01
+	CM-243	209.75	3.29	-3.29E+00	2.34E+00	9.55E+00
		228.14	10.60	7.25E-01		3.13E+00
		277.60	14.00	1.57E+00		2.34E+00

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	5.40E+06	5.40E+06	7.23E+05	2.67E+06
	NA-22	1274.54	99.94	6.08E-01	6.08E-01	6.26E-02	2.93E-01
@	NA-24	1368.53	99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09	99.86	1.00E+26		0.00E+00	1.00E+20
	AL-26	1808.65	99.76	1.86E-01	1.86E-01	4.03E-02	8.64E-02

: 00286

Analysis Report for 1606041-01

GAS 1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
K-40	1460.81	10.67	1.87E+00	1.87E+00	3.35E-01	8.81E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	3.68E-01	3.45E-01	1.75E-01	1.83E-01
	78.34	96.00	3.45E-01		9.38E-03	1.71E-01
SC-46	889.25	99.98	4.48E+03	4.42E+03	2.83E+03	2.21E+03
	1120.51	99.99	4.42E+03		-2.25E+02	2.18E+03
@ V-48	983.52	99.98	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1312.10	97.50	1.00E+26		1.00E+26	1.00E+20
CR-51	320.08	9.83	1.77E+12	1.77E+12	2.19E+10	8.75E+11
MN-54	834.83	99.97	5.74E+00	5.74E+00	3.25E-01	2.83E+00
CO-56	846.75	99.96	7.17E+03	3.16E+03	-5.00E+02	3.54E+03
	1037.75	14.03	5.67E+04		1.36E+04	2.79E+04
	1238.25	67.00	6.27E+03		2.19E+03	3.04E+03
	1771.40	15.51	1.27E+04		-2.13E+03	5.81E+03
	2598.48	16.90	3.16E+03		4.30E+02	1.00E+03
+ CO-57	122.06	* 85.51	6.92E+00	6.92E+00	7.25E+01	3.44E+00
	136.48	* 10.60	4.93E+01		7.59E+01	2.45E+01
CO-58	810.76	99.40	1.97E+04	1.97E+04	-5.86E+03	9.70E+03
FE-59	1099.22	56.50	2.15E+07	1.15E+07	-5.86E+06	1.06E+07
	1291.56	43.20	1.15E+07		-1.70E+06	5.54E+06
+ CO-60	1173.22	* 100.00	1.32E+00	8.10E-01	1.42E+02	6.52E-01
	1332.49	* 100.00	8.10E-01		1.43E+02	3.97E-01
ZN-65	1115.52	50.75	2.60E+01	2.60E+01	1.04E+01	1.28E+01
@ GA-67	93.31	35.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	208.95	2.24	1.00E+26		1.00E+26	1.00E+20
@	300.22	16.00	1.00E+26		1.00E+26	1.00E+20
SE-75	121.11	16.70	1.05E+03	2.24E+02	7.77E+03	5.24E+02
	136.00	59.20	2.24E+02		4.19E+02	1.11E+02
	264.65	59.80	2.61E+02		-1.57E+02	1.29E+02
	279.53	25.20	6.24E+02		-1.97E+01	3.08E+02
	400.65	11.40	1.58E+03		2.04E+02	7.83E+02
RB-82	776.52	13.00	1.98E+13	1.98E+13	-6.08E+12	9.76E+12
RB-83	520.41	46.00	5.48E+03	5.48E+03	4.80E+03	2.71E+03
	529.64	30.30	8.03E+03		1.14E+03	3.97E+03
	552.65	16.40	1.49E+04		2.19E+03	7.37E+03
KR-85	513.99	0.43	1.20E+02	1.20E+02	-7.68E+00	5.95E+01
SR-85	513.99	99.27	4.53E+04	4.53E+04	-2.89E+03	2.24E+04
Y-88	898.02	93.40	7.29E+02	2.64E+02	2.78E+02	3.60E+02
	1836.01	99.38	2.64E+02		2.96E+02	1.25E+02
NB-93M	16.57	9.43	4.68E+02	4.68E+02	-1.24E+03	2.30E+02
NB-94	702.63	100.00	4.29E-01	4.29E-01	-3.61E-02	2.12E-01
	871.10	100.00	5.65E-01		3.65E-02	2.79E-01
NB-95	765.79	99.81	8.80E+08	8.80E+08	8.56E+07	4.34E+08
@ NB-95M	235.69	25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
ZR-95	724.18	43.70	1.22E+05	9.94E+04	2.42E+04	6.00E+04
	756.72	55.30	9.94E+04		-5.68E+04	4.90E+04
@ MO-99	181.06	6.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	739.58	12.80	1.00E+26		1.00E+26	1.00E+20
@	778.00	4.50	1.00E+26		1.00E+26	1.00E+20
RU-103	497.08	89.00	8.80E+07	8.80E+07	3.03E+07	4.35E+07
RU-106	621.84	9.80	3.28E+01	3.28E+01	-7.13E+00	1.62E+01
AG-108M	433.93	89.90	4.99E-01	4.71E-01	-9.20E-03	2.47E-01
	614.37	90.40	4.71E-01		-3.12E-01	2.32E-01

Analysis Report for 1606041-01

GAS 1302

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	AG-108M	722.95	90.50	4.90E-01	4.71E-01	1.03E-01	2.41E-01
+	CD-109	88.03	* 3.72	5.98E+01	5.98E+01	2.95E+03	2.97E+01
	AG-110M	657.75	93.14	1.56E+01	1.56E+01	-1.30E+03	7.73E+00
		677.61	10.53	8.08E+01		-5.14E+00	3.98E+01
		706.67	16.46	5.25E+01		-1.96E+01	2.59E+01
		763.93	21.98	4.26E+01		-3.28E+00	2.10E+01
		884.67	71.63	1.60E+01		-6.54E+00	7.87E+00
		1384.27	23.94	1.75E+01		2.86E+00	8.32E+00
	CD-113M	263.70	0.02	1.52E+03	1.52E+03	1.12E+02	7.54E+02
+	SN-113	255.12	1.93	1.07E+04	4.86E+02	8.63E+03	5.31E+03
		391.69	* 64.90	4.86E+02		3.76E+02	2.41E+02
	TE123M	159.00	84.10	1.54E+02	1.54E+02	4.40E+01	7.63E+01
	SB-124	602.71	97.87	1.10E+05	9.08E+04	2.32E+04	5.44E+04
		645.85	7.26	1.53E+06		7.14E+05	7.56E+05
		722.78	11.10	9.97E+05		2.09E+05	4.91E+05
		1691.02	49.00	9.08E+04		1.42E+04	4.22E+04
	I-125	35.49	6.49	3.26E+06	3.26E+06	-2.29E+07	1.62E+06
	SB-125	176.33	6.89	7.84E+00	3.11E+00	4.23E+00	3.88E+00
		427.89	29.33	3.11E+00		-9.71E-01	1.54E+00
		463.38	10.35	9.67E+00		2.21E+00	4.79E+00
		600.56	17.80	4.93E+00		-1.33E+00	2.43E+00
		635.90	11.32	7.90E+00		5.16E-02	3.89E+00
	@ SB-126	414.70	83.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	666.33	99.60	1.00E+26		1.00E+26	1.00E+20
	@	695.00	99.60	1.00E+26		1.00E+26	1.00E+20
	@	720.50	53.80	1.00E+26		1.00E+26	1.00E+20
+	SN-126	87.57	* 37.00	1.20E+00	1.20E+00	5.91E+01	5.95E-01
	@ SB-127	473.00	25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	685.20	35.70	1.00E+26		1.00E+26	1.00E+20
	@	783.80	14.70	1.00E+26		1.00E+26	1.00E+20
	I-129	29.78	57.00	2.66E+00	2.66E+00	-1.89E+01	1.32E+00
		33.60	13.20	8.20E+00		1.87E+01	4.07E+00
		39.58	7.52	8.38E+00		-1.19E+01	4.16E+00
	@ I-131	284.30	6.05	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	364.48	81.20	1.00E+26		1.00E+26	1.00E+20
	@	636.97	7.26	1.00E+26		1.00E+26	1.00E+20
	@	722.89	1.80	1.00E+26		1.00E+26	1.00E+20
	@ TE-132	49.72	13.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	228.16	88.00	1.00E+26		1.00E+26	1.00E+20
	BA-133	81.00	33.00	1.17E+00	6.55E-01	-6.63E-01	5.82E-01
		302.84	17.80	2.08E+00		-7.66E-01	1.03E+00
		356.01	60.00	6.55E-01		-3.52E-01	3.23E-01
	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@ XE-133	81.00	38.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CS-134	563.23	8.38	1.34E+01	1.18E+00	7.19E+00	6.62E+00
		569.32	15.43	6.99E+00		-1.53E+00	3.45E+00
		604.70	97.60	1.18E+00		-9.28E-01	5.80E-01
		795.84	85.40	1.52E+00		-5.90E-01	7.50E-01
		801.93	8.73	1.55E+01		1.03E+01	7.66E+00
	CS-135	268.24	16.00	1.89E+00	1.89E+00	1.35E-02	9.33E-01
	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
	@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20

Analysis Report for 1606041-01
GAS 1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@ CS-136	153.22	7.46	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	163.89	4.61	1.00E+26		1.00E+26	1.00E+20
@	176.55	13.56	1.00E+26		1.00E+26	1.00E+20
@	273.65	12.66	1.00E+26		1.00E+26	1.00E+20
@	340.57	48.50	1.00E+26		1.00E+26	1.00E+20
@	818.50	99.70	1.00E+26		1.00E+26	1.00E+20
@	1048.07	79.60	1.00E+26		1.00E+26	1.00E+20
@	1235.34	19.70	1.00E+26		1.00E+26	1.00E+20
+ CS-137	661.65 *	85.12	1.03E+00	1.03E+00	9.06E+01	5.11E-01
LA-138	788.74	34.00	1.43E+00	2.83E-01	-4.59E-01	7.03E-01
	1435.80	66.00	2.83E-01		7.39E-02	1.33E-01
+ CE-139	165.85 *	80.35	8.57E+01	8.57E+01	1.27E+02	4.25E+01
@ BA-140	162.64	6.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	304.84	4.50	1.00E+26		1.00E+26	1.00E+20
@	423.70	3.20	1.00E+26		1.00E+26	1.00E+20
@	437.55	2.00	1.00E+26		1.00E+26	1.00E+20
@	537.32	25.00	1.00E+26		1.00E+26	1.00E+20
@ LA-140	328.77	20.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	487.03	45.50	1.00E+26		1.00E+26	1.00E+20
@	815.85	23.50	1.00E+26		1.00E+26	1.00E+20
@	1596.49	95.49	1.00E+26		1.00E+26	1.00E+20
CE-141	145.44	48.40	5.08E+09	5.08E+09	-2.44E+08	2.52E+09
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	3.09E+01	3.09E+01	1.38E+00	1.53E+01
PM-144	476.78	42.00	8.68E+00	3.38E+00	3.46E+00	4.30E+00
	618.01	98.60	3.38E+00		9.89E-01	1.67E+00
	696.49	99.49	3.38E+00		2.47E-01	1.67E+00
PM-145	36.85	21.70	3.76E+00	2.01E+00	-2.36E+00	1.87E+00
	37.36	39.70	2.01E+00		2.96E-01	9.97E-01
	42.30	15.10	4.65E+00		-4.46E+00	2.31E+00
	72.40	2.31	1.59E+01		-5.28E+00	7.89E+00
PM-146	453.90	39.94	1.70E+00	1.70E+00	1.12E+00	8.40E-01
	735.90	14.01	4.51E+00		-2.14E+00	2.22E+00
	747.13	13.10	5.07E+00		-2.74E+00	2.50E+00
@ ND-147	91.11	28.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	531.02	13.10	1.00E+26		1.00E+26	1.00E+20
@ PM-149	285.90	3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
EU-152	121.78	20.50	1.97E+00	1.43E+00	2.21E+01	9.82E-01
	244.69	5.40	6.51E+00		-1.29E+00	3.22E+00
	344.27	19.13	1.95E+00		-2.21E-01	9.62E-01
	778.89	9.20	6.03E+00		-3.47E+00	2.97E+00
	964.01	10.40	7.30E+00		-6.66E-01	3.60E+00
	1085.78	7.22	1.00E+01		4.43E+00	4.95E+00
	1112.02	9.60	7.70E+00		3.17E+00	3.80E+00
	1407.95	14.94	1.43E+00		5.82E-01	6.71E-01
GD-153	97.43	31.30	1.62E+01	1.62E+01	5.95E-01	8.01E+00
	103.18	22.20	2.30E+01		-5.44E+00	1.14E+01
EU-154	123.07	40.50	1.09E+00	9.82E-01	1.22E+01	5.41E-01
	723.30	19.70	2.80E+00		5.87E-01	1.38E+00
	873.19	11.50	6.19E+00		-2.49E+00	3.05E+00
	996.32	10.30	7.64E+00		6.22E+00	3.77E+00

Analysis Report for 1606041-01

GAS 1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	1004.76	17.90	4.26E+00	9.82E-01	4.73E-01	2.10E+00
	1274.45	35.50	9.82E-01		1.01E-01	4.73E-01
EU-155	86.50	30.90	3.07E+00	1.69E+00	7.57E+01	1.53E+00
	105.30	20.70	1.69E+00		5.37E-01	8.38E-01
@ EU-156	811.77	10.40	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1153.47	7.20	1.00E+26		1.00E+26	1.00E+20
@	1230.71	8.90	1.00E+26		1.00E+26	1.00E+20
HO-166M	184.41	72.60	3.79E-01	3.79E-01	1.35E-01	1.88E-01
	280.45	29.60	1.02E+00		-4.48E-02	5.06E-01
	410.94	11.10	3.80E+00		-1.72E-01	1.88E+00
	711.69	54.10	8.23E-01		4.65E-01	4.06E-01
TM-171	66.72	0.14	6.98E+02	6.98E+02	-1.39E+03	3.47E+02
HF-172	81.75	4.52	2.10E+01	6.70E+00	-2.81E+01	1.04E+01
	125.81	11.30	6.70E+00		-1.72E+00	3.32E+00
	@ LU-172	181.53	20.60		1.00E+26	1.00E+26	1.00E+20
@	810.06	16.63	1.00E+26	1.00E+26	1.00E+20	
@	912.12	15.25	1.00E+26	1.00E+26	1.00E+20	
@	1093.66	62.50	1.00E+26	1.00E+26	1.00E+20	
LU-173	100.72	5.24	1.96E+01	6.36E+00	-3.77E+00	9.72E+00
	272.11	21.20	6.36E+00		4.05E-01	3.15E+00
HF-175	343.40	84.00	1.71E+04	1.71E+04	6.03E+03	8.43E+03
LU-176	88.34	13.30	4.84E+00	3.30E-01	1.62E+02	2.41E+00
	201.83	86.00	3.30E-01		-1.51E-01	1.63E-01
	306.78	94.00	3.33E-01		6.88E-02	1.65E-01
TA-182	67.75	41.20	5.70E+02	5.70E+02	2.71E+02	2.83E+02
	1121.30	34.90	1.15E+03		4.13E+02	5.68E+02
	1189.05	16.23	1.83E+03		2.27E+02	8.95E+02
	1221.41	26.98	8.83E+02		2.94E+02	4.29E+02
	1231.02	11.44	1.89E+03		-1.68E+03	9.17E+02
IR-192	308.46	29.68	2.64E+04	2.49E+04	4.85E+03	1.31E+04
	468.07	48.10	2.49E+04		7.90E+03	1.23E+04
HG-203	279.19	77.30	3.76E+06	3.76E+06	1.35E+06	1.86E+06
BI-207	569.67	97.72	4.33E-01	4.33E-01	-7.51E-02	2.14E-01
	1063.62	74.90	8.62E-01		1.15E-02	4.25E-01
	TL-208	583.14	30.22		1.40E+00	3.96E-01	6.65E-01	6.91E-01
BI-210M	860.37	4.48	1.22E+01	6.72E-01	3.73E+00	6.04E+00
	2614.66	35.85	3.96E-01		3.22E-01	1.78E-01
	262.00	45.00	6.72E-01		1.35E-01	3.32E-01
	300.00	23.00	1.32E+00		-6.85E-02	6.53E-01
PB-210	46.50	4.25	1.70E+01	1.70E+01	-1.36E+02	8.45E+00
PB-211	404.84	2.90	1.20E+01	1.20E+01	-6.53E+00	5.93E+00
	831.96	2.90	1.80E+01		-4.21E+00	8.88E+00
+ BI-212	727.17	* 11.80	4.21E+00	4.21E+00	2.52E+00	2.08E+00
	1620.62	2.75	5.70E+00		-4.08E-01	2.63E+00
+ PB-212	238.63	* 44.60	8.41E-01	8.41E-01	4.91E-01	4.17E-01
	300.09	3.41	8.91E+00		-4.62E-01	4.41E+00
BI-214	609.31	46.30	9.42E-01	9.42E-01	7.66E-01	4.65E-01
	1120.29	15.10	3.86E+00		-1.96E-01	1.90E+00
	1764.49	15.80	1.06E+00		6.66E-02	4.89E-01
	2204.22	4.98	3.73E+00		1.68E+00	1.73E+00
+ PB-214	295.21	19.19	1.62E+00	9.27E-01	4.52E-01	8.03E-01
	351.92	* 37.19	9.27E-01		4.65E-01	4.59E-01
RN-219	401.80	6.50	5.33E+00	5.33E+00	-6.92E-01	2.63E+00

Analysis Report for 1606041-01
GAS 1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RA-223	323.87	3.88	8.12E+00	8.12E+00	2.40E+00	4.02E+00
RA-224	240.98	3.95	8.02E+00	8.02E+00	8.54E+00	3.98E+00
@ RA-225	40.00	31.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
RA-226	186.21	3.28	8.60E+00	8.60E+00	4.94E+00	4.26E+00
TH-227	50.10	8.40	8.86E+00	2.68E+00	3.71E+01	4.41E+00
	236.00	11.50	2.68E+00		-6.99E-01	1.33E+00
	256.20	6.30	4.87E+00		3.63E+00	2.41E+00
AC-228	338.32	11.40	2.80E+00	2.25E+00	5.27E-01	1.39E+00
	911.07	27.70	2.25E+00		-1.69E+00	1.11E+00
	969.11	16.60	3.73E+00		-1.44E-01	1.84E+00
TH-230	48.44	16.90	4.37E+00	4.37E+00	8.00E+00	2.18E+00
	62.85	4.60	1.91E+01		4.90E+02	9.51E+00
	67.67	0.37	9.12E+01		4.34E+01	4.53E+01
PA-231	283.67	1.60	1.89E+01	1.32E+01	-4.50E+00	9.35E+00
	302.67	2.30	1.32E+01		-4.88E+00	6.54E+00
TH-231	25.64	14.70	6.08E+01	5.16E+00	-3.03E+03	3.03E+01
	84.21	6.40	5.16E+00		-1.71E+00	2.56E+00
PA-233	311.98	38.60	9.18E+11	9.18E+11	2.07E+11	4.54E+11
PA-234	131.20	20.40	1.17E+00	1.17E+00	2.46E-01	5.82E-01
	733.99	8.80	4.98E+00		8.06E-01	2.45E+00
	946.00	12.00	5.55E+00		-2.39E+00	2.74E+00
PA-234M	1001.03	0.92	6.69E+01	6.69E+01	2.29E+01	3.30E+01
TH-234	63.29	3.80	1.02E+01	1.02E+01	-1.40E+03	5.08E+00
U-235	143.76	10.50	2.29E+00	2.29E+00	1.29E+00	1.14E+00
	163.35	4.70	5.39E+00		2.25E-01	2.67E+00
	205.31	4.70	6.14E+00		-1.43E+00	3.04E+00
NP-237	86.50	12.60	4.98E+00	4.98E+00	1.23E+02	2.48E+00
@ NP-239	106.10	22.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	228.18	10.70	1.00E+26		1.00E+26	1.00E+20
@	277.60	14.10	1.00E+26		1.00E+26	1.00E+20
+ AM-241	59.54	* 35.90	3.74E+00	3.74E+00	2.14E+02	1.86E+00
AM-243	74.67	66.00	4.88E-01	4.88E-01	-3.69E-01	2.42E-01
CM-243	209.75	3.29	9.55E+00	2.34E+00	-3.29E+00	4.73E+00
	228.14	10.60	3.13E+00		7.25E-01	1.55E+00
	277.60	14.00	2.34E+00		1.57E+00	1.16E+00

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

Analysis Report for 1606041-01
GAS 1302

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: GAS 1302

Elapsed Live time: 1800

Elapsed Real Time: 1825

Channel	1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193	201	209	217	225	233	241	249	257	265	273	281	289	297	305	313	321	329	337	345	353	361																																																																																																																																																																																																																																																																																																																																																					
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																			
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																		
	0	3	1037	1439	3456	19134	57884	9401	9032	17846	3967	1181	887	863	836	1294	2310	1170	879	938	1300	1198	1065	1082	1259	1412	1627	1869	2044	2211	2444	2943	3776	5004	5377	5022	4995	5051	5171	5323	5649	6302	8404	48498	43394	3265	2047	1918	1536	1491	1697	1765	1791	1759	1747	1740	1706	1740	1640	1745	1712	1797	1825	1713	1723	1756	1768	1813	1904	1899	2211	7161	89	22025	4481	1265	1093	1068	990	864	914	97	962	871	888	969	955	945	908	995	105	894	900	936	944	917	890	920	935	113	940	960	928	926	973	975	970	925	121	1070	1894	4492	1505	904	940	875	856	129	898	888	912	871	886	858	900	843	137	1189	1069	822	819	799	833	853	800	145	841	801	787	839	792	776	796	819	153	827	803	836	773	790	860	783	784	161	757	781	750	760	814	933	967	741	169	711	732	746	841	791	741	801	774	177	757	765	747	735	764	719	852	763	185	827	807	909	897	889	877	813	841	193	802	853	829	849	826	849	817	809	201	817	742	800	823	831	777	826	791	209	839	800	787	828	832	859	883	934	217	875	889	889	914	871	847	895	878	225	830	797	847	800	805	822	757	772	233	785	766	846	760	770	739	901	811	241	780	740	762	742	706	659	688	697	249	684	713	720	668	701	705	692	717	257	699	642	626	629	671	669	632	647	265	628	656	601	674	648	603	612	599	273	636	626	552	605	619	602	618	615	281	555	583	590	582	586	582	609	600	289	596	548	605	599	617	564	596	576	297	572	564	537	534	544	552	558	506	305	542	561	586	548	570	543	585	553	313	569	547	546	536	528	490	562	528	321	512	571	550	514	470	536	527	493	329	544	525	528	529	510	485	526	518	337	525	516	546	500	467	504	474	529	345	531	508	457	540	496	497	502	542	353	570	489	511	480	446	501	560	492	361	460	475	501	460	494	490	505	459

369: 507 460 474 454 495 482 505 484

Sample Title: GAS 1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	515	475	465	458	501	487	490	466
385:	482	479	459	474	451	479	528	538
393:	544	488	493	452	502	437	467	463
401:	483	496	459	440	493	484	464	502
409:	488	533	467	480	457	440	471	507
417:	496	453	497	453	479	508	480	501
425:	460	503	490	504	459	458	514	509
433:	492	484	492	453	474	524	498	504
441:	531	518	499	528	518	492	457	484
449:	443	504	522	534	492	467	514	562
457:	501	503	490	488	545	494	519	533
465:	508	480	547	537	510	534	521	481
473:	503	483	493	489	480	482	432	411
481:	423	424	428	419	432	386	410	384
489:	394	330	401	347	399	379	351	382
497:	338	352	370	379	336	339	354	342
505:	341	348	329	339	346	362	405	409
513:	366	343	351	312	347	365	302	380
521:	329	329	358	333	283	320	343	328
529:	294	267	305	338	295	299	318	331
537:	296	299	321	319	300	273	312	306
545:	286	270	338	288	312	285	285	300
553:	293	283	313	297	277	285	274	307
561:	273	304	334	284	261	273	274	268
569:	257	269	262	242	264	272	263	255
577:	290	265	291	284	303	256	306	298
585:	257	294	271	261	246	251	268	267
593:	244	226	265	244	263	266	269	276
601:	278	272	273	237	268	314	277	259
609:	291	325	275	242	245	282	271	240
617:	246	281	271	248	275	229	262	255
625:	243	242	276	239	282	246	216	293
633:	258	228	233	239	287	265	263	233
641:	271	229	257	301	257	240	241	287
649:	251	268	227	276	280	253	277	259
657:	267	269	299	470	3060	15839	12378	1683
665:	443	387	275	224	231	220	232	228
673:	231	208	214	243	216	212	229	261
681:	215	253	219	221	229	225	237	218
689:	216	204	229	221	214	221	221	204
697:	228	223	238	209	233	206	239	200
705:	243	206	204	226	222	233	227	241
713:	215	228	248	211	220	228	216	218
721:	226	235	193	177	224	243	243	232
729:	225	210	228	203	213	230	176	207
737:	237	217	189	239	215	249	218	219
745:	244	209	242	239	232	206	234	262
753:	228	199	206	227	228	215	219	241
761:	238	261	215	218	211	235	212	241
769:	215	212	230	223	233	244	244	223
777:	218	241	215	222	258	232	249	244
785:	298	230	226	250	250	213	228	234
793:	224	216	229	224	236	219	234	254

801: 227 240 249 235 261 253 191 232

Sample Title: GAS 1302

Channel	1	2	3	4	5	6	7	8
809:	245	237	221	257	220	228	267	248
817:	237	237	262	249	272	268	269	249
825:	234	265	240	266	223	260	275	235
833:	274	232	240	249	264	242	229	232
841:	241	257	268	254	253	243	241	233
849:	260	260	230	255	266	246	225	241
857:	259	259	255	291	258	246	253	274
865:	256	271	277	284	264	271	285	254
873:	275	264	267	264	295	275	276	290
881:	286	283	248	277	245	270	294	264
889:	325	296	293	252	256	283	294	289
897:	272	294	310	313	295	287	302	269
905:	328	315	333	319	301	325	291	310
913:	292	312	342	329	348	307	307	317
921:	287	311	317	296	303	307	319	300
929:	275	334	344	304	344	332	337	325
937:	318	335	341	347	339	346	301	317
945:	334	354	329	337	338	360	330	345
953:	338	323	343	346	335	376	336	358
961:	335	326	348	287	290	297	269	291
969:	279	243	268	271	258	273	260	233
977:	261	253	283	282	288	281	213	257
985:	259	230	269	264	252	278	240	239
993:	278	256	288	241	256	267	276	252
1001:	237	249	260	257	247	245	226	235
1009:	232	250	244	248	228	252	215	256
1017:	218	234	252	246	262	249	220	262
1025:	237	237	253	232	224	202	193	244
1033:	232	215	209	225	232	227	226	215
1041:	215	190	227	237	252	225	204	213
1049:	234	221	242	235	205	214	202	215
1057:	253	209	243	210	239	240	210	234
1065:	234	213	218	228	225	238	213	203
1073:	189	208	221	254	237	235	230	220
1081:	220	188	237	232	230	223	243	214
1089:	243	232	231	235	231	251	222	259
1097:	211	236	224	216	222	224	226	241
1105:	228	238	240	240	241	220	229	231
1113:	257	221	225	220	193	206	195	189
1121:	191	173	193	174	168	154	156	160
1129:	144	146	153	148	157	151	147	149
1137:	125	144	136	146	150	124	147	148
1145:	145	146	143	144	124	128	130	128
1153:	133	143	124	143	124	140	125	135
1161:	127	124	127	143	137	136	141	131
1169:	136	136	223	1282	7645	12946	5180	746
1177:	303	207	119	104	93	100	92	101
1185:	83	98	96	88	91	84	85	105
1193:	97	81	77	72	77	66	64	76
1201:	76	49	61	58	50	65	73	58
1209:	63	59	70	58	59	53	58	53
1217:	47	59	61	59	62	46	54	53
1225:	47	59	61	47	58	25	47	51

1233: 43 49 60 48 32 43 38 51

Sample Title: GAS 1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	45	42	33	43	26	43	37	43
1249:	38	40	40	37	42	45	39	43
1257:	47	38	39	28	34	31	38	35
1265:	32	32	28	25	17	28	37	33
1273:	40	30	32	35	30	44	36	30
1281:	29	31	24	26	29	37	23	29
1289:	28	24	23	37	27	30	39	20
1297:	30	33	24	30	30	33	36	30
1305:	25	27	28	37	33	25	34	29
1313:	33	31	32	28	30	37	34	31
1321:	47	38	28	33	37	45	34	41
1329:	46	101	741	4941	11500	6637	1141	233
1337:	131	56	16	14	16	15	22	22
1345:	24	19	14	10	16	14	19	21
1353:	15	23	18	15	12	14	14	15
1361:	11	14	12	13	13	9	11	10
1369:	18	16	16	11	12	14	14	16
1377:	20	21	18	14	16	11	12	18
1385:	17	24	19	14	16	17	20	15
1393:	15	16	7	14	16	12	14	7
1401:	14	12	13	11	15	16	11	8
1409:	11	13	12	8	8	9	9	9
1417:	14	15	15	15	20	11	14	14
1425:	11	11	12	10	12	7	7	11
1433:	16	13	9	8	12	15	14	11
1441:	13	12	11	13	7	10	4	14
1449:	6	15	11	8	11	7	18	14
1457:	13	9	12	17	27	17	8	7
1465:	15	9	11	16	12	14	11	8
1473:	6	7	9	18	12	12	11	14
1481:	17	14	14	7	14	15	14	12
1489:	9	11	7	11	15	9	12	10
1497:	12	16	5	9	7	6	15	8
1505:	4	15	10	14	16	15	8	9
1513:	17	19	8	10	16	10	9	7
1521:	12	4	14	8	6	13	13	9
1529:	6	7	9	9	9	17	12	9
1537:	5	15	8	7	10	16	5	9
1545:	13	14	8	11	12	9	11	11
1553:	8	14	9	16	8	18	8	15
1561:	9	14	12	11	9	8	7	10
1569:	12	8	14	10	16	10	8	7
1577:	7	13	10	10	9	7	7	10
1585:	8	7	10	8	9	10	9	7
1593:	6	5	7	7	5	11	5	10
1601:	8	7	6	10	7	10	8	11
1609:	6	9	10	2	7	12	10	8
1617:	6	8	10	9	5	6	6	8
1625:	5	13	7	8	5	7	10	5
1633:	7	13	11	11	12	8	8	10
1641:	7	5	9	10	11	11	6	10
1649:	7	9	9	8	7	6	8	10
1657:	1	8	8	7	10	9	6	5

1665: 8 7 10 6 7 6 9 6

Sample Title: GAS 1302

Channel	1	2	3	4	5	6	7	8
1673:	4	9	11	8	9	6	12	6
1681:	11	9	7	10	10	8	8	16
1689:	6	6	6	7	7	12	5	10
1697:	6	6	13	7	9	8	11	7
1705:	10	5	7	11	10	5	5	11
1713:	7	12	7	10	9	6	10	7
1721:	7	6	8	5	7	4	8	4
1729:	11	9	6	9	9	10	14	6
1737:	8	7	8	3	8	9	5	6
1745:	8	3	8	5	8	10	5	9
1753:	10	12	8	6	3	7	7	8
1761:	7	5	3	9	14	7	6	5
1769:	8	7	7	6	1	4	10	2
1777:	5	7	7	9	11	4	6	8
1785:	5	5	6	6	2	4	5	6
1793:	5	10	3	9	8	8	10	11
1801:	11	10	3	9	10	3	11	12
1809:	6	8	12	11	7	7	8	4
1817:	4	6	6	5	9	14	4	7
1825:	9	13	5	10	10	7	11	4
1833:	4	4	13	21	31	17	9	5
1841:	5	2	3	5	6	6	5	9
1849:	5	6	4	2	8	5	9	7
1857:	3	4	6	4	5	8	5	7
1865:	11	4	4	7	7	12	2	8
1873:	8	4	4	4	4	6	11	7
1881:	7	10	4	6	10	13	5	6
1889:	3	3	8	8	8	3	8	5
1897:	3	4	4	5	8	6	8	3
1905:	7	6	3	4	8	8	1	5
1913:	4	11	6	9	7	6	8	10
1921:	15	9	7	5	6	6	6	9
1929:	10	12	7	10	5	6	6	5
1937:	5	5	6	13	4	11	3	5
1945:	6	8	2	5	11	6	7	6
1953:	10	8	9	10	13	10	7	3
1961:	5	4	6	4	4	5	4	8
1969:	10	5	3	3	9	8	6	9
1977:	6	7	6	7	9	3	13	8
1985:	5	5	6	8	8	3	8	7
1993:	6	8	5	5	6	3	6	9
2001:	4	3	4	9	6	11	7	8
2009:	4	6	2	3	5	11	4	5
2017:	5	8	8	10	2	6	11	6
2025:	7	4	6	10	7	9	6	5
2033:	4	7	5	8	7	7	2	7
2041:	6	7	2	8	4	4	8	10
2049:	8	1	6	12	2	3	10	7
2057:	5	5	8	6	5	5	6	2
2065:	10	5	5	7	4	3	6	10
2073:	5	3	8	4	5	1	2	4
2081:	2	8	5	6	4	4	8	1
2089:	8	7	4	5	3	6	9	5

2097: 5 3 1 3 7 11 3 6

Sample Title: GAS 1302

Channel	1	2	3	4	5	6	7	8
2105:	5	5	4	3	3	5	6	2
2113:	4	1	5	6	4	6	7	6
2121:	4	3	3	4	5	7	4	5
2129:	0	8	4	7	2	3	1	5
2137:	5	7	7	6	11	4	6	4
2145:	4	5	5	3	11	4	3	1
2153:	8	3	6	3	5	11	8	5
2161:	7	3	2	4	6	1	4	6
2169:	3	6	8	6	6	3	5	5
2177:	7	3	6	1	6	6	2	7
2185:	4	4	3	7	6	3	6	4
2193:	6	5	2	5	7	6	8	5
2201:	3	7	8	4	13	5	2	4
2209:	1	2	5	8	6	8	4	8
2217:	7	8	3	3	7	2	5	4
2225:	3	3	7	13	9	7	4	8
2233:	15	6	3	7	5	8	8	5
2241:	7	3	6	6	3	5	5	10
2249:	6	6	5	7	6	8	6	5
2257:	5	7	3	4	10	11	6	8
2265:	7	4	5	8	7	3	9	5
2273:	5	7	5	8	3	4	8	5
2281:	4	3	6	7	2	3	10	6
2289:	12	8	1	6	4	4	9	5
2297:	5	5	8	10	6	6	4	6
2305:	4	2	5	2	3	1	6	1
2313:	4	2	7	1	4	1	3	2
2321:	2	5	2	4	3	4	2	0
2329:	3	1	8	3	0	2	4	4
2337:	2	0	5	2	1	4	5	2
2345:	1	3	5	3	8	2	0	6
2353:	1	1	3	2	5	3	1	0
2361:	1	3	2	1	0	4	5	3
2369:	0	1	3	3	4	3	0	2
2377:	1	2	3	0	1	2	3	4
2385:	1	0	0	0	4	3	2	1
2393:	2	1	0	3	1	0	0	3
2401:	2	1	1	2	1	2	5	0
2409:	1	0	0	3	1	1	2	0
2417:	2	0	2	0	2	1	0	0
2425:	0	3	0	0	4	0	1	1
2433:	1	0	0	2	0	4	2	0
2441:	0	2	0	2	1	0	0	3
2449:	0	0	0	2	0	0	1	1
2457:	0	1	0	1	1	1	0	1
2465:	2	1	0	0	2	0	0	0
2473:	1	1	0	2	1	1	0	0
2481:	1	1	0	2	0	2	1	3
2489:	1	1	0	0	1	0	1	1
2497:	1	1	1	1	1	1	8	33
2505:	95	117	78	11	1	1	0	0
2513:	0	0	1	0	1	0	1	2
2521:	0	0	0	0	0	0	0	0

2529: 0 0 0 0 1 0 0 0

Sample Title: GAS 1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	0	0	0	1	0
2545:	0	1	0	1	0	0	0	0
2553:	0	0	0	0	0	0	0	2
2561:	0	3	0	0	1	1	0	0
2569:	0	0	1	0	0	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	0	0	0	0	0	0	0
2593:	0	0	0	0	0	0	1	0
2601:	0	0	0	0	0	0	0	0
2609:	1	0	0	1	6	6	8	3
2617:	1	1	0	1	1	1	0	1
2625:	0	0	0	0	3	1	0	0
2633:	0	0	0	2	0	0	0	0
2641:	0	0	0	0	0	0	0	0
2649:	0	0	0	1	0	0	0	0
2657:	0	0	0	1	1	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	0	0	0	0	0	0	0
2681:	0	3	0	0	0	1	0	1
2689:	0	0	0	0	0	1	0	0
2697:	0	0	0	0	0	0	0	0
2705:	0	0	0	0	0	1	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	0	0	1	0	0
2729:	0	0	0	0	0	0	0	0
2737:	1	0	1	0	0	0	0	0
2745:	0	0	1	0	0	0	0	1
2753:	0	0	0	0	0	0	0	0
2761:	1	0	0	1	0	0	0	0
2769:	0	0	0	0	0	0	1	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	0	0	0	0	0	0	0	0
2801:	0	2	0	0	0	0	0	0
2809:	0	0	1	0	1	0	1	0
2817:	0	0	1	1	1	0	0	0
2825:	0	0	0	0	1	0	0	0
2833:	0	0	0	0	0	0	0	1
2841:	0	0	1	0	0	0	0	0
2849:	1	1	0	1	0	1	0	0
2857:	0	0	0	0	1	0	0	0
2865:	1	0	0	0	0	0	0	1
2873:	0	0	0	0	0	0	2	0
2881:	1	0	0	0	1	0	0	0
2889:	0	0	0	1	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	0	0	1	0
2913:	1	0	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	1	0	1	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	1	1	0	0	0
2953:	0	0	0	0	0	0	0	0

2961: 0 0 0 0 0 0 0 0

Sample Title: GAS 1302

Channel								
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	0	0	0	0
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	0	1	1	0	0
3001:	0	0	0	0	0	0	0	0
3009:	0	0	0	0	0	0	0	0
3017:	0	1	0	0	0	0	0	0
3025:	0	0	0	0	0	1	0	0
3033:	0	0	0	0	0	0	0	0
3041:	1	0	0	1	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	1	0	0	1	0	0
3065:	1	0	0	0	0	0	0	0
3073:	1	0	0	0	0	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	0	0	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	1	0	0	0	0	0
3113:	0	0	0	0	0	0	2	0
3121:	0	0	0	0	1	0	0	1
3129:	1	0	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	0	1	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	1	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	1	0	0	1	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	0	0	1	0	0	0
3209:	1	0	0	0	0	0	0	1
3217:	0	0	0	0	0	0	0	0
3225:	0	0	1	1	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	1	0	0	0	0	0	0
3249:	0	0	0	1	0	1	0	0
3257:	0	0	0	0	0	0	0	1
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	1	1	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	1	1	0	0	0	0
3313:	0	0	0	0	0	0	0	1
3321:	0	0	1	0	0	1	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	1	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	1	1	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	0	0	0	1
3385:	0	0	0	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0 0

Sample Title: GAS 1302

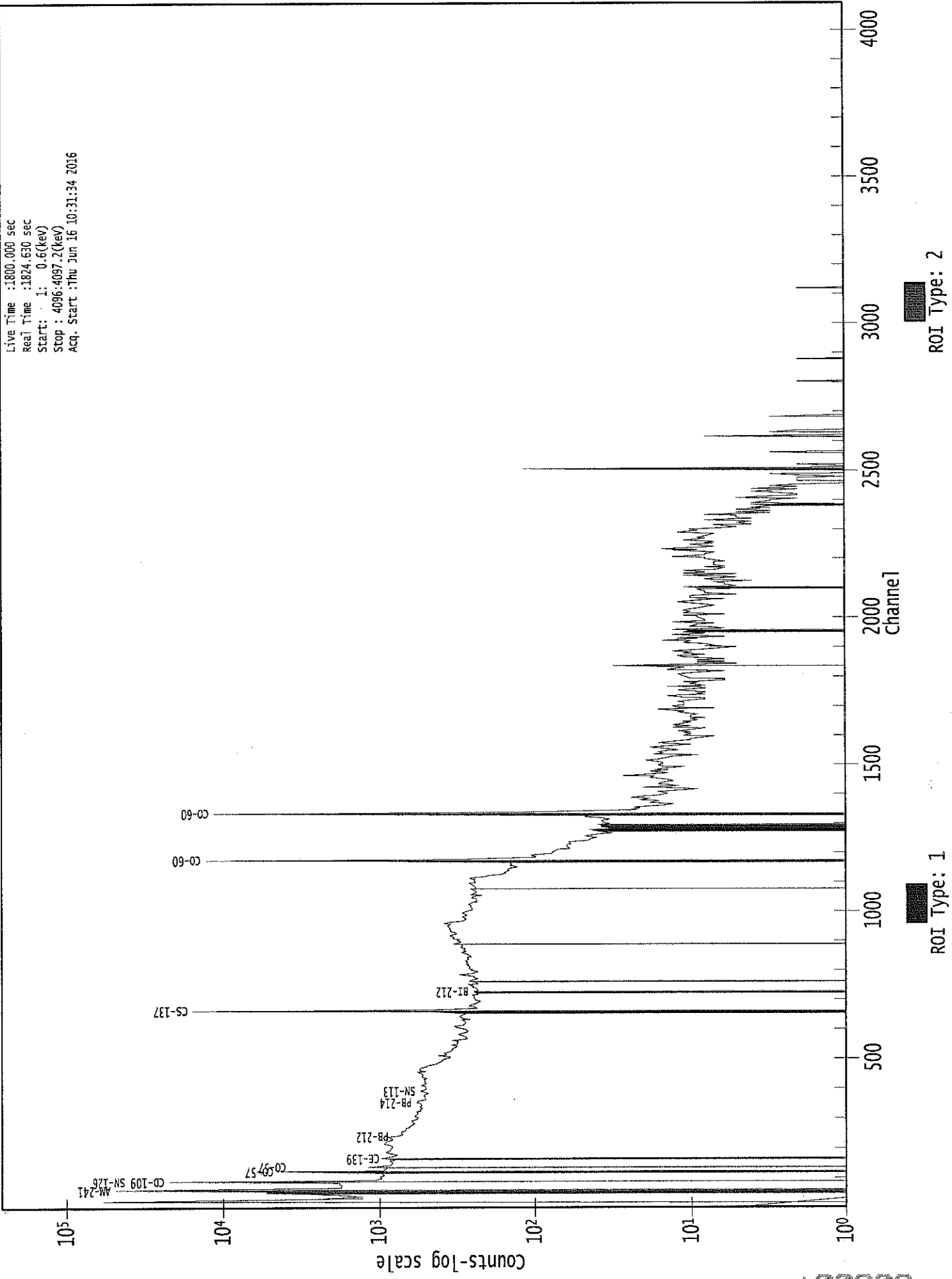
Channel	1	2	3	4	5	6	7	8
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	1	0
3433:	0	0	0	0	0	0	0	0
3441:	0	1	0	0	0	0	0	0
3449:	0	0	0	0	0	1	0	0
3457:	0	0	1	0	0	0	0	0
3465:	0	0	0	0	0	0	0	1
3473:	0	1	0	0	0	0	0	0
3481:	0	0	0	0	0	1	0	0
3489:	0	0	0	1	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	1	0	0	0	0	0	0
3513:	0	0	0	1	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	1
3537:	0	1	0	0	0	0	0	0
3545:	0	0	0	0	1	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	1	0	0	0	1	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	1	0	0	0	1	0	0
3593:	0	0	0	1	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	1	0	0	0	0
3617:	0	0	1	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	1	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	1	0	0	1	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	1	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	1	0	0	0	0	0
3721:	0	0	1	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	1
3745:	0	1	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

3825: 0 0 0 0 0 0 0 0 0

Sample Title: GAS 1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	1	0	0	0	0	0	1	0
3865:	0	0	1	1	0	0	1	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	1	0	1	0	0	0
3897:	0	1	0	0	1	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	1	0
3937:	0	0	0	0	1	0	0	0
3945:	0	0	0	0	0	0	1	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	1
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	1	0	0	0	0	0	1	0
4017:	0	1	0	0	0	0	0	0
4025:	0	0	0	0	0	0	1	0
4033:	1	0	0	0	0	0	0	0
4041:	0	0	1	0	0	0	0	0
4049:	0	1	0	0	0	0	0	0
4057:	0	0	0	0	0	0	1	1
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	1	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000038988.CNF



Analysis Report for 1606041-02
BLANK

6/16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-02
Sample Description : BLANK
Sample Type : SOIL

Sample Size : 7.834E+02 grams
Facility : Countroom

Sample Taken On : 6/16/2016 4:29:10PM
Acquisition Started : 6/16/2016 10:26:30AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3600.7 seconds

Dead Time : 0.02 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 7 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 4/6/2016
Efficiency Calibration Description :

Sample Number : 38985

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Ag
6/16/16

Analysis Report for 1606041-02

BLANK

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 11:26:34AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096
 Peak Search Sensitivity : 2.50

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
1	12.97	13.09	0.0000	0.00
2	199.50	199.52	0.0000	0.00
3	300.20	300.16	0.0000	0.00
4	439.71	439.60	0.0000	0.00
5	512.98	512.84	0.0000	0.00
6	584.76	584.58	0.0000	0.00
7	615.96	615.77	0.0000	0.00
8	632.12	631.92	0.0000	0.00
9	751.15	750.89	0.0000	0.00
10	818.54	818.25	0.0000	0.00
11	911.60	911.27	0.0000	0.00
12	931.98	931.64	0.0000	0.00
13	1019.88	1019.51	0.0000	0.00
14	1103.24	1102.84	0.0000	0.00
15	1126.83	1126.42	0.0000	0.00
16	1133.11	1132.69	0.0000	0.00
17	1173.28	1172.85	0.0000	0.00
18	1429.82	1429.31	0.0000	0.00
19	1463.73	1463.21	0.0000	0.00
20	1764.26	1763.65	0.0000	0.00

? = Adjacent peak noted
 Errors quoted at 2.000sigma

Analysis Report for 1606041-02

BLANK

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 11:26:34AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	12.97	12 -	15	13.09	1.99E+03	113.00	1.03E+03	1.04
2	199.50	197 -	203	199.52	2.50E+01	27.36	1.16E+02	4.55
3	300.20	298 -	303	300.16	1.76E+01	18.87	5.27E+01	1.36
4	439.71	433 -	444	439.60	2.60E+01	23.07	5.20E+01	3.54
m 5	512.98	506 -	522	512.84	1.84E+01	19.59	1.41E+01	1.77
6	584.76	579 -	590	584.58	2.78E+01	21.17	4.24E+01	7.28
7	615.96	614 -	618	615.77	1.09E+01	11.22	1.61E+01	2.71
8	632.12	625 -	637	631.92	2.37E+01	20.63	3.85E+01	2.78
9	751.15	747 -	753	750.89	9.70E+00	9.84	1.06E+01	0.99
10	818.54	816 -	820	818.25	7.50E+00	7.25	5.00E+00	1.88
11	911.60	908 -	914	911.27	1.09E+01	8.97	6.14E+00	3.73
12	931.98	929 -	935	931.64	6.50E+00	8.03	7.00E+00	2.85
13	1019.88	1016 -	1023	1019.51	6.82E+00	8.72	8.36E+00	2.28
14	1103.24	1100 -	1105	1102.84	8.25E+00	8.66	7.50E+00	2.83
15	1126.83	1124 -	1129	1126.42	9.86E+00	7.28	2.27E+00	3.39
16	1133.11	1130 -	1137	1132.69	7.50E+00	7.48	5.00E+00	1.56
17	1173.28	1169 -	1177	1172.85	1.55E+01	9.60	5.00E+00	3.88
18	1429.82	1427 -	1431	1429.31	5.50E+00	6.67	5.00E+00	1.79
19	1463.73	1457 -	1470	1463.21	1.93E+01	11.87	7.48E+00	8.53
20	1764.26	1760 -	1765	1763.65	4.25E+00	5.74	3.50E+00	1.10

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 11:26:34AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Analysis Report for 1606041-02

BLANK

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	12.97	12 -	15	1.99E+03	113.00	1.03E+03	5.69E+01
2	199.50	197 -	203	2.50E+01	27.36	1.16E+02	2.09E+01
3	300.20	298 -	303	1.76E+01	18.87	5.27E+01	1.39E+01
4	439.71	433 -	444	2.60E+01	23.07	5.20E+01	1.70E+01
m 5	512.98	506 -	522	1.84E+01	19.59	1.41E+01	6.18E+00
6	584.76	579 -	590	2.78E+01	21.17	4.24E+01	1.51E+01
7	615.96	614 -	618	1.09E+01	11.22	1.61E+01	7.45E+00
8	632.12	625 -	637	2.37E+01	20.63	3.85E+01	1.49E+01
9	751.15	747 -	753	9.70E+00	9.84	1.06E+01	6.26E+00
10	818.54	816 -	820	7.50E+00	7.25	5.00E+00	3.90E+00
11	911.60	908 -	914	1.09E+01	8.97	6.14E+00	4.99E+00
12	931.98	929 -	935	6.50E+00	8.03	7.00E+00	5.10E+00
13	1019.88	1016 -	1023	6.82E+00	8.72	8.36E+00	5.74E+00
14	1103.24	1100 -	1105	8.25E+00	8.66	7.50E+00	5.33E+00
15	1126.83	1124 -	1129	9.86E+00	7.28	2.27E+00	3.03E+00
16	1133.11	1130 -	1137	7.50E+00	7.48	5.00E+00	4.19E+00
17	1173.28	1169 -	1177	1.55E+01	9.60	5.00E+00	4.52E+00
18	1429.82	1427 -	1431	5.50E+00	6.67	5.00E+00	3.90E+00
19	1463.73	1457 -	1470	1.93E+01	11.87	7.48E+00	6.57E+00
20	1764.26	1760 -	1765	4.25E+00	5.74	3.50E+00	3.29E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 11:26:34AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	12.97	12 -	15	13.09	1.99E+03	113.00	1.03E+03	.....
2	199.50	197 -	203	199.52	2.50E+01	27.36	1.16E+02	.....
3	300.20	298 -	303	300.16	1.76E+01	18.87	5.27E+01	GA-67

: 00307

Analysis Report for 1606041-02

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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
								PB-212 BI-210M
m 4	439.71	433 -	444	439.60	2.60E+01	23.07	5.20E+01	.....
5	512.98	506 -	522	512.84	1.84E+01	19.59	1.41E+01	.....
6	584.76	579 -	590	584.58	2.78E+01	21.17	4.24E+01	.....
7	615.96	614 -	618	615.77	1.09E+01	11.22	1.61E+01	.....
8	632.12	625 -	637	631.92	2.37E+01	20.63	3.85E+01	.....
9	751.15	747 -	753	750.89	9.70E+00	9.84	1.06E+01	.....
10	818.54	816 -	820	818.25	7.50E+00	7.25	5.00E+00	CS-136
11	911.60	908 -	914	911.27	1.09E+01	8.97	6.14E+00	LU-172 AC-228
12	931.98	929 -	935	931.64	6.50E+00	8.03	7.00E+00	.....
13	1019.88	1016 -	1023	1019.51	6.82E+00	8.72	8.36E+00	.....
14	1103.24	1100 -	1105	1102.84	8.25E+00	8.66	7.50E+00	.....
15	1126.83	1124 -	1129	1126.42	9.86E+00	7.28	2.27E+00	.....
16	1133.11	1130 -	1137	1132.69	7.50E+00	7.48	5.00E+00	.....
17	1173.28	1169 -	1177	1172.85	1.55E+01	9.60	5.00E+00	CO-60
18	1429.82	1427 -	1431	1429.31	5.50E+00	6.67	5.00E+00	.....
19	1463.73	1457 -	1470	1463.21	1.93E+01	11.87	7.48E+00	.....
20	1764.26	1760 -	1765	1763.65	4.25E+00	5.74	3.50E+00	BI-214

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 11:26:34AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	12.97	1.99E+03	113.00	1.22E-05	1.66E-03
2	199.50	2.50E+01	27.36	1.91E-02	2.38E-03
3	300.20	1.76E+01	18.87	1.45E-02	2.21E-03
4	439.71	2.60E+01	23.07	1.10E-02	1.80E-03
m 5	512.98	1.84E+01	19.59	9.74E-03	1.42E-03
6	584.76	2.78E+01	21.17	8.77E-03	1.05E-03
7	615.96	1.09E+01	11.22	8.41E-03	8.88E-04
8	632.12	2.37E+01	20.63	8.24E-03	8.05E-04
9	751.15	9.70E+00	9.84	7.15E-03	7.67E-04
10	818.54	7.50E+00	7.25	6.66E-03	8.53E-04

Analysis Report for 1606041-02

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Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
11	911.60	1.09E+01	8.97	6.09E-03	9.28E-04
12	931.98	6.50E+00	8.03	5.98E-03	8.87E-04
13	1019.88	6.82E+00	8.72	5.56E-03	7.09E-04
14	1103.24	8.25E+00	8.66	5.22E-03	5.40E-04
15	1126.83	9.86E+00	7.28	5.13E-03	4.93E-04
16	1133.11	7.50E+00	7.48	5.11E-03	4.80E-04
17	1173.28	1.55E+01	9.60	4.97E-03	3.99E-04
18	1429.82	5.50E+00	6.67	4.29E-03	3.70E-04
19	1463.73	1.93E+01	11.87	4.23E-03	3.73E-04
20	1764.26	4.25E+00	5.74	3.77E-03	3.95E-04

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 11:26:34AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038677.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	12.97	1.99E+03	113.00			1.99E+03	1.13E+02
2	199.50	2.50E+01	27.36			2.50E+01	2.74E+01
3	300.20	1.76E+01	18.87			1.76E+01	1.89E+01
4	439.71	2.60E+01	23.07			2.60E+01	2.31E+01
m 5	512.98	1.84E+01	19.59			1.84E+01	1.96E+01
6	584.76	2.78E+01	21.17			2.78E+01	2.12E+01
7	615.96	1.09E+01	11.22			1.09E+01	1.12E+01
8	632.12	2.37E+01	20.63			2.37E+01	2.06E+01
9	751.15	9.70E+00	9.84			9.70E+00	9.84E+00
10	818.54	7.50E+00	7.25			7.50E+00	7.25E+00
11	911.60	1.09E+01	8.97	2.01E+00	2.72E+00	8.92E+00	9.38E+00
12	931.98	6.50E+00	8.03			6.50E+00	8.03E+00
13	1019.88	6.82E+00	8.72			6.82E+00	8.72E+00
14	1103.24	8.25E+00	8.66			8.25E+00	8.66E+00
15	1126.83	9.86E+00	7.28			9.86E+00	7.28E+00
16	1133.11	7.50E+00	7.48			7.50E+00	7.48E+00
17	1173.28	1.55E+01	9.60			1.55E+01	9.60E+00
18	1429.82	5.50E+00	6.67			5.50E+00	6.67E+00
19	1463.73	1.93E+01	11.87			1.93E+01	1.19E+01
20	1764.26	4.25E+00	5.74			4.25E+00	5.74E+00

Analysis Report for 1606041-02

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M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 11:26:34AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038677.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	12.97	1.99E+03	113.00			1.99E+03	1.13E+02
2	199.50	2.50E+01	27.36			2.50E+01	2.74E+01
3	300.20	1.76E+01	18.87			1.76E+01	1.89E+01
4	439.71	2.60E+01	23.07			2.60E+01	2.31E+01
m 5	512.98	1.84E+01	19.59			1.84E+01	1.96E+01
6	584.76	2.78E+01	21.17			2.78E+01	2.12E+01
7	615.96	1.09E+01	11.22			1.09E+01	1.12E+01
8	632.12	2.37E+01	20.63			2.37E+01	2.06E+01
9	751.15	9.70E+00	9.84			9.70E+00	9.84E+00
10	818.54	7.50E+00	7.25			7.50E+00	7.25E+00
11	911.60	1.09E+01	8.97	2.01E+00	2.72E+00	8.92E+00	9.38E+00
12	931.98	6.50E+00	8.03			6.50E+00	8.03E+00
13	1019.88	6.82E+00	8.72			6.82E+00	8.72E+00
14	1103.24	8.25E+00	8.66			8.25E+00	8.66E+00
15	1126.83	9.86E+00	7.28			9.86E+00	7.28E+00
16	1133.11	7.50E+00	7.48			7.50E+00	7.48E+00
17	1173.28	1.55E+01	9.60			1.55E+01	9.60E+00
18	1429.82	5.50E+00	6.67			5.50E+00	6.67E+00
19	1463.73	1.93E+01	11.87			1.93E+01	1.19E+01
20	1764.26	4.25E+00	5.74			4.25E+00	5.74E+00

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

Analysis Report for 1606041-02

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NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
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			*		?
			*		?

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 11:26:34AM

Peak Locate From Channel : 1

Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	12.97	5.53492E-01	2.84		
2	199.50	6.95281E-03	54.65		
3	300.20	4.89899E-03	53.49	Tol.	GA-67 BI-210M PB-212
4	439.71	7.22489E-03	44.34		
m 5	512.98	5.12401E-03	53.10		
6	584.76	7.72676E-03	38.05		
7	615.96	3.04094E-03	51.27		
8	632.12	6.59561E-03	43.44		
9	751.15	2.69444E-03	50.70		
10	818.54	2.08333E-03	48.30	Tol.	CS-136
11	911.60	2.47752E-03	52.56	Tol.	LU-172 AC-228
12	931.98	1.80556E-03	61.78		

Analysis Report for 1606041-02

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
13	1019.88	1.89394E-03	63.93		
14	1103.24	2.29167E-03	52.49		
15	1126.83	2.73990E-03	36.90		
16	1133.11	2.08333E-03	49.89		
17	1173.28	4.30556E-03	30.98	Tol.	CO-60
18	1429.82	1.52778E-03	60.64		
19	1463.73	5.35024E-03	30.83		
20	1764.26	1.18056E-03	67.58	Tol.	BI-214

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
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* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Analysis Report for 1606041-02

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<i>Nuclide Name</i>	<i>Nuclide Id Confidence</i>	<i>Wt mean Activity (pCi/grams)</i>	<i>Wt mean Activity Uncertainty</i>	<i>Comments</i>
<hr/>				
<hr/>				
? = nuclide is part of an undetermined solution				
X = nuclide rejected by the interference analysis				
@ = nuclide contains energy lines not used in Weighted Mean Activity				
Errors quoted at 2.000sigma				
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Analysis Report for 1606041-02

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 UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 11:26:34AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	12.97	5.53492E-01	2.84		
2	199.50	6.95281E-03	54.65		
3	300.20	4.89899E-03	53.49	Tol.	GA-67 BI-210M PB-212
m 4	439.71	7.22489E-03	44.34		
5	512.98	5.12401E-03	53.10		
6	584.76	7.72676E-03	38.05		
7	615.96	3.04094E-03	51.27		
8	632.12	6.59561E-03	43.44		
9	751.15	2.69444E-03	50.70		
10	818.54	2.08333E-03	48.30	Tol.	CS-136
11	911.60	2.47752E-03	52.56	Tol.	LU-172 AC-228
12	931.98	1.80556E-03	61.78		
13	1019.88	1.89394E-03	63.93		
14	1103.24	2.29167E-03	52.49		
15	1126.83	2.73990E-03	36.90		
16	1133.11	2.08333E-03	49.89		
17	1173.28	4.30556E-03	30.98	Tol.	CO-60
18	1429.82	1.52778E-03	60.64		
19	1463.73	5.35024E-03	30.83		
20	1764.26	1.18056E-03	67.58	Tol.	BI-214

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

Analysis Report for 1606041-02

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NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)	
+	BE-7	477.59	10.42	-5.79E-02	2.14E-01	2.14E-01
+	NA-22	1274.54	99.94	-1.03E-02	2.21E-02	2.21E-02
+	NA-24	1368.53	99.99	8.37E-03	2.02E-02	2.92E-02
		2754.09	99.86	-2.17E-03		2.02E-02
+	AL-26	1808.65	99.76	-2.41E-03	3.38E-02	3.38E-02
+	K-40	1460.81	10.67	1.10E-01	4.00E-01	4.00E-01
+	AR-41	1293.64	99.16	-1.52E-03	3.05E-03	3.05E-03
+	TI-44	67.88	94.40	-4.06E-03	1.25E-02	1.25E-02
		78.34	96.00	-2.71E-03		1.40E-02
+	SC-46	889.25	99.98	-7.85E-03	2.68E-02	2.68E-02
		1120.51	99.99	-3.25E-03		3.23E-02
+	V-48	983.52	99.98	-2.49E-03	2.76E-02	2.76E-02
		1312.10	97.50	-8.31E-03		2.79E-02
+	CR-51	320.08	9.83	4.78E-02	2.05E-01	2.05E-01
+	MN-54	834.83	99.97	-1.68E-02	2.55E-02	2.55E-02
+	CO-56	846.75	99.96	-2.08E-03	2.68E-02	2.68E-02
		1037.75	14.03	3.34E-02		2.26E-01
		1238.25	67.00	5.24E-03		5.21E-02
		1771.40	15.51	-4.91E-02		1.76E-01
		2598.48	16.90	0.00E+00		1.79E-01
+	CO-57	122.06	85.51	-8.57E-03	1.80E-02	1.80E-02
		136.48	10.60	8.09E-02		1.61E-01
+	CO-58	810.76	99.40	1.06E-02	3.14E-02	3.14E-02
+	FE-59	1099.22	56.50	1.24E-02	6.29E-02	6.29E-02
		1291.56	43.20	2.19E-02		7.18E-02
+	CO-60	1173.22	100.00	3.08E-02	3.70E-02	4.33E-02
		1332.49	100.00	8.70E-03		3.70E-02
+	ZN-65	1115.52	50.75	-4.56E-04	5.79E-02	5.79E-02
+	GA-67	93.31	35.70	4.29E-02	4.82E-02	4.82E-02
		208.95	2.24	2.42E-01		8.58E-01
		300.22	16.00	7.99E-02		1.27E-01
+	SE-75	121.11	16.70	-4.75E-02	2.86E-02	8.99E-02
		136.00	59.20	4.69E-03		2.86E-02
		264.65	59.80	8.61E-03		3.05E-02
		279.53	25.20	-1.19E-02		7.11E-02
		400.65	11.40	-1.19E-02		1.82E-01
+	RB-82	776.52	13.00	-6.48E-03	2.05E-01	2.05E-01
+	RB-83	520.41	46.00	4.19E-03	4.73E-02	4.73E-02
		529.64	30.30	-9.15E-03		6.26E-02
		552.65	16.40	1.17E-02		1.20E-01
+	KR-85	513.99	0.43	-2.15E+00	6.96E+00	6.96E+00
+	SR-85	513.99	99.27	-9.37E-03	3.03E-02	3.03E-02

Analysis Report for 1606041-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	93.40	6.74E-03	2.77E-02	2.77E-02
		1836.01	99.38	-5.21E-03		2.80E-02
+	NB-93M	16.57	9.43	2.14E+01	4.80E+01	4.80E+01
+	NB-94	702.63	100.00	3.92E-03	2.64E-02	3.11E-02
		871.10	100.00	3.41E-03		2.64E-02
+	NB-95	765.79	99.81	1.11E-02	2.97E-02	2.97E-02
+	NB-95M	235.69	25.00	-4.86E-02	5.93E-02	5.93E-02
+	ZR-95	724.18	43.70	-1.20E-03	4.24E-02	7.13E-02
		756.72	55.30	-1.09E-02		4.24E-02
+	MO-99	181.06	6.20	1.23E-01	1.96E-01	2.94E-01
		739.58	12.80	-9.83E-02		1.96E-01
		778.00	4.50	1.31E-01		6.33E-01
+	RU-103	497.08	89.00	-1.54E-03	2.16E-02	2.16E-02
+	RU-106	621.84	9.80	1.80E-02	2.43E-01	2.43E-01
+	AG-108M	433.93	89.90	-7.21E-03	1.99E-02	1.99E-02
		614.37	90.40	-1.25E-02		3.32E-02
		722.95	90.50	5.68E-03		3.52E-02
+	CD-109	88.03	3.72	4.92E-02	4.14E-01	4.14E-01
+	AG-110M	657.75	93.14	7.67E-03	2.96E-02	2.96E-02
		677.61	10.53	5.47E-02		2.56E-01
		706.67	16.46	-4.84E-04		1.65E-01
		763.93	21.98	-8.83E-03		1.24E-01
		884.67	71.63	1.08E-02		4.31E-02
		1384.27	23.94	-4.55E-03		9.80E-02
+	CD-113M	263.70	0.02	-8.09E+00	7.71E+01	7.71E+01
+	SN-113	255.12	1.93	-1.33E-02	2.96E-02	8.84E-01
		391.69	64.90	4.40E-03		2.96E-02
+	TE123M	159.00	84.10	-6.81E-03	1.87E-02	1.87E-02
+	SB-124	602.71	97.87	3.99E-03	3.26E-02	3.26E-02
		645.85	7.26	-4.11E-02		3.83E-01
		722.78	11.10	4.61E-02		2.86E-01
		1691.02	49.00	-2.53E-03		6.07E-02
+	I-125	35.49	6.49	1.85E-01	5.42E-01	5.42E-01
+	SB-125	176.33	6.89	-1.29E-01	7.29E-02	2.61E-01
		427.89	29.33	9.06E-03		7.29E-02
		463.38	10.35	-4.29E-02		1.71E-01
		600.56	17.80	8.36E-02		1.92E-01
		635.90	11.32	-6.20E-02		2.26E-01
+	SB-126	414.70	83.30	-1.12E-02	1.93E-02	1.93E-02
		666.33	99.60	-7.47E-03		2.50E-02
		695.00	99.60	4.78E-03		3.18E-02
		720.50	53.80	-2.53E-02		5.07E-02
+	SN-126	87.57	37.00	4.94E-03	4.17E-02	4.17E-02
+	SB-127	473.00	25.00	-4.47E-02	6.06E-02	7.56E-02
		685.20	35.70	-1.76E-02		6.06E-02
		783.80	14.70	-2.35E-02		1.64E-01
+	I-129	29.78	57.00	2.11E-02	1.20E-01	1.20E-01
		33.60	13.20	-1.04E-01		2.79E-01

Analysis Report for 1606041-02

BLANK

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	-1.55E-01	1.20E-01	3.18E-01
+	I-131	284.30	6.05	-1.30E-01	2.20E-02	2.76E-01
		364.48	81.20	-1.37E-02		2.20E-02
		636.97	7.26	-5.93E-02		3.55E-01
		722.89	1.80	2.80E-01		1.74E+00
+	TE-132	49.72	13.10	3.03E-02	1.92E-02	1.14E-01
		228.16	88.00	-2.01E-02		1.92E-02
+	BA-133	81.00	33.00	-1.02E-02	3.55E-02	3.95E-02
		302.84	17.80	1.12E-02		1.02E-01
		356.01	60.00	-2.02E-02		3.55E-02
+	I-133	529.87	86.30	-3.47E-03	1.96E-02	1.96E-02
+	XE-133	81.00	38.00	-8.57E-03	3.33E-02	3.33E-02
+	CS-134	563.23	8.38	-1.65E-01	3.19E-02	2.70E-01
		569.32	15.43	1.65E-03		1.66E-01
		604.70	97.60	-1.00E-02		3.19E-02
		795.84	85.40	6.52E-03		3.21E-02
		801.93	8.73	7.76E-02		3.89E-01
+	CS-135	268.24	16.00	3.24E-02	1.06E-01	1.06E-01
+	I-135	1131.51	22.50	-1.86E-02	6.63E-02	8.11E-02
		1260.41	28.60	-2.21E-04		6.63E-02
		1678.03	9.54	-6.03E-02		1.56E-01
+	CS-136	153.22	7.46	-3.54E-02	2.59E-02	2.22E-01
		163.89	4.61	6.22E-02		3.64E-01
		176.55	13.56	8.36E-03		1.38E-01
		273.65	12.66	3.19E-02		1.53E-01
		340.57	48.50	-1.67E-02		3.82E-02
		818.50	99.70	-1.88E-03		2.59E-02
		1048.07	79.60	8.02E-03		3.09E-02
		1235.34	19.70	5.62E-02		1.82E-01
+	CS-137	661.65	85.12	-1.35E-02	2.67E-02	2.67E-02
+	LA-138	788.74	34.00	-6.16E-03	4.78E-02	6.51E-02
		1435.80	66.00	-1.53E-02		4.78E-02
+	CE-139	165.85	80.35	-4.30E-03	2.05E-02	2.05E-02
+	BA-140	162.64	6.70	6.84E-02	8.36E-02	2.43E-01
		304.84	4.50	-1.61E-01		3.36E-01
		423.70	3.20	7.86E-02		6.55E-01
		437.55	2.00	7.87E-02		1.10E+00
		537.32	25.00	-1.09E-02		8.36E-02
+	LA-140	328.77	20.50	-1.33E-02	3.50E-02	1.01E-01
		487.03	45.50	-5.01E-03		4.60E-02
		815.85	23.50	-3.02E-03		1.18E-01
		1596.49	95.49	-9.10E-03		3.50E-02
+	CE-141	145.44	48.40	1.60E-02	3.75E-02	3.75E-02
+	CE-143	57.36	11.80	-3.29E-02	4.56E-02	9.94E-02
		293.26	42.00	-3.19E-03		4.56E-02
		664.55	5.20	5.67E-02		4.30E-01
+	CE-144	133.54	10.80	-8.07E-02	1.41E-01	1.41E-01
+	PM-144	476.78	42.00	-1.44E-02	2.90E-02	5.31E-02
		618.01	98.60	5.79E-04		2.90E-02

Analysis Report for 1606041-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	696.49	99.49	2.78E-03	2.90E-02	3.29E-02
+	PM-145	36.85	21.70	6.10E-02	7.62E-02	1.44E-01
		37.36	39.70	3.22E-02		7.62E-02
		42.30	15.10	1.05E-01		1.68E-01
		72.40	2.31	-2.59E-01		5.22E-01
+	PM-146	453.90	39.94	5.33E-05	5.38E-02	5.38E-02
		735.90	14.01	2.08E-02		2.06E-01
		747.13	13.10	3.20E-02		2.05E-01
+	ND-147	91.11	28.90	4.50E-02	6.35E-02	6.35E-02
		531.02	13.10	-3.61E-02		1.43E-01
+	PM-149	285.90	3.10	2.20E-01	5.70E-01	5.70E-01
+	EU-152	121.78	20.50	-3.57E-02	7.52E-02	7.52E-02
		244.69	5.40	-1.13E-01		3.56E-01
		344.27	19.13	-2.34E-02		1.00E-01
		778.89	9.20	6.01E-02		3.37E-01
		964.01	10.40	-2.19E-01		2.23E-01
		1085.78	7.22	4.33E-02		4.19E-01
		1112.02	9.60	-5.29E-02		2.72E-01
		1407.95	14.94	7.76E-02		2.08E-01
+	GD-153	97.43	31.30	1.13E-02	4.69E-02	4.69E-02
		103.18	22.20	-6.73E-03		7.05E-02
+	EU-154	123.07	40.50	4.13E-03	3.96E-02	3.96E-02
		723.30	19.70	2.61E-02		1.62E-01
		873.19	11.50	-1.42E-01		1.98E-01
		996.32	10.30	-8.21E-02		2.47E-01
		1004.76	17.90	3.91E-02		1.59E-01
		1274.45	35.50	-2.89E-02		6.23E-02
+	EU-155	86.50	30.90	-2.66E-02	4.96E-02	4.96E-02
		105.30	20.70	-3.90E-03		7.75E-02
+	EU-156	811.77	10.40	1.33E-01	2.90E-01	2.90E-01
		1153.47	7.20	-7.12E-02		4.36E-01
		1230.71	8.90	-3.71E-03		3.71E-01
+	HO-166M	184.41	72.60	1.34E-02	2.89E-02	2.89E-02
		280.45	29.60	-1.02E-02		6.07E-02
		410.94	11.10	4.48E-02		1.83E-01
		711.69	54.10	-1.45E-02		4.77E-02
+	TM-171	66.72	0.14	4.49E-01	9.01E+00	9.01E+00
+	HF-172	81.75	4.52	-1.64E-01	1.60E-01	2.91E-01
		125.81	11.30	9.14E-02		1.60E-01
+	LU-172	181.53	20.60	1.95E-03	3.74E-02	8.65E-02
		810.06	16.63	6.19E-02		1.83E-01
		912.12	15.25	2.09E-02		2.03E-01
		1093.66	62.50	-3.33E-02		3.74E-02
+	LU-173	100.72	5.24	9.46E-02	7.93E-02	3.07E-01
		272.11	21.20	-4.26E-02		7.93E-02
+	HF-175	343.40	84.00	1.39E-03	2.28E-02	2.28E-02
+	LU-176	88.34	13.30	1.38E-02	2.01E-02	1.16E-01
		201.83	86.00	-1.02E-02		2.11E-02
		306.78	94.00	1.19E-03		2.01E-02

Analysis Report for 1606041-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TA-182	67.75	41.20	-9.29E-03	2.86E-02	2.86E-02
		1121.30	34.90	4.73E-03		9.27E-02
		1189.05	16.23	4.66E-02		2.00E-01
		1221.41	26.98	9.46E-03		1.11E-01
		1231.02	11.44	-4.37E-02		2.77E-01
+	IR-192	308.46	29.68	1.61E-02	4.57E-02	6.55E-02
		468.07	48.10	2.36E-02		4.57E-02
+	HG-203	279.19	77.30	-2.98E-03	2.38E-02	2.38E-02
+	BI-207	569.67	97.72	2.61E-04	2.63E-02	2.63E-02
		1063.62	74.90	-1.44E-02		3.97E-02
+	TL-208	583.14	30.22	5.83E-02	1.08E-01	1.08E-01
		860.37	4.48	4.90E-02		6.73E-01
		2614.66	35.85	5.51E-02		1.18E-01
+	BI-210M	262.00	45.00	1.08E-02	4.28E-02	4.28E-02
		300.00	23.00	5.83E-02		9.31E-02
+	PB-210	46.50	4.25	1.94E-01	4.88E-01	4.88E-01
+	PB-211	404.84	2.90	-1.96E-01	7.47E-01	7.47E-01
		831.96	2.90	1.21E-01		9.12E-01
+	BI-212	727.17	11.80	1.63E-01	2.82E-01	2.82E-01
		1620.62	2.75	3.52E-01		1.06E+00
+	PB-212	238.63	44.60	-1.97E-02	3.91E-02	3.91E-02
		300.09	3.41	3.93E-01		6.28E-01
+	BI-214	609.31	46.30	2.20E-03	6.45E-02	6.45E-02
		1120.29	15.10	-2.15E-02		2.14E-01
		1764.49	15.80	0.00E+00		2.27E-01
		2204.22	4.98	6.69E-02		7.30E-01
+	PB-214	295.21	19.19	4.45E-02	6.60E-02	1.17E-01
		351.92	37.19	3.46E-02		6.60E-02
+	RN-219	401.80	6.50	-9.18E-02	3.26E-01	3.26E-01
+	RA-223	323.87	3.88	-1.44E-01	5.35E-01	5.35E-01
+	RA-224	240.98	3.95	4.53E-02	4.87E-01	4.87E-01
+	RA-225	40.00	31.00	-3.64E-02	7.46E-02	7.46E-02
+	RA-226	186.21	3.28	6.47E-01	6.47E-01	6.47E-01
+	TH-227	50.10	8.40	4.91E-02	1.35E-01	1.84E-01
		236.00	11.50	-1.10E-01		1.35E-01
		256.20	6.30	5.11E-03		2.76E-01
+	AC-228	338.32	11.40	1.69E-02	1.14E-01	1.75E-01
		911.07	27.70	3.10E-02		1.14E-01
		969.11	16.60	8.88E-02		2.18E-01
+	TH-230	48.44	16.90	-1.41E-01	7.98E-02	7.98E-02
		62.85	4.60	2.09E-01		3.56E-01
		67.67	0.37	-1.04E+00		3.19E+00
+	PA-231	283.67	1.60	-5.01E-01	7.87E-01	1.06E+00
		302.67	2.30	8.64E-02		7.87E-01
+	TH-231	25.64	14.70	-2.03E-01	2.20E-01	9.55E-01
		84.21	6.40	7.72E-02		2.20E-01
+	PA-233	311.98	38.60	1.69E-04	4.99E-02	4.99E-02
+	PA-234	131.20	20.40	-1.42E-02	7.71E-02	7.71E-02

Analysis Report for 1606041-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	733.99	8.80	-5.93E-02	7.71E-02	3.10E-01
		946.00	12.00	-1.17E-02		2.45E-01
+	PA-234M	1001.03	0.92	2.77E-01	2.77E+00	2.77E+00
+	TH-234	63.29	3.80	2.51E-01	4.28E-01	4.28E-01
+	U-235	143.76	10.50	6.63E-02	1.76E-01	1.76E-01
		163.35	4.70	9.89E-02		3.51E-01
		205.31	4.70	-3.76E-02		3.91E-01
+	NP-237	86.50	12.60	-6.51E-02	1.22E-01	1.22E-01
+	NP-239	106.10	22.70	4.63E-02	6.70E-02	6.70E-02
		228.18	10.70	-1.62E-01		1.55E-01
		277.60	14.10	6.73E-03		1.25E-01
+	AM-241	59.54	35.90	-1.11E-02	3.74E-02	3.74E-02
+	AM-243	74.67	66.00	8.03E-03	2.24E-02	2.24E-02
+	CM-243	209.75	3.29	3.98E-01	1.35E-01	6.05E-01
		228.14	10.60	-1.75E-01		1.68E-01
		277.60	14.00	7.26E-03		1.35E-01

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	2.14E-01	2.14E-01	-5.79E-02	9.49E-02
NA-22	1274.54	99.94	2.21E-02	2.21E-02	-1.03E-02	8.28E-03
NA-24	1368.53	99.99	2.92E-02	2.02E-02	8.37E-03	1.23E-02
	2754.09	99.86	2.02E-02		-2.17E-03	7.14E-03
AL-26	1808.65	99.76	3.38E-02	3.38E-02	-2.41E-03	1.34E-02
K-40	1460.81	10.67	4.00E-01	4.00E-01	1.10E-01	1.71E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AR-41	1293.64	99.16	3.05E-03	3.05E-03	-1.52E-03	1.18E-03
TI-44	67.88	94.40	1.25E-02	1.25E-02	-4.06E-03	5.68E-03
	78.34	96.00	1.40E-02		-2.71E-03	6.50E-03
SC-46	889.25	99.98	2.68E-02	2.68E-02	-7.85E-03	1.13E-02
	1120.51	99.99	3.23E-02		-3.25E-03	1.37E-02
V-48	983.52	99.98	2.76E-02	2.76E-02	-2.49E-03	1.16E-02
	1312.10	97.50	2.79E-02		-8.31E-03	1.11E-02
CR-51	320.08	9.83	2.05E-01	2.05E-01	4.78E-02	9.32E-02
MN-54	834.83	99.97	2.55E-02	2.55E-02	-1.68E-02	1.08E-02
CO-56	846.75	99.96	2.68E-02	2.68E-02	-2.08E-03	1.14E-02
	1037.75	14.03	2.26E-01		3.34E-02	9.60E-02
	1238.25	67.00	5.21E-02		5.24E-03	2.20E-02
	1771.40	15.51	1.76E-01		-4.91E-02	6.60E-02
	2598.48	16.90	1.79E-01		0.00E+00	6.71E-02
CO-57	122.06	85.51	1.80E-02	1.80E-02	-8.57E-03	8.39E-03
	136.48	10.60	1.61E-01		8.09E-02	7.52E-02
CO-58	810.76	99.40	3.14E-02	3.14E-02	1.06E-02	1.37E-02
FE-59	1099.22	56.50	6.29E-02	6.29E-02	1.24E-02	2.71E-02
	1291.56	43.20	7.18E-02		2.19E-02	2.94E-02
CO-60	1173.22	100.00	4.33E-02	3.70E-02	3.08E-02	1.90E-02
	1332.49	100.00	3.70E-02		8.70E-03	1.56E-02
ZN-65	1115.52	50.75	5.79E-02	5.79E-02	-4.56E-04	2.40E-02
GA-67	93.31	35.70	4.82E-02	4.82E-02	4.29E-02	2.28E-02
	208.95	2.24	8.58E-01		2.42E-01	3.99E-01
	300.22	16.00	1.27E-01		7.99E-02	5.84E-02
SE-75	121.11	16.70	8.99E-02	2.86E-02	-4.75E-02	4.18E-02
	136.00	59.20	2.86E-02		4.69E-03	1.33E-02
	264.65	59.80	3.05E-02		8.61E-03	1.39E-02
	279.53	25.20	7.11E-02		-1.19E-02	3.22E-02
	400.65	11.40	1.82E-01		-1.19E-02	8.12E-02
RB-82	776.52	13.00	2.05E-01	2.05E-01	-6.48E-03	8.84E-02
RB-83	520.41	46.00	4.73E-02	4.73E-02	4.19E-03	2.07E-02
	529.64	30.30	6.26E-02		-9.15E-03	2.68E-02
	552.65	16.40	1.20E-01		1.17E-02	5.12E-02
KR-85	513.99	0.43	6.96E+00	6.96E+00	-2.15E+00	3.17E+00
SR-85	513.99	99.27	3.03E-02	3.03E-02	-9.37E-03	1.38E-02
Y-88	898.02	93.40	2.77E-02	2.77E-02	6.74E-03	1.16E-02
	1836.01	99.38	2.80E-02		-5.21E-03	1.05E-02
NB-93M	16.57	9.43	4.80E+01	4.80E+01	2.14E+01	2.31E+01
NB-94	702.63	100.00	3.11E-02	2.64E-02	3.92E-03	1.38E-02
	871.10	100.00	2.64E-02		3.41E-03	1.11E-02
NB-95	765.79	99.81	2.97E-02	2.97E-02	1.11E-02	1.30E-02
NB-95M	235.69	25.00	5.93E-02	5.93E-02	-4.86E-02	2.68E-02
ZR-95	724.18	43.70	7.13E-02	4.24E-02	-1.20E-03	3.17E-02
	756.72	55.30	4.24E-02		-1.09E-02	1.79E-02
MO-99	181.06	6.20	2.94E-01	1.96E-01	1.23E-01	1.37E-01
	739.58	12.80	1.96E-01		-9.83E-02	8.49E-02
	778.00	4.50	6.33E-01		1.31E-01	2.78E-01
RU-103	497.08	89.00	2.16E-02	2.16E-02	-1.54E-03	9.35E-03
RU-106	621.84	9.80	2.43E-01	2.43E-01	1.80E-02	1.06E-01
AG-108M	433.93	89.90	1.99E-02	1.99E-02	-7.21E-03	8.66E-03
	614.37	90.40	3.32E-02		-1.25E-02	1.49E-02
	722.95	90.50	3.52E-02		5.68E-03	1.57E-02

Analysis Report for 1606041-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CD-109	88.03	3.72	4.14E-01	4.14E-01	4.92E-02	1.94E-01
AG-110M	657.75	93.14	2.96E-02	2.96E-02	7.67E-03	1.31E-02
	677.61	10.53	2.56E-01		5.47E-02	1.12E-01
	706.67	16.46	1.65E-01		-4.84E-04	7.20E-02
	763.93	21.98	1.24E-01		-8.83E-03	5.38E-02
	884.67	71.63	4.31E-02		1.08E-02	1.86E-02
	1384.27	23.94	9.80E-02		-4.55E-03	3.67E-02
CD-113M	263.70	0.02	7.71E+01	7.71E+01	-8.09E+00	3.50E+01
SN-113	255.12	1.93	8.84E-01	2.96E-02	-1.33E-02	4.01E-01
	391.69	64.90	2.96E-02		4.40E-03	1.31E-02
TE123M	159.00	84.10	1.87E-02	1.87E-02	-6.81E-03	8.62E-03
SB-124	602.71	97.87	3.26E-02	3.26E-02	3.99E-03	1.48E-02
	645.85	7.26	3.83E-01		-4.11E-02	1.69E-01
	722.78	11.10	2.86E-01		4.61E-02	1.27E-01
	1691.02	49.00	6.07E-02		-2.53E-03	2.35E-02
I-125	35.49	6.49	5.42E-01	5.42E-01	1.85E-01	2.50E-01
SB-125	176.33	6.89	2.61E-01	7.29E-02	-1.29E-01	1.21E-01
	427.89	29.33	7.29E-02		9.06E-03	3.25E-02
	463.38	10.35	1.71E-01		-4.29E-02	7.37E-02
	600.56	17.80	1.92E-01		8.36E-02	8.75E-02
	635.90	11.32	2.26E-01		-6.20E-02	9.91E-02
SB-126	414.70	83.30	1.93E-02	1.93E-02	-1.12E-02	8.30E-03
	666.33	99.60	2.50E-02		-7.47E-03	1.08E-02
	695.00	99.60	3.18E-02		4.78E-03	1.42E-02
	720.50	53.80	5.07E-02		-2.53E-02	2.21E-02
SN-126	87.57	37.00	4.17E-02	4.17E-02	4.94E-03	1.95E-02
SB-127	473.00	25.00	7.56E-02	6.06E-02	-4.47E-02	3.30E-02
	685.20	35.70	6.06E-02		-1.76E-02	2.58E-02
	783.80	14.70	1.64E-01		-2.35E-02	6.99E-02
I-129	29.78	57.00	1.20E-01	1.20E-01	2.11E-02	5.59E-02
	33.60	13.20	2.79E-01		-1.04E-01	1.27E-01
	39.58	7.52	3.18E-01		-1.55E-01	1.45E-01
I-131	284.30	6.05	2.76E-01	2.20E-02	-1.30E-01	1.24E-01
	364.48	81.20	2.20E-02		-1.37E-02	9.76E-03
	636.97	7.26	3.55E-01		-5.93E-02	1.56E-01
	722.89	1.80	1.74E+00		2.80E-01	7.72E-01
TE-132	49.72	13.10	1.14E-01	1.92E-02	3.03E-02	5.18E-02
	228.16	88.00	1.92E-02		-2.01E-02	8.81E-03
BA-133	81.00	33.00	3.95E-02	3.55E-02	-1.02E-02	1.83E-02
	302.84	17.80	1.02E-01		1.12E-02	4.58E-02
	356.01	60.00	3.55E-02		-2.02E-02	1.61E-02
I-133	529.87	86.30	1.96E-02	1.96E-02	-3.47E-03	8.47E-03
XE-133	81.00	38.00	3.33E-02	3.33E-02	-8.57E-03	1.54E-02
CS-134	563.23	8.38	2.70E-01	3.19E-02	-1.65E-01	1.18E-01
	569.32	15.43	1.66E-01		1.65E-03	7.39E-02
	604.70	97.60	3.19E-02		-1.00E-02	1.44E-02
	795.84	85.40	3.21E-02		6.52E-03	1.38E-02
	801.93	8.73	3.89E-01		7.76E-02	1.73E-01
CS-135	268.24	16.00	1.06E-01	1.06E-01	3.24E-02	4.77E-02
I-135	1131.51	22.50	8.11E-02	6.63E-02	-1.86E-02	3.42E-02
	1260.41	28.60	6.63E-02		-2.21E-04	2.78E-02
	1678.03	9.54	1.56E-01		-6.03E-02	5.83E-02
CS-136	153.22	7.46	2.22E-01	2.59E-02	-3.54E-02	1.03E-01

Analysis Report for 1606041-02

BLANK

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
CS-136	163.89	4.61	3.64E-01	2.59E-02	6.22E-02	1.69E-01	
	176.55	13.56	1.38E-01		8.36E-03	6.43E-02	
	273.65	12.66	1.53E-01		3.19E-02	7.00E-02	
	340.57	48.50	3.82E-02		-1.67E-02	1.71E-02	
	818.50	99.70	2.59E-02		-1.88E-03	1.10E-02	
	1048.07	79.60	3.09E-02		8.02E-03	1.25E-02	
	1235.34	19.70	1.82E-01		5.62E-02	7.76E-02	
	CS-137	661.65	85.12		2.67E-02	2.67E-02	-1.35E-02	1.14E-02
788.74		34.00	6.51E-02	4.78E-02	-6.16E-03	2.70E-02	
LA-138	1435.80	66.00	4.78E-02		-1.53E-02	1.93E-02	
CE-139	165.85	80.35	2.05E-02	2.05E-02	-4.30E-03	9.50E-03	
BA-140	162.64	6.70	2.43E-01	8.36E-02	6.84E-02	1.13E-01	
	304.84	4.50	3.36E-01		-1.61E-01	1.48E-01	
	423.70	3.20	6.55E-01		7.86E-02	2.92E-01	
	437.55	2.00	1.10E+00		7.87E-02	4.89E-01	
	537.32	25.00	8.36E-02		-1.09E-02	3.63E-02	
	537.32	25.00	8.36E-02		-1.09E-02	3.63E-02	
LA-140	328.77	20.50	1.01E-01	3.50E-02	-1.33E-02	4.59E-02	
	487.03	45.50	4.60E-02		-5.01E-03	2.02E-02	
	815.85	23.50	1.18E-01		-3.02E-03	5.06E-02	
	1596.49	95.49	3.50E-02		-9.10E-03	1.41E-02	
CE-141	145.44	48.40	3.75E-02	3.75E-02	1.60E-02	1.76E-02	
CE-143	57.36	11.80	9.94E-02	4.56E-02	-3.29E-02	4.53E-02	
	293.26	42.00	4.56E-02		-3.19E-03	2.10E-02	
	664.55	5.20	4.30E-01		5.67E-02	1.87E-01	
CE-144	133.54	10.80	1.41E-01	1.41E-01	-8.07E-02	6.54E-02	
PM-144	476.78	42.00	5.31E-02	2.90E-02	-1.44E-02	2.36E-02	
	618.01	98.60	2.90E-02		5.79E-04	1.29E-02	
	696.49	99.49	3.29E-02		2.78E-03	1.47E-02	
	PM-145	36.85	21.70	1.44E-01	7.62E-02	6.10E-02	6.65E-02
37.36		39.70	7.62E-02		3.22E-02	3.51E-02	
42.30		15.10	1.68E-01		1.05E-01	7.79E-02	
72.40		2.31	5.22E-01		-2.59E-01	2.39E-01	
PM-146	453.90	39.94	5.38E-02	5.38E-02	5.33E-05	2.39E-02	
	735.90	14.01	2.06E-01		2.08E-02	9.02E-02	
	747.13	13.10	2.05E-01		3.20E-02	8.87E-02	
ND-147	91.11	28.90	6.35E-02	6.35E-02	4.50E-02	3.01E-02	
	531.02	13.10	1.43E-01		-3.61E-02	6.13E-02	
PM-149	285.90	3.10	5.70E-01	5.70E-01	2.20E-01	2.59E-01	
EU-152	121.78	20.50	7.52E-02	7.52E-02	-3.57E-02	3.50E-02	
	244.69	5.40	3.56E-01		-1.13E-01	1.64E-01	
	344.27	19.13	1.00E-01		-2.34E-02	4.51E-02	
	778.89	9.20	3.37E-01		6.01E-02	1.48E-01	
	964.01	10.40	2.23E-01		-2.19E-01	9.02E-02	
	1085.78	7.22	4.19E-01		4.33E-02	1.75E-01	
	1112.02	9.60	2.72E-01		-5.29E-02	1.10E-01	
	1407.95	14.94	2.08E-01		7.76E-02	8.42E-02	
	GD-153	97.43	31.30	4.69E-02	4.69E-02	1.13E-02	2.18E-02
		103.18	22.20	7.05E-02		-6.73E-03	3.30E-02
EU-154	123.07	40.50	3.96E-02	3.96E-02	4.13E-03	1.85E-02	
	723.30	19.70	1.62E-01		2.61E-02	7.20E-02	
	873.19	11.50	1.98E-01		-1.42E-01	8.13E-02	
	996.32	10.30	2.47E-01		-8.21E-02	1.01E-01	
	1004.76	17.90	1.59E-01		3.91E-02	6.64E-02	

Analysis Report for 1606041-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	1274.45	35.50	6.23E-02	3.96E-02	-2.89E-02	2.33E-02
EU-155	86.50	30.90	4.96E-02	4.96E-02	-2.66E-02	2.32E-02
	105.30	20.70	7.75E-02		-3.90E-03	3.63E-02
EU-156	811.77	10.40	2.90E-01	2.90E-01	1.33E-01	1.27E-01
	1153.47	7.20	4.36E-01		-7.12E-02	1.82E-01
	1230.71	8.90	3.71E-01		-3.71E-03	1.55E-01
HO-166M	184.41	72.60	2.89E-02	2.89E-02	1.34E-02	1.36E-02
	280.45	29.60	6.07E-02		-1.02E-02	2.75E-02
	410.94	11.10	1.83E-01		4.48E-02	8.15E-02
	711.69	54.10	4.77E-02		-1.45E-02	2.06E-02
TM-171	66.72	0.14	9.01E+00	9.01E+00	4.49E-01	4.13E+00
HF-172	81.75	4.52	2.91E-01	1.60E-01	-1.64E-01	1.34E-01
	125.81	11.30	1.60E-01		9.14E-02	7.52E-02
LU-172	181.53	20.60	8.65E-02	3.74E-02	1.95E-03	4.02E-02
	810.06	16.63	1.83E-01		6.19E-02	8.04E-02
	912.12	15.25	2.03E-01		2.09E-02	8.77E-02
	1093.66	62.50	3.74E-02		-3.33E-02	1.48E-02
LU-173	100.72	5.24	3.07E-01	7.93E-02	9.46E-02	1.44E-01
	272.11	21.20	7.93E-02		-4.26E-02	3.57E-02
HF-175	343.40	84.00	2.28E-02	2.28E-02	1.39E-03	1.02E-02
LU-176	88.34	13.30	1.16E-01	2.01E-02	1.38E-02	5.42E-02
	201.83	86.00	2.11E-02		-1.02E-02	9.77E-03
	306.78	94.00	2.01E-02		1.19E-03	9.07E-03
TA-182	67.75	41.20	2.86E-02	2.86E-02	-9.29E-03	1.30E-02
	1121.30	34.90	9.27E-02		4.73E-03	3.92E-02
	1189.05	16.23	2.00E-01		4.66E-02	8.37E-02
	1221.41	26.98	1.11E-01		9.46E-03	4.53E-02
	1231.02	11.44	2.77E-01		-4.37E-02	1.15E-01
IR-192	308.46	29.68	6.55E-02	4.57E-02	1.61E-02	2.97E-02
	468.07	48.10	4.57E-02		2.36E-02	2.03E-02
HG-203	279.19	77.30	2.38E-02	2.38E-02	-2.98E-03	1.08E-02
BI-207	569.67	97.72	2.63E-02	2.63E-02	2.61E-04	1.17E-02
	1063.62	74.90	3.97E-02		-1.44E-02	1.66E-02
TL-208	583.14	30.22	1.08E-01	1.08E-01	5.83E-02	4.89E-02
	860.37	4.48	6.73E-01		4.90E-02	2.91E-01
	2614.66	35.85	1.18E-01		5.51E-02	4.84E-02
BI-210M	262.00	45.00	4.28E-02	4.28E-02	1.08E-02	1.96E-02
	300.00	23.00	9.31E-02		5.83E-02	4.27E-02
PB-210	46.50	4.25	4.88E-01	4.88E-01	1.94E-01	2.26E-01
PB-211	404.84	2.90	7.47E-01	7.47E-01	-1.96E-01	3.35E-01
	831.96	2.90	9.12E-01		1.21E-01	3.88E-01
BI-212	727.17	11.80	2.82E-01	2.82E-01	1.63E-01	1.26E-01
	1620.62	2.75	1.06E+00		3.52E-01	4.10E-01
PB-212	238.63	44.60	3.91E-02	3.91E-02	-1.97E-02	1.79E-02
	300.09	3.41	6.28E-01		3.93E-01	2.88E-01
BI-214	609.31	46.30	6.45E-02	6.45E-02	2.20E-03	2.89E-02
	1120.29	15.10	2.14E-01		-2.15E-02	9.06E-02
	1764.49	15.80	2.27E-01		0.00E+00	9.16E-02
	2204.22	4.98	7.30E-01		6.69E-02	2.90E-01
PB-214	295.21	19.19	1.17E-01	6.60E-02	4.45E-02	5.41E-02
	351.92	37.19	6.60E-02		3.46E-02	3.03E-02
RN-219	401.80	6.50	3.26E-01	3.26E-01	-9.18E-02	1.46E-01
RA-223	323.87	3.88	5.35E-01	5.35E-01	-1.44E-01	2.43E-01

Analysis Report for 1606041-02

BLANK

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RA-224	240.98	3.95	4.87E-01	4.87E-01	4.53E-02	2.24E-01
RA-225	40.00	31.00	7.46E-02	7.46E-02	-3.64E-02	3.41E-02
RA-226	186.21	3.28	6.47E-01	6.47E-01	6.47E-01	3.04E-01
TH-227	50.10	8.40	1.84E-01	1.35E-01	4.91E-02	8.40E-02
	236.00	11.50	1.35E-01		-1.10E-01	6.09E-02
	256.20	6.30	2.76E-01		5.11E-03	1.25E-01
AC-228	338.32	11.40	1.75E-01	1.14E-01	1.69E-02	7.89E-02
	911.07	27.70	1.14E-01		3.10E-02	4.94E-02
	969.11	16.60	2.18E-01		8.88E-02	9.56E-02
TH-230	48.44	16.90	7.98E-02	7.98E-02	-1.41E-01	3.57E-02
	62.85	4.60	3.56E-01		2.09E-01	1.66E-01
	67.67	0.37	3.19E+00		-1.04E+00	1.45E+00
PA-231	283.67	1.60	1.06E+00	7.87E-01	-5.01E-01	4.78E-01
	302.67	2.30	7.87E-01		8.64E-02	3.55E-01
TH-231	25.64	14.70	9.55E-01	2.20E-01	-2.03E-01	4.47E-01
	84.21	6.40	2.20E-01		7.72E-02	1.02E-01
PA-233	311.98	38.60	4.99E-02	4.99E-02	1.69E-04	2.26E-02
PA-234	131.20	20.40	7.71E-02	7.71E-02	-1.42E-02	3.59E-02
	733.99	8.80	3.10E-01		-5.93E-02	1.35E-01
	946.00	12.00	2.45E-01		-1.17E-02	1.04E-01
PA-234M	1001.03	0.92	2.77E+00	2.77E+00	2.77E-01	1.14E+00
TH-234	63.29	3.80	4.28E-01	4.28E-01	2.51E-01	2.00E-01
U-235	143.76	10.50	1.76E-01	1.76E-01	6.63E-02	8.26E-02
	163.35	4.70	3.51E-01		9.89E-02	1.63E-01
	205.31	4.70	3.91E-01		-3.76E-02	1.81E-01
NP-237	86.50	12.60	1.22E-01	1.22E-01	-6.51E-02	5.68E-02
NP-239	106.10	22.70	6.70E-02	6.70E-02	4.63E-02	3.14E-02
	228.18	10.70	1.55E-01		-1.62E-01	7.11E-02
	277.60	14.10	1.25E-01		6.73E-03	5.69E-02
AM-241	59.54	35.90	3.74E-02	3.74E-02	-1.11E-02	1.71E-02
AM-243	74.67	66.00	2.24E-02	2.24E-02	8.03E-03	1.04E-02
CM-243	209.75	3.29	6.05E-01	1.35E-01	3.98E-01	2.81E-01
	228.14	10.60	1.68E-01		-1.75E-01	7.68E-02
	277.60	14.00	1.35E-01		7.26E-03	6.13E-02

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

Analysis Report for 1606041-02
BLANK

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: BLANK

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193	201	209	217	225	233	241	249	257	265	273	281	289	297	305	313	321	329	337	345	353	361
	0	1048	93	30	12	17	11	8	15	12	13	15	9	15	25	13	13	18	12	10	7	10	13	8	17	9	12	10	8	8	8	9	6	10	6	10	6	3	6	9	7	9	6	10	6	
	0	765	56	24	11	21	8	21	17	20	17	13	10	15	14	9	15	16	14	13	12	8	35	13	12	8	13	13	5	15	8	10	6	8	7	6	8	7	3	6	7	4	5	5	2	
	0	342	61	17	15	20	17	15	14	21	20	14	19	19	13	10	12	12	16	12	15	14	13	10	7	10	7	8	4	8	8	7	6	8	6	8	6	8	7	5	8	3	7	4		
	0	186	60	25	18	11	12	12	9	21	26	23	15	13	23	18	8	9	7	14	7	9	8	13	8	13	8	8	8	8	8	6	6	6	5	5	4	8	5	6	4	10	6	4		
	0	1977	42	17	16	19	13	12	12	18	12	41	13	8	10	17	13	6	11	19	13	12	7	11	11	13	5	4	4	8	2	8	6	9	9	4	8	3	9	6	8	12	8	5		
	0	269	32	25	13	16	18	14	14	16	14	13	18	19	12	13	11	19	12	8	10	11	9	14	14	13	11	11	7	9	12	3	4	2	8	5	13	4	8	7	6	5	3			
	11	76	31	18	9	33	15	24	17	18	14	8	11	14	15	19	14	21	17	9	12	11	15	15	10	11	11	8	15	12	12	4	9	3	9	13	3	4	8	7	4	5	9	8		
	434	80	31	14	12	5	6	27	10	19	15	10	14	8	12	18	10	13	8	7	11	14	9	15	15	7	7	10	6	7	7	8	5	8	11	11	3	6	8	5	4	18	2	3		

369: 7 4 6 5 8 5 7 4

Sample Title: BLANK

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	3	7	5	3	3	3	2	7
385:	4	5	6	2	0	5	3	2
393:	7	4	6	2	3	0	7	5
401:	3	4	5	8	6	2	5	8
409:	4	3	7	5	3	2	0	6
417:	2	3	5	5	3	4	3	4
425:	7	5	4	4	7	3	2	4
433:	3	4	2	2	7	4	9	9
441:	2	5	4	1	1	3	7	3
449:	5	3	6	5	5	1	6	4
457:	4	4	6	3	2	3	4	2
465:	2	3	3	6	5	4	3	0
473:	10	1	2	7	6	3	3	4
481:	7	2	5	1	2	2	6	5
489:	3	6	4	4	1	7	1	3
497:	2	1	7	1	3	5	5	1
505:	4	2	3	5	5	33	24	15
513:	12	1	3	5	3	3	4	6
521:	3	1	0	5	4	3	0	5
529:	2	2	3	2	3	6	2	3
537:	7	2	1	4	2	1	3	1
545:	4	0	4	1	1	0	4	3
553:	1	4	3	3	1	3	3	3
561:	2	6	2	4	2	7	8	1
569:	7	3	2	5	3	3	2	2
577:	3	2	1	3	3	5	6	6
585:	8	3	5	2	6	1	3	3
593:	2	3	0	3	8	3	6	3
601:	6	2	8	4	5	3	2	5
609:	9	3	4	0	3	3	8	3
617:	5	0	2	3	2	1	3	2
625:	2	1	2	2	6	5	8	2
633:	3	3	4	4	1	1	1	4
641:	5	3	3	2	2	1	6	2
649:	4	2	3	2	1	6	3	3
657:	6	2	2	1	2	2	0	3
665:	3	1	4	1	3	4	4	2
673:	1	2	2	1	3	3	4	2
681:	2	2	2	3	1	0	2	1
689:	5	0	1	5	5	0	5	1
697:	4	4	6	3	4	3	0	2
705:	4	2	2	2	4	0	2	2
713:	1	3	4	3	2	3	1	4
721:	4	1	1	8	0	4	3	3
729:	4	2	2	1	1	5	4	2
737:	0	3	2	3	2	2	2	3
745:	2	2	0	2	2	3	1	7
753:	0	1	0	1	2	4	2	1
761:	1	2	2	1	1	3	4	3
769:	3	1	1	1	0	2	2	3
777:	1	1	4	3	3	3	2	2
785:	1	0	0	3	0	1	3	1
793:	0	3	2	0	1	5	2	1

801: 0 5 5 4 4 1 2 3

Sample Title: BLANK

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	2	3	1	4	2	1	0	1
817:	1	4	4	0	1	2	2	0
825:	4	0	1	2	1	3	0	1
833:	3	1	2	1	1	1	5	3
841:	2	2	1	1	0	2	3	1
849:	3	0	3	2	2	0	1	2
857:	2	3	1	2	2	2	2	2
865:	2	2	3	1	2	1	1	3
873:	0	2	0	0	3	3	0	1
881:	2	0	1	3	5	2	1	2
889:	2	0	2	1	1	1	1	2
897:	1	1	1	3	0	1	0	1
905:	0	1	2	0	1	5	3	2
913:	3	0	0	2	2	1	0	1
921:	2	1	1	2	0	4	1	0
929:	1	1	3	2	2	1	0	1
937:	1	2	2	4	2	2	3	0
945:	1	3	2	1	1	1	2	1
953:	2	3	1	3	1	1	4	1
961:	0	3	1	0	1	1	0	3
969:	3	3	2	5	2	2	0	1
977:	4	2	1	1	3	1	0	2
985:	1	1	1	2	2	4	2	2
993:	1	1	2	0	1	0	2	0
1001:	3	1	0	1	1	1	2	0
1009:	1	3	0	2	2	1	0	0
1017:	0	3	2	2	2	2	0	2
1025:	1	3	2	0	1	0	0	3
1033:	0	1	1	4	2	2	0	1
1041:	2	0	0	0	1	0	3	0
1049:	2	0	0	0	1	0	1	1
1057:	1	0	3	2	1	0	3	3
1065:	0	0	2	3	2	2	1	3
1073:	0	1	0	1	3	0	0	2
1081:	1	0	2	1	1	1	1	3
1089:	0	1	4	0	0	0	0	0
1097:	2	3	1	2	0	5	0	5
1105:	0	0	1	2	2	0	0	1
1113:	0	0	3	1	1	2	1	4
1121:	1	1	0	1	2	3	3	2
1129:	0	0	1	4	2	1	1	1
1137:	0	1	1	0	1	0	1	0
1145:	2	1	1	1	0	1	2	1
1153:	1	1	3	0	3	2	1	1
1161:	3	4	1	3	2	2	0	0
1169:	0	2	3	0	5	5	2	1
1177:	0	1	3	0	1	1	1	1
1185:	1	1	2	0	2	1	1	2
1193:	1	0	1	0	0	0	0	0
1201:	0	0	2	1	0	1	3	1
1209:	3	0	2	0	0	1	0	1
1217:	0	1	2	0	2	1	0	1
1225:	1	1	2	1	2	1	1	0

1233: 2 1 2 1 2 3 0 1

Sample Title: BLANK

Channel	1	2	0	0	1	0	1	1
1241:	1	2	0	0	1	0	1	1
1249:	1	1	2	4	1	1	1	1
1257:	2	0	2	2	1	0	2	3
1265:	0	2	0	0	1	3	1	0
1273:	0	0	1	1	0	0	1	1
1281:	0	1	0	0	0	0	0	2
1289:	2	1	0	0	1	1	1	0
1297:	0	2	1	0	0	1	0	0
1305:	1	0	2	0	1	0	0	1
1313:	2	1	0	2	1	3	1	2
1321:	2	0	2	2	2	1	0	1
1329:	3	2	1	1	1	1	1	1
1337:	1	2	0	3	0	3	0	2
1345:	2	0	1	1	0	1	0	0
1353:	2	0	0	1	1	2	0	0
1361:	0	0	1	1	3	0	0	3
1369:	1	1	2	1	0	2	0	2
1377:	2	0	0	1	0	1	0	0
1385:	1	0	1	1	0	0	2	1
1393:	2	0	0	0	0	0	0	0
1401:	0	1	0	2	2	0	1	1
1409:	0	0	0	0	3	1	1	2
1417:	1	0	1	2	2	1	1	2
1425:	1	1	0	1	4	3	0	1
1433:	1	0	1	0	0	3	2	1
1441:	1	1	1	0	1	0	1	0
1449:	3	0	1	2	0	1	1	0
1457:	0	0	2	3	5	1	1	2
1465:	1	1	3	3	1	0	1	1
1473:	1	0	0	1	0	1	1	0
1481:	0	1	0	0	1	0	0	0
1489:	0	0	0	0	1	0	2	0
1497:	3	1	0	0	0	0	1	1
1505:	0	0	2	0	0	0	1	0
1513:	1	1	0	0	0	1	0	1
1521:	1	2	0	0	0	0	1	1
1529:	0	1	2	1	0	0	1	2
1537:	0	0	0	2	1	0	2	1
1545:	0	0	0	0	1	1	1	0
1553:	1	1	0	0	0	0	2	0
1561:	0	0	0	0	0	2	0	3
1569:	2	0	2	1	1	0	1	0
1577:	0	1	3	0	1	0	1	1
1585:	0	0	0	1	0	3	0	0
1593:	0	0	1	1	0	4	0	0
1601:	1	0	2	1	0	0	2	1
1609:	0	1	1	0	1	0	0	0
1617:	1	0	1	1	1	0	0	0
1625:	0	0	0	0	0	0	1	1
1633:	0	0	2	1	0	0	0	2
1641:	1	1	0	1	0	0	0	2
1649:	1	0	0	0	1	0	0	0
1657:	0	0	0	3	1	0	0	0

1665: 1 0 0 1 0 1 1 0

Sample Title: BLANK

Channel	1	2	3	4	5	6	7	8
1673:	1	0	0	1	0	0	0	0
1681:	1	0	2	0	1	0	0	0
1689:	0	2	0	1	1	0	1	0
1697:	0	0	0	1	0	0	1	0
1705:	0	0	0	1	1	0	0	0
1713:	1	0	0	1	0	1	0	0
1721:	0	0	0	1	0	0	0	0
1729:	0	1	1	1	0	0	1	0
1737:	0	1	1	0	0	0	0	0
1745:	0	1	0	0	1	2	1	0
1753:	0	0	0	1	0	0	1	0
1761:	0	1	1	4	0	0	0	0
1769:	0	0	1	1	1	0	0	0
1777:	3	1	0	0	0	1	1	0
1785:	0	0	0	0	0	0	0	1
1793:	0	0	1	0	0	0	2	1
1801:	2	1	0	0	0	0	1	2
1809:	1	1	0	0	0	1	0	0
1817:	0	0	2	0	0	0	0	1
1825:	1	0	0	0	1	0	0	0
1833:	0	0	1	0	1	0	1	1
1841:	1	1	1	0	0	0	0	1
1849:	0	0	0	0	0	0	0	0
1857:	1	0	1	0	1	0	0	0
1865:	0	2	0	1	0	0	0	1
1873:	0	0	1	0	0	0	0	0
1881:	0	0	3	0	0	0	1	1
1889:	0	1	2	0	1	0	0	1
1897:	0	1	0	0	0	2	0	1
1905:	0	1	0	0	1	0	0	0
1913:	0	0	0	1	0	0	0	1
1921:	0	1	0	1	1	0	2	0
1929:	0	0	0	0	1	0	1	0
1937:	1	0	0	1	1	0	0	0
1945:	0	2	0	0	0	1	0	0
1953:	1	0	2	2	0	0	0	0
1961:	1	0	0	1	0	0	0	0
1969:	0	0	1	1	0	0	0	1
1977:	1	0	2	1	0	0	0	0
1985:	1	0	1	0	0	2	0	0
1993:	0	0	0	0	1	0	3	0
2001:	0	0	0	0	0	1	0	0
2009:	0	0	0	1	0	0	0	0
2017:	1	1	0	0	0	1	1	0
2025:	2	0	0	1	0	0	0	0
2033:	0	0	0	0	0	0	1	0
2041:	0	0	0	0	1	0	0	0
2049:	0	0	0	0	0	0	0	1
2057:	0	0	0	0	0	0	0	0
2065:	1	1	0	0	0	0	0	0
2073:	1	0	0	0	1	0	1	0
2081:	0	0	0	1	0	0	1	0
2089:	1	0	2	0	1	1	0	1

2097: 0 0 0 2 1 1 1 0

Sample Title: BLANK

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2105:	1	1	0	0	1	0	0	0
2113:	0	4	0	0	2	0	0	1
2121:	0	0	1	0	0	2	1	0
2129:	0	0	0	1	1	0	1	0
2137:	0	1	0	0	0	0	0	1
2145:	0	0	1	0	0	0	0	0
2153:	1	0	0	0	0	1	0	0
2161:	0	0	0	1	0	0	0	0
2169:	0	0	0	0	0	0	0	0
2177:	1	0	1	0	0	1	1	0
2185:	1	0	0	0	0	0	0	0
2193:	0	0	0	2	1	1	1	3
2201:	0	1	0	1	0	0	0	0
2209:	1	0	0	0	0	0	0	0
2217:	1	0	0	0	1	1	1	0
2225:	0	0	0	1	0	1	1	1
2233:	1	0	1	0	0	0	0	0
2241:	0	0	3	0	0	0	0	0
2249:	1	1	0	1	0	1	0	0
2257:	0	2	0	0	1	0	1	0
2265:	0	1	0	0	2	0	1	1
2273:	1	0	1	1	0	0	0	0
2281:	0	0	0	1	0	1	0	2
2289:	0	2	1	0	0	0	0	0
2297:	1	0	0	1	1	0	0	1
2305:	0	0	1	0	0	0	0	1
2313:	0	0	0	0	1	0	1	0
2321:	0	0	0	1	1	0	1	0
2329:	0	0	0	0	1	0	0	0
2337:	0	0	0	1	1	0	0	0
2345:	0	1	1	0	0	0	1	0
2353:	1	1	0	1	0	0	0	0
2361:	0	0	0	0	0	0	1	0
2369:	1	1	0	0	0	0	0	0
2377:	1	0	1	0	0	0	0	0
2385:	0	1	0	0	0	0	0	1
2393:	0	0	0	0	0	0	0	0
2401:	0	0	0	0	2	0	1	1
2409:	1	1	0	1	0	0	0	0
2417:	0	0	0	0	0	1	0	0
2425:	1	0	0	1	0	0	1	1
2433:	0	0	0	0	0	0	0	0
2441:	1	0	0	0	0	0	0	1
2449:	0	1	0	0	0	0	2	1
2457:	0	0	0	0	0	0	0	1
2465:	0	1	0	0	1	1	0	1
2473:	0	0	0	1	1	0	0	0
2481:	1	0	0	0	0	0	0	0
2489:	0	0	0	0	0	0	0	0
2497:	0	1	1	0	1	0	0	0
2505:	1	1	0	0	0	0	0	0
2513:	0	0	1	0	0	1	0	0
2521:	0	0	0	0	0	1	0	0

2529: 1 0 0 2 0 0 2 1

Sample Title: BLANK

Channel	1	2	3	4	5	6	7	8
2537:	0	0	1	0	2	1	0	1
2545:	0	1	0	0	0	0	0	0
2553:	0	0	2	0	1	0	0	0
2561:	2	1	1	0	0	0	0	0
2569:	1	0	0	0	0	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	0	0	0	0	0	1	0
2593:	0	0	0	2	1	0	0	0
2601:	0	0	0	0	1	0	0	0
2609:	0	0	0	1	1	3	1	1
2617:	0	0	0	0	0	1	0	0
2625:	0	0	0	1	0	0	1	0
2633:	0	0	0	0	0	1	0	2
2641:	0	0	0	0	0	0	0	0
2649:	0	1	0	0	0	0	0	0
2657:	0	0	0	0	1	0	0	0
2665:	1	2	0	1	0	0	0	1
2673:	0	0	1	0	0	1	0	0
2681:	0	0	0	0	0	0	0	0
2689:	0	0	0	0	0	0	0	0
2697:	0	0	0	0	0	0	0	1
2705:	0	0	1	0	0	0	0	0
2713:	0	0	0	0	2	0	0	0
2721:	0	1	0	0	0	0	0	0
2729:	0	1	0	0	0	1	0	1
2737:	0	0	0	0	0	1	0	0
2745:	0	0	1	0	0	1	0	0
2753:	0	1	0	0	0	0	1	0
2761:	0	2	1	1	0	0	0	0
2769:	0	0	0	0	1	1	0	1
2777:	1	2	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	0	0	1	0	0	0	0	0
2801:	0	0	0	0	2	0	0	1
2809:	0	0	0	1	1	0	0	0
2817:	0	0	0	0	0	0	0	0
2825:	0	0	0	0	0	1	0	0
2833:	0	0	0	0	1	0	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	1	0	0	0	0	0	0
2857:	0	0	0	0	0	1	0	0
2865:	1	0	0	0	0	0	0	0
2873:	0	1	0	0	0	0	1	0
2881:	0	0	0	1	0	1	0	0
2889:	0	0	0	0	0	0	1	1
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	1	0	0	0
2913:	0	0	0	1	0	0	0	0
2921:	0	0	0	0	0	0	1	0
2929:	0	0	0	0	1	0	0	0
2937:	0	0	0	0	0	1	0	0
2945:	0	1	0	0	0	0	2	1
2953:	0	1	0	0	0	0	0	0

2961: 0 0 0 0 0 0 0 0 1

Sample Title: BLANK

Channel	1	2	3	4	5	6	7	8	9
2969:	1	0	0	1	0	0	1	0	
2977:	0	1	1	0	0	0	0	0	
2985:	0	1	0	0	0	0	0	0	
2993:	0	0	0	0	0	0	1	0	
3001:	1	0	0	0	0	0	0	0	
3009:	0	1	0	0	0	0	0	0	
3017:	0	0	0	0	0	1	0	0	
3025:	0	0	0	0	0	0	0	0	
3033:	0	0	0	0	0	0	0	1	
3041:	0	0	0	0	0	0	0	0	
3049:	0	0	0	0	0	0	0	0	
3057:	0	0	0	0	0	0	0	0	
3065:	0	2	0	1	0	0	0	0	
3073:	0	0	0	0	0	0	0	0	
3081:	0	0	0	0	1	0	0	0	
3089:	0	0	0	0	1	0	0	0	
3097:	0	0	1	0	1	0	0	0	
3105:	0	0	0	0	0	0	0	0	
3113:	0	0	0	0	1	0	0	0	
3121:	0	0	0	1	0	0	0	0	
3129:	0	0	0	0	0	0	0	0	
3137:	1	0	0	1	1	1	1	1	
3145:	0	0	0	2	0	0	0	1	
3153:	0	0	0	0	0	0	0	0	
3161:	0	0	1	0	0	0	1	0	
3169:	1	1	1	1	0	0	0	0	
3177:	0	0	0	0	0	0	0	0	
3185:	0	0	0	0	0	0	0	1	
3193:	0	0	0	0	1	0	0	0	
3201:	0	0	0	0	0	0	0	0	
3209:	0	0	0	0	0	0	0	0	
3217:	1	1	0	0	1	0	0	0	
3225:	0	0	0	0	1	0	0	0	
3233:	0	0	0	0	0	0	0	0	
3241:	0	0	1	0	0	0	1	0	
3249:	0	0	0	0	0	1	1	0	
3257:	0	0	0	0	0	0	0	1	
3265:	1	0	0	0	0	0	1	1	
3273:	0	0	1	0	0	0	0	0	
3281:	0	0	0	0	0	0	0	0	
3289:	0	0	0	0	0	0	0	1	
3297:	0	0	2	0	1	0	0	0	
3305:	0	0	0	1	0	0	0	0	
3313:	0	0	0	0	0	0	0	0	
3321:	0	0	0	0	0	0	0	0	
3329:	0	0	0	1	0	1	0	1	
3337:	0	0	0	0	0	0	1	0	
3345:	1	0	0	1	0	0	0	0	
3353:	0	0	0	0	0	0	0	0	
3361:	0	0	0	0	0	0	0	0	
3369:	0	0	0	0	0	1	1	0	
3377:	0	1	1	0	0	0	1	0	
3385:	0	0	0	0	0	0	0	0	

3393: 0 0 0 0 0 0 0 0 0

Sample Title: BLANK

Channel	1	2	3	4	5	6	7	8	9
3401:	0	1	0	0	0	0	0	1	0
3409:	0	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0	1
3433:	0	0	0	0	0	0	0	0	1
3441:	0	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0	0
3457:	0	0	0	2	0	2	0	0	0
3465:	0	0	0	0	0	0	0	0	0
3473:	2	1	0	0	0	1	0	0	0
3481:	0	0	0	0	0	0	0	0	0
3489:	0	0	0	0	1	0	0	0	0
3497:	0	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0	0
3513:	0	0	0	1	1	0	0	0	0
3521:	0	1	1	0	0	0	0	0	1
3529:	0	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0	0
3561:	0	0	0	0	1	0	0	0	0
3569:	0	0	0	0	0	0	0	0	0
3577:	1	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	1	0	0	0
3593:	0	0	0	0	1	0	0	0	1
3601:	0	0	0	0	0	0	0	0	1
3609:	0	0	0	0	0	1	0	0	0
3617:	0	1	0	0	1	0	0	0	0
3625:	0	0	0	0	0	0	1	0	0
3633:	0	0	0	0	0	0	0	0	0
3641:	1	0	0	1	0	0	0	0	1
3649:	0	0	0	0	1	0	1	0	0
3657:	0	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0	1
3673:	0	0	0	0	0	0	0	0	0
3681:	1	0	0	0	0	0	0	0	0
3689:	0	0	1	0	0	0	0	0	0
3697:	0	0	0	1	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0	0
3721:	1	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0	0
3745:	1	0	0	1	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0	0
3769:	0	0	0	0	1	1	0	0	0
3777:	0	0	0	0	0	0	0	0	0
3785:	0	1	0	0	0	0	0	0	1
3793:	0	0	0	0	0	0	0	0	0
3801:	0	0	0	0	1	0	0	0	0
3809:	0	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	1	0	0

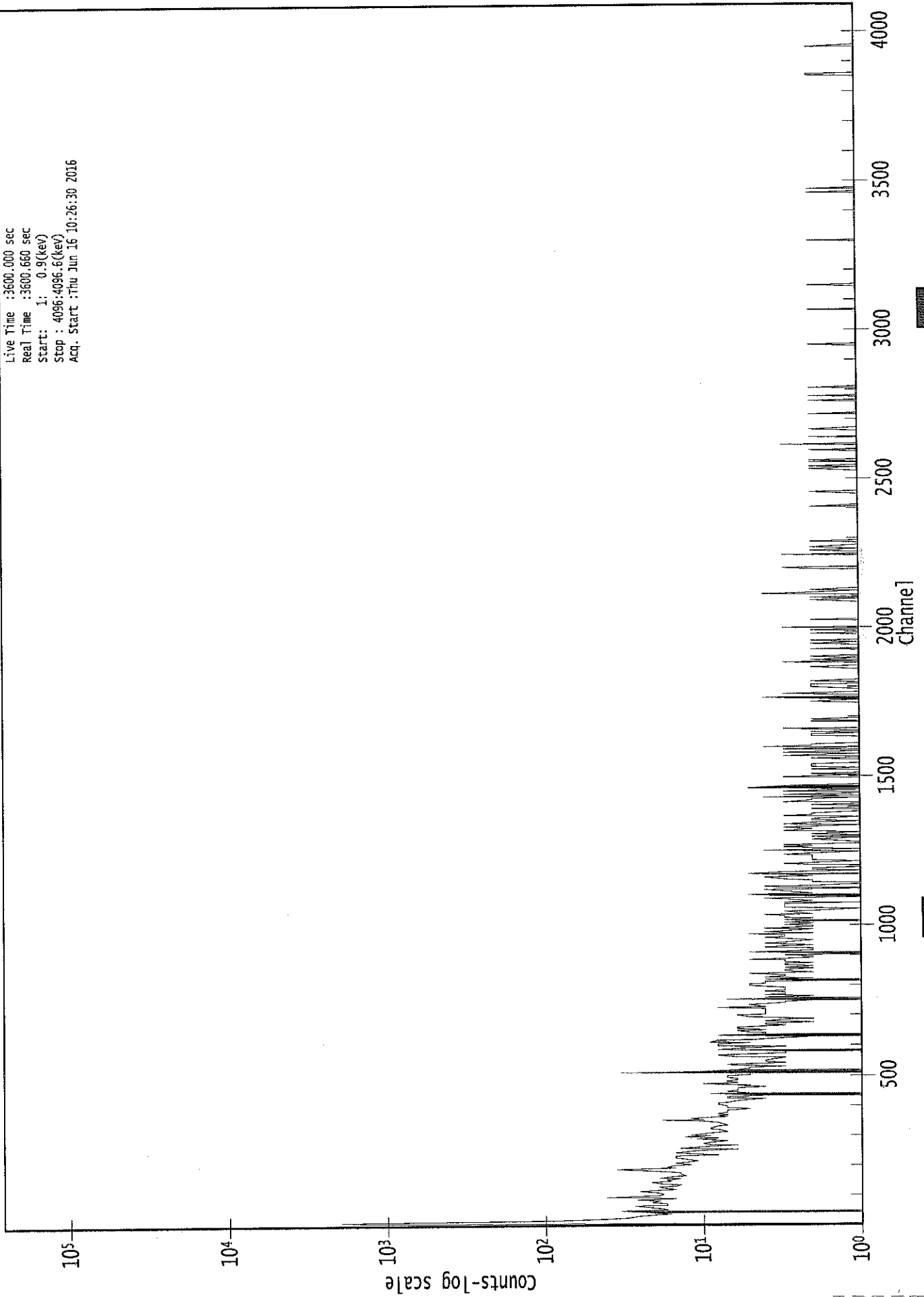
3825: 0 0 0 0 0 0 0 0 0

Sample Title: BLANK

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	1	0	0	0
3849:	0	0	1	0	2	0	0	0
3857:	0	2	0	1	0	0	0	0
3865:	1	0	1	0	0	0	0	0
3873:	0	0	1	0	0	1	0	0
3881:	0	0	1	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	1	0	0	1	0	0
3913:	0	0	0	0	0	1	0	0
3921:	0	0	0	1	0	0	0	0
3929:	0	0	1	0	0	0	1	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	2	0	1	1
3953:	0	0	0	1	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	1	0	0	0	0	0	0
3985:	0	0	0	0	0	0	1	0
3993:	0	0	0	0	0	1	0	0
4001:	0	1	0	1	0	0	0	0
4009:	0	0	1	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	1	0	0	1
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	1	0	0	0
4049:	0	0	1	0	0	0	1	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	1	0	0	0	1
4089:	0	2	0	0	0	1	0	0

0000038985.CNF

Live Time :3600.000 sec
Real Time :3600.660 sec
Start: 1: 0.9(kev)
Stop : 4096.4096.6(kev)
Acq. Start :Thu Jun 16 10:26:30 2016



Analysis Report for 1606041-03
CP-5028 00-02

W
6116

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-03
Sample Description : CP-5028 00-02
Sample Type : SOIL

Sample Size : 3.877E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 4:29:39PM
Acquisition Started : 6/16/2016 7:16:00AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.4 seconds

Dead Time : 0.04 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 7 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 4/6/2016
Efficiency Calibration Description :

Sample Number : 38973

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606041-03
CP-5028 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 8:16:07AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	12.86	12.98	0.0000	0.00
2	46.60	46.70	0.0000	0.00
3	63.09	63.19	0.0000	0.00
4	73.01	73.10	0.0000	0.00
5	76.81	76.90	0.0000	0.00
6	88.17	88.26	0.0000	0.00
7	93.11	93.19	0.0000	0.00
8	128.88	128.94	0.0000	0.00
9	185.72	185.75	0.0000	0.00
10	204.48	204.49	0.0000	0.00
11	236.00	236.00	0.0000	0.00
12	241.58	241.57	0.0000	0.00
13	270.29	270.27	0.0000	0.00
14	277.15	277.12	0.0000	0.00
15	295.13	295.10	0.0000	0.00
16	300.17	300.14	0.0000	0.00
17	327.79	327.74	0.0000	0.00
18	338.35	338.29	0.0000	0.00
19	351.84	351.77	0.0000	0.00
20	500.32	500.18	0.0000	0.00
21	512.81	512.66	0.0000	0.00
22	580.00	579.82	0.0000	0.00
23	583.34	583.16	0.0000	0.00
24	609.27	609.08	0.0000	0.00
25	722.06	721.82	0.0000	0.00
26	727.36	727.12	0.0000	0.00
27	758.26	758.00	0.0000	0.00
28	768.23	767.96	0.0000	0.00
29	785.98	785.71	0.0000	0.00
30	821.88	821.59	0.0000	0.00
31	861.08	860.77	0.0000	0.00
32	871.31	871.00	0.0000	0.00
33	911.20	910.87	0.0000	0.00
34	917.23	916.90	0.0000	0.00
35	950.00	949.66	0.0000	0.00
36	964.78	964.43	0.0000	0.00
37	969.31	968.96	0.0000	0.00
38	1120.54	1120.13	0.0000	0.00
39	1377.72	1377.23	0.0000	0.00
40	1401.49	1400.98	0.0000	0.00
41	1456.42	1455.90	0.0000	0.00
42	1460.92	1460.40	0.0000	0.00

Analysis Report for 1606041-03
CP-5028 00-02

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1472.18	1471.65	0.0000	0.00
44	1585.01	1584.45	0.0000	0.00
45	1616.93	1616.36	0.0000	0.00
46	1631.88	1631.31	0.0000	0.00
47	1764.59	1763.98	0.0000	0.00
48	1800.90	1800.29	0.0000	0.00
49	1919.97	1919.33	0.0000	0.00
50	1941.27	1940.63	0.0000	0.00
51	2090.27	2089.60	0.0000	0.00
52	2104.84	2104.17	0.0000	0.00
53	2120.23	2119.55	0.0000	0.00
54	2204.72	2204.03	0.0000	0.00
55	2398.43	2397.71	0.0000	0.00
56	2487.73	2487.00	0.0000	0.00
57	2613.93	2613.19	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606041-03
CP-5028 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 8:16:07AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	12.86	12 -	16	12.98	1.74E+03	131.21	1.92E+03	1.01
2	46.60	44 -	50	46.70	8.06E+01	71.25	8.77E+02	1.22
3	63.09	59 -	66	63.19	1.72E+02	94.91	1.39E+03	1.87
M	4	72 -	79	73.10	4.29E+01	22.37	2.16E+02	1.10
m	5	72 -	79	76.90	5.84E+02	71.51	5.91E+02	1.10
6	88.17	86 -	91	88.26	1.52E+02	78.61	1.12E+03	3.69
7	93.11	91 -	96	93.19	1.89E+02	77.46	1.00E+03	1.17
8	128.88	126 -	133	128.94	7.45E+01	74.43	8.69E+02	1.41
9	185.72	182 -	188	185.75	2.43E+02	63.81	5.64E+02	1.32
10	204.48	202 -	207	204.49	4.89E+01	48.14	4.26E+02	3.38
M	11	233 -	245	236.00	2.48E+01	31.81	2.21E+02	1.28
m	12	233 -	245	241.57	1.68E+02	60.63	2.92E+02	1.71
13	270.29	267 -	273	270.27	5.74E+01	45.21	3.25E+02	1.23
14	277.15	274 -	281	277.12	5.64E+01	47.37	3.37E+02	1.69
M	15	292 -	306	295.10	2.75E+02	40.79	1.71E+02	1.41
m	16	292 -	306	300.14	6.41E+01	34.60	2.05E+02	1.50
17	327.79	325 -	331	327.74	4.71E+01	40.38	2.62E+02	1.04
18	338.35	335 -	342	338.29	1.26E+02	48.04	3.03E+02	1.53
19	351.84	348 -	355	351.77	3.84E+02	61.02	3.66E+02	1.28
20	500.32	496 -	505	500.18	4.97E+01	33.87	1.37E+02	6.57
m	21	507 -	516	512.66	3.71E+01	32.77	1.17E+02	1.95
M	22	579 -	588	579.82	1.13E+01	12.69	4.65E+01	2.03
m	23	579 -	588	583.16	2.43E+02	38.01	1.11E+02	1.84
24	609.27	604 -	613	609.08	2.82E+02	52.64	2.35E+02	1.41
M	25	715 -	733	721.82	1.89E+01	20.88	7.20E+01	1.98
m	26	715 -	733	727.12	4.82E+01	24.25	7.20E+01	1.98
M	27	752 -	777	758.00	1.93E+01	18.36	3.83E+01	1.83
m	28	752 -	777	767.96	3.52E+01	21.26	6.55E+01	1.96
29	785.98	782 -	789	785.71	2.42E+01	25.85	9.36E+01	1.73
30	821.88	818 -	825	821.59	2.28E+01	20.10	5.24E+01	2.98
M	31	856 -	882	860.77	4.07E+01	20.75	3.50E+01	2.31
m	32	856 -	882	871.00	1.32E+01	16.06	3.00E+01	1.92
33	911.20	907 -	915	910.87	1.27E+02	35.30	1.17E+02	1.53
34	917.23	915 -	920	916.90	1.83E+01	16.94	3.95E+01	2.36
35	950.00	946 -	954	949.66	1.80E+01	22.62	6.80E+01	2.26
M	36	962 -	972	964.43	3.16E+01	15.62	3.60E+01	2.66
m	37	962 -	972	968.96	9.30E+01	27.94	6.30E+01	2.35
38	1120.54	1115 -	1124	1120.13	6.46E+01	33.11	1.19E+02	1.51
39	1377.72	1373 -	1381	1377.23	2.31E+01	16.29	2.58E+01	2.41
40	1401.49	1397 -	1405	1400.98	1.50E+01	12.20	1.40E+01	1.50

Analysis Report for 1606041-03
CP-5028 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1456.42	1454 - 1463		1455.90	7.10E+00	8.00	1.59E+01	2.80
m	42	1460.92	1454 - 1463		1460.40	5.48E+02	47.94	1.86E+01	2.02
	43	1472.18	1469 - 1475		1471.65	1.05E+01	8.75	5.08E+00	1.68
	44	1585.01	1578 - 1590		1584.45	1.91E+01	17.23	2.58E+01	1.30
	45	1616.93	1611 - 1620		1616.36	1.00E+01	13.42	2.00E+01	4.32
	46	1631.88	1628 - 1635		1631.31	1.48E+01	10.20	6.33E+00	2.35
	47	1764.59	1759 - 1767		1763.98	6.22E+01	17.56	9.55E+00	2.51
	48	1800.90	1797 - 1802		1800.29	7.00E+00	5.29	0.00E+00	1.47
	49	1919.97	1917 - 1921		1919.33	6.00E+00	4.90	0.00E+00	1.47
	50	1941.27	1937 - 1943		1940.63	8.00E+00	5.66	0.00E+00	1.66
	51	2090.27	2085 - 2095		2089.60	1.50E+01	7.75	0.00E+00	1.47
	52	2104.84	2098 - 2110		2104.17	2.40E+01	9.80	0.00E+00	1.47
	53	2120.23	2114 - 2123		2119.55	7.40E+00	8.06	5.20E+00	2.94
	54	2204.72	2199 - 2208		2204.03	1.36E+01	12.61	1.47E+01	2.40
	55	2398.43	2395 - 2400		2397.71	7.00E+00	5.29	0.00E+00	3.31
	56	2487.73	2484 - 2489		2487.00	5.00E+00	4.47	0.00E+00	2.98
	57	2613.93	2608 - 2617		2613.19	8.16E+01	19.00	4.79E+00	2.57

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 8:16:07AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	12.86	12 -	16	1.74E+03	131.21	1.92E+03	8.32E+01
	2	46.60	44 -	50	8.06E+01	71.25	8.77E+02	5.67E+01
	3	63.09	59 -	66	1.72E+02	94.91	1.39E+03	7.50E+01
M	4	73.01	72 -	79	4.29E+01	22.37	2.16E+02	2.42E+01
m	5	76.81	72 -	79	5.84E+02	71.51	5.91E+02	4.00E+01
	6	88.17	86 -	91	1.52E+02	78.61	1.12E+03	6.14E+01
	7	93.11	91 -	96	1.89E+02	77.46	1.00E+03	5.95E+01
	8	128.88	126 -	133	7.45E+01	74.43	8.69E+02	5.95E+01
	9	185.72	182 -	188	2.43E+02	63.81	5.64E+02	4.58E+01
	10	204.48	202 -	207	4.89E+01	48.14	4.26E+02	3.79E+01
M	11	236.00	233 -	245	2.48E+01	31.81	2.21E+02	2.45E+01

Analysis Report for 1606041-03

CP-5028 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	12	241.58	233 -	245	1.68E+02	60.63	2.92E+02	2.81E+01
	13	270.29	267 -	273	5.74E+01	45.21	3.25E+02	3.50E+01
	14	277.15	274 -	281	5.64E+01	47.37	3.37E+02	3.69E+01
M	15	295.13	292 -	306	2.75E+02	40.79	1.71E+02	2.15E+01
m	16	300.17	292 -	306	6.41E+01	34.60	2.05E+02	2.36E+01
	17	327.79	325 -	331	4.71E+01	40.38	2.62E+02	3.12E+01
	18	338.35	335 -	342	1.26E+02	48.04	3.03E+02	3.49E+01
	19	351.84	348 -	355	3.84E+02	61.02	3.66E+02	3.84E+01
	20	500.32	496 -	505	4.97E+01	33.87	1.37E+02	2.53E+01
m	21	512.81	507 -	516	3.71E+01	32.77	1.17E+02	1.78E+01
M	22	580.00	579 -	588	1.13E+01	12.69	4.65E+01	1.12E+01
m	23	583.34	579 -	588	2.43E+02	38.01	1.11E+02	1.73E+01
	24	609.27	604 -	613	2.82E+02	52.64	2.35E+02	3.33E+01
M	25	722.06	715 -	733	1.89E+01	20.88	7.20E+01	1.39E+01
m	26	727.36	715 -	733	4.82E+01	24.25	7.20E+01	1.39E+01
M	27	758.26	752 -	777	1.93E+01	18.36	3.83E+01	1.02E+01
m	28	768.23	752 -	777	3.52E+01	21.26	6.55E+01	1.33E+01
	29	785.98	782 -	789	2.42E+01	25.85	9.36E+01	1.96E+01
	30	821.88	818 -	825	2.28E+01	20.10	5.24E+01	1.45E+01
M	31	861.08	856 -	882	4.07E+01	20.75	3.50E+01	9.73E+00
m	32	871.31	856 -	882	1.32E+01	16.06	3.00E+01	9.00E+00
	33	911.20	907 -	915	1.27E+02	35.30	1.17E+02	2.24E+01
	34	917.23	915 -	920	1.83E+01	16.94	3.95E+01	1.20E+01
	35	950.00	946 -	954	1.80E+01	22.62	6.80E+01	1.72E+01
M	36	964.78	962 -	972	3.16E+01	15.62	3.60E+01	9.86E+00
m	37	969.31	962 -	972	9.30E+01	27.94	6.30E+01	1.30E+01
	38	1120.54	1115 -	1124	6.46E+01	33.11	1.19E+02	2.38E+01
	39	1377.72	1373 -	1381	2.31E+01	16.29	2.58E+01	1.08E+01
	40	1401.49	1397 -	1405	1.50E+01	12.20	1.40E+01	7.74E+00
M	41	1456.42	1454 -	1463	7.10E+00	8.00	1.59E+01	6.56E+00
m	42	1460.92	1454 -	1463	5.48E+02	47.94	1.86E+01	7.09E+00
	43	1472.18	1469 -	1475	1.05E+01	8.75	5.08E+00	4.84E+00
	44	1585.01	1578 -	1590	1.91E+01	17.23	2.58E+01	1.22E+01
	45	1616.93	1611 -	1620	1.00E+01	13.42	2.00E+01	9.73E+00
	46	1631.88	1628 -	1635	1.48E+01	10.20	6.33E+00	5.49E+00
	47	1764.59	1759 -	1767	6.22E+01	17.56	9.55E+00	6.35E+00
	48	1800.90	1797 -	1802	7.00E+00	5.29	0.00E+00	0.00E+00
	49	1919.97	1917 -	1921	6.00E+00	4.90	0.00E+00	0.00E+00
	50	1941.27	1937 -	1943	8.00E+00	5.66	0.00E+00	0.00E+00
	51	2090.27	2085 -	2095	1.50E+01	7.75	0.00E+00	0.00E+00
	52	2104.84	2098 -	2110	2.40E+01	9.80	0.00E+00	0.00E+00
	53	2120.23	2114 -	2123	7.40E+00	8.06	5.20E+00	4.89E+00
	54	2204.72	2199 -	2208	1.36E+01	12.61	1.47E+01	8.40E+00
	55	2398.43	2395 -	2400	7.00E+00	5.29	0.00E+00	0.00E+00
	56	2487.73	2484 -	2489	5.00E+00	4.47	0.00E+00	0.00E+00
	57	2613.93	2608 -	2617	8.16E+01	19.00	4.79E+00	4.83E+00

Analysis Report for 1606041-03
 CP-5028 00-02

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 8:16:07AM

Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
 Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	12.86	12 -	16	12.98	1.74E+03	131.21	1.92E+03	.....
2	46.60	44 -	50	46.70	8.06E+01	71.25	8.77E+02	PB-210
3	63.09	59 -	66	63.19	1.72E+02	94.91	1.39E+03	TH-234 TH-230
M 4	73.01	72 -	79	73.10	4.29E+01	22.37	2.16E+02	PM-145
m 5	76.81	72 -	79	76.90	5.84E+02	71.51	5.91E+02	.....
6	88.17	86 -	91	88.26	1.52E+02	78.61	1.12E+03	CD-109 LU-176 SN-126
7	93.11	91 -	96	93.19	1.89E+02	77.46	1.00E+03	GA-67
8	128.88	126 -	133	128.94	7.45E+01	74.43	8.69E+02	.....
9	185.72	182 -	188	185.75	2.43E+02	63.81	5.64E+02	RA-226
10	204.48	202 -	207	204.49	4.89E+01	48.14	4.26E+02	U-235
M 11	236.00	233 -	245	236.00	2.48E+01	31.81	2.21E+02	TH-227 NB-95M
m 12	241.58	233 -	245	241.57	1.68E+02	60.63	2.92E+02	RA-224
13	270.29	267 -	273	270.27	5.74E+01	45.21	3.25E+02	.....
14	277.15	274 -	281	277.12	5.64E+01	47.37	3.37E+02	CM-243 NP-239
M 15	295.13	292 -	306	295.10	2.75E+02	40.79	1.71E+02	PB-214
m 16	300.17	292 -	306	300.14	6.41E+01	34.60	2.05E+02	GA-67 PB-212 BI-210M
17	327.79	325 -	331	327.74	4.71E+01	40.38	2.62E+02	LA-140
18	338.35	335 -	342	338.29	1.26E+02	48.04	3.03E+02	AC-228
19	351.84	348 -	355	351.77	3.84E+02	61.02	3.66E+02	PB-214
20	500.32	496 -	505	500.18	4.97E+01	33.87	1.37E+02	.....
m 21	512.81	507 -	516	512.66	3.71E+01	32.77	1.17E+02	.....
M 22	580.00	579 -	588	579.82	1.13E+01	12.69	4.65E+01	.....
m 23	583.34	579 -	588	583.16	2.43E+02	38.01	1.11E+02	TL-208

Analysis Report for 1606041-03

CP-5028 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	24	609.27	604 -	613	609.08	2.82E+02	52.64	2.35E+02	BI-214
	25	722.06	715 -	733	721.82	1.89E+01	20.88	7.20E+01	SB-124 I-131 AG-108M
m	26	727.36	715 -	733	727.12	4.82E+01	24.25	7.20E+01	BI-212
M	27	758.26	752 -	777	758.00	1.93E+01	18.36	3.83E+01	.....
m	28	768.23	752 -	777	767.96	3.52E+01	21.26	6.55E+01	.....
	29	785.98	782 -	789	785.71	2.42E+01	25.85	9.36E+01	.....
	30	821.88	818 -	825	821.59	2.28E+01	20.10	5.24E+01	.....
M	31	861.08	856 -	882	860.77	4.07E+01	20.75	3.50E+01	TL-208
m	32	871.31	856 -	882	871.00	1.32E+01	16.06	3.00E+01	NB-94
	33	911.20	907 -	915	910.87	1.27E+02	35.30	1.17E+02	AC-228 LU-172
	34	917.23	915 -	920	916.90	1.83E+01	16.94	3.95E+01	.....
	35	950.00	946 -	954	949.66	1.80E+01	22.62	6.80E+01	.....
M	36	964.78	962 -	972	964.43	3.16E+01	15.62	3.60E+01	EU-152
m	37	969.31	962 -	972	968.96	9.30E+01	27.94	6.30E+01	AC-228
	38	1120.54	1115 -	1124	1120.13	6.46E+01	33.11	1.19E+02	SC-46 BI-214 TA-182
	39	1377.72	1373 -	1381	1377.23	2.31E+01	16.29	2.58E+01	.....
	40	1401.49	1397 -	1405	1400.98	1.50E+01	12.20	1.40E+01	.....
M	41	1456.42	1454 -	1463	1455.90	7.10E+00	8.00	1.59E+01	.....
m	42	1460.92	1454 -	1463	1460.40	5.48E+02	47.94	1.86E+01	K-40
	43	1472.18	1469 -	1475	1471.65	1.05E+01	8.75	5.08E+00	.....
	44	1585.01	1578 -	1590	1584.45	1.91E+01	17.23	2.58E+01	.....
	45	1616.93	1611 -	1620	1616.36	1.00E+01	13.42	2.00E+01	.....
	46	1631.88	1628 -	1635	1631.31	1.48E+01	10.20	6.33E+00	.....
	47	1764.59	1759 -	1767	1763.98	6.22E+01	17.56	9.55E+00	BI-214
	48	1800.90	1797 -	1802	1800.29	7.00E+00	5.29	0.00E+00	.....
	49	1919.97	1917 -	1921	1919.33	6.00E+00	4.90	0.00E+00	.....
	50	1941.27	1937 -	1943	1940.63	8.00E+00	5.66	0.00E+00	.....
	51	2090.27	2085 -	2095	2089.60	1.50E+01	7.75	0.00E+00	.....
	52	2104.84	2098 -	2110	2104.17	2.40E+01	9.80	0.00E+00	.....
	53	2120.23	2114 -	2123	2119.55	7.40E+00	8.06	5.20E+00	.....
	54	2204.72	2199 -	2208	2204.03	1.36E+01	12.61	1.47E+01	BI-214
	55	2398.43	2395 -	2400	2397.71	7.00E+00	5.29	0.00E+00	.....
	56	2487.73	2484 -	2489	2487.00	5.00E+00	4.47	0.00E+00	.....
	57	2613.93	2608 -	2617	2613.19	8.16E+01	19.00	4.79E+00	TL-208

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1606041-03
CP-5028 00-02

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 8:16:07AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	12.86	1.74E+03	131.21	1.10E-05	1.66E-03
	2	46.60	8.06E+01	71.25	1.71E-02	1.66E-03
	3	63.09	1.72E+02	94.91	2.36E-02	1.74E-03
M	4	73.01	4.29E+01	22.37	2.53E-02	1.95E-03
m	5	76.81	5.84E+02	71.51	2.57E-02	2.03E-03
	6	88.17	1.52E+02	78.61	2.60E-02	2.27E-03
	7	93.11	1.89E+02	77.46	2.60E-02	2.27E-03
	8	128.88	7.45E+01	74.43	2.39E-02	2.29E-03
	9	185.72	2.43E+02	63.81	1.99E-02	2.40E-03
	10	204.48	4.89E+01	48.14	1.88E-02	2.37E-03
M	11	236.00	2.48E+01	31.81	1.71E-02	2.32E-03
m	12	241.58	1.68E+02	60.63	1.69E-02	2.31E-03
	13	270.29	5.74E+01	45.21	1.56E-02	2.26E-03
	14	277.15	5.64E+01	47.37	1.54E-02	2.24E-03
M	15	295.13	2.75E+02	40.79	1.47E-02	2.21E-03
m	16	300.17	6.41E+01	34.60	1.45E-02	2.21E-03
	17	327.79	4.71E+01	40.38	1.37E-02	2.16E-03
	18	338.35	1.26E+02	48.04	1.33E-02	2.14E-03
	19	351.84	3.84E+02	61.02	1.30E-02	2.12E-03
	20	500.32	4.97E+01	33.87	9.93E-03	1.49E-03
m	21	512.81	3.71E+01	32.77	9.74E-03	1.42E-03
M	22	580.00	1.13E+01	12.69	8.83E-03	1.07E-03
m	23	583.34	2.43E+02	38.01	8.79E-03	1.06E-03
	24	609.27	2.82E+02	52.64	8.48E-03	9.23E-04
M	25	722.06	1.89E+01	20.88	7.38E-03	7.29E-04
m	26	727.36	4.82E+01	24.25	7.34E-03	7.36E-04
M	27	758.26	1.93E+01	18.36	7.09E-03	7.76E-04
m	28	768.23	3.52E+01	21.26	7.02E-03	7.89E-04
	29	785.98	2.42E+01	25.85	6.89E-03	8.11E-04
	30	821.88	2.28E+01	20.10	6.64E-03	8.58E-04
M	31	861.08	4.07E+01	20.75	6.38E-03	9.08E-04
m	32	871.31	1.32E+01	16.06	6.32E-03	9.21E-04
	33	911.20	1.27E+02	35.30	6.09E-03	9.29E-04
	34	917.23	1.83E+01	16.94	6.06E-03	9.17E-04
	35	950.00	1.80E+01	22.62	5.89E-03	8.50E-04
M	36	964.78	3.16E+01	15.62	5.81E-03	8.20E-04
m	37	969.31	9.30E+01	27.94	5.79E-03	8.11E-04
	38	1120.54	6.46E+01	33.11	5.15E-03	5.05E-04
	39	1377.72	2.31E+01	16.29	4.41E-03	3.66E-04
	40	1401.49	1.50E+01	12.20	4.35E-03	3.68E-04
M	41	1456.42	7.10E+00	8.00	4.24E-03	3.72E-04
m	42	1460.92	5.48E+02	47.94	4.23E-03	3.72E-04
	43	1472.18	1.05E+01	8.75	4.21E-03	3.73E-04
	44	1585.01	1.91E+01	17.23	4.01E-03	3.82E-04
	45	1616.93	1.00E+01	13.42	3.96E-03	3.84E-04

Analysis Report for 1606041-03
CP-5028 00-02

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
46	1631.88	1.48E+01	10.20	3.94E-03	3.85E-04
47	1764.59	6.22E+01	17.56	3.77E-03	3.96E-04
48	1800.90	7.00E+00	5.29	3.73E-03	3.98E-04
49	1919.97	6.00E+00	4.90	3.62E-03	4.01E-04
50	1941.27	8.00E+00	5.66	3.60E-03	4.01E-04
51	2090.27	1.50E+01	7.75	3.51E-03	4.01E-04
52	2104.84	2.40E+01	9.80	3.50E-03	4.01E-04
53	2120.23	7.40E+00	8.06	3.49E-03	4.01E-04
54	2204.72	1.36E+01	12.61	3.45E-03	4.01E-04
55	2398.43	7.00E+00	5.29	3.40E-03	4.01E-04
56	2487.73	5.00E+00	4.47	3.39E-03	4.01E-04
57	2613.93	8.16E+01	19.00	3.40E-03	4.01E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 8:16:07AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038677.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	12.86	1.74E+03	131.21	1.02E+03	3.77E+01	7.26E+02	1.37E+02
2	46.60	8.06E+01	71.25	2.17E+01	5.74E+00	5.89E+01	7.15E+01
3	63.09	1.72E+02	94.91	2.91E+01	8.34E+00	1.43E+02	9.53E+01
M	4	73.01	4.29E+01	22.37		4.29E+01	2.24E+01
m	5	76.81	5.84E+02	71.51		5.84E+02	7.15E+01
	6	88.17	1.52E+02	78.61		1.52E+02	7.86E+01
	7	93.11	1.89E+02	77.46	4.47E+01	1.44E+02	7.78E+01
	8	128.88	7.45E+01	74.43		7.45E+01	7.44E+01
	9	185.72	2.43E+02	63.81	3.13E+01	2.12E+02	6.42E+01
	10	204.48	4.89E+01	48.14	7.09E+00	4.18E+01	4.85E+01
M	11	236.00	2.48E+01	31.81		2.48E+01	3.18E+01
m	12	241.58	1.68E+02	60.63	2.33E+00	1.66E+02	6.07E+01
	13	270.29	5.74E+01	45.21		5.74E+01	4.52E+01
	14	277.15	5.64E+01	47.37		5.64E+01	4.74E+01
M	15	295.13	2.75E+02	40.79		2.75E+02	4.08E+01
m	16	300.17	6.41E+01	34.60		6.41E+01	3.46E+01
	17	327.79	4.71E+01	40.38		4.71E+01	4.04E+01
	18	338.35	1.26E+02	48.04		1.26E+02	4.80E+01

Analysis Report for 1606041-03

CP-5028 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	19	351.84	3.84E+02	61.02	9.12E+00	4.79E+00	3.75E+02	6.12E+01
	20	500.32	4.97E+01	33.87			4.97E+01	3.39E+01
m	21	512.81	3.71E+01	32.77			3.71E+01	3.28E+01
M	22	580.00	1.13E+01	12.69			1.13E+01	1.27E+01
m	23	583.34	2.43E+02	38.01	3.98E+00	3.57E+00	2.39E+02	3.82E+01
	24	609.27	2.82E+02	52.64	8.66E+00	3.90E+00	2.73E+02	5.28E+01
M	25	722.06	1.89E+01	20.88			1.89E+01	2.09E+01
m	26	727.36	4.82E+01	24.25			4.82E+01	2.42E+01
M	27	758.26	1.93E+01	18.36			1.93E+01	1.84E+01
m	28	768.23	3.52E+01	21.26			3.52E+01	2.13E+01
	29	785.98	2.42E+01	25.85			2.42E+01	2.58E+01
	30	821.88	2.28E+01	20.10			2.28E+01	2.01E+01
M	31	861.08	4.07E+01	20.75			4.07E+01	2.07E+01
m	32	871.31	1.32E+01	16.06			1.32E+01	1.61E+01
	33	911.20	1.27E+02	35.30	2.01E+00	2.72E+00	1.25E+02	3.54E+01
	34	917.23	1.83E+01	16.94			1.83E+01	1.69E+01
	35	950.00	1.80E+01	22.62			1.80E+01	2.26E+01
M	36	964.78	3.16E+01	15.62			3.16E+01	1.56E+01
m	37	969.31	9.30E+01	27.94			9.30E+01	2.79E+01
	38	1120.54	6.46E+01	33.11			6.46E+01	3.31E+01
	39	1377.72	2.31E+01	16.29			2.31E+01	1.63E+01
	40	1401.49	1.50E+01	12.20			1.50E+01	1.22E+01
M	41	1456.42	7.10E+00	8.00			7.10E+00	8.00E+00
m	42	1460.92	5.48E+02	47.94	3.09E+00	1.97E+00	5.45E+02	4.80E+01
	43	1472.18	1.05E+01	8.75			1.05E+01	8.75E+00
	44	1585.01	1.91E+01	17.23			1.91E+01	1.72E+01
	45	1616.93	1.00E+01	13.42			1.00E+01	1.34E+01
	46	1631.88	1.48E+01	10.20			1.48E+01	1.02E+01
	47	1764.59	6.22E+01	17.56			6.22E+01	1.76E+01
	48	1800.90	7.00E+00	5.29			7.00E+00	5.29E+00
	49	1919.97	6.00E+00	4.90			6.00E+00	4.90E+00
	50	1941.27	8.00E+00	5.66			8.00E+00	5.66E+00
	51	2090.27	1.50E+01	7.75			1.50E+01	7.75E+00
	52	2104.84	2.40E+01	9.80			2.40E+01	9.80E+00
	53	2120.23	7.40E+00	8.06			7.40E+00	8.06E+00
	54	2204.72	1.36E+01	12.61			1.36E+01	1.26E+01
	55	2398.43	7.00E+00	5.29			7.00E+00	5.29E+00
	56	2487.73	5.00E+00	4.47			5.00E+00	4.47E+00
	57	2613.93	8.16E+01	19.00			8.16E+01	1.90E+01

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1606041-03
CP-5028 00-02

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 8:16:07AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038677.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	1.74E+03	131.21	1.02E+03	3.77E+01	7.26E+02	1.37E+02
	2	8.06E+01	71.25	2.17E+01	5.74E+00	5.89E+01	7.15E+01
	3	1.72E+02	94.91	2.91E+01	8.34E+00	1.43E+02	9.53E+01
M	4	4.29E+01	22.37			4.29E+01	2.24E+01
m	5	5.84E+02	71.51			5.84E+02	7.15E+01
	6	1.52E+02	78.61			1.52E+02	7.86E+01
	7	1.89E+02	77.46	4.47E+01	7.30E+00	1.44E+02	7.78E+01
	8	7.45E+01	74.43			7.45E+01	7.44E+01
	9	2.43E+02	63.81	3.13E+01	6.95E+00	2.12E+02	6.42E+01
	10	4.89E+01	48.14	7.09E+00	6.23E+00	4.18E+01	4.85E+01
M	11	2.48E+01	31.81			2.48E+01	3.18E+01
m	12	1.68E+02	60.63	2.33E+00	1.42E+00	1.66E+02	6.07E+01
	13	5.74E+01	45.21			5.74E+01	4.52E+01
	14	5.64E+01	47.37			5.64E+01	4.74E+01
M	15	2.75E+02	40.79			2.75E+02	4.08E+01
m	16	6.41E+01	34.60			6.41E+01	3.46E+01
	17	4.71E+01	40.38			4.71E+01	4.04E+01
	18	1.26E+02	48.04			1.26E+02	4.80E+01
	19	3.84E+02	61.02	9.12E+00	4.79E+00	3.75E+02	6.12E+01
	20	4.97E+01	33.87			4.97E+01	3.39E+01
m	21	3.71E+01	32.77			3.71E+01	3.28E+01
M	22	1.13E+01	12.69			1.13E+01	1.27E+01
m	23	2.43E+02	38.01	3.98E+00	3.57E+00	2.39E+02	3.82E+01
	24	2.82E+02	52.64	8.66E+00	3.90E+00	2.73E+02	5.28E+01
M	25	1.89E+01	20.88			1.89E+01	2.09E+01
m	26	4.82E+01	24.25			4.82E+01	2.42E+01
M	27	1.93E+01	18.36			1.93E+01	1.84E+01
m	28	3.52E+01	21.26			3.52E+01	2.13E+01
	29	2.42E+01	25.85			2.42E+01	2.58E+01
	30	2.28E+01	20.10			2.28E+01	2.01E+01
M	31	4.07E+01	20.75			4.07E+01	2.07E+01
m	32	1.32E+01	16.06			1.32E+01	1.61E+01
	33	1.27E+02	35.30	2.01E+00	2.72E+00	1.25E+02	3.54E+01
	34	1.83E+01	16.94			1.83E+01	1.69E+01
	35	1.80E+01	22.62			1.80E+01	2.26E+01
M	36	3.16E+01	15.62			3.16E+01	1.56E+01
m	37	9.30E+01	27.94			9.30E+01	2.79E+01
	38	6.46E+01	33.11			6.46E+01	3.31E+01
	39	2.31E+01	16.29			2.31E+01	1.63E+01
	40	1.50E+01	12.20			1.50E+01	1.22E+01
M	41	7.10E+00	8.00			7.10E+00	8.00E+00

Analysis Report for 1606041-03
CP-5028 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	42	1460.92	5.48E+02	47.94	3.09E+00	1.97E+00	5.45E+02	4.80E+01
	43	1472.18	1.05E+01	8.75			1.05E+01	8.75E+00
	44	1585.01	1.91E+01	17.23			1.91E+01	1.72E+01
	45	1616.93	1.00E+01	13.42			1.00E+01	1.34E+01
	46	1631.88	1.48E+01	10.20			1.48E+01	1.02E+01
	47	1764.59	6.22E+01	17.56			6.22E+01	1.76E+01
	48	1800.90	7.00E+00	5.29			7.00E+00	5.29E+00
	49	1919.97	6.00E+00	4.90			6.00E+00	4.90E+00
	50	1941.27	8.00E+00	5.66			8.00E+00	5.66E+00
	51	2090.27	1.50E+01	7.75			1.50E+01	7.75E+00
	52	2104.84	2.40E+01	9.80			2.40E+01	9.80E+00
	53	2120.23	7.40E+00	8.06			7.40E+00	8.06E+00
	54	2204.72	1.36E+01	12.61			1.36E+01	1.26E+01
	55	2398.43	7.00E+00	5.29			7.00E+00	5.29E+00
	56	2487.73	5.00E+00	4.47			5.00E+00	4.47E+00
	57	2613.93	8.16E+01	19.00			8.16E+01	1.90E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.998	1460.81 *	10.67	2.34E+01	2.95E+00
GA-67	0.895	93.31 *	35.70	2.34E+00	4.13E+00
		208.95	2.24		
		300.22 *	16.00	4.14E+00	7.35E+00
NB-95M	0.950	235.69 *	25.00	7.13E-01	9.19E-01
CD-109	0.997	88.03 *	3.72	3.08E+00	1.63E+00
SN-126	0.943	87.57 *	37.00	3.05E-01	1.60E-01
TL-208	0.950	583.14 *	30.22	1.74E+00	3.48E-01
		860.37 *	4.48	2.75E+00	1.46E+00
		2614.66 *	35.85	1.30E+00	3.39E-01
PB-210	0.998	46.50 *	4.25	1.57E+00	1.91E+00
BI-212	0.761	727.17 *	11.80	1.08E+00	5.53E-01
		1620.62	2.75		
BI-214	0.995	609.31 *	46.30	1.35E+00	2.99E-01
		1120.29 *	15.10	1.61E+00	8.39E-01

Analysis Report for 1606041-03
CP-5028 00-02

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.995	1764.49 *	15.80	2.02E+00	6.09E-01
		2204.22 *	4.98	1.54E+00	1.43E+00
PB-214	0.999	295.21 *	19.19	1.89E+00	3.98E-01
		351.92 *	37.19	1.51E+00	3.47E-01
RA-224	0.944	240.98 *	3.95	4.82E+00	1.88E+00
RA-226	0.963	186.21 *	3.28	6.28E+00	1.17E+01
AC-228	0.997	338.32 *	11.40	1.60E+00	6.63E-01
		911.07 *	27.70	1.43E+00	4.61E-01
		969.11 *	16.60	1.87E+00	6.21E-01
TH-234	0.994	63.29 *	3.80	3.08E+00	2.07E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 8:16:07AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	12.86	2.01552E-01	9.41	
M	4	73.01	1.19212E-02	26.06	Tol. PM-145
m	5	76.81	1.62342E-01	6.12	
	8	128.88	2.06857E-02	49.97	
	10	204.48	1.16020E-02	58.10	Tol. U-235
	13	270.29	1.59482E-02	39.37	
	14	277.15	1.56728E-02	41.98	Tol. NP-239 CM-243
	17	327.79	1.30727E-02	42.90	Tol. LA-140
	20	500.32	1.37983E-02	34.09	
m	21	512.81	1.02921E-02	44.22	
M	22	580.00	3.14753E-03	55.99	Sum
M	25	722.06	5.24359E-03	55.31	Tol. SB-124 I-131
M	27	758.26	5.36874E-03	47.49	
m	28	768.23	9.77624E-03	30.20	Sum
	29	785.98	6.72535E-03	53.38	
	30	821.88	6.32937E-03	44.11	

Analysis Report for 1606041-03
CP-5028 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
m	32	871.31	3.67142E-03	60.76		
	34	917.23	5.07310E-03	46.38		
	35	950.00	4.99733E-03	62.87	S-Esc	
M	36	964.78	8.76633E-03	24.75	Tol.	EU-152
	39	1377.72	6.41204E-03	35.29		
	40	1401.49	4.16667E-03	40.65		
M	41	1456.42	1.97290E-03	56.32		
	43	1472.18	2.90598E-03	41.80	Sum	
	44	1585.01	5.31250E-03	45.06		
	45	1616.93	2.77778E-03	67.08		
	46	1631.88	4.12037E-03	34.38		
	48	1800.90	1.94444E-03	37.80		
	49	1919.97	1.66667E-03	40.82		
	50	1941.27	2.22222E-03	35.36		
	51	2090.27	4.16667E-03	25.82	Sum	
	52	2104.84	6.66667E-03	20.41		
	53	2120.23	2.05556E-03	54.47		
	55	2398.43	1.94444E-03	37.80		
	56	2487.73	1.38889E-03	44.72		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	2.34E+01	2.95E+00
GA-67	0.89	93.31 *	35.70	2.34E+00	4.13E+00
		208.95	2.24		
		300.22 *	16.00	4.14E+00	7.35E+00
NB-95M	0.95	235.69 *	25.00	7.13E-01	9.19E-01
CD-109	0.99	88.03 *	3.72	3.08E+00	1.63E+00
SN-126	0.94	87.57 *	37.00	3.05E-01	1.60E-01
TL-208	0.95	583.14 *	30.22	1.74E+00	3.48E-01
		860.37 *	4.48	2.75E+00	1.46E+00

Analysis Report for 1606041-03
CP-5028 00-02

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TL-208	0.95	2614.66 *		35.85	1.30E+00	3.39E-01
PB-210	0.99	46.50 *		4.25	1.57E+00	1.91E+00
BI-212	0.76	727.17 *		11.80	1.08E+00	5.53E-01
		1620.62		2.75		
BI-214	0.99	609.31 *		46.30	1.35E+00	2.99E-01
		1120.29 *		15.10	1.61E+00	8.39E-01
		1764.49 *		15.80	2.02E+00	6.09E-01
		2204.22 *		4.98	1.54E+00	1.43E+00
PB-214	0.99	295.21 *		19.19	1.89E+00	3.98E-01
		351.92 *		37.19	1.51E+00	3.47E-01
RA-224	0.94	240.98 *		3.95	4.82E+00	1.88E+00
RA-226	0.96	186.21 *		3.28	6.28E+00	1.17E+01
AC-228	0.99	338.32 *		11.40	1.60E+00	6.63E-01
		911.07 *		27.70	1.43E+00	4.61E-01
		969.11 *		16.60	1.87E+00	6.21E-01
TH-234	0.99	63.29 *		3.80	3.08E+00	2.07E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.998	2.34E+01	2.95E+00	
GA-67	0.895	2.77E+00	4.30E+00	
NB-95M	0.950	7.13E-01	9.19E-01	
? CD-109	0.997	3.08E+00	1.63E+00	
? SN-126	0.943	3.05E-01	1.60E-01	
TL-208	0.950	1.55E+00	2.40E-01	
PB-210	0.998	1.57E+00	1.91E+00	
BI-212	0.761	1.08E+00	5.53E-01	
BI-214	0.995	1.49E+00	2.51E-01	
PB-214	0.999	1.67E+00	2.62E-01	
RA-224	0.944	4.82E+00	1.88E+00	

Analysis Report for 1606041-03
CP-5028 00-02

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
RA-226	0.963	6.28E+00	1.17E+01	
AC-228	0.997	1.59E+00	3.23E-01	
TH-234	0.994	3.08E+00	2.07E+00	

- ? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1606041-03
CP-5028 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 8:16:07AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	12.86	2.01552E-01		
M	4	73.01	1.19212E-02	Tol.	PM-145
m	5	76.81	1.62342E-01		
	8	128.88	2.06857E-02		
	10	204.48	1.16020E-02	Tol.	U-235
	13	270.29	1.59482E-02		
	14	277.15	1.56728E-02	Tol.	NP-239 CM-243
	17	327.79	1.30727E-02	Tol.	LA-140
	20	500.32	1.37983E-02		
m	21	512.81	1.02921E-02		
M	22	580.00	3.14753E-03	Sum	
M	25	722.06	5.24359E-03	Tol.	SB-124 I-131
M	27	758.26	5.36874E-03		
m	28	768.23	9.77624E-03	Sum	
	29	785.98	6.72535E-03		
	30	821.88	6.32937E-03		
m	32	871.31	3.67142E-03		
	34	917.23	5.07310E-03		
	35	950.00	4.99733E-03	S-Esc	
M	36	964.78	8.76633E-03	Tol.	EU-152
	39	1377.72	6.41204E-03		
	40	1401.49	4.16667E-03		
M	41	1456.42	1.97290E-03		
	43	1472.18	2.90598E-03	Sum	
	44	1585.01	5.31250E-03		
	45	1616.93	2.77778E-03		
	46	1631.88	4.12037E-03		
	48	1800.90	1.94444E-03		
	49	1919.97	1.66667E-03		
	50	1941.27	2.22222E-03		
	51	2090.27	4.16667E-03	Sum	
	52	2104.84	6.66667E-03		

Analysis Report for 1606041-03
CP-5028 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
53	2120.23	2.05556E-03	54.47		
55	2398.43	1.94444E-03	37.80		
56	2487.73	1.38889E-03	44.72		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-2.48E-01	8.11E-01	8.11E-01
+	NA-22	1274.54	99.94	-2.44E-02	1.07E-01	1.07E-01
+	NA-24	1368.53	99.99	-6.94E+02	2.67E+03	3.04E+03
		2754.09	99.86	7.45E+02		2.67E+03
+	AL-26	1808.65	99.76	-2.71E-02	6.83E-02	6.83E-02
+	K-40	1460.81	* 10.67	2.34E+01	1.12E+00	1.12E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-2.07E-02	6.88E-02	6.88E-02
		78.34	96.00	3.93E-01		1.07E-01
+	SC-46	889.25	99.98	2.87E-02	1.14E-01	1.14E-01
		1120.51	99.99	2.78E-01		2.08E-01
+	V-48	983.52	99.98	-6.76E-02	1.49E-01	1.49E-01
		1312.10	97.50	3.02E-02		1.78E-01
+	CR-51	320.08	9.83	1.61E-01	9.09E-01	9.09E-01
+	MN-54	834.83	99.97	7.02E-03	1.11E-01	1.11E-01
+	CO-56	846.75	99.96	-9.02E-03	1.01E-01	1.01E-01
		1037.75	14.03	2.36E-01		8.61E-01
		1238.25	67.00	7.00E-02		2.48E-01
		1771.40	15.51	-3.47E-01		4.73E-01
		2598.48	16.90	1.54E-01		4.81E-01
+	CO-57	122.06	85.51	-3.51E-02	7.37E-02	7.37E-02
		136.48	10.60	-9.63E-02		6.33E-01
+	CO-58	810.76	99.40	-4.26E-03	1.13E-01	1.13E-01
+	FE-59	1099.22	56.50	5.43E-02	2.39E-01	2.39E-01
		1291.56	43.20	-1.61E-03		3.08E-01
+	CO-60	1173.22	100.00	-6.87E-03	9.66E-02	1.27E-01

Analysis Report for 1606041-03
CP-5028 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CO-60	1332.49	100.00	-1.15E-02	9.66E-02	9.66E-02
+	ZN-65	1115.52	50.75	-3.46E-02	2.41E-01	2.41E-01
+	GA-67	93.31	* 35.70	2.34E+00	2.01E+00	2.01E+00
		208.95	2.24	1.73E+01		2.72E+01
		300.22	* 16.00	4.14E+00		7.78E+00
+	SE-75	121.11	16.70	-1.14E-01	1.15E-01	3.90E-01
		136.00	59.20	-3.19E-02		1.15E-01
		264.65	59.80	-1.04E-03		1.22E-01
		279.53	25.20	-8.92E-02		2.92E-01
		400.65	11.40	8.06E-02		7.14E-01
+	RB-82	776.52	13.00	-1.57E-01	9.81E-01	9.81E-01
+	RB-83	520.41	46.00	1.09E-01	1.97E-01	1.97E-01
		529.64	30.30	1.76E-02		2.61E-01
		552.65	16.40	1.23E-01		5.26E-01
+	KR-85	513.99	0.43	-1.39E+01	2.12E+01	2.12E+01
+	SR-85	513.99	99.27	-6.72E-02	1.03E-01	1.03E-01
+	Y-88	898.02	93.40	5.73E-02	9.35E-02	1.29E-01
		1836.01	99.38	0.00E+00		9.35E-02
+	NB-93M	16.57	9.43	-3.95E+01	1.21E+02	1.21E+02
+	NB-94	702.63	100.00	4.63E-03	1.08E-01	1.08E-01
		871.10	100.00	5.08E-02		1.08E-01
+	NB-95	765.79	99.81	6.70E-02	1.46E-01	1.46E-01
+	NB-95M	235.69	* 25.00	7.13E-01	3.51E+00	3.51E+00
+	ZR-95	724.18	43.70	1.22E-01	2.20E-01	3.22E-01
		756.72	55.30	1.25E-01		2.20E-01
+	MO-99	181.06	6.20	6.40E-01	8.36E+00	1.24E+01
		739.58	12.80	1.63E+00		8.36E+00
		778.00	4.50	1.04E+00		2.46E+01
+	RU-103	497.08	89.00	-5.35E-02	9.37E-02	9.37E-02
+	RU-106	621.84	9.80	1.21E-01	9.41E-01	9.41E-01
+	AG-108M	433.93	89.90	-2.59E-02	8.14E-02	8.14E-02
		614.37	90.40	2.45E-02		1.15E-01
		722.95	90.50	-8.84E-02		1.27E-01
+	CD-109	88.03	* 3.72	3.08E+00	2.54E+00	2.54E+00
+	AG-110M	657.75	93.14	-1.49E-02	1.05E-01	1.05E-01
		677.61	10.53	-5.90E-02		9.83E-01
		706.67	16.46	1.54E-01		6.74E-01
		763.93	21.98	-6.09E-01		4.78E-01
		884.67	71.63	-1.56E-03		1.33E-01
		1384.27	23.94	-3.61E-02		3.43E-01
+	CD-113M	263.70	0.02	-1.59E+01	2.98E+02	2.98E+02
+	SN-113	255.12	1.93	1.11E+00	1.17E-01	4.15E+00
		391.69	64.90	7.98E-02		1.17E-01
+	TE123M	159.00	84.10	1.19E-02	8.84E-02	8.84E-02
+	SB-124	602.71	97.87	-6.60E-04	1.11E-01	1.11E-01
		645.85	7.26	-5.34E-01		1.45E+00
		722.78	11.10	-8.05E-01		1.16E+00
		1691.02	49.00	2.86E-02		1.72E-01

Analysis Report for 1606041-03
CP-5028 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-125	35.49	6.49	-2.58E-01	2.04E+00	2.04E+00
+	SB-125	176.33	6.89	-3.86E-01	2.58E-01	9.91E-01
		427.89	29.33	-2.11E-02		2.58E-01
		463.38	10.35	1.07E-01		7.97E-01
		600.56	17.80	-9.00E-02		5.49E-01
		635.90	11.32	-1.84E-01		7.62E-01
+	SB-126	414.70	83.30	1.60E-02	1.47E-01	1.47E-01
		666.33	99.60	6.12E-03		1.73E-01
		695.00	99.60	-4.06E-02		1.67E-01
		720.50	53.80	1.09E-01		3.33E-01
+	SN-126	87.57	* 37.00	3.05E-01	2.52E-01	2.52E-01
+	SB-127	473.00	25.00	2.46E-01	1.43E+00	1.84E+00
		685.20	35.70	-1.09E-01		1.43E+00
		783.80	14.70	4.00E+00		4.56E+00
+	I-129	29.78	57.00	-3.39E-01	3.67E-01	3.67E-01
		33.60	13.20	-5.89E-01		1.02E+00
		39.58	7.52	3.49E-01		1.36E+00
+	I-131	284.30	6.05	-1.76E+00	2.10E-01	2.62E+00
		364.48	81.20	1.16E-01		2.10E-01
		636.97	7.26	7.23E-01		2.90E+00
		722.89	1.80	-1.02E+01		1.47E+01
+	TE-132	49.72	13.10	1.51E+00	6.27E-01	4.32E+00
		228.16	88.00	3.93E-02		6.27E-01
+	BA-133	81.00	33.00	9.14E-02	1.18E-01	1.84E-01
		302.84	17.80	-2.41E-01		4.35E-01
		356.01	60.00	-5.07E-02		1.18E-01
+	I-133	529.87	86.30	8.46E+01	1.97E+02	1.97E+02
+	XE-133	81.00	38.00	2.83E-01	5.69E-01	5.69E-01
+	CS-134	563.23	8.38	2.99E-01	1.22E-01	9.44E-01
		569.32	15.43	1.90E-01		5.08E-01
		604.70	97.60	-5.25E-03		1.22E-01
		795.84	85.40	1.00E-01		1.45E-01
		801.93	8.73	-1.80E-01		1.23E+00
+	CS-135	268.24	16.00	2.59E-01	4.83E-01	4.83E-01
+	I-135	1131.51	22.50	-3.47E+09	1.32E+10	1.59E+10
		1260.41	28.60	-1.59E+09		1.32E+10
		1678.03	9.54	-1.34E+10		1.92E+10
+	CS-136	153.22	7.46	-6.32E-01	1.56E-01	1.56E+00
		163.89	4.61	5.98E-01		2.41E+00
		176.55	13.56	2.04E-01		8.39E-01
		273.65	12.66	-1.19E+00		8.96E-01
		340.57	48.50	-4.13E-01		2.90E-01
		818.50	99.70	-1.48E-02		1.56E-01
		1048.07	79.60	-1.91E-02		2.33E-01
		1235.34	19.70	1.47E-01		1.23E+00
+	CS-137	661.65	85.12	-3.01E-02	1.14E-01	1.14E-01
+	LA-138	788.74	34.00	-2.26E-03	1.46E-01	3.29E-01
		1435.80	66.00	-1.03E-02		1.46E-01
+	CE-139	165.85	80.35	-1.38E-02	8.73E-02	8.73E-02

Analysis Report for 1606041-03
CP-5028 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BA-140	162.64	6.70	-7.29E-01	5.13E-01	1.69E+00
		304.84	4.50	-6.54E-01		2.72E+00
		423.70	3.20	1.66E+00		4.19E+00
		437.55	2.00	3.02E+00		7.01E+00
		537.32	25.00	3.45E-02		5.13E-01
+	LA-140	328.77	20.50	2.88E-01	1.92E-01	6.59E-01
		487.03	45.50	2.85E-03		2.78E-01
		815.85	23.50	1.99E-01		7.13E-01
		1596.49	95.49	1.28E-01		1.92E-01
+	CE-141	145.44	48.40	2.20E-02	1.81E-01	1.81E-01
+	CE-143	57.36	11.80	8.65E+00	3.32E+01	6.99E+01
		293.26	42.00	3.06E+01		3.32E+01
		664.55	5.20	9.53E+01		2.56E+02
+	CE-144	133.54	10.80	-7.78E-02	6.05E-01	6.05E-01
+	PM-144	476.78	42.00	-5.52E-02	9.80E-02	1.81E-01
		618.01	98.60	-1.08E-02		9.80E-02
		696.49	99.49	6.92E-03		1.05E-01
+	PM-145	36.85	21.70	3.78E-02	2.77E-01	5.26E-01
		37.36	39.70	1.99E-02		2.77E-01
		42.30	15.10	2.46E-01		5.65E-01
		72.40	2.31	-9.50E-01		3.02E+00
+	PM-146	453.90	39.94	-3.12E-02	1.77E-01	1.77E-01
		735.90	14.01	2.31E-02		6.34E-01
		747.13	13.10	-5.16E-03		6.79E-01
+	ND-147	91.11	28.90	2.93E-01	5.86E-01	5.86E-01
		531.02	13.10	-8.71E-02		1.03E+00
+	PM-149	285.90	3.10	2.81E+01	4.96E+01	4.96E+01
+	EU-152	121.78	20.50	-1.43E-01	3.00E-01	3.00E-01
		244.69	5.40	1.51E-01		1.28E+00
		344.27	19.13	-3.37E-02		3.75E-01
		778.89	9.20	4.50E-02		1.06E+00
		964.01	10.40	-4.26E+00		1.27E+00
		1085.78	7.22	4.02E-01		1.52E+00
		1112.02	9.60	1.46E-01		1.32E+00
		1407.95	14.94	9.83E-02		6.20E-01
+	GD-153	97.43	31.30	-5.46E-03	2.13E-01	2.13E-01
		103.18	22.20	-1.85E-01		3.04E-01
+	EU-154	123.07	40.50	-2.16E-02	1.54E-01	1.54E-01
		723.30	19.70	-4.07E-01		5.85E-01
		873.19	11.50	-1.40E-01		8.59E-01
		996.32	10.30	1.71E-01		1.04E+00
		1004.76	17.90	-1.87E-02		5.75E-01
		1274.45	35.50	-6.83E-02		2.99E-01
+	EU-155	86.50	30.90	-3.94E-01	2.77E-01	2.77E-01
		105.30	20.70	2.61E-01		3.30E-01
+	EU-156	811.77	10.40	-5.07E-01	1.48E+00	1.48E+00
		1153.47	7.20	7.05E-01		2.66E+00
		1230.71	8.90	2.42E-01		2.19E+00
+	HO-166M	184.41	72.60	1.80E-01	1.29E-01	1.29E-01

Analysis Report for 1606041-03
CP-5028 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	HO-166M	280.45	29.60	-7.20E-02	1.29E-01	2.36E-01
		410.94	11.10	8.17E-01		7.78E-01
		711.69	54.10	-2.73E-02		1.80E-01
+	TM-171	66.72	0.14	-8.59E-01	4.65E+01	4.65E+01
+	HF-172	81.75	4.52	-1.55E+00	6.01E-01	1.29E+00
		125.81	11.30	4.70E-02		6.01E-01
+	LU-172	181.53	20.60	-1.32E-01	4.89E-01	9.13E-01
		810.06	16.63	-6.28E-02		1.66E+00
		912.12	15.25	7.19E+00		3.64E+00
		1093.66	62.50	2.02E-01		4.89E-01
+	LU-173	100.72	5.24	2.04E-01	3.64E-01	1.27E+00
		272.11	21.20	1.19E-01		3.64E-01
+	HF-175	343.40	84.00	1.58E-02	9.76E-02	9.76E-02
+	LU-176	88.34	13.30	1.24E+00	7.63E-02	6.74E-01
		201.83	86.00	1.55E-02		8.26E-02
		306.78	94.00	1.64E-02		7.63E-02
+	TA-182	67.75	41.20	-5.02E-02	1.67E-01	1.67E-01
		1121.30	34.90	7.18E-01		5.78E-01
		1189.05	16.23	1.59E-01		8.81E-01
		1221.41	26.98	7.72E-02		5.30E-01
		1231.02	11.44	-4.07E-01		1.12E+00
+	IR-192	308.46	29.68	6.83E-02	1.77E-01	2.64E-01
		468.07	48.10	3.89E-03		1.77E-01
+	HG-203	279.19	77.30	6.05E-02	1.13E-01	1.13E-01
+	BI-207	569.67	97.72	2.98E-02	7.95E-02	7.95E-02
		1063.62	74.90	-3.74E-02		1.46E-01
+	TL-208	583.14	* 30.22	1.74E+00	1.97E-01	4.31E-01
		860.37	* 4.48	2.75E+00		5.03E+00
		2614.66	* 35.85	1.30E+00		1.97E-01
+	BI-210M	262.00	45.00	8.61E-02	1.56E-01	1.56E-01
		300.00	23.00	2.64E-01		3.65E-01
+	PB-210	46.50	* 4.25	1.57E+00	3.14E+00	3.14E+00
+	PB-211	404.84	2.90	9.81E-01	2.55E+00	2.55E+00
		831.96	2.90	-1.66E+00		3.52E+00
+	BI-212	727.17	* 11.80	1.08E+00	1.83E+00	1.83E+00
		1620.62	2.75	-4.67E-01		3.89E+00
+	PB-212	238.63	44.60	1.22E+00	3.66E-01	3.66E-01
		300.09	3.41	1.78E+00		2.46E+00
+	BI-214	609.31	* 46.30	1.35E+00	3.47E-01	3.47E-01
		1120.29	* 15.10	1.61E+00		1.25E+00
		1764.49	* 15.80	2.02E+00		5.01E-01
		2204.22	* 4.98	1.54E+00		2.20E+00
+	PB-214	295.21	* 19.19	1.89E+00	3.24E-01	8.21E-01
		351.92	* 37.19	1.51E+00		3.24E-01
+	RN-219	401.80	6.50	5.12E-02	1.19E+00	1.19E+00
+	RA-223	323.87	3.88	-2.22E-01	1.82E+00	1.82E+00
+	RA-224	240.98	* 3.95	4.82E+00	3.59E+00	3.59E+00
+	RA-225	40.00	31.00	1.30E-01	5.07E-01	5.07E-01

Analysis Report for 1606041-03
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-226	186.21	*	3.28	6.28E+00	2.87E+00	2.87E+00
+	TH-227	50.10		8.40	3.00E-01	8.58E-01	8.58E-01
		236.00		11.50	-4.37E+00		9.69E-01
		256.20		6.30	7.80E-03		1.14E+00
+	AC-228	338.32	*	11.40	1.60E+00	5.50E-01	9.24E-01
		911.07	*	27.70	1.43E+00		5.50E-01
		969.11	*	16.60	1.87E+00		9.12E-01
+	TH-230	48.44		16.90	-4.45E-01	4.41E-01	4.41E-01
		62.85		4.60	1.38E+00		1.71E+00
		67.67		0.37	-5.28E+00		1.76E+01
+	PA-231	283.67		1.60	-2.90E+00	3.36E+00	4.31E+00
		302.67		2.30	-1.86E+00		3.36E+00
+	TH-231	25.64		14.70	-1.59E+00	9.83E-01	2.90E+00
		84.21		6.40	8.50E-01		9.83E-01
+	PA-233	311.98		38.60	-1.78E-02	2.32E-01	2.32E-01
+	PA-234	131.20		20.40	1.31E-01	3.43E-01	3.43E-01
		733.99		8.80	-5.07E-02		9.93E-01
		946.00		12.00	-1.37E-02		8.15E-01
+	PA-234M	1001.03		0.92	-1.31E+00	1.13E+01	1.13E+01
+	TH-234	63.29	*	3.80	3.08E+00	3.33E+00	3.33E+00
+	U-235	143.76		10.50	6.79E-02	6.68E-01	6.68E-01
		163.35		4.70	-6.18E-01		1.43E+00
		205.31		4.70	9.64E-01		1.62E+00
+	NP-237	86.50		12.60	-9.63E-01	6.77E-01	6.77E-01
+	NP-239	106.10		22.70	-1.04E+00	5.02E+00	5.02E+00
		228.18		10.70	7.10E-01		1.13E+01
		277.60		14.10	6.11E+00		9.27E+00
+	AM-241	59.54		35.90	-4.25E-02	1.85E-01	1.85E-01
+	AM-243	74.67		66.00	-7.05E-01	1.39E-01	1.39E-01
+	CM-243	209.75		3.29	2.15E+00	5.48E-01	2.46E+00
		228.14		10.60	4.21E-02		6.70E-01
		277.60		14.00	3.61E-01		5.48E-01

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1606041-03
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NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	8.11E-01	8.11E-01	-2.48E-01	3.78E-01
NA-22	1274.54	99.94	1.07E-01	1.07E-01	-2.44E-02	4.77E-02
NA-24	1368.53	99.99	3.04E+03	2.67E+03	-6.94E+02	1.26E+03
	2754.09	99.86	2.67E+03		7.45E+02	1.00E+03
AL-26	1808.65	99.76	6.83E-02	6.83E-02	-2.71E-02	2.71E-02
+ K-40	1460.81	* 10.67	1.12E+00	1.12E+00	2.34E+01	5.03E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	6.88E-02	6.88E-02	-2.07E-02	3.33E-02
	78.34	96.00	1.07E-01		3.93E-01	5.24E-02
SC-46	889.25	99.98	1.14E-01	1.14E-01	2.87E-02	5.27E-02
	1120.51	99.99	2.08E-01		2.78E-01	9.84E-02
V-48	983.52	99.98	1.49E-01	1.49E-01	-6.76E-02	6.77E-02
	1312.10	97.50	1.78E-01		3.02E-02	7.99E-02
CR-51	320.08	9.83	9.09E-01	9.09E-01	1.61E-01	4.30E-01
MN-54	834.83	99.97	1.11E-01	1.11E-01	7.02E-03	5.16E-02
CO-56	846.75	99.96	1.01E-01	1.01E-01	-9.02E-03	4.61E-02
	1037.75	14.03	8.61E-01		2.36E-01	3.93E-01
	1238.25	67.00	2.48E-01		7.00E-02	1.15E-01
	1771.40	15.51	4.73E-01		-3.47E-01	1.88E-01
	2598.48	16.90	4.81E-01		1.54E-01	1.91E-01
CO-57	122.06	85.51	7.37E-02	7.37E-02	-3.51E-02	3.56E-02
	136.48	10.60	6.33E-01		-9.63E-02	3.06E-01
CO-58	810.76	99.40	1.13E-01	1.13E-01	-4.26E-03	5.20E-02
FE-59	1099.22	56.50	2.39E-01	2.39E-01	5.43E-02	1.09E-01
	1291.56	43.20	3.08E-01		-1.61E-03	1.39E-01
CO-60	1173.22	100.00	1.27E-01	9.66E-02	-6.87E-03	5.82E-02
	1332.49	100.00	9.66E-02		-1.15E-02	4.25E-02
ZN-65	1115.52	50.75	2.41E-01	2.41E-01	-3.46E-02	1.10E-01
+ GA-67	93.31	* 35.70	2.01E+00	2.01E+00	2.34E+00	9.85E-01
	208.95	2.24	2.72E+01		1.73E+01	1.31E+01
	300.22	* 16.00	7.78E+00		4.14E+00	3.80E+00
SE-75	121.11	16.70	3.90E-01	1.15E-01	-1.14E-01	1.88E-01
	136.00	59.20	1.15E-01		-3.19E-02	5.55E-02
	264.65	59.80	1.22E-01		-1.04E-03	5.79E-02
	279.53	25.20	2.92E-01		-8.92E-02	1.39E-01
	400.65	11.40	7.14E-01		8.06E-02	3.37E-01
RB-82	776.52	13.00	9.81E-01	9.81E-01	-1.57E-01	4.53E-01
RB-83	520.41	46.00	1.97E-01	1.97E-01	1.09E-01	9.20E-02
	529.64	30.30	2.61E-01		1.76E-02	1.21E-01
	552.65	16.40	5.26E-01		1.23E-01	2.44E-01
KR-85	513.99	0.43	2.12E+01	2.12E+01	-1.39E+01	9.98E+00
SR-85	513.99	99.27	1.03E-01	1.03E-01	-6.72E-02	4.83E-02
Y-88	898.02	93.40	1.29E-01	9.35E-02	5.73E-02	5.95E-02
	1836.01	99.38	9.35E-02		0.00E+00	3.92E-02
NB-93M	16.57	9.43	1.21E+02	1.21E+02	-3.95E+01	5.85E+01

Analysis Report for 1606041-03
CP-5028 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94	702.63	100.00	1.08E-01	1.08E-01	4.63E-03	5.06E-02
	871.10	100.00	1.08E-01		5.08E-02	4.99E-02
NB-95	765.79	99.81	1.46E-01	1.46E-01	6.70E-02	6.86E-02
+ NB-95M	235.69 *	25.00	3.51E+00	3.51E+00	7.13E-01	1.71E+00
ZR-95	724.18	43.70	3.22E-01	2.20E-01	1.22E-01	1.52E-01
	756.72	55.30	2.20E-01		1.25E-01	1.03E-01
MO-99	181.06	6.20	1.24E+01	8.36E+00	6.40E-01	5.96E+00
	739.58	12.80	8.36E+00		1.63E+00	3.86E+00
	778.00	4.50	2.46E+01		1.04E+00	1.13E+01
RU-103	497.08	89.00	9.37E-02	9.37E-02	-5.35E-02	4.33E-02
RU-106	621.84	9.80	9.41E-01	9.41E-01	1.21E-01	4.38E-01
AG-108M	433.93	89.90	8.14E-02	8.14E-02	-2.59E-02	3.81E-02
	614.37	90.40	1.15E-01		2.45E-02	5.39E-02
	722.95	90.50	1.27E-01		-8.84E-02	5.96E-02
+ CD-109	88.03 *	3.72	2.54E+00	2.54E+00	3.08E+00	1.24E+00
AG-110M	657.75	93.14	1.05E-01	1.05E-01	-1.49E-02	4.87E-02
	677.61	10.53	9.83E-01		-5.90E-02	4.59E-01
	706.67	16.46	6.74E-01		1.54E-01	3.15E-01
	763.93	21.98	4.78E-01		-6.09E-01	2.21E-01
	884.67	71.63	1.33E-01		-1.56E-03	6.03E-02
	1384.27	23.94	3.43E-01		-3.61E-02	1.46E-01
CD-113M	263.70	0.02	2.98E+02	2.98E+02	-1.59E+01	1.42E+02
SN-113	255.12	1.93	4.15E+00	1.17E-01	1.11E+00	1.99E+00
	391.69	64.90	1.17E-01		7.98E-02	5.49E-02
TE123M	159.00	84.10	8.84E-02	8.84E-02	1.19E-02	4.27E-02
SB-124	602.71	97.87	1.11E-01	1.11E-01	-6.60E-04	5.20E-02
	645.85	7.26	1.45E+00		-5.34E-01	6.75E-01
	722.78	11.10	1.16E+00		-8.05E-01	5.43E-01
	1691.02	49.00	1.72E-01		2.86E-02	7.04E-02
I-125	35.49	6.49	2.04E+00	2.04E+00	-2.58E-01	9.75E-01
SB-125	176.33	6.89	9.91E-01	2.58E-01	-3.86E-01	4.77E-01
	427.89	29.33	2.58E-01		-2.11E-02	1.21E-01
	463.38	10.35	7.97E-01		1.07E-01	3.74E-01
	600.56	17.80	5.49E-01		-9.00E-02	2.57E-01
	635.90	11.32	7.62E-01		-1.84E-01	3.53E-01
SB-126	414.70	83.30	1.47E-01	1.47E-01	1.60E-02	6.90E-02
	666.33	99.60	1.73E-01		6.12E-03	8.10E-02
	695.00	99.60	1.67E-01		-4.06E-02	7.75E-02
	720.50	53.80	3.33E-01		1.09E-01	1.55E-01
+ SN-126	87.57 *	37.00	2.52E-01	2.52E-01	3.05E-01	1.23E-01
SB-127	473.00	25.00	1.84E+00	1.43E+00	2.46E-01	8.64E-01
	685.20	35.70	1.43E+00		-1.09E-01	6.63E-01
	783.80	14.70	4.56E+00		4.00E+00	2.14E+00
I-129	29.78	57.00	3.67E-01	3.67E-01	-3.39E-01	1.75E-01
	33.60	13.20	1.02E+00		-5.89E-01	4.87E-01
	39.58	7.52	1.36E+00		3.49E-01	6.53E-01
I-131	284.30	6.05	2.62E+00	2.10E-01	-1.76E+00	1.24E+00
	364.48	81.20	2.10E-01		1.16E-01	9.92E-02
	636.97	7.26	2.90E+00		7.23E-01	1.35E+00
	722.89	1.80	1.47E+01		-1.02E+01	6.88E+00
TE-132	49.72	13.10	4.32E+00	6.27E-01	1.51E+00	2.08E+00
	228.16	88.00	6.27E-01		3.93E-02	3.00E-01
BA-133	81.00	33.00	1.84E-01	1.18E-01	9.14E-02	8.88E-02

Analysis Report for 1606041-03
CP-5028 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	302.84	17.80	4.35E-01	1.18E-01	-2.41E-01	2.08E-01
	356.01	60.00	1.18E-01		-5.07E-02	5.55E-02
I-133	529.87	86.30	1.97E+02	1.97E+02	8.46E+01	9.15E+01
XE-133	81.00	38.00	5.69E-01	5.69E-01	2.83E-01	2.75E-01
CS-134	563.23	8.38	9.44E-01	1.22E-01	2.99E-01	4.37E-01
	569.32	15.43	5.08E-01		1.90E-01	2.35E-01
	604.70	97.60	1.22E-01		-5.25E-03	5.80E-02
	795.84	85.40	1.45E-01		1.00E-01	6.81E-02
	801.93	8.73	1.23E+00		-1.80E-01	5.70E-01
CS-135	268.24	16.00	4.83E-01	4.83E-01	2.59E-01	2.31E-01
I-135	1131.51	22.50	1.59E+10	1.32E+10	-3.47E+09	7.18E+09
	1260.41	28.60	1.32E+10		-1.59E+09	5.93E+09
	1678.03	9.54	1.92E+10		-1.34E+10	7.19E+09
CS-136	153.22	7.46	1.56E+00	1.56E-01	-6.32E-01	7.56E-01
	163.89	4.61	2.41E+00		5.98E-01	1.16E+00
	176.55	13.56	8.39E-01		2.04E-01	4.04E-01
	273.65	12.66	8.96E-01		-1.19E+00	4.26E-01
	340.57	48.50	2.90E-01		-4.13E-01	1.38E-01
	818.50	99.70	1.56E-01		-1.48E-02	7.13E-02
	1048.07	79.60	2.33E-01		-1.91E-02	1.07E-01
	1235.34	19.70	1.23E+00		1.47E-01	5.68E-01
CS-137	661.65	85.12	1.14E-01	1.14E-01	-3.01E-02	5.30E-02
LA-138	788.74	34.00	3.29E-01	1.46E-01	-2.26E-03	1.53E-01
	1435.80	66.00	1.46E-01		-1.03E-02	6.38E-02
CE-139	165.85	80.35	8.73E-02	8.73E-02	-1.38E-02	4.20E-02
BA-140	162.64	6.70	1.69E+00	5.13E-01	-7.29E-01	8.13E-01
	304.84	4.50	2.72E+00		-6.54E-01	1.29E+00
	423.70	3.20	4.19E+00		1.66E+00	1.97E+00
	437.55	2.00	7.01E+00		3.02E+00	3.31E+00
	537.32	25.00	5.13E-01		3.45E-02	2.38E-01
LA-140	328.77	20.50	6.59E-01	1.92E-01	2.88E-01	3.13E-01
	487.03	45.50	2.78E-01		2.85E-03	1.30E-01
	815.85	23.50	7.13E-01		1.99E-01	3.28E-01
CE-141	1596.49	95.49	1.92E-01		1.28E-01	8.45E-02
	145.44	48.40	1.81E-01	1.81E-01	2.20E-02	8.78E-02
CE-143	57.36	11.80	6.99E+01	3.32E+01	8.65E+00	3.36E+01
	293.26	42.00	3.32E+01		3.06E+01	1.61E+01
	664.55	5.20	2.56E+02		9.53E+01	1.20E+02
CE-144	133.54	10.80	6.05E-01	6.05E-01	-7.78E-02	2.92E-01
PM-144	476.78	42.00	1.81E-01	9.80E-02	-5.52E-02	8.41E-02
	618.01	98.60	9.80E-02		-1.08E-02	4.58E-02
	696.49	99.49	1.05E-01		6.92E-03	4.89E-02
PM-145	36.85	21.70	5.26E-01	2.77E-01	3.78E-02	2.51E-01
	37.36	39.70	2.77E-01		1.99E-02	1.33E-01
	42.30	15.10	5.65E-01		2.46E-01	2.70E-01
	72.40	2.31	3.02E+00		-9.50E-01	1.46E+00
PM-146	453.90	39.94	1.77E-01	1.77E-01	-3.12E-02	8.25E-02
	735.90	14.01	6.34E-01		2.31E-02	2.91E-01
	747.13	13.10	6.79E-01		-5.16E-03	3.11E-01
ND-147	91.11	28.90	5.86E-01	5.86E-01	2.93E-01	2.87E-01
	531.02	13.10	1.03E+00		-8.71E-02	4.76E-01
PM-149	285.90	3.10	4.96E+01	4.96E+01	2.81E+01	2.37E+01
EU-152	121.78	20.50	3.00E-01	3.00E-01	-1.43E-01	1.45E-01

Analysis Report for 1606041-03
CP-5028 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	244.69	5.40	1.28E+00	3.00E-01	1.51E-01	6.13E-01
	344.27	19.13	3.75E-01		-3.37E-02	1.77E-01
	778.89	9.20	1.06E+00		4.50E-02	4.90E-01
	964.01	10.40	1.27E+00		-4.26E+00	5.92E-01
	1085.78	7.22	1.52E+00		4.02E-01	6.90E-01
	1112.02	9.60	1.32E+00		1.46E-01	6.08E-01
	1407.95	14.94	6.20E-01		9.83E-02	2.69E-01
GD-153	97.43	31.30	2.13E-01	2.13E-01	-5.46E-03	1.03E-01
	103.18	22.20	3.04E-01		-1.85E-01	1.47E-01
EU-154	123.07	40.50	1.54E-01	1.54E-01	-2.16E-02	7.43E-02
	723.30	19.70	5.85E-01		-4.07E-01	2.74E-01
	873.19	11.50	8.59E-01		-1.40E-01	3.93E-01
	996.32	10.30	1.04E+00		1.71E-01	4.77E-01
	1004.76	17.90	5.75E-01		-1.87E-02	2.61E-01
EU-155	1274.45	35.50	2.99E-01	2.77E-01	-6.83E-02	1.34E-01
	86.50	30.90	2.77E-01		-3.94E-01	1.35E-01
	105.30	20.70	3.30E-01		2.61E-01	1.60E-01
EU-156	811.77	10.40	1.48E+00	1.48E+00	-5.07E-01	6.80E-01
	1153.47	7.20	2.66E+00		7.05E-01	1.22E+00
	1230.71	8.90	2.19E+00		2.42E-01	9.98E-01
HO-166M	184.41	72.60	1.29E-01	1.29E-01	1.80E-01	6.29E-02
	280.45	29.60	2.36E-01		-7.20E-02	1.12E-01
	410.94	11.10	7.78E-01		8.17E-01	3.68E-01
	711.69	54.10	1.80E-01		-2.73E-02	8.34E-02
TM-171	66.72	0.14	4.65E+01	4.65E+01	-8.59E-01	2.25E+01
HF-172	81.75	4.52	1.29E+00	6.01E-01	-1.55E+00	6.25E-01
	125.81	11.30	6.01E-01		4.70E-02	2.91E-01
LU-172	181.53	20.60	9.13E-01	4.89E-01	-1.32E-01	4.40E-01
	810.06	16.63	1.66E+00		-6.28E-02	7.65E-01
	912.12	15.25	3.64E+00		7.19E+00	1.74E+00
	1093.66	62.50	4.89E-01		2.02E-01	2.23E-01
LU-173	100.72	5.24	1.27E+00	3.64E-01	2.04E-01	6.15E-01
	272.11	21.20	3.64E-01		1.19E-01	1.74E-01
HF-175	343.40	84.00	9.76E-02	9.76E-02	1.58E-02	4.62E-02
LU-176	88.34	13.30	6.74E-01	7.63E-02	1.24E+00	3.29E-01
	201.83	86.00	8.26E-02		1.55E-02	3.97E-02
	306.78	94.00	7.63E-02		1.64E-02	3.62E-02
TA-182	67.75	41.20	1.67E-01	1.67E-01	-5.02E-02	8.09E-02
	1121.30	34.90	5.78E-01		7.18E-01	2.74E-01
	1189.05	16.23	8.81E-01		1.59E-01	4.06E-01
	1221.41	26.98	5.30E-01		7.72E-02	2.44E-01
	1231.02	11.44	1.12E+00		-4.07E-01	5.08E-01
IR-192	308.46	29.68	2.64E-01	1.77E-01	6.83E-02	1.25E-01
	468.07	48.10	1.77E-01		3.89E-03	8.26E-02
HG-203	279.19	77.30	1.13E-01	1.13E-01	6.05E-02	5.38E-02
BI-207	569.67	97.72	7.95E-02	7.95E-02	2.98E-02	3.68E-02
	1063.62	74.90	1.46E-01		-3.74E-02	6.63E-02
+ TL-208	583.14	*	30.22	1.97E-01	1.74E+00	2.06E-01
	860.37	*	4.48		2.75E+00	2.42E+00
	2614.66	*	35.85		1.30E+00	7.69E-02
BI-210M	262.00		1.56E-01	1.56E-01	8.61E-02	7.44E-02
	300.00		3.65E-01		2.64E-01	1.74E-01
+ PB-210	46.50	*	4.25	3.14E+00	3.14E+00	1.53E+00

Analysis Report for 1606041-03
CP-5028 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PB-211	404.84	2.90	2.55E+00	2.55E+00	9.81E-01	1.20E+00
	831.96	2.90	3.52E+00		-1.66E+00	1.62E+00
+ BI-212	727.17 *	11.80	1.83E+00	1.83E+00	1.08E+00	8.84E-01
	1620.62	2.75	3.89E+00		-4.67E-01	1.71E+00
PB-212	238.63	44.60	3.66E-01	3.66E-01	1.22E+00	1.79E-01
	300.09	3.41	2.46E+00		1.78E+00	1.18E+00
+ BI-214	609.31 *	46.30	3.47E-01	3.47E-01	1.35E+00	1.67E-01
	1120.29 *	15.10	1.25E+00		1.61E+00	5.92E-01
	1764.49 *	15.80	5.01E-01		2.02E+00	2.06E-01
	2204.22 *	4.98	2.20E+00		1.54E+00	9.46E-01
+ PB-214	295.21 *	19.19	8.21E-01	3.24E-01	1.89E+00	4.01E-01
	351.92 *	37.19	3.24E-01		1.51E+00	1.56E-01
RN-219	401.80	6.50	1.19E+00	1.19E+00	5.12E-02	5.62E-01
RA-223	323.87	3.88	1.82E+00	1.82E+00	-2.22E-01	8.59E-01
+ RA-224	240.98 *	3.95	3.59E+00	3.59E+00	4.82E+00	1.76E+00
RA-225	40.00	31.00	5.07E-01	5.07E-01	1.30E-01	2.43E-01
+ RA-226	186.21 *	3.28	2.87E+00	2.87E+00	6.28E+00	1.40E+00
TH-227	50.10	8.40	8.58E-01	8.58E-01	3.00E-01	4.13E-01
	236.00	11.50	9.69E-01		-4.37E+00	4.71E-01
	256.20	6.30	1.14E+00		7.80E-03	5.45E-01
+ AC-228	338.32 *	11.40	9.24E-01	5.50E-01	1.60E+00	4.45E-01
	911.07 *	27.70	5.50E-01		1.43E+00	2.59E-01
	969.11 *	16.60	9.12E-01		1.87E+00	4.29E-01
TH-230	48.44	16.90	4.41E-01	4.41E-01	-4.45E-01	2.12E-01
	62.85	4.60	1.71E+00		1.38E+00	8.31E-01
	67.67	0.37	1.76E+01		-5.28E+00	8.50E+00
PA-231	283.67	1.60	4.31E+00	3.36E+00	-2.90E+00	2.05E+00
	302.67	2.30	3.36E+00		-1.86E+00	1.60E+00
TH-231	25.64	14.70	2.90E+00	9.83E-01	-1.59E+00	1.39E+00
	84.21	6.40	9.83E-01		8.50E-01	4.76E-01
PA-233	311.98	38.60	2.32E-01	2.32E-01	-1.78E-02	1.10E-01
PA-234	131.20	20.40	3.43E-01	3.43E-01	1.31E-01	1.66E-01
	733.99	8.80	9.93E-01		-5.07E-02	4.55E-01
	946.00	12.00	8.15E-01		-1.37E-02	3.70E-01
PA-234M	1001.03	0.92	1.13E+01	1.13E+01	-1.31E+00	5.13E+00
+ TH-234	63.29 *	3.80	3.33E+00	3.33E+00	3.08E+00	1.64E+00
U-235	143.76	10.50	6.68E-01	6.68E-01	6.79E-02	3.23E-01
	163.35	4.70	1.43E+00		-6.18E-01	6.89E-01
	205.31	4.70	1.62E+00		9.64E-01	7.81E-01
NP-237	86.50	12.60	6.77E-01	6.77E-01	-9.63E-01	3.30E-01
NP-239	106.10	22.70	5.02E+00	5.02E+00	-1.04E+00	2.43E+00
	228.18	10.70	1.13E+01		7.10E-01	5.42E+00
	277.60	14.10	9.27E+00		6.11E+00	4.43E+00
AM-241	59.54	35.90	1.85E-01	1.85E-01	-4.25E-02	8.94E-02
AM-243	74.67	66.00	1.39E-01	1.39E-01	-7.05E-01	6.78E-02
CM-243	209.75	3.29	2.46E+00	5.48E-01	2.15E+00	1.19E+00
	228.14	10.60	6.70E-01		4.21E-02	3.21E-01
	277.60	14.00	5.48E-01		3.61E-01	2.62E-01

Analysis Report for 1606041-03
CP-5028 00-02

- + = Nuclide identified during the nuclide identification
 - * = Energy line found in the spectrum
 - > = MDA value not calculated
 - @ = Half-life too short to be able to perform the decay correction
-

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP-5028 00-02

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	92	828
9:	1054	660	337	414	1881	131	126	152	
17:	121	85	109	99	78	69	56	74	
25:	52	56	60	64	51	49	44	67	
33:	56	44	36	52	57	55	62	63	
41:	63	58	50	41	64	78	129	66	
49:	59	82	72	61	84	78	61	80	
57:	66	80	78	90	93	100	165	135	
65:	116	91	97	97	100	114	118	100	
73:	140	137	385	118	550	201	76	107	
81:	98	78	83	122	104	79	183	141	
89:	72	166	69	119	252	106	82	62	
97:	63	65	65	70	69	57	69	62	
105:	70	80	69	55	72	64	65	49	
113:	66	41	66	49	61	60	58	55	
121:	45	52	52	55	60	55	66	69	
129:	93	62	53	58	53	51	50	48	
137:	53	59	59	60	64	45	63	79	
145:	49	60	53	67	51	58	49	52	
153:	60	61	56	65	52	43	59	65	
161:	49	42	42	54	50	46	39	41	
169:	52	39	39	47	51	45	39	45	
177:	54	38	49	39	38	42	46	59	
185:	75	189	77	37	44	49	46	62	
193:	46	60	37	45	49	49	41	39	
201:	38	29	47	53	53	49	31	43	
209:	80	50	38	46	42	43	41	36	
217:	34	44	53	36	40	41	37	29	
225:	36	35	37	29	43	31	33	30	
233:	25	32	24	46	37	286	445	46	
241:	99	112	39	24	29	30	29	25	
249:	28	33	32	34	47	34	28	32	
257:	30	29	20	32	27	26	22	34	
265:	23	27	27	27	29	57	30	30	
273:	20	21	27	27	46	34	26	23	
281:	21	22	19	30	25	25	39	24	
289:	24	25	21	23	14	33	205	80	
297:	17	21	27	61	29	30	30	27	
305:	24	18	22	25	28	23	23	24	
313:	20	18	19	30	18	28	16	17	
321:	21	23	20	16	22	23	18	58	
329:	22	19	16	21	25	12	23	19	
337:	22	90	56	21	25	21	19	26	
345:	16	16	20	23	26	23	113	297	
353:	43	17	25	23	15	10	22	9	
361:	17	20	18	19	19	21	12	14	

369: 14 18 9 22 25 13 23 11

Sample Title: CP-5028 00-02

Channel	1	2	3	4	5	6	7	8
377:	15	13	17	19	19	10	15	22
385:	12	19	13	17	13	20	14	12
393:	18	16	8	20	17	12	19	12
401:	31	14	14	20	17	19	11	12
409:	32	27	14	14	23	14	8	11
417:	17	12	15	15	17	22	15	10
425:	21	20	10	15	18	14	18	15
433:	9	14	18	15	16	19	24	10
441:	23	13	13	16	13	17	10	16
449:	17	22	9	15	11	15	12	8
457:	13	12	18	15	7	19	34	9
465:	12	15	13	12	14	17	16	17
473:	18	15	11	13	14	12	13	14
481:	14	11	20	7	13	8	18	9
489:	14	13	10	11	12	18	3	9
497:	7	14	19	17	11	10	6	17
505:	8	7	11	11	16	50	53	25
513:	28	15	12	7	13	12	17	16
521:	10	15	9	9	13	4	9	12
529:	12	8	10	14	7	11	11	10
537:	21	6	6	6	16	10	11	14
545:	8	16	7	8	10	15	10	13
553:	8	11	7	13	7	10	5	9
561:	6	20	14	5	8	5	13	11
569:	13	9	5	9	7	12	11	11
577:	12	11	13	18	5	41	150	52
585:	12	10	10	5	8	10	11	10
593:	7	6	15	9	8	13	9	9
601:	15	11	10	15	8	7	10	52
609:	194	76	13	12	12	10	16	11
617:	9	7	8	11	6	7	13	10
625:	6	8	8	9	11	9	5	6
633:	5	5	3	10	10	9	10	13
641:	11	7	7	11	4	9	13	11
649:	7	13	12	4	12	11	7	12
657:	9	9	5	7	12	11	5	14
665:	12	9	9	10	9	6	10	10
673:	9	6	10	12	11	8	6	13
681:	8	12	5	8	9	7	3	7
689:	5	7	10	5	6	13	9	9
697:	11	5	12	9	11	12	7	9
705:	12	8	15	11	9	4	9	7
713:	10	6	6	8	9	7	6	9
721:	10	16	7	7	8	21	27	20
729:	10	11	3	9	5	7	7	6
737:	5	3	10	6	5	14	7	3
745:	12	5	7	5	4	6	3	3
753:	6	6	13	14	5	14	7	9
761:	8	9	5	10	5	5	13	29
769:	11	5	11	11	10	8	5	8
777:	7	7	4	8	9	5	7	7
785:	15	21	8	5	3	7	4	8
793:	4	20	21	5	9	4	13	5

801: 9 5 9 8 6 10 10 5

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Channel	1	2	3	4	5	6	7	8
809:	3	6	9	3	13	7	6	7
817:	3	3	7	5	9	5	12	5
825:	3	4	8	6	8	6	6	9
833:	5	6	7	10	11	6	7	10
841:	9	8	4	5	2	13	5	3
849:	5	2	5	5	4	7	3	2
857:	6	5	9	17	23	7	10	7
865:	6	6	5	9	8	3	9	4
873:	9	7	3	5	6	4	7	5
881:	6	1	4	4	7	7	5	7
889:	7	8	4	7	5	5	8	9
897:	8	5	5	8	8	5	5	4
905:	7	4	4	5	6	38	85	28
913:	9	4	6	11	9	6	5	1
921:	4	6	3	6	7	5	2	10
929:	10	9	3	8	8	12	7	8
937:	4	3	8	6	9	4	4	1
945:	7	0	5	4	13	12	8	5
953:	3	2	6	2	5	3	6	9
961:	7	2	11	14	16	8	5	34
969:	56	13	8	3	6	3	3	4
977:	8	3	11	3	6	2	6	6
985:	5	4	4	8	9	4	4	7
993:	3	4	7	8	3	9	4	5
1001:	3	2	3	9	6	5	6	6
1009:	5	5	5	4	5	4	8	6
1017:	2	8	4	2	2	10	4	6
1025:	6	2	2	5	2	8	4	7
1033:	3	1	6	10	4	6	4	7
1041:	3	4	6	4	4	6	4	5
1049:	7	4	8	5	8	6	8	7
1057:	6	6	5	7	4	3	10	3
1065:	4	4	6	7	7	5	6	2
1073:	7	3	6	7	7	13	3	5
1081:	3	4	6	3	3	7	7	4
1089:	6	1	5	3	9	4	6	8
1097:	1	2	12	9	4	2	4	4
1105:	6	6	6	3	7	5	10	6
1113:	3	7	7	6	5	5	17	47
1121:	22	7	5	3	7	6	5	4
1129:	3	4	1	4	5	8	6	3
1137:	9	6	4	9	6	3	2	9
1145:	5	7	11	3	6	6	2	4
1153:	8	8	10	2	5	4	2	7
1161:	4	6	5	2	2	8	5	7
1169:	3	6	6	6	3	6	7	7
1177:	9	5	7	6	10	2	0	6
1185:	6	11	5	7	5	7	6	5
1193:	5	6	6	8	3	7	7	4
1201:	7	3	5	5	11	7	10	9
1209:	7	8	8	5	5	7	9	3
1217:	7	9	6	6	5	5	4	9
1225:	5	7	7	4	5	7	5	6

1233: 3 4 4 8 14 12 7 8

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Channel	1	2	3	4	5	6	7	8
1241:	3	11	6	4	3	3	6	6
1249:	8	5	9	6	9	6	6	2
1257:	4	5	5	5	3	4	1	3
1265:	6	6	2	2	4	2	5	5
1273:	2	5	1	2	4	5	5	6
1281:	6	5	1	1	4	4	7	5
1289:	4	2	7	3	3	4	5	1
1297:	2	7	3	5	4	5	6	4
1305:	4	2	4	3	5	6	3	0
1313:	4	5	4	2	4	4	4	4
1321:	8	5	4	1	5	4	1	1
1329:	4	4	1	3	2	3	1	3
1337:	5	0	1	3	0	4	4	2
1345:	3	0	2	5	3	4	5	4
1353:	3	2	1	3	4	4	0	3
1361:	0	2	2	0	2	2	1	0
1369:	1	1	1	3	1	2	4	6
1377:	10	8	2	3	0	2	3	2
1385:	1	2	1	1	4	2	4	3
1393:	4	4	3	0	1	1	3	2
1401:	4	8	2	1	0	2	5	4
1409:	1	2	4	2	0	0	2	2
1417:	4	1	0	1	4	1	1	2
1425:	3	2	2	2	3	3	1	2
1433:	1	1	3	3	4	2	3	3
1441:	2	2	0	1	3	0	3	2
1449:	3	2	6	2	2	2	2	5
1457:	1	11	73	224	206	46	0	2
1465:	3	2	0	2	0	3	3	5
1473:	1	1	0	0	0	0	2	2
1481:	2	2	2	2	0	0	4	1
1489:	1	2	0	1	1	3	2	2
1497:	3	1	1	1	2	2	1	2
1505:	0	1	1	1	3	6	1	2
1513:	3	0	2	5	1	1	2	0
1521:	4	2	2	1	1	1	1	1
1529:	2	0	1	0	0	2	3	1
1537:	0	2	3	2	0	1	1	0
1545:	0	0	2	2	1	0	2	0
1553:	2	3	0	1	2	1	1	1
1561:	1	0	0	0	1	2	2	3
1569:	2	0	2	2	1	1	2	2
1577:	1	0	1	3	3	4	2	1
1585:	1	3	9	3	2	0	3	6
1593:	2	3	3	0	4	0	0	0
1601:	0	0	1	0	1	2	3	1
1609:	1	1	1	0	2	1	3	4
1617:	4	1	3	1	1	1	2	0
1625:	2	1	2	0	2	5	5	2
1633:	2	2	0	0	1	0	2	0
1641:	2	3	0	0	1	2	2	1
1649:	1	0	1	1	1	2	3	0
1657:	4	4	0	1	4	2	0	1

1665: 5 1 0 0 1 1 0 3

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Channel	1	2	3	4	5	6	7	8	9
1673:	0	1	1	0	0	0	1	0	
1681:	0	0	2	1	0	1	1	1	
1689:	0	0	2	0	1	1	0	1	
1697:	1	2	2	2	2	0	0	0	
1705:	0	1	1	0	1	1	2	2	
1713:	4	1	0	2	0	0	2	1	
1721:	0	1	2	1	1	0	4	3	
1729:	8	0	2	1	1	1	2	1	
1737:	1	2	1	0	1	0	3	1	
1745:	2	2	1	1	1	0	1	1	
1753:	1	0	0	1	0	1	1	1	
1761:	1	4	18	24	13	5	0	0	
1769:	2	0	1	2	0	0	0	2	
1777:	1	0	2	1	0	0	0	1	
1785:	0	0	3	0	2	1	1	1	
1793:	1	0	0	0	0	1	0	2	
1801:	4	0	0	0	1	1	1	0	
1809:	0	2	0	0	1	1	1	1	
1817:	0	0	0	1	1	1	1	0	
1825:	1	0	1	0	0	3	1	0	
1833:	1	1	1	0	2	3	0	1	
1841:	0	2	0	3	1	2	5	1	
1849:	2	3	1	0	2	1	0	0	
1857:	2	1	0	4	0	1	1	3	
1865:	1	0	2	0	0	1	2	1	
1873:	1	0	3	0	1	0	0	1	
1881:	0	1	1	0	0	0	1	0	
1889:	0	2	1	0	2	1	0	0	
1897:	0	0	0	0	2	0	0	2	
1905:	0	2	2	0	0	1	1	2	
1913:	0	2	2	0	0	0	4	2	
1921:	0	0	1	1	0	1	0	1	
1929:	0	2	2	1	2	2	1	0	
1937:	0	0	1	2	4	1	0	0	
1945:	1	2	0	2	1	1	1	0	
1953:	2	0	0	1	2	1	1	0	
1961:	1	1	1	1	1	1	0	0	
1969:	3	1	0	2	0	0	1	0	
1977:	0	1	0	0	0	0	0	1	
1985:	0	0	3	2	0	2	0	2	
1993:	3	1	0	1	0	0	1	1	
2001:	0	0	0	0	2	0	0	1	
2009:	0	1	1	2	1	0	0	1	
2017:	0	1	0	0	1	1	0	0	
2025:	1	0	1	2	1	1	0	1	
2033:	0	0	0	1	2	0	2	0	
2041:	2	1	0	1	1	1	0	0	
2049:	0	0	0	1	1	2	1	1	
2057:	2	0	1	2	2	0	0	2	
2065:	0	2	0	1	0	0	1	0	
2073:	0	1	1	0	1	1	0	1	
2081:	1	0	0	0	0	2	0	4	
2089:	2	2	1	2	1	1	0	0	

2097: 0 0 0 0 6 3 2 2

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Channel	1	2	3	4	5	6	7	8	9
2105:	3	3	1	2	2	0	0	2	
2113:	1	0	1	1	0	0	3	2	
2121:	2	1	0	0	3	1	2	0	
2129:	1	2	1	1	2	0	0	2	
2137:	5	1	0	3	1	3	1	0	
2145:	2	2	0	2	0	0	3	2	
2153:	1	2	0	1	1	2	0	1	
2161:	1	1	2	1	1	2	1	0	
2169:	1	1	2	0	2	2	1	0	
2177:	0	2	0	1	3	2	1	1	
2185:	3	0	0	1	0	1	2	1	
2193:	2	2	0	0	1	1	1	1	
2201:	0	0	6	7	4	1	1	0	
2209:	1	2	0	0	2	0	2	1	
2217:	1	0	0	1	1	0	0	0	
2225:	2	0	0	1	0	3	2	0	
2233:	1	0	0	0	2	1	2	1	
2241:	0	0	2	0	1	0	3	1	
2249:	0	0	0	0	1	1	0	1	
2257:	0	0	0	1	1	2	3	2	
2265:	0	2	1	1	1	2	1	0	
2273:	0	1	1	0	2	1	0	0	
2281:	2	0	1	0	1	2	0	0	
2289:	0	0	1	2	3	1	1	0	
2297:	1	0	0	1	1	1	0	0	
2305:	0	2	1	1	1	1	1	0	
2313:	1	2	0	0	1	2	2	1	
2321:	0	0	0	0	2	1	0	1	
2329:	1	1	0	1	0	2	0	2	
2337:	1	0	2	1	1	1	1	0	
2345:	2	0	0	0	1	0	2	1	
2353:	0	1	4	1	2	1	3	3	
2361:	0	1	2	2	3	0	2	1	
2369:	2	1	0	0	1	0	0	3	
2377:	1	1	1	3	1	1	1	1	
2385:	2	1	0	0	0	1	1	2	
2393:	0	0	0	1	2	2	2	0	
2401:	0	0	0	0	1	0	1	1	
2409:	3	0	1	1	3	0	0	1	
2417:	1	1	1	1	2	0	1	1	
2425:	0	0	0	0	2	2	0	2	
2433:	1	0	0	2	0	2	1	0	
2441:	3	1	1	0	0	0	2	1	
2449:	1	1	1	0	0	0	0	0	
2457:	1	2	0	0	0	0	0	1	
2465:	0	0	1	0	1	0	1	0	
2473:	0	1	0	1	0	0	2	0	
2481:	1	1	0	0	0	2	1	2	
2489:	0	0	0	0	0	0	2	3	
2497:	0	1	2	0	0	0	0	1	
2505:	2	0	0	0	1	0	0	0	
2513:	1	1	1	1	0	0	0	0	
2521:	0	0	1	1	0	0	0	1	

2529: 0 2 1 0 0 0 0 0 0

Sample Title: CP-5028 00-02

Channel	1	2	3	4	5	6	7	8	9
2537:	1	0	0	0	2	0	0	0	0
2545:	1	1	0	0	1	0	2	0	0
2553:	1	0	0	0	0	0	0	0	0
2561:	1	1	0	2	0	1	0	1	0
2569:	0	1	1	1	1	0	0	0	0
2577:	0	1	0	0	0	0	0	0	0
2585:	1	0	1	0	0	0	1	0	0
2593:	0	1	2	0	0	0	2	0	0
2601:	0	0	0	0	0	0	0	0	0
2609:	1	3	1	14	29	26	9	1	0
2617:	0	1	0	0	1	0	0	0	0
2625:	0	1	0	0	0	0	1	0	0
2633:	0	0	0	1	1	0	0	0	0
2641:	0	0	0	0	0	0	0	0	0
2649:	1	0	1	0	0	0	0	1	0
2657:	0	1	0	0	0	0	0	2	0
2665:	1	0	0	0	0	0	0	0	0
2673:	0	1	0	0	0	1	1	0	0
2681:	0	0	0	0	0	0	1	0	0
2689:	0	1	0	1	0	0	1	0	0
2697:	0	1	0	1	0	1	0	0	0
2705:	1	0	0	0	0	1	0	0	0
2713:	2	0	0	1	0	1	1	0	0
2721:	0	0	1	0	0	0	0	1	0
2729:	0	0	0	0	0	0	0	0	0
2737:	0	0	0	0	1	0	1	0	0
2745:	0	0	0	0	0	0	1	1	0
2753:	0	0	1	0	0	0	0	0	0
2761:	0	1	1	0	0	0	0	1	0
2769:	0	1	0	0	0	1	0	0	0
2777:	0	1	1	0	1	1	1	0	0
2785:	0	0	0	0	0	0	0	0	0
2793:	0	0	0	0	0	0	0	0	0
2801:	0	0	0	0	0	0	1	0	0
2809:	0	0	0	1	0	0	0	1	0
2817:	2	0	0	1	0	0	0	1	0
2825:	0	0	0	1	0	1	0	3	0
2833:	0	0	0	1	0	0	1	0	0
2841:	0	1	0	1	0	0	0	0	0
2849:	0	0	0	0	0	0	0	0	0
2857:	0	0	0	0	2	0	0	0	0
2865:	0	0	0	0	0	0	0	1	0
2873:	0	1	0	0	1	0	0	0	0
2881:	1	1	0	1	0	1	0	0	0
2889:	1	0	0	0	0	1	0	0	0
2897:	0	1	0	0	0	0	0	0	0
2905:	0	0	1	1	0	0	0	1	0
2913:	0	0	0	2	0	0	0	1	0
2921:	0	0	0	0	0	0	0	0	0
2929:	0	3	0	1	1	0	1	0	0
2937:	0	0	0	0	0	1	0	0	0
2945:	0	0	1	0	0	1	0	0	0
2953:	0	0	0	0	0	0	0	0	0

2961: 1 1 0 0 1 0 0 0

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Channel	1	2	3	4	5	6	7	8
2969:	1	0	0	0	0	2	0	0
2977:	1	0	0	0	0	0	0	0
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	0	0	0	1	0
3001:	0	0	0	0	0	1	0	0
3009:	0	0	0	1	0	0	0	0
3017:	0	1	0	0	0	0	0	1
3025:	1	0	0	0	0	1	0	0
3033:	1	1	0	0	0	0	1	0
3041:	1	0	0	1	0	0	0	0
3049:	1	0	0	0	0	0	0	0
3057:	1	0	0	0	0	0	0	1
3065:	0	0	0	0	0	0	1	0
3073:	1	0	1	2	0	0	0	0
3081:	0	0	0	0	0	0	0	1
3089:	0	0	0	1	0	0	0	0
3097:	1	0	0	0	0	0	0	0
3105:	0	1	0	0	1	0	1	0
3113:	0	0	0	1	0	0	0	0
3121:	1	0	0	1	0	0	0	0
3129:	1	0	0	0	0	1	0	0
3137:	0	0	0	0	0	0	1	0
3145:	0	0	0	0	0	0	0	0
3153:	1	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	0	1
3169:	0	0	1	0	0	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	1	0	0	0	0
3193:	0	0	0	0	0	0	0	1
3201:	0	1	0	0	0	0	0	0
3209:	1	0	0	0	0	0	2	1
3217:	0	1	0	0	0	2	0	0
3225:	1	0	0	0	0	0	0	0
3233:	0	0	1	0	0	0	0	0
3241:	0	0	0	1	0	0	0	0
3249:	0	0	0	0	1	3	0	1
3257:	1	0	0	0	0	0	0	0
3265:	0	0	0	1	0	0	0	0
3273:	1	0	1	0	0	0	0	0
3281:	0	1	0	0	0	0	0	0
3289:	1	0	0	0	1	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	1	0
3321:	0	0	0	0	1	0	1	0
3329:	1	0	1	1	0	1	0	1
3337:	0	0	1	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	1	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	1	0	0	0	1	1	0
3377:	1	0	0	0	1	0	0	0
3385:	0	0	0	0	1	0	0	0

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5028 00-02

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0	0
3417:	0	0	0	1	0	0	0	0	0
3425:	0	0	0	0	0	0	0	1	1
3433:	0	1	0	1	1	0	0	0	0
3441:	1	0	0	0	1	0	0	0	1
3449:	0	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	1	1
3465:	0	0	0	0	1	0	0	0	0
3473:	1	0	1	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0	1
3489:	0	1	0	0	0	0	0	1	0
3497:	0	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0	0
3521:	0	1	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0	1
3537:	0	0	0	0	0	0	0	1	0
3545:	0	0	0	0	0	0	0	0	1
3553:	0	0	0	0	1	0	0	0	0
3561:	0	0	0	0	0	0	0	0	1
3569:	0	0	1	1	0	0	0	0	1
3577:	0	0	0	0	1	1	0	0	0
3585:	0	0	0	0	1	0	0	0	0
3593:	0	0	0	0	0	0	0	0	0
3601:	0	0	1	0	0	0	0	0	0
3609:	0	0	1	0	0	0	0	0	0
3617:	0	1	0	0	0	0	0	0	0
3625:	0	0	0	1	0	0	0	0	0
3633:	1	0	0	0	0	1	0	0	0
3641:	0	1	0	0	0	0	0	0	0
3649:	0	0	1	0	1	0	0	0	0
3657:	0	0	0	0	0	0	0	0	0
3665:	1	0	0	0	1	0	0	0	0
3673:	0	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0	1
3689:	0	0	0	0	1	0	0	0	0
3697:	1	0	1	0	0	0	0	0	1
3705:	0	1	0	0	0	0	0	1	0
3713:	0	0	0	1	0	0	0	0	0
3721:	0	0	1	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	1	1
3745:	1	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	1	0
3777:	0	0	0	0	0	0	0	0	0
3785:	0	0	1	1	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0	0
3801:	0	0	0	0	1	0	0	0	0
3809:	1	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0	0

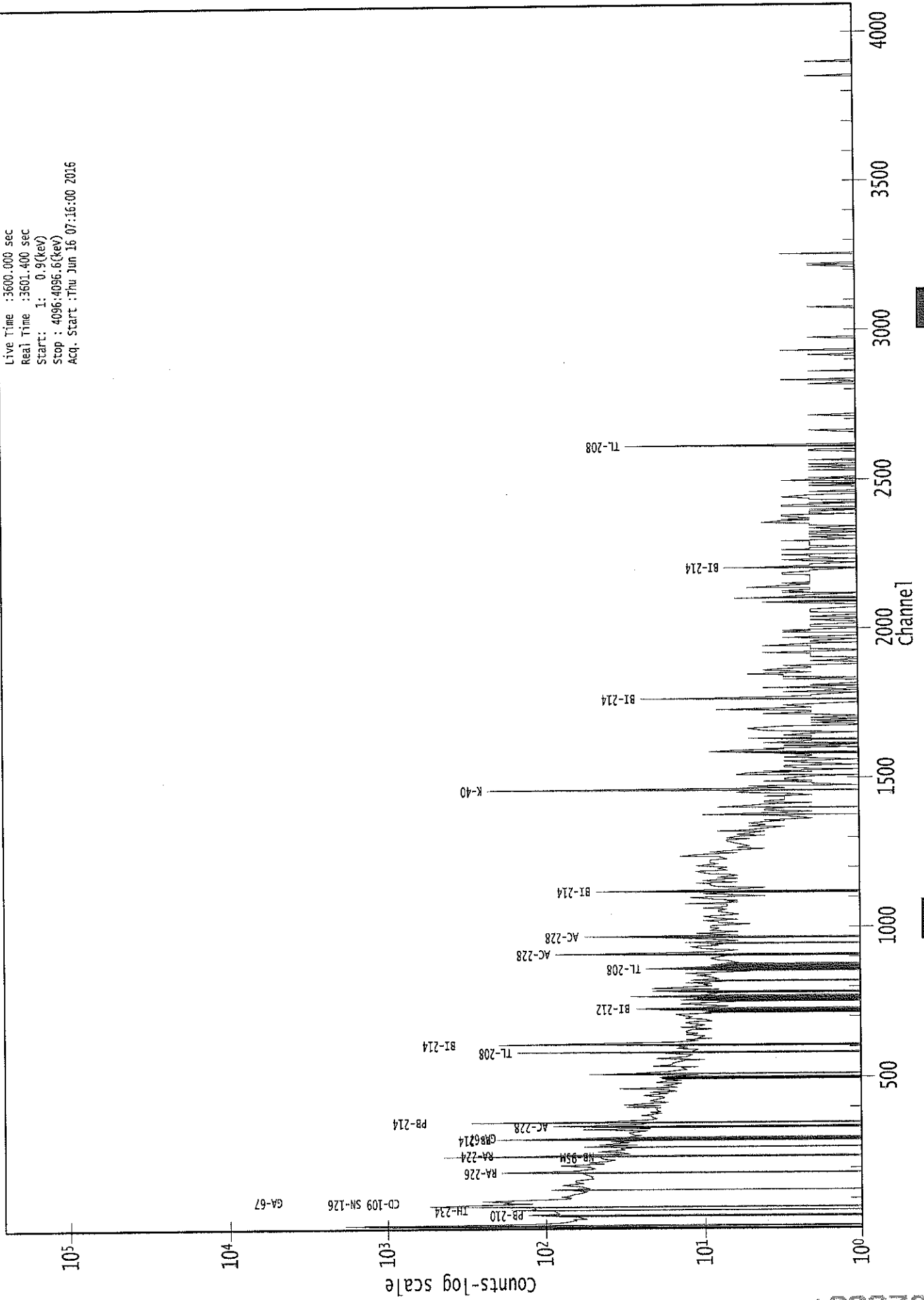
3825: 1 0 0 0 0 0 0 0 0

Sample Title: CP-5028 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	1	0	0	0	0	0	0
3849:	0	0	2	0	0	0	0	1
3857:	0	0	1	0	0	1	0	0
3865:	0	1	0	0	0	0	0	0
3873:	0	0	0	0	0	1	0	0
3881:	0	0	1	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	1	0	2	0	0	0	1
3905:	0	0	1	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	1	0	0	0	0	0	0	0
3929:	0	0	0	0	1	0	0	0
3937:	0	0	0	0	0	0	0	1
3945:	1	0	0	0	0	0	0	1
3953:	0	0	0	0	0	0	1	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	1	0	0	1	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	1	0	0	0	0	0	0	1
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	1	0	0	0	0	0	0
4033:	0	0	0	0	0	0	1	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	1	0	0	0	0	0
4057:	0	1	0	0	0	1	0	0
4065:	1	0	1	0	0	0	1	0
4073:	0	0	1	0	0	0	0	0
4081:	0	0	0	0	0	0	0	1
4089:	0	0	0	0	0	0	0	0

0000038973.CNF

Live Time : 3600.000 sec
Real Time : 3601.400 sec
Start : 1: 0.9(keV)
Stop : 4096:4096.6(keV)
Acq. Start : Thu Jun 16 07:16:00 2016



Analysis Report for 1606041-04
CP-5028 00-02

✓
6116

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-04
Sample Description : CP-5028 00-02
Sample Type : SOIL

Sample Size : 3.877E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 4:30:05PM
Acquisition Started : 6/16/2016 8:22:56AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.4 seconds

Dead Time : 0.04 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 7 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 4/6/2016
Efficiency Calibration Description :

Sample Number : 38977

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606041-04
CP-5028 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 9:23:04AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	12.88	13.00	0.0000	0.00
2	19.40	19.52	0.0000	0.00
3	63.43	63.52	0.0000	0.00
4	76.09	76.17	0.0000	0.00
5	84.25	84.33	0.0000	0.00
6	86.91	86.99	0.0000	0.00
7	89.58	89.66	0.0000	0.00
8	93.01	93.09	0.0000	0.00
9	104.91	104.98	0.0000	0.00
10	185.87	185.90	0.0000	0.00
11	209.41	209.43	0.0000	0.00
12	236.00	236.00	0.0000	0.00
13	241.58	241.57	0.0000	0.00
14	256.86	256.84	0.0000	0.00
15	269.82	269.80	0.0000	0.00
16	295.11	295.08	0.0000	0.00
17	300.24	300.20	0.0000	0.00
18	338.35	338.29	0.0000	0.00
19	351.84	351.78	0.0000	0.00
20	463.15	463.03	0.0000	0.00
21	510.85	510.71	0.0000	0.00
22	583.26	583.08	0.0000	0.00
23	609.41	609.22	0.0000	0.00
24	661.47	661.25	0.0000	0.00
25	727.15	726.90	0.0000	0.00
26	768.08	767.82	0.0000	0.00
27	772.45	772.18	0.0000	0.00
28	795.14	794.87	0.0000	0.00
29	860.76	860.46	0.0000	0.00
30	887.98	887.67	0.0000	0.00
31	911.41	911.08	0.0000	0.00
32	922.52	922.19	0.0000	0.00
33	969.19	968.85	0.0000	0.00
34	1010.76	1010.40	0.0000	0.00
35	1120.63	1120.22	0.0000	0.00
36	1237.79	1237.34	0.0000	0.00
37	1273.49	1273.03	0.0000	0.00
38	1283.69	1283.22	0.0000	0.00
39	1289.25	1288.78	0.0000	0.00
40	1378.31	1377.82	0.0000	0.00
41	1409.46	1408.96	0.0000	0.00
42	1460.89	1460.37	0.0000	0.00

Analysis Report for 1606041-04
CP-5028 00-02

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1590.71	1590.15	0.0000	0.00
44	1630.72	1630.15	0.0000	0.00
45	1729.09	1728.49	0.0000	0.00
46	1764.63	1764.03	0.0000	0.00
47	1794.95	1794.33	0.0000	0.00
48	2036.11	2035.44	0.0000	0.00
49	2116.07	2115.39	0.0000	0.00
50	2204.21	2203.51	0.0000	0.00
51	2614.17	2613.43	0.0000	0.00
52	2638.94	2638.20	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606041-04
CP-5028 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 9:23:04AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	12.88	12 -	16	13.00	1.80E+03	130.52	1.86E+03	1.00
2	19.40	18 -	23	19.52	5.79E+01	71.45	9.02E+02	2.13
3	63.43	61 -	66	63.52	1.17E+02	78.34	1.14E+03	1.79
4	76.09	71 -	80	76.17	9.45E+02	132.01	1.95E+03	3.07
M	5	82 -	97	84.33	6.22E+01	53.96	7.20E+02	1.33
m	6	82 -	97	86.99	1.66E+02	58.72	6.56E+02	1.34
m	7	82 -	97	89.66	1.52E+02	56.89	5.87E+02	1.35
m	8	82 -	97	93.09	1.82E+02	56.96	5.22E+02	1.36
9	104.91	102 -	107	104.98	6.30E+01	61.09	6.96E+02	2.84
10	185.87	182 -	189	185.90	2.52E+02	70.96	6.71E+02	1.21
11	209.41	207 -	214	209.43	5.81E+01	65.45	6.82E+02	1.43
M	12	234 -	245	236.00	2.64E+01	31.81	2.11E+02	1.28
m	13	234 -	245	241.57	1.71E+02	61.01	3.05E+02	1.71
14	256.86	253 -	260	256.84	5.51E+01	49.32	3.70E+02	3.52
15	269.82	266 -	272	269.80	9.08E+01	45.46	3.06E+02	2.64
16	295.11	291 -	298	295.08	2.40E+02	57.27	3.84E+02	1.31
17	300.24	299 -	303	300.20	3.65E+01	33.79	2.23E+02	1.26
18	338.35	335 -	342	338.29	1.65E+02	48.54	2.81E+02	1.41
19	351.84	348 -	355	351.78	4.16E+02	58.79	2.97E+02	1.33
20	463.15	459 -	467	463.03	5.63E+01	39.18	1.99E+02	1.52
21	510.85	506 -	516	510.71	1.77E+02	48.00	2.07E+02	2.17
22	583.26	580 -	586	583.08	2.38E+02	39.19	1.08E+02	1.26
23	609.41	605 -	613	609.22	2.80E+02	50.24	2.15E+02	1.49
24	661.47	658 -	663	661.25	1.87E+01	21.70	7.66E+01	1.71
25	727.15	723 -	731	726.90	5.40E+01	33.94	1.44E+02	1.53
M	26	761 -	775	767.82	3.04E+01	24.70	8.93E+01	2.02
m	27	761 -	775	772.18	2.63E+01	23.28	7.85E+01	2.03
28	795.14	791 -	798	794.87	2.54E+01	24.58	8.33E+01	1.51
29	860.76	855 -	864	860.46	3.93E+01	26.06	7.34E+01	2.10
30	887.98	885 -	891	887.67	2.08E+01	19.70	5.45E+01	3.30
M	31	907 -	929	911.08	1.52E+02	28.32	4.59E+01	1.73
m	32	907 -	929	922.19	1.82E+01	24.01	6.80E+01	3.15
33	969.19	965 -	973	968.85	5.93E+01	37.61	1.73E+02	1.56
34	1010.76	1007 -	1013	1010.40	1.38E+01	16.82	4.04E+01	3.19
35	1120.63	1115 -	1125	1120.22	8.20E+01	30.06	7.61E+01	1.98
36	1237.79	1233 -	1242	1237.34	2.89E+01	28.64	1.02E+02	1.74
37	1273.49	1270 -	1276	1273.03	1.06E+01	13.93	2.68E+01	2.13
M	38	1282 -	1292	1283.22	1.42E+01	9.66	2.39E+01	2.43
m	39	1282 -	1292	1288.78	1.75E+01	17.41	4.00E+01	2.43
40	1378.31	1372 -	1385	1377.82	2.11E+01	25.55	6.38E+01	3.33

Analysis Report for 1606041-04

CP-5028 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1409.46	1405 -	1415	1408.96	1.44E+01	18.65	3.92E+01	2.46
42	1460.89	1455 -	1466	1460.37	5.47E+02	49.80	3.72E+01	2.22
43	1590.71	1584 -	1597	1590.15	4.10E+01	15.00	6.02E+00	6.18
44	1630.72	1627 -	1632	1630.15	1.10E+01	10.20	1.20E+01	1.31
45	1729.09	1725 -	1731	1728.49	1.53E+01	8.96	3.47E+00	3.21
46	1764.63	1759 -	1769	1764.03	5.01E+01	15.56	5.89E+00	2.17
47	1794.95	1791 -	1798	1794.33	1.20E+01	6.93	0.00E+00	1.66
48	2036.11	2032 -	2038	2035.44	9.00E+00	6.00	0.00E+00	3.50
49	2116.07	2112 -	2117	2115.39	4.43E+00	6.78	5.14E+00	1.35
50	2204.21	2198 -	2207	2203.51	1.74E+01	10.25	5.30E+00	3.33
51	2614.17	2607 -	2617	2613.43	7.05E+01	19.09	1.10E+01	2.60
52	2638.94	2634 -	2641	2638.20	5.00E+00	4.47	0.00E+00	1.16

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 9:23:04AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	12.88	12 -	16	1.80E+03	130.52	1.86E+03	8.15E+01
2	19.40	18 -	23	5.79E+01	71.45	9.02E+02	5.74E+01
3	63.43	61 -	66	1.17E+02	78.34	1.14E+03	6.19E+01
4	76.09	71 -	80	9.45E+02	132.01	1.95E+03	9.60E+01
M 5	84.25	82 -	97	6.22E+01	53.96	7.20E+02	4.41E+01
m 6	86.91	82 -	97	1.66E+02	58.72	6.56E+02	4.21E+01
m 7	89.58	82 -	97	1.52E+02	56.89	5.87E+02	3.98E+01
m 8	93.01	82 -	97	1.82E+02	56.96	5.22E+02	3.76E+01
9	104.91	102 -	107	6.30E+01	61.09	6.96E+02	4.85E+01
10	185.87	182 -	189	2.52E+02	70.96	6.71E+02	5.22E+01
11	209.41	207 -	214	5.81E+01	65.45	6.82E+02	5.23E+01
M 12	236.00	234 -	245	2.64E+01	31.81	2.11E+02	2.39E+01
m 13	241.58	234 -	245	1.71E+02	61.01	3.05E+02	2.87E+01
14	256.86	253 -	260	5.51E+01	49.32	3.70E+02	3.87E+01
15	269.82	266 -	272	9.08E+01	45.46	3.06E+02	3.39E+01
16	295.11	291 -	298	2.40E+02	57.27	3.84E+02	3.96E+01

Analysis Report for 1606041-04

CP-5028 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level	
17	300.24	299 -	303	3.65E+01	33.79	2.23E+02	2.59E+01	
18	338.35	335 -	342	1.65E+02	48.54	2.81E+02	3.39E+01	
19	351.84	348 -	355	4.16E+02	58.79	2.97E+02	3.48E+01	
20	463.15	459 -	467	5.63E+01	39.18	1.99E+02	2.98E+01	
21	510.85	506 -	516	1.77E+02	48.00	2.07E+02	3.28E+01	
22	583.26	580 -	586	2.38E+02	39.19	1.08E+02	1.99E+01	
23	609.41	605 -	613	2.80E+02	50.24	2.15E+02	3.08E+01	
24	661.47	658 -	663	1.87E+01	21.70	7.66E+01	1.64E+01	
25	727.15	723 -	731	5.40E+01	33.94	1.44E+02	2.51E+01	
M	26	768.08	761 -	775	3.04E+01	24.70	8.93E+01	1.55E+01
m	27	772.45	761 -	775	2.63E+01	23.28	7.85E+01	1.46E+01
28	795.14	791 -	798	2.54E+01	24.58	8.33E+01	1.84E+01	
29	860.76	855 -	864	3.93E+01	26.06	7.34E+01	1.88E+01	
30	887.98	885 -	891	2.08E+01	19.70	5.45E+01	1.44E+01	
M	31	911.41	907 -	929	1.52E+02	28.32	4.59E+01	1.11E+01
m	32	922.52	907 -	929	1.82E+01	24.01	6.80E+01	1.36E+01
33	969.19	965 -	973	5.93E+01	37.61	1.73E+02	2.82E+01	
34	1010.76	1007 -	1013	1.38E+01	16.82	4.04E+01	1.24E+01	
35	1120.63	1115 -	1125	8.20E+01	30.06	7.61E+01	1.97E+01	
36	1237.79	1233 -	1242	2.89E+01	28.64	1.02E+02	2.18E+01	
37	1273.49	1270 -	1276	1.06E+01	13.93	2.68E+01	1.01E+01	
M	38	1283.69	1282 -	1292	1.42E+01	9.66	2.39E+01	8.03E+00
m	39	1289.25	1282 -	1292	1.75E+01	17.41	4.00E+01	1.04E+01
40	1378.31	1372 -	1385	2.11E+01	25.55	6.38E+01	1.96E+01	
41	1409.46	1405 -	1415	1.44E+01	18.65	3.92E+01	1.40E+01	
42	1460.89	1455 -	1466	5.47E+02	49.80	3.72E+01	1.40E+01	
43	1590.71	1584 -	1597	4.10E+01	15.00	6.02E+00	6.42E+00	
44	1630.72	1627 -	1632	1.10E+01	10.20	1.20E+01	6.37E+00	
45	1729.09	1725 -	1731	1.53E+01	8.96	3.47E+00	3.60E+00	
46	1764.63	1759 -	1769	5.01E+01	15.56	5.89E+00	5.33E+00	
47	1794.95	1791 -	1798	1.20E+01	6.93	0.00E+00	0.00E+00	
48	2036.11	2032 -	2038	9.00E+00	6.00	0.00E+00	0.00E+00	
49	2116.07	2112 -	2117	4.43E+00	6.78	5.14E+00	4.37E+00	
50	2204.21	2198 -	2207	1.74E+01	10.25	5.30E+00	4.90E+00	
51	2614.17	2607 -	2617	7.05E+01	19.09	1.10E+01	7.47E+00	
52	2638.94	2634 -	2641	5.00E+00	4.47	0.00E+00	0.00E+00	

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1606041-04
CP-5028 00-02

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 9:23:04AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	12.88	12 -	16	13.00	1.80E+03	130.52	1.86E+03	.....
2	19.40	18 -	23	19.52	5.79E+01	71.45	9.02E+02	.....
3	63.43	61 -	66	63.52	1.17E+02	78.34	1.14E+03	TH-234 TH-230
4	76.09	71 -	80	76.17	9.45E+02	132.01	1.95E+03	.....
M 5	84.25	82 -	97	84.33	6.22E+01	53.96	7.20E+02	TH-231
m 6	86.91	82 -	97	86.99	1.66E+02	58.72	6.56E+02	NP-237 EU-155 SN-126
m 7	89.58	82 -	97	89.66	1.52E+02	56.89	5.87E+02	.....
m 8	93.01	82 -	97	93.09	1.82E+02	56.96	5.22E+02	GA-67
9	104.91	102 -	107	104.98	6.30E+01	61.09	6.96E+02	EU-155
10	185.87	182 -	189	185.90	2.52E+02	70.96	6.71E+02	RA-226
11	209.41	207 -	214	209.43	5.81E+01	65.45	6.82E+02	CM-243 GA-67
M 12	236.00	234 -	245	236.00	2.64E+01	31.81	2.11E+02	TH-227 NB-95M
m 13	241.58	234 -	245	241.57	1.71E+02	61.01	3.05E+02	RA-224
14	256.86	253 -	260	256.84	5.51E+01	49.32	3.70E+02	TH-227
15	269.82	266 -	272	269.80	9.08E+01	45.46	3.06E+02	.....
16	295.11	291 -	298	295.08	2.40E+02	57.27	3.84E+02	PB-214
17	300.24	299 -	303	300.20	3.65E+01	33.79	2.23E+02	GA-67 PB-212 BI-210M
18	338.35	335 -	342	338.29	1.65E+02	48.54	2.81E+02	AC-228
19	351.84	348 -	355	351.78	4.16E+02	58.79	2.97E+02	PB-214
20	463.15	459 -	467	463.03	5.63E+01	39.18	1.99E+02	SB-125
21	510.85	506 -	516	510.71	1.77E+02	48.00	2.07E+02	.....
22	583.26	580 -	586	583.08	2.38E+02	39.19	1.08E+02	TL-208
23	609.41	605 -	613	609.22	2.80E+02	50.24	2.15E+02	BI-214
24	661.47	658 -	663	661.25	1.87E+01	21.70	7.66E+01	CS-137
25	727.15	723 -	731	726.90	5.40E+01	33.94	1.44E+02	BI-212
M 26	768.08	761 -	775	767.82	3.04E+01	24.70	8.93E+01	.....
m 27	772.45	761 -	775	772.18	2.63E+01	23.28	7.85E+01	.....
28	795.14	791 -	798	794.87	2.54E+01	24.58	8.33E+01	CS-134
29	860.76	855 -	864	860.46	3.93E+01	26.06	7.34E+01	TL-208
30	887.98	885 -	891	887.67	2.08E+01	19.70	5.45E+01	.....
M 31	911.41	907 -	929	911.08	1.52E+02	28.32	4.59E+01	AC-228 LU-172
m 32	922.52	907 -	929	922.19	1.82E+01	24.01	6.80E+01	.....
33	969.19	965 -	973	968.85	5.93E+01	37.61	1.73E+02	AC-228

Analysis Report for 1606041-04

CP-5028 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
34	1010.76	1007 -	1013	1010.40	1.38E+01	16.82	4.04E+01	.....
35	1120.63	1115 -	1125	1120.22	8.20E+01	30.06	7.61E+01	SC-46 BI-214 TA-182
36	1237.79	1233 -	1242	1237.34	2.89E+01	28.64	1.02E+02	CO-56
37	1273.49	1270 -	1276	1273.03	1.06E+01	13.93	2.68E+01	EU-154
M 38	1283.69	1282 -	1292	1283.22	1.42E+01	9.66	2.39E+01	.....
m 39	1289.25	1282 -	1292	1288.78	1.75E+01	17.41	4.00E+01	.....
40	1378.31	1372 -	1385	1377.82	2.11E+01	25.55	6.38E+01	.....
41	1409.46	1405 -	1415	1408.96	1.44E+01	18.65	3.92E+01	.....
42	1460.89	1455 -	1466	1460.37	5.47E+02	49.80	3.72E+01	K-40
43	1590.71	1584 -	1597	1590.15	4.10E+01	15.00	6.02E+00	.....
44	1630.72	1627 -	1632	1630.15	1.10E+01	10.20	1.20E+01	.....
45	1729.09	1725 -	1731	1728.49	1.53E+01	8.96	3.47E+00	.....
46	1764.63	1759 -	1769	1764.03	5.01E+01	15.56	5.89E+00	BI-214
47	1794.95	1791 -	1798	1794.33	1.20E+01	6.93	0.00E+00	.....
48	2036.11	2032 -	2038	2035.44	9.00E+00	6.00	0.00E+00	.....
49	2116.07	2112 -	2117	2115.39	4.43E+00	6.78	5.14E+00	.....
50	2204.21	2198 -	2207	2203.51	1.74E+01	10.25	5.30E+00	BI-214
51	2614.17	2607 -	2617	2613.43	7.05E+01	19.09	1.10E+01	TL-208
52	2638.94	2634 -	2641	2638.20	5.00E+00	4.47	0.00E+00	.....

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 9:23:04AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	12.88	1.80E+03	130.52	1.12E-05	1.66E-03
2	19.40	5.79E+01	71.45	5.46E-04	1.66E-03
3	63.43	1.17E+02	78.34	2.37E-02	1.74E-03
4	76.09	9.45E+02	132.01	2.56E-02	2.02E-03
M 5	84.25	6.22E+01	53.96	2.60E-02	2.19E-03
m 6	86.91	1.66E+02	58.72	2.60E-02	2.25E-03
m 7	89.58	1.52E+02	56.89	2.60E-02	2.27E-03
m 8	93.01	1.82E+02	56.96	2.60E-02	2.27E-03
9	104.91	6.30E+01	61.09	2.55E-02	2.27E-03

Analysis Report for 1606041-04
CP-5028 00-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	10	185.87	2.52E+02	70.96	1.99E-02	2.40E-03
	11	209.41	5.81E+01	65.45	1.85E-02	2.36E-03
M	12	236.00	2.64E+01	31.81	1.71E-02	2.32E-03
m	13	241.58	1.71E+02	61.01	1.69E-02	2.31E-03
	14	256.86	5.51E+01	49.32	1.62E-02	2.28E-03
	15	269.82	9.08E+01	45.46	1.57E-02	2.26E-03
	16	295.11	2.40E+02	57.27	1.47E-02	2.21E-03
	17	300.24	3.65E+01	33.79	1.45E-02	2.21E-03
	18	338.35	1.65E+02	48.54	1.33E-02	2.14E-03
	19	351.84	4.16E+02	58.79	1.30E-02	2.12E-03
	20	463.15	5.63E+01	39.18	1.05E-02	1.68E-03
	21	510.85	1.77E+02	48.00	9.77E-03	1.43E-03
	22	583.26	2.38E+02	39.19	8.79E-03	1.06E-03
	23	609.41	2.80E+02	50.24	8.48E-03	9.22E-04
	24	661.47	1.87E+01	21.70	7.94E-03	6.53E-04
	25	727.15	5.40E+01	33.94	7.34E-03	7.36E-04
M	26	768.08	3.04E+01	24.70	7.02E-03	7.88E-04
m	27	772.45	2.63E+01	23.28	6.99E-03	7.94E-04
	28	795.14	2.54E+01	24.58	6.82E-03	8.23E-04
	29	860.76	3.93E+01	26.06	6.39E-03	9.08E-04
	30	887.98	2.08E+01	19.70	6.22E-03	9.43E-04
M	31	911.41	1.52E+02	28.32	6.09E-03	9.28E-04
m	32	922.52	1.82E+01	24.01	6.03E-03	9.06E-04
	33	969.19	5.93E+01	37.61	5.79E-03	8.11E-04
	34	1010.76	1.38E+01	16.82	5.60E-03	7.27E-04
	35	1120.63	8.20E+01	30.06	5.15E-03	5.05E-04
	36	1237.79	2.89E+01	28.64	4.77E-03	3.84E-04
	37	1273.49	1.06E+01	13.93	4.67E-03	3.76E-04
M	38	1283.69	1.42E+01	9.66	4.64E-03	3.74E-04
m	39	1289.25	1.75E+01	17.41	4.63E-03	3.72E-04
	40	1378.31	2.11E+01	25.55	4.41E-03	3.66E-04
	41	1409.46	1.44E+01	18.65	4.34E-03	3.68E-04
	42	1460.89	5.47E+02	49.80	4.23E-03	3.72E-04
	43	1590.71	4.10E+01	15.00	4.00E-03	3.82E-04
	44	1630.72	1.10E+01	10.20	3.94E-03	3.85E-04
	45	1729.09	1.53E+01	8.96	3.81E-03	3.93E-04
	46	1764.63	5.01E+01	15.56	3.77E-03	3.96E-04
	47	1794.95	1.20E+01	6.93	3.74E-03	3.98E-04
	48	2036.11	9.00E+00	6.00	3.54E-03	4.01E-04
	49	2116.07	4.43E+00	6.78	3.49E-03	4.01E-04
	50	2204.21	1.74E+01	10.25	3.45E-03	4.01E-04
	51	2614.17	7.05E+01	19.09	3.40E-03	4.01E-04
	52	2638.94	5.00E+00	4.47	3.40E-03	4.01E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

Analysis Report for 1606041-04

CP-5028 00-02

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 9:23:04AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038677.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	12.88	1.80E+03	130.52			1.80E+03	1.31E+02
2	19.40	5.79E+01	71.45			5.79E+01	7.14E+01
3	63.43	1.17E+02	78.34	2.91E+01	8.34E+00	8.78E+01	7.88E+01
4	76.09	9.45E+02	132.01			9.45E+02	1.32E+02
M	5	84.25	6.22E+01			6.22E+01	5.40E+01
m	6	86.91	1.66E+02			1.66E+02	5.87E+01
m	7	89.58	1.52E+02			1.52E+02	5.69E+01
m	8	93.01	1.82E+02	4.47E+01	7.30E+00	1.38E+02	5.74E+01
	9	104.91	6.30E+01			6.30E+01	6.11E+01
	10	185.87	2.52E+02	3.13E+01	6.95E+00	2.20E+02	7.13E+01
	11	209.41	5.81E+01			5.81E+01	6.55E+01
M	12	236.00	2.64E+01			2.64E+01	3.18E+01
m	13	241.58	1.71E+02	2.33E+00	1.42E+00	1.68E+02	6.10E+01
	14	256.86	5.51E+01			5.51E+01	4.93E+01
	15	269.82	9.08E+01			9.08E+01	4.55E+01
	16	295.11	2.40E+02			2.40E+02	5.73E+01
	17	300.24	3.65E+01			3.65E+01	3.38E+01
	18	338.35	1.65E+02			1.65E+02	4.85E+01
	19	351.84	4.16E+02	9.12E+00	4.79E+00	4.07E+02	5.90E+01
	20	463.15	5.63E+01			5.63E+01	3.92E+01
	21	510.85	1.77E+02	6.97E+01	5.00E+00	1.08E+02	4.83E+01
	22	583.26	2.38E+02	3.98E+00	3.57E+00	2.34E+02	3.93E+01
	23	609.41	2.80E+02	8.66E+00	3.90E+00	2.72E+02	5.04E+01
	24	661.47	1.87E+01			1.87E+01	2.17E+01
	25	727.15	5.40E+01			5.40E+01	3.39E+01
M	26	768.08	3.04E+01			3.04E+01	2.47E+01
m	27	772.45	2.63E+01			2.63E+01	2.33E+01
	28	795.14	2.54E+01			2.54E+01	2.46E+01
	29	860.76	3.93E+01			3.93E+01	2.61E+01
	30	887.98	2.08E+01			2.08E+01	1.97E+01
M	31	911.41	1.52E+02	2.01E+00	2.72E+00	1.50E+02	2.85E+01
m	32	922.52	1.82E+01			1.82E+01	2.40E+01
	33	969.19	5.93E+01			5.93E+01	3.76E+01
	34	1010.76	1.38E+01			1.38E+01	1.68E+01
	35	1120.63	8.20E+01			8.20E+01	3.01E+01
	36	1237.79	2.89E+01			2.89E+01	2.86E+01
	37	1273.49	1.06E+01			1.06E+01	1.39E+01
M	38	1283.69	1.42E+01			1.42E+01	9.66E+00
m	39	1289.25	1.75E+01			1.75E+01	1.74E+01
	40	1378.31	2.11E+01			2.11E+01	2.56E+01
	41	1409.46	1.44E+01			1.44E+01	1.86E+01
	42	1460.89	5.47E+02	3.09E+00	1.97E+00	5.44E+02	4.98E+01
	43	1590.71	4.10E+01			4.10E+01	1.50E+01
	44	1630.72	1.10E+01			1.10E+01	1.02E+01

Analysis Report for 1606041-04

CP-5028 00-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
45	1729.09	1.53E+01	8.96			1.53E+01	8.96E+00
46	1764.63	5.01E+01	15.56			5.01E+01	1.56E+01
47	1794.95	1.20E+01	6.93			1.20E+01	6.93E+00
48	2036.11	9.00E+00	6.00			9.00E+00	6.00E+00
49	2116.07	4.43E+00	6.78			4.43E+00	6.78E+00
50	2204.21	1.74E+01	10.25			1.74E+01	1.02E+01
51	2614.17	7.05E+01	19.09			7.05E+01	1.91E+01
52	2638.94	5.00E+00	4.47			5.00E+00	4.47E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 9:23:04AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038677.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	12.88	1.80E+03	130.52			1.80E+03	1.31E+02
2	19.40	5.79E+01	71.45			5.79E+01	7.14E+01
3	63.43	1.17E+02	78.34	2.91E+01	8.34E+00	8.78E+01	7.88E+01
4	76.09	9.45E+02	132.01			9.45E+02	1.32E+02
M	5	84.25	6.22E+01			6.22E+01	5.40E+01
m	6	86.91	1.66E+02			1.66E+02	5.87E+01
m	7	89.58	1.52E+02			1.52E+02	5.69E+01
m	8	93.01	1.82E+02	4.47E+01	7.30E+00	1.38E+02	5.74E+01
	9	104.91	6.30E+01			6.30E+01	6.11E+01
	10	185.87	2.52E+02	3.13E+01	6.95E+00	2.20E+02	7.13E+01
	11	209.41	5.81E+01			5.81E+01	6.55E+01
M	12	236.00	2.64E+01			2.64E+01	3.18E+01
m	13	241.58	1.71E+02	2.33E+00	1.42E+00	1.68E+02	6.10E+01
	14	256.86	5.51E+01			5.51E+01	4.93E+01
	15	269.82	9.08E+01			9.08E+01	4.55E+01
	16	295.11	2.40E+02			2.40E+02	5.73E+01
	17	300.24	3.65E+01			3.65E+01	3.38E+01
	18	338.35	1.65E+02			1.65E+02	4.85E+01
	19	351.84	4.16E+02	9.12E+00	4.79E+00	4.07E+02	5.90E+01
	20	463.15	5.63E+01			5.63E+01	3.92E+01

Analysis Report for 1606041-04

CP-5028 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	21	510.85	1.77E+02	48.00	6.97E+01	5.00E+00	1.08E+02	4.83E+01
	22	583.26	2.38E+02	39.19	3.98E+00	3.57E+00	2.34E+02	3.93E+01
	23	609.41	2.80E+02	50.24	8.66E+00	3.90E+00	2.72E+02	5.04E+01
	24	661.47	1.87E+01	21.70			1.87E+01	2.17E+01
	25	727.15	5.40E+01	33.94			5.40E+01	3.39E+01
M	26	768.08	3.04E+01	24.70			3.04E+01	2.47E+01
m	27	772.45	2.63E+01	23.28			2.63E+01	2.33E+01
	28	795.14	2.54E+01	24.58			2.54E+01	2.46E+01
	29	860.76	3.93E+01	26.06			3.93E+01	2.61E+01
	30	887.98	2.08E+01	19.70			2.08E+01	1.97E+01
M	31	911.41	1.52E+02	28.32	2.01E+00	2.72E+00	1.50E+02	2.85E+01
m	32	922.52	1.82E+01	24.01			1.82E+01	2.40E+01
	33	969.19	5.93E+01	37.61			5.93E+01	3.76E+01
	34	1010.76	1.38E+01	16.82			1.38E+01	1.68E+01
	35	1120.63	8.20E+01	30.06			8.20E+01	3.01E+01
	36	1237.79	2.89E+01	28.64			2.89E+01	2.86E+01
	37	1273.49	1.06E+01	13.93			1.06E+01	1.39E+01
M	38	1283.69	1.42E+01	9.66			1.42E+01	9.66E+00
m	39	1289.25	1.75E+01	17.41			1.75E+01	1.74E+01
	40	1378.31	2.11E+01	25.55			2.11E+01	2.56E+01
	41	1409.46	1.44E+01	18.65			1.44E+01	1.86E+01
	42	1460.89	5.47E+02	49.80	3.09E+00	1.97E+00	5.44E+02	4.98E+01
	43	1590.71	4.10E+01	15.00			4.10E+01	1.50E+01
	44	1630.72	1.10E+01	10.20			1.10E+01	1.02E+01
	45	1729.09	1.53E+01	8.96			1.53E+01	8.96E+00
	46	1764.63	5.01E+01	15.56			5.01E+01	1.56E+01
	47	1794.95	1.20E+01	6.93			1.20E+01	6.93E+00
	48	2036.11	9.00E+00	6.00			9.00E+00	6.00E+00
	49	2116.07	4.43E+00	6.78			4.43E+00	6.78E+00
	50	2204.21	1.74E+01	10.25			1.74E+01	1.02E+01
	51	2614.17	7.05E+01	19.09			7.05E+01	1.91E+01
	52	2638.94	5.00E+00	4.47			5.00E+00	4.47E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1606041-04
CP-5028 00-02

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.999	1460.81 *	10.67	2.33E+01	3.00E+00
GA-67	0.947	93.31 *	35.70	2.25E+00	3.91E+00
		208.95 *	2.24	2.13E+01	3.60E+01
		300.22 *	16.00	2.38E+00	4.59E+00
CS-137	0.995	661.65 *	85.12	5.37E-02	6.24E-02
EU-155	0.975	86.50 *	30.90	4.01E-01	1.46E-01
		105.30 *	20.70	2.32E-01	2.26E-01
TL-208	0.978	583.14 *	30.22	1.71E+00	3.53E-01
		860.37 *	4.48	2.66E+00	1.80E+00
		2614.66 *	35.85	1.12E+00	3.31E-01
BI-212	0.766	727.17 *	11.80	1.21E+00	7.68E-01
		1620.62	2.75		
BI-214	0.995	609.31 *	46.30	1.34E+00	2.88E-01
		1120.29 *	15.10	2.04E+00	7.74E-01
		1764.49 *	15.80	1.63E+00	5.34E-01
		2204.22 *	4.98	1.95E+00	1.18E+00
PB-214	0.999	295.21 *	19.19	1.64E+00	4.64E-01
		351.92 *	37.19	1.63E+00	3.56E-01
RA-224	0.944	240.98 *	3.95	4.89E+00	1.89E+00
RA-226	0.982	186.21 *	3.28	6.54E+00	1.22E+01
TH-227	0.449	50.10	8.40		
		236.00 *	11.50	2.60E-01	3.14E-01
		256.20 *	6.30	1.05E+00	9.47E-01
AC-228	0.991	338.32 *	11.40	2.10E+00	7.03E-01
		911.07 *	27.70	1.72E+00	4.19E-01
		969.11 *	16.60	1.19E+00	7.76E-01
TH-231	0.308	25.64	14.70		
		84.21 *	6.40	7.24E-01	6.31E-01
TH-234	0.997	63.29 *	3.80	1.89E+00	1.70E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 9:23:04AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
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Analysis Report for 1606041-04
CP-5028 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	12.88	5.00121E-01	3.62		
2	19.40	1.60931E-02	61.66		
4	76.09	2.62523E-01	6.98		
m 7	89.58	4.23086E-02	18.67		
15	269.82	2.52311E-02	25.02	Sum	
20	463.15	1.56446E-02	34.79	Tol.	SB-125
21	510.85	2.99498E-02	22.38		
M 26	768.08	8.44574E-03	40.62		
m 27	772.45	7.29950E-03	44.30		
28	795.14	7.04809E-03	48.43	Sum	
30	887.98	5.76968E-03	47.42		
m 32	922.52	5.05539E-03	65.95	Sum	
34	1010.76	3.83987E-03	60.85		
36	1237.79	8.03125E-03	49.52		
37	1273.49	2.93981E-03	65.80	Tol.	EU-154
M 38	1283.69	3.94890E-03	33.96		
m 39	1289.25	4.84928E-03	49.88		
40	1378.31	5.85954E-03	60.57	Sum	
41	1409.46	4.00327E-03	64.70		
43	1590.71	1.13857E-02	18.30		
44	1630.72	3.05556E-03	46.35	Sum	
45	1729.09	4.24020E-03	29.34	Sum	
47	1794.95	3.33333E-03	28.87		
48	2036.11	2.50000E-03	33.33		
49	2116.07	1.23016E-03	76.57	Sum	
52	2638.94	1.38889E-03	44.72		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	2.33E+01	3.00E+00
GA-67	0.94	93.31 *	35.70	2.25E+00	3.91E+00

Analysis Report for 1606041-04
CP-5028 00-02

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
GA-67	0.94	208.95 *	2.24	2.13E+01	3.60E+01
		300.22 *	16.00	2.38E+00	4.59E+00
CS-137	0.99	661.65 *	85.12	5.37E-02	6.24E-02
EU-155	0.97	86.50 *	30.90	4.01E-01	1.46E-01
		105.30 *	20.70	2.32E-01	2.26E-01
TL-208	0.97	583.14 *	30.22	1.71E+00	3.53E-01
		860.37 *	4.48	2.66E+00	1.80E+00
		2614.66 *	35.85	1.12E+00	3.31E-01
BI-212	0.76	727.17 *	11.80	1.21E+00	7.68E-01
		1620.62	2.75		
BI-214	0.99	609.31 *	46.30	1.34E+00	2.88E-01
		1120.29 *	15.10	2.04E+00	7.74E-01
		1764.49 *	15.80	1.63E+00	5.34E-01
		2204.22 *	4.98	1.95E+00	1.18E+00
PB-214	0.99	295.21 *	19.19	1.64E+00	4.64E-01
		351.92 *	37.19	1.63E+00	3.56E-01
RA-224	0.94	240.98 *	3.95	4.89E+00	1.89E+00
RA-226	0.98	186.21 *	3.28	6.54E+00	1.22E+01
TH-227	0.44	50.10	8.40		
		236.00 *	11.50	2.60E-01	3.14E-01
		256.20 *	6.30	1.05E+00	9.47E-01
AC-228	0.99	338.32 *	11.40	2.10E+00	7.03E-01
		911.07 *	27.70	1.72E+00	4.19E-01
		969.11 *	16.60	1.19E+00	7.76E-01
TH-231	0.30	25.64	14.70		
		84.21 *	6.40	7.24E-01	6.31E-01
TH-234	0.99	63.29 *	3.80	1.89E+00	1.70E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
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Analysis Report for 1606041-04
 CP-5028 00-02

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.999	2.33E+01	3.00E+00	
	GA-67	0.947	2.45E+00	3.74E+00	
X	NB-95M	0.950			
X	SN-126	0.932			
	CS-137	0.995	5.37E-02	6.24E-02	
	EU-155	0.975	3.51E-01	1.23E-01	
	TL-208	0.978	1.42E+00	2.39E-01	
	BI-212	0.766	1.21E+00	7.68E-01	
	BI-214	0.995	1.49E+00	2.36E-01	
	PB-214	0.999	1.64E+00	2.83E-01	
	RA-224	0.944	4.89E+00	1.89E+00	
	RA-226	0.982	6.54E+00	1.22E+01	
	TH-227	0.449	3.38E-01	2.98E-01	
	AC-228	0.991	1.71E+00	3.26E-01	
	TH-231	0.308	7.24E-01	6.31E-01	
	TH-234	0.997	1.89E+00	1.70E+00	
X	NP-237	0.974			

- ? = nuclide is part of an undetermined solution
- X = nuclide rejected by the interference analysis
- @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1606041-04
CP-5028 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 9:23:04AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	12.88	5.00121E-01	3.62		
2	19.40	1.60931E-02	61.66		
4	76.09	2.62523E-01	6.98		
m 7	89.58	4.23086E-02	18.67		
15	269.82	2.52311E-02	25.02	Sum	
20	463.15	1.56446E-02	34.79	Tol.	SB-125
21	510.85	2.99498E-02	22.38		
M 26	768.08	8.44574E-03	40.62		
m 27	772.45	7.29950E-03	44.30		
28	795.14	7.04809E-03	48.43	Sum	
30	887.98	5.76968E-03	47.42		
m 32	922.52	5.05539E-03	65.95	Sum	
34	1010.76	3.83987E-03	60.85		
36	1237.79	8.03125E-03	49.52		
37	1273.49	2.93981E-03	65.80	Tol.	EU-154
M 38	1283.69	3.94890E-03	33.96		
m 39	1289.25	4.84928E-03	49.88		
40	1378.31	5.85954E-03	60.57	Sum	
41	1409.46	4.00327E-03	64.70		
43	1590.71	1.13857E-02	18.30		
44	1630.72	3.05556E-03	46.35	Sum	
45	1729.09	4.24020E-03	29.34	Sum	
47	1794.95	3.33333E-03	28.87		
48	2036.11	2.50000E-03	33.33		
49	2116.07	1.23016E-03	76.57	Sum	
52	2638.94	1.38889E-03	44.72		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1606041-04
CP-5028 00-02

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+ BE-7	477.59	10.42	-1.53E-01	8.11E-01	8.11E-01
+ NA-22	1274.54	99.94	-1.05E-03	1.07E-01	1.07E-01
+ NA-24	1368.53	99.99	-9.48E+01	1.92E+03	4.41E+03
	2754.09	99.86	-5.23E+02		1.92E+03
+ AL-26	1808.65	99.76	-2.01E-02	8.69E-02	8.69E-02
+ K-40	1460.81	* 10.67	2.33E+01	1.35E+00	1.35E+00
+ @ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+ TI-44	67.88	94.40	1.52E-02	7.04E-02	7.04E-02
	78.34	96.00	4.22E-01		1.07E-01
+ SC-46	889.25	99.98	5.57E-03	1.17E-01	1.17E-01
	1120.51	99.99	2.28E-01		1.98E-01
+ V-48	983.52	99.98	-1.14E-01	1.34E-01	1.34E-01
	1312.10	97.50	3.76E-02		1.81E-01
+ CR-51	320.08	9.83	-1.19E-02	9.02E-01	9.02E-01
+ MN-54	834.83	99.97	-2.01E-04	1.17E-01	1.17E-01
+ CO-56	846.75	99.96	-1.54E-03	1.02E-01	1.02E-01
	1037.75	14.03	-4.13E-01		7.37E-01
	1238.25	67.00	1.58E-01		2.65E-01
	1771.40	15.51	3.61E-02		5.09E-01
	2598.48	16.90	0.00E+00		3.41E-01
+ CO-57	122.06	85.51	3.86E-03	7.45E-02	7.45E-02
	136.48	10.60	-4.25E-02		6.52E-01
+ CO-58	810.76	99.40	-1.56E-02	1.16E-01	1.16E-01
+ FE-59	1099.22	56.50	1.22E-02	2.58E-01	2.58E-01
	1291.56	43.20	-1.45E-02		3.23E-01
+ CO-60	1173.22	100.00	2.64E-03	1.10E-01	1.40E-01
	1332.49	100.00	2.42E-02		1.10E-01
+ ZN-65	1115.52	50.75	-5.45E-02	2.26E-01	2.26E-01
+ GA-67	93.31	* 35.70	2.25E+00	3.56E+00	3.91E+00
	208.95	* 2.24	2.13E+01		3.93E+01
	300.22	* 16.00	2.38E+00		3.56E+00
+ SE-75	121.11	16.70	1.35E-01	1.17E-01	3.96E-01
	136.00	59.20	3.27E-02		1.22E-01
	264.65	59.80	-1.44E-02		1.17E-01
	279.53	25.20	-1.99E-01		3.14E-01
	400.65	11.40	-1.75E-01		6.95E-01
+ RB-82	776.52	13.00	-1.53E-01	9.92E-01	9.92E-01
+ RB-83	520.41	46.00	5.88E-02	1.74E-01	1.74E-01
	529.64	30.30	3.12E-02		2.86E-01
	552.65	16.40	1.69E-01		5.26E-01
+ KR-85	513.99	0.43	-1.51E+01	2.03E+01	2.03E+01
+ SR-85	513.99	99.27	-7.31E-02	9.81E-02	9.81E-02

Analysis Report for 1606041-04
CP-5028 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	93.40	8.51E-03	7.92E-02	1.31E-01
		1836.01	99.38	-1.68E-02		7.92E-02
+	NB-93M	16.57	9.43	1.91E+01	1.23E+02	1.23E+02
+	NB-94	702.63	100.00	5.83E-02	9.84E-02	1.05E-01
		871.10	100.00	-1.22E-03		9.84E-02
+	NB-95	765.79	99.81	1.78E-01	1.68E-01	1.68E-01
+	NB-95M	235.69	* 25.00	7.66E-01	3.30E+00	3.30E+00
+	ZR-95	724.18	43.70	-1.62E-02	2.05E-01	3.27E-01
		756.72	55.30	-1.54E-02		2.05E-01
+	MO-99	181.06	6.20	-5.59E+00	8.99E+00	1.26E+01
		739.58	12.80	3.12E+00		8.99E+00
		778.00	4.50	1.01E+01		2.51E+01
+	RU-103	497.08	89.00	-2.08E-02	9.38E-02	9.38E-02
+	RU-106	621.84	9.80	1.58E-01	1.00E+00	1.00E+00
+	AG-108M	433.93	89.90	-4.66E-02	7.47E-02	7.47E-02
		614.37	90.40	1.24E-03		1.09E-01
		722.95	90.50	-7.12E-03		1.16E-01
+	CD-109	88.03	3.72	3.84E+00	2.56E+00	2.56E+00
+	AG-110M	657.75	93.14	-5.36E-03	1.04E-01	1.04E-01
		677.61	10.53	-1.82E-01		8.96E-01
		706.67	16.46	-1.35E-01		6.18E-01
		763.93	21.98	-1.85E-01		5.72E-01
		884.67	71.63	7.03E-03		1.55E-01
		1384.27	23.94	7.84E-02		4.45E-01
+	CD-113M	263.70	0.02	1.90E+01	2.93E+02	2.93E+02
+	SN-113	255.12	1.93	1.42E+00	1.16E-01	3.93E+00
		391.69	64.90	6.80E-02		1.16E-01
+	TE123M	159.00	84.10	1.37E-02	8.22E-02	8.22E-02
+	SB-124	602.71	97.87	-1.31E-02	1.15E-01	1.15E-01
		645.85	7.26	-9.09E-02		1.41E+00
		722.78	11.10	-6.49E-02		1.06E+00
		1691.02	49.00	3.83E-02		1.99E-01
+	I-125	35.49	6.49	-6.91E-01	2.22E+00	2.22E+00
+	SB-125	176.33	6.89	3.87E-01	2.45E-01	1.03E+00
		427.89	29.33	-9.18E-02		2.45E-01
		463.38	10.35	7.60E-01		9.00E-01
		600.56	17.80	-1.58E-01		5.59E-01
		635.90	11.32	2.79E-01		7.95E-01
+	SB-126	414.70	83.30	9.47E-02	1.52E-01	1.60E-01
		666.33	99.60	-3.83E-03		1.52E-01
		695.00	99.60	7.56E-05		1.67E-01
		720.50	53.80	-1.05E-01		3.00E-01
+	SN-126	87.57	* 37.00	3.34E-01	4.82E-01	4.82E-01
+	SB-127	473.00	25.00	7.47E-01	1.52E+00	1.82E+00
		685.20	35.70	-3.73E-01		1.52E+00
		783.80	14.70	2.40E+00		3.96E+00
+	I-129	29.78	57.00	-1.01E-01	3.60E-01	3.60E-01
		33.60	13.20	3.89E-01		1.15E+00

Analysis Report for 1606041-04
CP-5028 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	1.64E-01	3.60E-01	1.38E+00
+	I-131	284.30	6.05	7.32E-01	2.03E-01	2.77E+00
		364.48	81.20	1.74E-02		2.03E-01
		636.97	7.26	1.44E+00		2.89E+00
		722.89	1.80	-8.25E-01		1.34E+01
+	TE-132	49.72	13.10	6.77E-01	6.19E-01	4.29E+00
		228.16	88.00	-2.31E-01		6.19E-01
+	BA-133	81.00	33.00	4.77E-02	1.16E-01	1.81E-01
		302.84	17.80	7.42E-02		4.13E-01
		356.01	60.00	-8.78E-03		1.16E-01
+	I-133	529.87	86.30	9.90E+01	2.24E+02	2.24E+02
+	XE-133	81.00	38.00	1.49E-01	5.64E-01	5.64E-01
+	CS-134	563.23	8.38	6.27E-01	1.21E-01	1.01E+00
		569.32	15.43	7.59E-02		5.21E-01
		604.70	97.60	4.01E-03		1.21E-01
		795.84	85.40	1.41E-01		1.43E-01
		801.93	8.73	1.70E-01		1.19E+00
+	CS-135	268.24	16.00	-2.23E-03	5.05E-01	5.05E-01
+	I-135	1131.51	22.50	1.88E+09	1.46E+10	2.07E+10
		1260.41	28.60	-6.75E+09		1.46E+10
		1678.03	9.54	-4.01E+08		3.49E+10
+	CS-136	153.22	7.46	4.57E-01	1.73E-01	1.55E+00
		163.89	4.61	1.08E+00		2.45E+00
		176.55	13.56	1.39E-01		8.55E-01
		273.65	12.66	-3.80E-01		8.71E-01
		340.57	48.50	-3.86E-01		2.89E-01
		818.50	99.70	-4.57E-03		1.73E-01
		1048.07	79.60	-1.34E-01		2.13E-01
		1235.34	19.70	2.66E-01		1.34E+00
+	CS-137	661.65	85.12	5.37E-02	1.02E-01	1.02E-01
+	LA-138	788.74	34.00	2.01E-01	1.19E-01	2.64E-01
		1435.80	66.00	-3.63E-02		1.19E-01
+	CE-139	165.85	80.35	2.59E-02	8.82E-02	8.82E-02
+	BA-140	162.64	6.70	-1.12E+00	5.28E-01	1.64E+00
		304.84	4.50	1.61E+00		2.65E+00
		423.70	3.20	9.06E-02		3.94E+00
		437.55	2.00	-4.20E-01		6.35E+00
		537.32	25.00	-4.19E-02		5.28E-01
+	LA-140	328.77	20.50	1.87E-01	2.06E-01	6.90E-01
		487.03	45.50	7.80E-02		2.99E-01
		815.85	23.50	-7.99E-02		7.43E-01
		1596.49	95.49	6.43E-03		2.06E-01
+	CE-141	145.44	48.40	9.30E-02	1.64E-01	1.64E-01
+	CE-143	57.36	11.80	9.46E+00	3.47E+01	7.55E+01
		293.26	42.00	3.29E+01		3.47E+01
		664.55	5.20	2.06E+01		2.50E+02
+	CE-144	133.54	10.80	2.04E-01	6.40E-01	6.40E-01
+	PM-144	476.78	42.00	-3.42E-02	9.78E-02	1.81E-01
		618.01	98.60	8.95E-03		1.01E-01

Analysis Report for 1606041-04
CP-5028 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	696.49	99.49	-2.74E-02	9.78E-02	9.78E-02
+	PM-145	36.85	21.70	5.36E-03	2.85E-01	5.39E-01
		37.36	39.70	2.83E-03		2.85E-01
		42.30	15.10	-1.87E-01		5.88E-01
		72.40	2.31	-1.03E+00		2.93E+00
+	PM-146	453.90	39.94	-4.70E-02	1.69E-01	1.69E-01
		735.90	14.01	-1.02E-01		6.60E-01
		747.13	13.10	-9.30E-02		7.42E-01
+	ND-147	91.11	28.90	1.99E-01	5.85E-01	5.85E-01
		531.02	13.10	1.01E-01		1.16E+00
+	PM-149	285.90	3.10	-2.60E+01	4.59E+01	4.59E+01
+	EU-152	121.78	20.50	1.57E-02	3.03E-01	3.03E-01
		244.69	5.40	1.90E-01		1.32E+00
		344.27	19.13	6.67E-02		3.62E-01
		778.89	9.20	2.90E-01		1.07E+00
		964.01	10.40	-1.80E-02		1.24E+00
		1085.78	7.22	4.19E-01		1.54E+00
		1112.02	9.60	1.95E-01		1.24E+00
		1407.95	14.94	3.29E-01		7.77E-01
+	GD-153	97.43	31.30	9.97E-02	2.10E-01	2.10E-01
		103.18	22.20	-5.04E-02		3.07E-01
+	EU-154	123.07	40.50	-3.38E-02	1.54E-01	1.54E-01
		723.30	19.70	-3.28E-02		5.33E-01
		873.19	11.50	-3.62E-02		8.69E-01
		996.32	10.30	-2.99E-01		1.04E+00
		1004.76	17.90	2.40E-01		6.40E-01
		1274.45	35.50	-2.93E-03		2.99E-01
+	EU-155	86.50	* 30.90	4.01E-01	3.67E-01	5.79E-01
		105.30	* 20.70	2.32E-01		3.67E-01
+	EU-156	811.77	10.40	6.05E-01	1.61E+00	1.61E+00
		1153.47	7.20	1.60E+00		2.98E+00
		1230.71	8.90	4.65E-01		2.35E+00
+	HO-166M	184.41	72.60	2.06E-01	1.30E-01	1.30E-01
		280.45	29.60	-1.60E-01		2.54E-01
		410.94	11.10	1.91E-01		7.11E-01
		711.69	54.10	1.27E-02		1.83E-01
+	TM-171	66.72	0.14	2.92E+01	4.86E+01	4.86E+01
+	HF-172	81.75	4.52	-1.47E+00	5.94E-01	1.32E+00
		125.81	11.30	-3.66E-01		5.94E-01
+	LU-172	181.53	20.60	-3.16E-01	5.28E-01	9.18E-01
		810.06	16.63	-2.31E-01		1.71E+00
		912.12	15.25	8.69E+00		3.70E+00
		1093.66	62.50	-3.37E-01		5.28E-01
+	LU-173	100.72	5.24	3.66E-01	3.71E-01	1.24E+00
		272.11	21.20	-6.72E-02		3.71E-01
+	HF-175	343.40	84.00	1.60E-02	9.37E-02	9.37E-02
+	LU-176	88.34	13.30	1.06E+00	7.18E-02	7.05E-01
		201.83	86.00	-7.47E-02		8.24E-02
		306.78	94.00	-1.25E-02		7.18E-02

Analysis Report for 1606041-04
CP-5028 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TA-182	67.75	41.20	3.69E-02	1.71E-01	1.71E-01
		1121.30	34.90	8.44E-01		5.65E-01
		1189.05	16.23	3.46E-02		8.17E-01
		1221.41	26.98	2.14E-02		5.19E-01
		1231.02	11.44	8.96E-02		1.23E+00
+	IR-192	308.46	29.68	-4.84E-02	1.63E-01	2.44E-01
		468.07	48.10	2.34E-03		1.63E-01
+	HG-203	279.19	77.30	2.67E-02	1.14E-01	1.14E-01
+	BI-207	569.67	97.72	1.19E-02	8.17E-02	8.17E-02
		1063.62	74.90	-5.97E-02		1.40E-01
+	TL-208	583.14	* 30.22	1.71E+00	2.81E-01	3.16E-01
		860.37	* 4.48	2.66E+00		2.73E+00
		2614.66	* 35.85	1.12E+00		2.81E-01
+	BI-210M	262.00	45.00	-1.49E-03	1.47E-01	1.47E-01
		300.00	23.00	2.62E-01		3.43E-01
+	PB-210	46.50	4.25	2.08E+00	2.12E+00	2.12E+00
+	PB-211	404.84	2.90	-1.08E+00	2.61E+00	2.61E+00
		831.96	2.90	-5.84E-01		3.65E+00
+	BI-212	727.17	* 11.80	1.21E+00	1.19E+00	1.19E+00
		1620.62	2.75	8.51E-01		3.58E+00
+	PB-212	238.63	44.60	1.13E+00	3.64E-01	3.64E-01
		300.09	3.41	1.77E+00		2.32E+00
+	BI-214	609.31	* 46.30	1.34E+00	3.22E-01	3.22E-01
		1120.29	* 15.10	2.04E+00		1.05E+00
		1764.49	* 15.80	1.63E+00		4.34E-01
		2204.22	* 4.98	1.95E+00		1.41E+00
+	PB-214	295.21	* 19.19	1.64E+00	2.95E-01	5.62E-01
		351.92	* 37.19	1.63E+00		2.95E-01
+	RN-219	401.80	6.50	3.23E-02	1.17E+00	1.17E+00
+	RA-223	323.87	3.88	-1.77E+00	1.77E+00	1.77E+00
+	RA-224	240.98	* 3.95	4.89E+00	3.38E+00	3.38E+00
+	RA-225	40.00	31.00	6.11E-02	5.16E-01	5.16E-01
+	RA-226	186.21	* 3.28	6.54E+00	3.24E+00	3.24E+00
+	TH-227	50.10	8.40	1.33E-01	8.45E-01	8.45E-01
		236.00	* 11.50	2.60E-01		1.12E+00
		256.20	* 6.30	1.05E+00		1.52E+00
+	AC-228	338.32	* 11.40	2.10E+00	8.97E-01	8.97E-01
		911.07	* 27.70	1.72E+00		9.47E-01
		969.11	* 16.60	1.19E+00		1.19E+00
+	TH-230	48.44	16.90	-3.84E-01	4.35E-01	4.35E-01
		62.85	4.60	2.68E+00		1.75E+00
		67.67	0.37	3.88E+00		1.80E+01
+	PA-231	283.67	1.60	1.20E+00	3.19E+00	4.54E+00
		302.67	2.30	5.73E-01		3.19E+00
+	TH-231	25.64	14.70	3.31E-01	2.80E+00	3.08E+00
		84.21	* 6.40	7.24E-01		2.80E+00
+	PA-233	311.98	38.60	-4.99E-02	2.22E-01	2.22E-01
+	PA-234	131.20	20.40	-1.40E-01	3.29E-01	3.29E-01

Analysis Report for 1606041-04
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	733.99	8.80	-2.61E-01	3.29E-01	1.05E+00
		946.00	12.00	1.23E-01		8.36E-01
+	PA-234M	1001.03	0.92	4.26E+00	1.29E+01	1.29E+01
+	TH-234	63.29	* 3.80	1.89E+00	2.76E+00	2.76E+00
+	U-235	143.76	10.50	-3.07E-01	5.97E-01	5.97E-01
		163.35	4.70	-9.51E-01		1.39E+00
		205.31	4.70	8.55E-01		1.55E+00
+	NP-237	86.50	* 12.60	9.80E-01	1.41E+00	1.41E+00
+	NP-239	106.10	22.70	6.08E+00	5.21E+00	5.21E+00
		228.18	10.70	-4.19E+00		1.12E+01
		277.60	14.10	9.73E-01		9.17E+00
+	AM-241	59.54	35.90	1.14E-02	1.87E-01	1.87E-01
+	AM-243	74.67	66.00	-5.15E-01	1.42E-01	1.42E-01
+	CM-243	209.75	3.29	3.27E+00	5.34E-01	2.56E+00
		228.14	10.60	-2.45E-01		6.55E-01
		277.60	14.00	5.67E-02		5.34E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	8.11E-01	8.11E-01	-1.53E-01	3.78E-01
	NA-22	1274.54	99.94	1.07E-01	1.07E-01	-1.05E-03	4.77E-02
	NA-24	1368.53	99.99	4.41E+03	1.92E+03	-9.48E+01	1.93E+03
		2754.09	99.86	1.92E+03		-5.23E+02	6.08E+02
	AL-26	1808.65	99.76	8.69E-02	8.69E-02	-2.01E-02	3.64E-02
+	K-40	1460.81	* 10.67	1.35E+00	1.35E+00	2.33E+01	6.18E-01

Analysis Report for 1606041-04
CP-5028 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	7.04E-02	7.04E-02	1.52E-02	3.41E-02
	78.34	96.00	1.07E-01		4.22E-01	5.23E-02
SC-46	889.25	99.98	1.17E-01	1.17E-01	5.57E-03	5.38E-02
	1120.51	99.99	1.98E-01		2.28E-01	9.33E-02
V-48	983.52	99.98	1.34E-01	1.34E-01	-1.14E-01	5.99E-02
	1312.10	97.50	1.81E-01		3.76E-02	8.15E-02
CR-51	320.08	9.83	9.02E-01	9.02E-01	-1.19E-02	4.26E-01
MN-54	834.83	99.97	1.17E-01	1.17E-01	-2.01E-04	5.44E-02
CO-56	846.75	99.96	1.02E-01	1.02E-01	-1.54E-03	4.67E-02
	1037.75	14.03	7.37E-01		-4.13E-01	3.32E-01
	1238.25	67.00	2.65E-01		1.58E-01	1.24E-01
	1771.40	15.51	5.09E-01		3.61E-02	2.06E-01
	2598.48	16.90	3.41E-01		0.00E+00	1.21E-01
CO-57	122.06	85.51	7.45E-02	7.45E-02	3.86E-03	3.60E-02
	136.48	10.60	6.52E-01		-4.25E-02	3.15E-01
CO-58	810.76	99.40	1.16E-01	1.16E-01	-1.56E-02	5.35E-02
FE-59	1099.22	56.50	2.58E-01	2.58E-01	1.22E-02	1.19E-01
	1291.56	43.20	3.23E-01		-1.45E-02	1.46E-01
CO-60	1173.22	100.00	1.40E-01	1.10E-01	2.64E-03	6.50E-02
	1332.49	100.00	1.10E-01		2.42E-02	4.91E-02
ZN-65	1115.52	50.75	2.26E-01	2.26E-01	-5.45E-02	1.03E-01
+ GA-67	93.31	* 35.70	3.91E+00	3.56E+00	2.25E+00	1.94E+00
	208.95	* 2.24	3.93E+01		2.13E+01	1.91E+01
	300.22	* 16.00	3.56E+00		2.38E+00	1.69E+00
SE-75	121.11	16.70	3.96E-01	1.17E-01	1.35E-01	1.91E-01
	136.00	59.20	1.22E-01		3.27E-02	5.89E-02
	264.65	59.80	1.17E-01		-1.44E-02	5.57E-02
	279.53	25.20	3.14E-01		-1.99E-01	1.50E-01
	400.65	11.40	6.95E-01		-1.75E-01	3.27E-01
RB-82	776.52	13.00	9.92E-01	9.92E-01	-1.53E-01	4.58E-01
RB-83	520.41	46.00	1.74E-01	1.74E-01	5.88E-02	8.08E-02
	529.64	30.30	2.86E-01		3.12E-02	1.33E-01
	552.65	16.40	5.26E-01		1.69E-01	2.44E-01
KR-85	513.99	0.43	2.03E+01	2.03E+01	-1.51E+01	9.51E+00
SR-85	513.99	99.27	9.81E-02	9.81E-02	-7.31E-02	4.60E-02
Y-88	898.02	93.40	1.31E-01	7.92E-02	8.51E-03	6.06E-02
	1836.01	99.38	7.92E-02		-1.68E-02	3.20E-02
NB-93M	16.57	9.43	1.23E+02	1.23E+02	1.91E+01	5.99E+01
NB-94	702.63	100.00	1.05E-01	9.84E-02	5.83E-02	4.88E-02
	871.10	100.00	9.84E-02		-1.22E-03	4.51E-02
NB-95	765.79	99.81	1.68E-01	1.68E-01	1.78E-01	7.92E-02
NB-95M	235.69	* 25.00	3.30E+00	3.30E+00	7.66E-01	1.61E+00
ZR-95	724.18	43.70	3.27E-01	2.05E-01	-1.62E-02	1.55E-01
	756.72	55.30	2.05E-01		-1.54E-02	9.53E-02
MO-99	181.06	6.20	1.26E+01	8.99E+00	-5.59E+00	6.07E+00
	739.58	12.80	8.99E+00		3.12E+00	4.17E+00
	778.00	4.50	2.51E+01		1.01E+01	1.16E+01
RU-103	497.08	89.00	9.38E-02	9.38E-02	-2.08E-02	4.34E-02
RU-106	621.84	9.80	1.00E+00	1.00E+00	1.58E-01	4.69E-01
AG-108M	433.93	89.90	7.47E-02	7.47E-02	-4.66E-02	3.47E-02
	614.37	90.40	1.09E-01		1.24E-03	5.12E-02
	722.95	90.50	1.16E-01		-7.12E-03	5.40E-02

Analysis Report for 1606041-04
CP-5028 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CD-109	88.03	3.72	2.56E+00	2.56E+00	3.84E+00	1.25E+00
AG-110M	657.75	93.14	1.04E-01	1.04E-01	-5.36E-03	4.83E-02
	677.61	10.53	8.96E-01		-1.82E-01	4.15E-01
	706.67	16.46	6.18E-01		-1.35E-01	2.87E-01
	763.93	21.98	5.72E-01		-1.85E-01	2.69E-01
	884.67	71.63	1.55E-01		7.03E-03	7.17E-02
	1384.27	23.94	4.45E-01		7.84E-02	1.97E-01
CD-113M	263.70	0.02	2.93E+02	2.93E+02	1.90E+01	1.39E+02
SN-113	255.12	1.93	3.93E+00	1.16E-01	1.42E+00	1.87E+00
	391.69	64.90	1.16E-01		6.80E-02	5.46E-02
TE123M	159.00	84.10	8.22E-02	8.22E-02	1.37E-02	3.96E-02
SB-124	602.71	97.87	1.15E-01	1.15E-01	-1.31E-02	5.41E-02
	645.85	7.26	1.41E+00		-9.09E-02	6.53E-01
	722.78	11.10	1.06E+00		-6.49E-02	4.92E-01
	1691.02	49.00	1.99E-01		3.83E-02	8.42E-02
I-125	35.49	6.49	2.22E+00	2.22E+00	-6.91E-01	1.07E+00
SB-125	176.33	6.89	1.03E+00	2.45E-01	3.87E-01	4.96E-01
	427.89	29.33	2.45E-01		-9.18E-02	1.15E-01
	463.38	10.35	9.00E-01		7.60E-01	4.26E-01
	600.56	17.80	5.59E-01		-1.58E-01	2.62E-01
	635.90	11.32	7.95E-01		2.79E-01	3.69E-01
SB-126	414.70	83.30	1.60E-01	1.52E-01	9.47E-02	7.51E-02
	666.33	99.60	1.52E-01		-3.83E-03	7.04E-02
	695.00	99.60	1.67E-01		7.56E-05	7.77E-02
	720.50	53.80	3.00E-01		-1.05E-01	1.39E-01
SN-126	87.57 *	37.00	4.82E-01	4.82E-01	3.34E-01	2.38E-01
SB-127	473.00	25.00	1.82E+00	1.52E+00	7.47E-01	8.54E-01
	685.20	35.70	1.52E+00		-3.73E-01	7.06E-01
	783.80	14.70	3.96E+00		2.40E+00	1.83E+00
I-129	29.78	57.00	3.60E-01	3.60E-01	-1.01E-01	1.71E-01
	33.60	13.20	1.15E+00		3.89E-01	5.51E-01
	39.58	7.52	1.38E+00		1.64E-01	6.64E-01
I-131	284.30	6.05	2.77E+00	2.03E-01	7.32E-01	1.32E+00
	364.48	81.20	2.03E-01		1.74E-02	9.54E-02
	636.97	7.26	2.89E+00		1.44E+00	1.34E+00
	722.89	1.80	1.34E+01		-8.25E-01	6.25E+00
TE-132	49.72	13.10	4.29E+00	6.19E-01	6.77E-01	2.06E+00
	228.16	88.00	6.19E-01		-2.31E-01	2.96E-01
BA-133	81.00	33.00	1.81E-01	1.16E-01	4.77E-02	8.74E-02
	302.84	17.80	4.13E-01		7.42E-02	1.96E-01
	356.01	60.00	1.16E-01		-8.78E-03	5.45E-02
I-133	529.87	86.30	2.24E+02	2.24E+02	9.90E+01	1.05E+02
XE-133	81.00	38.00	5.64E-01	5.64E-01	1.49E-01	2.72E-01
CS-134	563.23	8.38	1.01E+00	1.21E-01	6.27E-01	4.73E-01
	569.32	15.43	5.21E-01		7.59E-02	2.42E-01
	604.70	97.60	1.21E-01		4.01E-03	5.75E-02
	795.84	85.40	1.43E-01		1.41E-01	6.67E-02
	801.93	8.73	1.19E+00		1.70E-01	5.49E-01
CS-135	268.24	16.00	5.05E-01	5.05E-01	-2.23E-03	2.42E-01
I-135	1131.51	22.50	2.07E+10	1.46E+10	1.88E+09	9.48E+09
	1260.41	28.60	1.46E+10		-6.75E+09	6.53E+09
	1678.03	9.54	3.49E+10		-4.01E+08	1.47E+10
CS-136	153.22	7.46	1.55E+00	1.73E-01	4.57E-01	7.47E-01

Analysis Report for 1606041-04
CP-5028 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)		
CS-136	163.89	4.61	2.45E+00	1.73E-01	1.08E+00	1.18E+00		
	176.55	13.56	8.55E-01		1.39E-01	4.12E-01		
	273.65	12.66	8.71E-01		-3.80E-01	4.13E-01		
	340.57	48.50	2.89E-01		-3.86E-01	1.38E-01		
	818.50	99.70	1.73E-01		-4.57E-03	7.99E-02		
	1048.07	79.60	2.13E-01		-1.34E-01	9.65E-02		
	1235.34	19.70	1.34E+00		2.66E-01	6.23E-01		
+ CS-137	661.65	* 85.12	1.02E-01	1.02E-01	5.37E-02	4.70E-02		
LA-138	788.74	34.00	2.64E-01	1.19E-01	2.01E-01	1.21E-01		
	1435.80	66.00	1.19E-01		-3.63E-02	5.04E-02		
CE-139	165.85	80.35	8.82E-02	8.82E-02	2.59E-02	4.25E-02		
BA-140	162.64	6.70	1.64E+00	5.28E-01	-1.12E+00	7.89E-01		
	304.84	4.50	2.65E+00		1.61E+00	1.26E+00		
	423.70	3.20	3.94E+00		9.06E-02	1.85E+00		
	437.55	2.00	6.35E+00		-4.20E-01	2.97E+00		
	537.32	25.00	5.28E-01		-4.19E-02	2.45E-01		
LA-140	328.77	20.50	6.90E-01	2.06E-01	1.87E-01	3.29E-01		
	487.03	45.50	2.99E-01		7.80E-02	1.40E-01		
	815.85	23.50	7.43E-01		-7.99E-02	3.43E-01		
	1596.49	95.49	2.06E-01		6.43E-03	9.15E-02		
CE-141	145.44	48.40	1.64E-01	1.64E-01	9.30E-02	7.90E-02		
CE-143	57.36	11.80	7.55E+01	3.47E+01	9.46E+00	3.64E+01		
	293.26	42.00	3.47E+01		3.29E+01	1.68E+01		
	664.55	5.20	2.50E+02		2.06E+01	1.16E+02		
CE-144	133.54	10.80	6.40E-01	6.40E-01	2.04E-01	3.09E-01		
PM-144	476.78	42.00	1.81E-01	9.78E-02	-3.42E-02	8.41E-02		
	618.01	98.60	1.01E-01		8.95E-03	4.71E-02		
	696.49	99.49	9.78E-02		-2.74E-02	4.54E-02		
PM-145	36.85	21.70	5.39E-01	2.85E-01	5.36E-03	2.58E-01		
	37.36	39.70	2.85E-01		2.83E-03	1.36E-01		
	42.30	15.10	5.88E-01		-1.87E-01	2.82E-01		
	72.40	2.31	2.93E+00		-1.03E+00	1.42E+00		
PM-146	453.90	39.94	1.69E-01	1.69E-01	-4.70E-02	7.84E-02		
	735.90	14.01	6.60E-01		-1.02E-01	3.04E-01		
	747.13	13.10	7.42E-01		-9.30E-02	3.43E-01		
ND-147	91.11	28.90	5.85E-01	5.85E-01	1.99E-01	2.86E-01		
	531.02	13.10	1.16E+00		1.01E-01	5.43E-01		
PM-149	285.90	3.10	4.59E+01	4.59E+01	-2.60E+01	2.18E+01		
EU-152	121.78	20.50	3.03E-01	3.03E-01	1.57E-02	1.46E-01		
	244.69	5.40	1.32E+00		1.90E-01	6.29E-01		
	344.27	19.13	3.62E-01		6.67E-02	1.71E-01		
	778.89	9.20	1.07E+00		2.90E-01	4.95E-01		
	964.01	10.40	1.24E+00		-1.80E-02	5.78E-01		
	1085.78	7.22	1.54E+00		4.19E-01	7.00E-01		
	1112.02	9.60	1.24E+00		1.95E-01	5.66E-01		
	1407.95	14.94	7.77E-01		3.29E-01	3.48E-01		
	GD-153	97.43	31.30		2.10E-01	2.10E-01	9.97E-02	1.02E-01
		103.18	22.20		3.07E-01		-5.04E-02	1.49E-01
EU-154	123.07	40.50	1.54E-01	1.54E-01	-3.38E-02	7.42E-02		
	723.30	19.70	5.33E-01		-3.28E-02	2.49E-01		
	873.19	11.50	8.69E-01		-3.62E-02	3.98E-01		
	996.32	10.30	1.04E+00		-2.99E-01	4.77E-01		
	1004.76	17.90	6.40E-01		2.40E-01	2.94E-01		

Analysis Report for 1606041-04
CP-5028 00-02

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	1274.45		35.50	2.99E-01	1.54E-01	-2.93E-03	1.34E-01
+	EU-155	86.50 *	30.90	5.79E-01	3.67E-01	4.01E-01	2.86E-01
		105.30 *	20.70	3.67E-01		2.32E-01	1.78E-01
	EU-156	811.77	10.40	1.61E+00	1.61E+00	6.05E-01	7.45E-01
		1153.47	7.20	2.98E+00		1.60E+00	1.38E+00
		1230.71	8.90	2.35E+00		4.65E-01	1.08E+00
	HO-166M	184.41	72.60	1.30E-01	1.30E-01	2.06E-01	6.34E-02
		280.45	29.60	2.54E-01		-1.60E-01	1.21E-01
		410.94	11.10	7.11E-01		1.91E-01	3.35E-01
		711.69	54.10	1.83E-01		1.27E-02	8.49E-02
	TM-171	66.72	0.14	4.86E+01	4.86E+01	2.92E+01	2.35E+01
	HF-172	81.75	4.52	1.32E+00	5.94E-01	-1.47E+00	6.37E-01
		125.81	11.30	5.94E-01		-3.66E-01	2.88E-01
	LU-172	181.53	20.60	9.18E-01	5.28E-01	-3.16E-01	4.42E-01
		810.06	16.63	1.71E+00		-2.31E-01	7.92E-01
		912.12	15.25	3.70E+00		8.69E+00	1.77E+00
		1093.66	62.50	5.28E-01		-3.37E-01	2.42E-01
	LU-173	100.72	5.24	1.24E+00	3.71E-01	3.66E-01	6.02E-01
		272.11	21.20	3.71E-01		-6.72E-02	1.78E-01
	HF-175	343.40	84.00	9.37E-02	9.37E-02	1.60E-02	4.42E-02
	LU-176	88.34	13.30	7.05E-01	7.18E-02	1.06E+00	3.45E-01
		201.83	86.00	8.24E-02		-7.47E-02	3.96E-02
		306.78	94.00	7.18E-02		-1.25E-02	3.40E-02
	TA-182	67.75	41.20	1.71E-01	1.71E-01	3.69E-02	8.28E-02
		1121.30	34.90	5.65E-01		8.44E-01	2.67E-01
		1189.05	16.23	8.17E-01		3.46E-02	3.74E-01
		1221.41	26.98	5.19E-01		2.14E-02	2.38E-01
		1231.02	11.44	1.23E+00		8.96E-02	5.65E-01
	IR-192	308.46	29.68	2.44E-01	1.63E-01	-4.84E-02	1.15E-01
		468.07	48.10	1.63E-01		2.34E-03	7.59E-02
	HG-203	279.19	77.30	1.14E-01	1.14E-01	2.67E-02	5.46E-02
	BI-207	569.67	97.72	8.17E-02	8.17E-02	1.19E-02	3.78E-02
		1063.62	74.90	1.40E-01		-5.97E-02	6.34E-02
+	TL-208	583.14 *	30.22	3.16E-01	2.81E-01	1.71E+00	1.48E-01
		860.37 *	4.48	2.73E+00		2.66E+00	1.27E+00
		2614.66 *	35.85	2.81E-01		1.12E+00	1.19E-01
	BI-210M	262.00	45.00	1.47E-01	1.47E-01	-1.49E-03	7.00E-02
		300.00	23.00	3.43E-01		2.62E-01	1.64E-01
	PB-210	46.50	4.25	2.12E+00	2.12E+00	2.08E+00	1.02E+00
	PB-211	404.84	2.90	2.61E+00	2.61E+00	-1.08E+00	1.23E+00
		831.96	2.90	3.65E+00		-5.84E-01	1.69E+00
+	BI-212	727.17 *	11.80	1.19E+00	1.19E+00	1.21E+00	5.62E-01
		1620.62	2.75	3.58E+00		8.51E-01	1.55E+00
	PB-212	238.63	44.60	3.64E-01	3.64E-01	1.13E+00	1.79E-01
		300.09	3.41	2.32E+00		1.77E+00	1.10E+00
+	BI-214	609.31 *	46.30	3.22E-01	3.22E-01	1.34E+00	1.55E-01
		1120.29 *	15.10	1.05E+00		2.04E+00	4.91E-01
		1764.49 *	15.80	4.34E-01		1.63E+00	1.73E-01
		2204.22 *	4.98	1.41E+00		1.95E+00	5.53E-01
+	PB-214	295.21 *	19.19	5.62E-01	2.95E-01	1.64E+00	2.72E-01
		351.92 *	37.19	2.95E-01		1.63E+00	1.42E-01
	RN-219	401.80	6.50	1.17E+00	1.17E+00	3.23E-02	5.50E-01
	RA-223	323.87	3.88	1.77E+00	1.77E+00	-1.77E+00	8.34E-01

Analysis Report for 1606041-04
CP-5028 00-02

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+ RA-224	240.98	*	3.95	3.38E+00	3.38E+00	4.89E+00	1.65E+00
RA-225	40.00		31.00	5.16E-01	5.16E-01	6.11E-02	2.48E-01
+ RA-226	186.21	*	3.28	3.24E+00	3.24E+00	6.54E+00	1.58E+00
+ TH-227	50.10		8.40	8.45E-01	8.45E-01	1.33E-01	4.06E-01
	236.00	*	11.50	1.12E+00		2.60E-01	5.46E-01
	256.20	*	6.30	1.52E+00		1.05E+00	7.34E-01
+ AC-228	338.32	*	11.40	8.97E-01	8.97E-01	2.10E+00	4.31E-01
	911.07	*	27.70	9.47E-01		1.72E+00	4.58E-01
	969.11	*	16.60	1.19E+00		1.19E+00	5.68E-01
TH-230	48.44		16.90	4.35E-01	4.35E-01	-3.84E-01	2.09E-01
	62.85		4.60	1.75E+00		2.68E+00	8.51E-01
	67.67		0.37	1.80E+01		3.88E+00	8.70E+00
PA-231	283.67		1.60	4.54E+00	3.19E+00	1.20E+00	2.16E+00
	302.67		2.30	3.19E+00		5.73E-01	1.51E+00
+ TH-231	25.64		14.70	3.08E+00	2.80E+00	3.31E-01	1.48E+00
	84.21	*	6.40	2.80E+00		7.24E-01	1.38E+00
PA-233	311.98		38.60	2.22E-01	2.22E-01	-4.99E-02	1.05E-01
PA-234	131.20		20.40	3.29E-01	3.29E-01	-1.40E-01	1.59E-01
	733.99		8.80	1.05E+00		-2.61E-01	4.82E-01
	946.00		12.00	8.36E-01		1.23E-01	3.81E-01
PA-234M	1001.03		0.92	1.29E+01	1.29E+01	4.26E+00	5.95E+00
+ TH-234	63.29	*	3.80	2.76E+00	2.76E+00	1.89E+00	1.35E+00
U-235	143.76		10.50	5.97E-01	5.97E-01	-3.07E-01	2.87E-01
	163.35		4.70	1.39E+00		-9.51E-01	6.67E-01
	205.31		4.70	1.55E+00		8.55E-01	7.45E-01
NP-237	86.50	*	12.60	1.41E+00	1.41E+00	9.80E-01	6.99E-01
NP-239	106.10		22.70	5.21E+00	5.21E+00	6.08E+00	2.53E+00
	228.18		10.70	1.12E+01		-4.19E+00	5.37E+00
	277.60		14.10	9.17E+00		9.73E-01	4.37E+00
AM-241	59.54		35.90	1.87E-01	1.87E-01	1.14E-02	9.05E-02
AM-243	74.67		66.00	1.42E-01	1.42E-01	-5.15E-01	6.95E-02
CM-243	209.75		3.29	2.56E+00	5.34E-01	3.27E+00	1.24E+00
	228.14		10.60	6.55E-01		-2.45E-01	3.14E-01
	277.60		14.00	5.34E-01		5.67E-02	2.55E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

Analysis Report for 1606041-04
CP-5028 00-02

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP-5028 00-02

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	73	727
9:	1075	706	359	353	1963	145	123	145
17:	122	108	119	104	75	57	46	65
25:	66	64	60	59	40	45	53	47
33:	43	69	62	53	58	62	55	77
41:	62	62	62	65	63	84	128	59
49:	65	77	64	68	82	75	72	83
57:	76	94	86	95	86	87	162	170
65:	92	89	107	116	85	100	100	118
73:	119	135	390	149	505	224	95	84
81:	106	84	79	134	127	88	195	148
89:	92	180	85	113	201	108	80	61
97:	46	68	79	62	61	55	59	81
105:	79	76	61	55	44	54	65	67
113:	67	51	66	54	56	48	54	53
121:	55	51	57	49	51	58	68	72
129:	80	57	52	49	55	62	67	59
137:	54	52	54	56	58	40	51	53
145:	50	40	52	41	46	51	39	57
153:	52	55	67	48	59	47	35	52
161:	37	41	47	46	51	56	45	37
169:	40	47	52	55	41	49	37	57
177:	51	45	43	41	34	52	47	50
185:	64	205	76	48	45	37	44	45
193:	33	53	36	42	38	39	48	46
201:	44	36	41	38	57	42	34	47
209:	85	60	44	43	36	50	42	41
217:	39	41	30	36	33	36	37	30
225:	34	32	24	40	42	29	41	37
233:	24	28	38	46	26	280	455	49
241:	95	121	31	33	36	27	32	21
249:	34	32	20	25	18	31	20	39
257:	44	27	39	22	27	31	21	24
265:	28	24	26	32	45	56	45	16
273:	21	27	35	18	40	40	28	22
281:	24	33	35	29	19	19	24	27
289:	26	21	34	29	29	32	184	82
297:	24	18	24	51	31	24	18	28
305:	24	22	22	15	20	19	20	21
313:	17	21	23	12	25	22	22	17
321:	23	19	18	21	14	26	34	42
329:	24	24	22	26	19	24	14	30
337:	25	116	60	21	26	13	20	16
345:	23	19	20	22	22	24	123	299
353:	42	17	15	18	15	22	22	14
361:	17	22	12	13	24	18	17	22

369: 16 13 17 18 10 9 13 16

Sample Title: CP-5028 00-02

Channel	16	13	17	18	10	9	13	16
377:	21	10	23	18	16	18	16	13
385:	21	21	27	21	10	20	16	17
393:	16	10	11	12	15	21	16	13
401:	16	22	18	18	18	14	17	20
409:	29	14	11	15	22	20	8	17
417:	19	11	11	14	14	11	19	18
425:	17	12	16	16	12	13	19	14
433:	8	11	14	12	17	17	14	13
441:	26	9	17	11	18	9	18	12
449:	13	16	14	11	17	8	11	8
457:	11	13	12	16	12	25	38	13
465:	17	14	9	11	13	13	10	15
473:	15	21	13	16	4	18	12	11
481:	12	16	5	12	16	11	20	13
489:	12	12	17	6	8	11	13	10
497:	10	9	10	15	12	17	8	8
505:	16	8	21	19	14	63	77	35
513:	13	12	12	7	8	4	14	11
521:	12	13	12	6	10	5	9	16
529:	13	7	17	15	14	10	15	7
537:	10	8	17	14	10	7	8	10
545:	9	10	11	9	13	19	11	9
553:	9	9	10	6	5	16	13	7
561:	10	20	10	9	13	7	5	15
569:	8	13	13	7	12	6	6	6
577:	8	12	6	5	8	37	172	45
585:	10	15	4	8	6	15	9	11
593:	11	12	12	15	9	15	11	17
601:	4	9	13	14	11	13	12	39
609:	189	92	6	12	14	9	12	8
617:	14	8	10	10	10	7	10	10
625:	13	11	4	7	9	8	11	2
633:	5	8	8	7	6	11	12	7
641:	5	10	9	6	11	6	10	7
649:	9	9	10	4	7	9	5	8
657:	9	9	7	10	12	15	4	5
665:	12	10	7	7	6	11	3	9
673:	6	8	14	9	5	8	4	6
681:	10	9	11	8	5	7	7	10
689:	10	11	10	9	5	8	10	10
697:	6	10	7	6	13	10	16	9
705:	6	5	5	9	9	4	13	7
713:	10	6	10	10	2	7	10	8
721:	8	6	10	6	5	21	43	19
729:	7	6	9	7	2	6	8	10
737:	5	11	5	10	4	11	6	5
745:	14	7	4	5	3	13	5	10
753:	9	8	10	8	6	10	5	11
761:	7	8	12	13	13	14	14	23
769:	15	6	8	20	10	9	4	8
777:	7	5	7	6	12	4	4	6
785:	7	10	9	2	3	8	0	2
793:	6	12	24	11	7	5	8	6

801: 7 5 9 6 10 9 5 7

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	7	10	8	9	6	8	6	4
817:	9	9	8	9	5	6	9	7
825:	3	8	5	7	5	7	8	5
833:	6	13	7	14	6	9	13	6
841:	3	7	5	6	1	5	5	5
849:	11	6	6	7	4	5	5	5
857:	8	5	6	17	12	8	7	3
865:	2	8	3	6	5	4	5	7
873:	6	7	8	4	6	7	6	5
881:	10	5	6	4	5	7	11	8
889:	10	4	3	4	7	8	5	9
897:	7	8	6	7	11	6	8	10
905:	1	8	2	5	7	33	84	45
913:	4	5	2	4	4	7	3	5
921:	13	7	6	7	6	5	10	7
929:	1	6	4	4	10	12	5	4
937:	5	8	4	6	3	6	4	6
945:	4	5	7	4	6	4	5	11
953:	9	4	4	2	5	8	3	7
961:	5	7	6	14	13	9	6	31
969:	52	17	7	5	6	8	8	3
977:	3	5	8	1	3	6	3	3
985:	1	8	8	6	1	10	4	6
993:	6	6	5	3	6	7	5	8
1001:	8	8	6	5	8	3	5	1
1009:	7	5	8	5	3	1	10	3
1017:	3	7	9	6	3	3	5	4
1025:	5	8	9	7	7	3	4	5
1033:	4	2	9	3	3	3	3	4
1041:	8	6	8	6	5	8	4	2
1049:	7	2	3	10	4	5	6	10
1057:	7	5	4	3	4	4	6	3
1065:	8	4	10	6	6	4	8	6
1073:	5	5	7	4	4	4	3	4
1081:	1	3	1	7	5	2	3	14
1089:	4	7	3	8	7	8	5	4
1097:	13	5	5	7	6	5	7	5
1105:	4	9	8	2	3	9	10	2
1113:	7	4	4	6	5	6	19	38
1121:	22	4	3	9	4	2	7	6
1129:	3	5	6	6	8	6	7	5
1137:	6	4	10	10	6	3	8	8
1145:	2	5	7	4	4	6	5	9
1153:	8	6	9	8	4	6	2	8
1161:	8	7	5	4	6	6	3	4
1169:	5	2	9	8	10	8	6	8
1177:	12	7	11	6	6	4	3	5
1185:	8	9	2	4	6	5	6	7
1193:	6	3	13	5	7	6	5	8
1201:	5	6	2	4	3	7	11	7
1209:	6	10	5	8	7	9	5	4
1217:	6	5	4	6	8	7	4	8
1225:	6	7	8	7	5	10	6	4

1233: 3 7 4 7 15 21 5 9

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	4	5	8	4	4	3	5	7
1249:	7	4	4	7	3	3	6	3
1257:	6	2	4	4	8	1	1	6
1265:	6	4	3	2	3	2	1	7
1273:	6	4	3	1	2	2	6	4
1281:	5	4	10	2	2	5	7	4
1289:	10	3	5	2	2	5	4	5
1297:	2	1	6	1	7	3	5	2
1305:	5	5	2	3	2	3	1	7
1313:	2	6	7	5	3	3	5	3
1321:	3	2	4	2	2	4	4	0
1329:	4	5	3	3	3	5	1	2
1337:	4	5	3	5	0	2	1	2
1345:	1	6	6	2	1	4	3	3
1353:	2	2	1	7	3	4	5	4
1361:	2	1	1	5	0	2	2	4
1369:	6	1	2	2	2	3	4	6
1377:	8	8	5	2	2	1	5	3
1385:	2	3	4	1	1	2	2	1
1393:	2	2	1	0	1	1	3	4
1401:	4	2	2	3	0	2	5	6
1409:	8	1	1	3	4	2	2	2
1417:	3	4	2	1	3	0	3	1
1425:	1	2	0	3	4	3	3	1
1433:	2	1	1	2	1	2	1	2
1441:	2	2	1	2	0	3	2	2
1449:	1	4	1	1	3	1	1	2
1457:	3	10	67	218	216	44	1	1
1465:	1	2	2	2	2	1	1	2
1473:	3	5	4	1	1	2	1	5
1481:	0	4	0	2	2	3	0	2
1489:	1	3	1	3	2	3	1	2
1497:	2	3	3	1	3	3	3	1
1505:	1	1	0	2	5	4	3	3
1513:	1	5	2	1	0	3	1	2
1521:	0	1	2	1	4	2	0	3
1529:	3	3	2	2	1	2	2	4
1537:	3	3	2	1	1	0	6	0
1545:	1	1	1	1	1	0	1	0
1553:	1	1	1	1	2	6	1	0
1561:	4	1	1	0	0	0	2	0
1569:	2	2	0	0	2	1	1	1
1577:	2	3	2	3	3	4	1	0
1585:	2	3	6	9	1	1	5	7
1593:	4	2	3	1	0	0	3	1
1601:	2	1	1	1	1	1	4	0
1609:	0	4	2	1	1	1	0	2
1617:	0	1	0	3	4	2	2	0
1625:	1	2	0	1	2	10	4	0
1633:	2	3	1	3	1	1	1	1
1641:	0	1	1	0	1	3	3	0
1649:	1	2	1	1	0	1	1	2
1657:	2	1	3	1	2	1	2	0

1665: 1 2 2 2 0 0 0 0

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
1673:	2	0	2	0	2	1	1	0
1681:	2	4	0	1	0	1	0	0
1689:	3	0	3	0	1	2	1	1
1697:	1	1	3	0	1	1	0	1
1705:	0	0	1	0	0	1	3	1
1713:	0	1	0	0	1	1	2	0
1721:	0	1	2	0	0	1	3	3
1729:	6	4	0	1	1	2	0	2
1737:	1	1	2	1	1	2	3	0
1745:	0	1	2	1	3	1	0	0
1753:	0	1	0	1	0	0	0	1
1761:	0	3	10	21	13	3	1	1
1769:	0	1	0	0	0	2	1	0
1777:	1	2	0	0	1	0	0	0
1785:	1	1	0	1	0	0	0	2
1793:	1	4	2	2	1	0	0	1
1801:	1	1	1	1	2	0	2	1
1809:	2	0	1	0	3	0	2	1
1817:	1	0	1	0	1	1	0	0
1825:	1	1	0	1	1	1	2	2
1833:	0	0	2	0	0	0	0	2
1841:	1	0	2	2	0	1	3	2
1849:	3	1	0	2	1	1	0	0
1857:	0	0	0	1	0	3	1	1
1865:	1	0	1	0	0	3	2	0
1873:	0	0	1	1	0	1	0	0
1881:	1	0	1	1	0	0	1	1
1889:	1	3	1	1	1	1	0	0
1897:	0	2	1	0	0	0	0	1
1905:	1	0	2	0	1	1	1	2
1913:	1	1	1	3	0	1	0	0
1921:	0	3	0	1	2	1	1	1
1929:	0	2	2	0	0	0	2	1
1937:	0	0	1	1	0	1	0	0
1945:	1	0	0	0	0	0	0	1
1953:	0	1	2	0	0	0	1	2
1961:	2	0	1	2	1	1	0	0
1969:	0	0	0	0	1	1	0	0
1977:	2	1	1	0	1	1	1	2
1985:	2	3	0	1	2	2	0	0
1993:	1	2	2	0	0	1	0	2
2001:	1	2	2	2	0	0	0	1
2009:	1	2	0	2	1	1	1	0
2017:	0	1	1	0	3	1	1	2
2025:	0	1	1	1	0	1	0	0
2033:	0	2	3	2	2	0	0	1
2041:	1	2	0	1	0	0	0	2
2049:	0	2	1	1	0	0	0	0
2057:	0	1	1	0	0	0	2	0
2065:	1	1	2	1	0	0	0	0
2073:	0	0	0	0	2	1	0	1
2081:	1	0	0	2	0	0	0	2
2089:	2	0	1	2	0	0	1	1

2097: 1 0 2 1 0 2 1 2

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Channel	1	2	3	4	5	6	7	8
2105:	0	1	0	3	2	0	0	0
2113:	0	1	2	4	0	2	1	0
2121:	0	1	1	0	2	0	1	0
2129:	1	1	1	1	1	1	1	1
2137:	1	0	1	1	1	0	0	0
2145:	0	0	1	1	1	0	2	2
2153:	0	0	1	0	2	2	0	0
2161:	2	0	1	0	1	0	0	1
2169:	0	1	1	2	0	1	1	1
2177:	1	0	0	0	0	1	0	0
2185:	0	0	2	2	1	0	3	2
2193:	0	1	1	0	1	0	1	1
2201:	0	3	7	1	6	1	0	0
2209:	1	0	0	3	1	0	0	1
2217:	0	2	1	1	1	0	2	0
2225:	0	0	0	0	2	0	1	1
2233:	0	0	1	2	0	0	0	3
2241:	1	0	0	1	1	0	0	2
2249:	0	2	1	0	3	0	1	0
2257:	0	0	1	2	1	1	0	2
2265:	0	2	1	1	0	2	0	1
2273:	1	1	0	2	2	1	1	0
2281:	3	0	2	1	2	0	3	0
2289:	0	2	0	1	2	2	1	0
2297:	1	0	2	0	1	2	1	1
2305:	0	0	2	1	1	2	0	1
2313:	2	1	1	0	2	2	0	1
2321:	0	1	1	1	1	0	0	1
2329:	1	3	2	1	0	2	2	1
2337:	0	2	0	1	0	0	1	0
2345:	0	0	0	0	0	1	1	1
2353:	1	1	0	1	0	0	2	1
2361:	1	1	1	0	3	0	3	2
2369:	1	0	0	1	1	1	2	1
2377:	1	1	0	0	1	1	0	3
2385:	1	0	1	2	1	0	2	0
2393:	0	0	0	2	1	0	0	0
2401:	2	0	0	1	1	1	1	3
2409:	0	1	1	2	2	2	0	1
2417:	0	1	1	1	0	0	1	0
2425:	3	0	1	1	0	0	0	0
2433:	0	2	0	0	1	0	1	0
2441:	0	0	2	0	0	1	1	0
2449:	1	1	0	0	0	1	2	0
2457:	0	0	1	0	1	3	0	0
2465:	0	0	0	1	0	0	0	0
2473:	0	0	0	0	0	1	0	0
2481:	0	0	0	0	0	0	0	0
2489:	0	0	1	1	1	2	2	0
2497:	1	1	0	0	0	0	1	0
2505:	0	0	0	0	1	1	0	1
2513:	0	0	2	0	0	0	0	0
2521:	1	1	0	0	0	0	0	0

2529: 0 2 0 0 0 0 0 0 0

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Channel	1	2	3	4	5	6	7	8	9
2537:	0	2	0	0	0	0	0	0	2
2545:	0	0	1	1	0	1	1	0	0
2553:	1	2	0	0	0	0	0	0	2
2561:	0	0	0	0	0	0	0	0	0
2569:	0	0	0	1	0	0	0	0	1
2577:	0	0	0	0	0	0	2	0	0
2585:	1	0	0	1	0	1	0	0	0
2593:	0	0	0	0	0	0	0	0	0
2601:	2	0	0	3	0	0	0	0	1
2609:	0	1	3	8	26	21	13	0	2
2617:	0	1	1	1	0	0	0	0	0
2625:	1	0	1	0	0	0	0	0	2
2633:	0	0	0	0	0	4	1	0	0
2641:	0	0	0	0	0	1	0	0	0
2649:	0	0	0	0	0	0	0	0	0
2657:	1	0	0	0	0	1	0	0	0
2665:	0	1	1	0	0	0	1	0	0
2673:	0	1	0	0	0	0	0	0	0
2681:	0	1	0	0	1	1	1	1	1
2689:	0	0	0	0	0	0	0	0	2
2697:	0	0	0	0	0	0	0	0	0
2705:	0	1	0	0	1	0	1	0	0
2713:	0	0	0	0	0	0	1	0	0
2721:	0	0	0	0	0	2	0	0	1
2729:	0	0	0	0	0	0	0	0	0
2737:	0	0	0	1	0	0	0	0	0
2745:	0	0	0	0	1	0	0	0	0
2753:	0	0	0	0	0	0	0	0	1
2761:	0	1	0	0	0	1	1	0	0
2769:	0	0	0	0	0	1	0	0	0
2777:	0	0	0	0	0	0	0	0	0
2785:	1	0	0	0	0	0	1	0	0
2793:	0	0	0	0	0	0	0	0	0
2801:	0	0	0	0	0	1	0	0	0
2809:	0	0	0	0	1	0	0	0	0
2817:	0	1	0	1	0	0	0	0	0
2825:	0	0	2	2	0	1	0	0	0
2833:	0	0	2	0	0	0	0	0	0
2841:	0	1	0	0	0	1	0	0	0
2849:	0	0	0	1	0	0	1	0	0
2857:	0	0	0	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	1	0	0
2881:	0	0	0	0	0	1	0	0	1
2889:	0	0	0	0	0	0	1	0	0
2897:	0	0	0	0	1	0	0	0	0
2905:	0	0	1	0	0	0	0	0	0
2913:	0	0	0	0	0	1	0	0	0
2921:	0	0	0	1	0	2	2	0	1
2929:	0	0	1	0	0	0	0	0	0
2937:	0	0	0	0	0	1	0	0	0
2945:	0	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0	0

2961: 0 0 1 0 3 0 0 1

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
2969:	0	1	0	0	0	0	0	0
2977:	0	1	0	0	0	0	1	0
2985:	1	0	0	0	0	0	0	0
2993:	0	0	0	0	0	0	0	1
3001:	0	0	0	0	0	0	0	1
3009:	0	0	1	1	1	0	1	0
3017:	0	0	0	0	1	1	0	0
3025:	0	1	0	1	0	1	0	0
3033:	1	0	0	0	0	0	2	0
3041:	0	0	0	0	0	2	0	0
3049:	0	0	1	0	0	0	0	0
3057:	0	0	0	0	1	0	0	2
3065:	0	0	0	1	0	0	0	0
3073:	0	0	0	0	0	1	0	0
3081:	0	0	0	0	0	0	0	0
3089:	1	0	0	0	0	1	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	0	0	0	0	0	0
3113:	0	0	1	0	0	0	0	0
3121:	1	0	0	0	2	0	0	1
3129:	0	1	0	0	0	0	0	1
3137:	0	0	0	0	0	0	1	1
3145:	0	0	0	0	1	1	0	0
3153:	0	0	0	0	1	0	0	1
3161:	0	0	0	0	0	0	0	0
3169:	0	1	0	1	0	0	0	0
3177:	0	0	0	1	0	0	1	0
3185:	0	0	0	0	0	0	0	1
3193:	1	0	1	1	0	0	2	0
3201:	1	0	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	1
3217:	0	0	0	0	0	0	1	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	0	1	1	1
3241:	0	1	0	0	0	0	0	1
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	1
3281:	0	1	0	1	0	0	0	0
3289:	0	0	0	0	0	1	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	1	0	0	0
3313:	0	0	1	2	0	0	1	0
3321:	0	0	1	0	0	0	0	0
3329:	0	1	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	1	0	0	0	1	0
3353:	0	1	0	1	0	0	0	0
3361:	0	0	0	2	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	1	0	0	0	0
3385:	1	0	0	0	0	1	1	0

3393: 1 0 0 0 0 0 0 0 0

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Channel	1	0	1	0	0	0	0	0
3401:	1	0	1	0	0	0	0	0
3409:	0	0	1	0	0	0	0	1
3417:	0	0	0	0	0	1	1	0
3425:	0	0	0	1	1	2	0	1
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	1	0	1	0
3449:	0	1	1	0	0	0	0	0
3457:	0	0	0	0	0	1	0	0
3465:	0	0	1	1	0	0	0	0
3473:	0	0	1	0	0	0	0	0
3481:	0	0	0	0	0	0	1	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	1	0	0	0
3513:	0	0	0	1	0	0	0	0
3521:	0	0	1	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	1	0	0	0
3545:	1	0	0	0	1	2	1	0
3553:	0	0	0	0	0	0	0	1
3561:	0	0	0	0	0	0	0	0
3569:	0	1	0	1	0	0	0	0
3577:	0	0	2	0	0	1	0	0
3585:	2	0	0	0	0	0	0	1
3593:	2	0	0	0	0	0	0	1
3601:	0	0	0	0	1	0	0	0
3609:	0	0	0	0	0	1	0	0
3617:	0	0	0	0	0	0	0	0
3625:	1	0	0	0	0	1	0	0
3633:	0	0	0	0	0	1	0	1
3641:	1	0	0	0	0	0	0	0
3649:	0	0	0	1	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	1	0	1	0	0	0	0	0
3673:	0	0	0	1	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	1	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	1	0	0	0	0	0	0	0
3713:	1	0	0	1	0	1	1	0
3721:	0	0	0	0	0	0	1	0
3729:	0	0	1	1	0	0	0	0
3737:	1	0	0	1	0	1	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	1	0	0	1	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	1	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	2	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	1	0	0	0	0	0
3809:	1	0	0	0	0	0	0	1
3817:	0	1	0	0	0	0	0	0

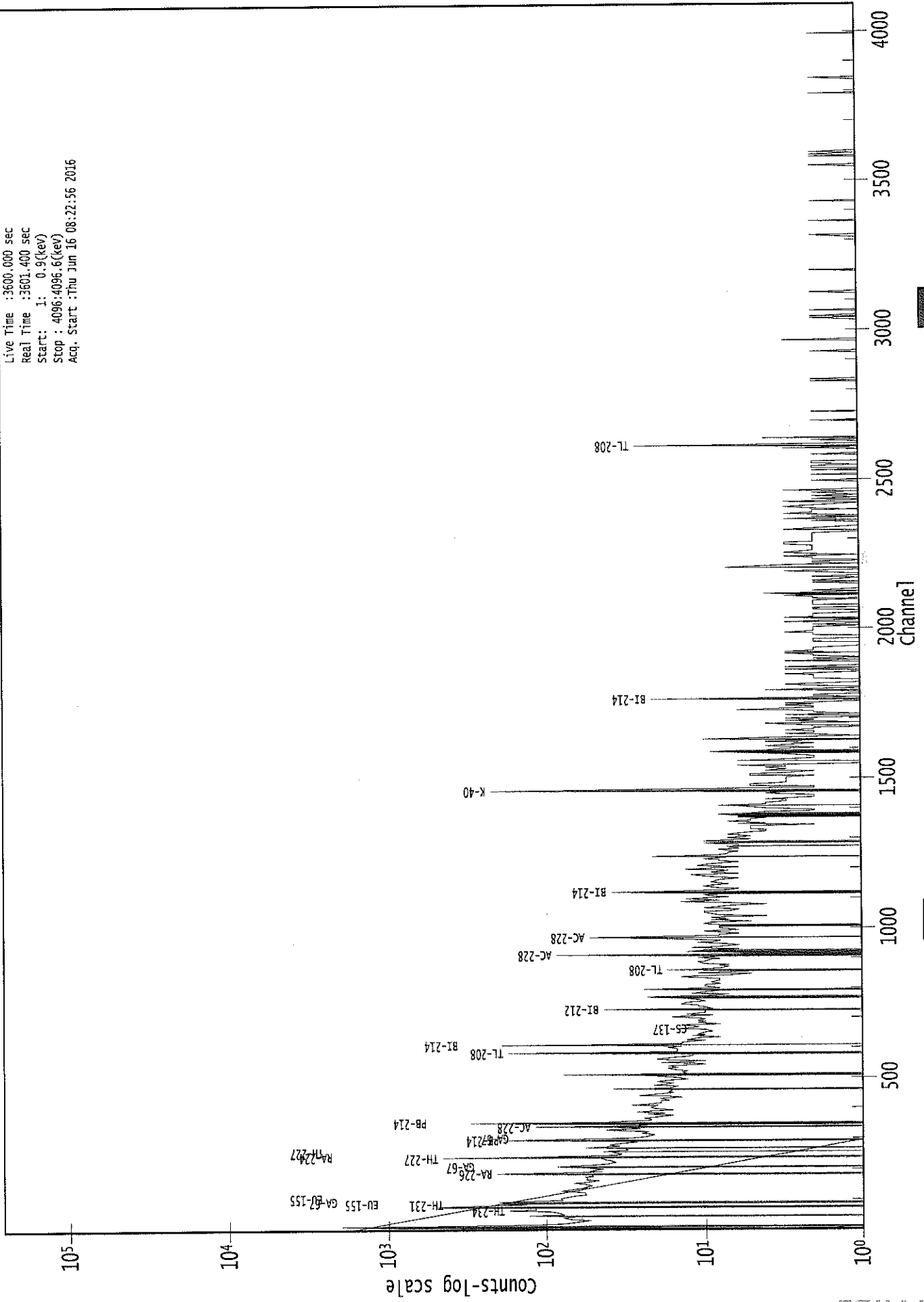
3825: 0 0 0 0 0 0 0 0 1

Sample Title: CP-5028 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	1	0	1	0	0	0
3841:	0	0	2	0	0	0	0	0
3849:	1	0	0	0	0	0	0	0
3857:	0	1	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	1	0
3897:	1	0	0	0	0	0	0	0
3905:	0	1	1	0	0	0	0	0
3913:	0	0	0	1	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	1	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	1	2
3993:	0	0	0	0	0	0	0	0
4001:	1	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	1	0
4017:	0	0	0	0	0	0	0	0
4025:	1	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	1	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	1	1	0	0	1	0	0

0000038977.CNF

Live Time : 3600.000 sec
Real Time : 3601.400 sec
Start : 1: 0.9(keV)
Stop : 4096.4096.6(keV)
Acq. Start : Thu Jun 16 08:22:56 2016



Analysis Report for 1606041-05
CP-5028 02-05

Cell

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-05
Sample Description : CP-5028 02-05
Sample Type : SOIL

Sample Size : 4.656E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 4:30:39PM
Acquisition Started : 6/16/2016 7:16:08AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3613.2 seconds

Dead Time : 0.36 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 9 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 38974

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606041-05
CP-5028 02-05

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 8:16:41AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.79	47.02	0.0000	0.00
2	63.48	63.70	0.0000	0.00
3	74.94	75.15	0.0000	0.00
4	77.69	77.90	0.0000	0.00
5	85.50	85.71	0.0000	0.00
6	88.27	88.48	0.0000	0.00
7	93.41	93.61	0.0000	0.00
8	99.52	99.72	0.0000	0.00
9	115.24	115.44	0.0000	0.00
10	130.36	130.54	0.0000	0.00
11	186.22	186.38	0.0000	0.00
12	239.04	239.17	0.0000	0.00
13	242.70	242.83	0.0000	0.00
14	270.72	270.83	0.0000	0.00
15	277.30	277.41	0.0000	0.00
16	295.73	295.83	0.0000	0.00
17	300.92	301.02	0.0000	0.00
18	328.15	328.24	0.0000	0.00
19	339.03	339.10	0.0000	0.00
20	352.20	352.27	0.0000	0.00
21	463.05	463.07	0.0000	0.00
22	511.11	511.10	0.0000	0.00
23	583.68	583.64	0.0000	0.00
24	610.00	609.94	0.0000	0.00
25	727.65	727.54	0.0000	0.00
26	741.32	741.21	0.0000	0.00
27	768.69	768.56	0.0000	0.00
28	786.72	786.58	0.0000	0.00
29	795.69	795.55	0.0000	0.00
30	860.57	860.40	0.0000	0.00
31	896.50	896.31	0.0000	0.00
32	912.19	912.00	0.0000	0.00
33	934.74	934.54	0.0000	0.00
34	969.78	969.56	0.0000	0.00
35	1120.91	1120.62	0.0000	0.00
36	1207.29	1206.97	0.0000	0.00
37	1223.01	1222.68	0.0000	0.00
38	1238.56	1238.23	0.0000	0.00
39	1244.82	1244.49	0.0000	0.00
40	1378.46	1378.07	0.0000	0.00
41	1461.63	1461.21	0.0000	0.00
42	1510.60	1510.16	0.0000	0.00

Analysis Report for 1606041-05
CP-5028 02-05

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1589.61	1589.14	0.0000	0.00
44	1593.25	1592.78	0.0000	0.00
45	1633.92	1633.44	0.0000	0.00
46	1730.32	1729.80	0.0000	0.00
47	1764.81	1764.28	0.0000	0.00
48	1846.88	1846.32	0.0000	0.00
49	2095.49	2094.86	0.0000	0.00
50	2102.68	2102.04	0.0000	0.00
51	2204.25	2203.58	0.0000	0.00
52	2448.59	2447.85	0.0000	0.00
53	2615.65	2614.87	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606041-05
CP-5028 02-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 8:16:41AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	46.79	44 -	50	47.02	1.27E+02	78.96	1.04E+03	1.14
2	63.48	61 -	67	63.70	1.36E+02	93.74	1.49E+03	1.34
M 3	74.94	71 -	83	75.15	4.26E+02	88.33	1.08E+03	1.66
m 4	77.69	71 -	83	77.90	6.34E+02	95.30	1.06E+03	1.67
M 5	85.50	83 -	97	85.71	1.86E+02	66.45	8.15E+02	2.23
m 6	88.27	83 -	97	88.48	2.49E+02	88.44	1.07E+03	2.24
m 7	93.41	83 -	97	93.61	3.53E+02	87.35	9.52E+02	2.26
8	99.52	98 -	104	99.72	6.95E+01	72.33	9.03E+02	4.42
9	115.24	113 -	118	115.44	6.08E+01	61.66	7.08E+02	2.31
10	130.36	126 -	134	130.54	1.23E+02	87.97	1.10E+03	1.85
11	186.22	182 -	190	186.38	1.74E+02	79.95	8.74E+02	2.15
M 12	239.04	233 -	246	239.17	8.28E+02	71.40	3.53E+02	1.86
m 13	242.70	233 -	246	242.83	1.19E+02	58.84	3.59E+02	1.89
14	270.72	267 -	274	270.83	9.03E+01	47.96	3.21E+02	2.41
15	277.30	275 -	280	277.41	4.51E+01	38.88	2.70E+02	1.82
M 16	295.73	292 -	304	295.83	2.22E+02	42.94	2.18E+02	1.59
m 17	300.92	292 -	304	301.02	6.07E+01	38.67	2.59E+02	1.95
18	328.15	325 -	331	328.24	4.28E+01	43.15	3.06E+02	1.45
19	339.03	335 -	343	339.10	1.12E+02	56.17	4.12E+02	1.68
20	352.20	347 -	355	352.27	3.55E+02	55.91	3.06E+02	2.02
21	463.05	460 -	465	463.07	4.03E+01	30.38	1.51E+02	1.91
22	511.11	506 -	515	511.10	1.23E+02	46.25	2.36E+02	2.45
23	583.68	579 -	588	583.64	1.93E+02	44.71	1.75E+02	2.05
24	610.00	605 -	614	609.94	2.59E+02	48.18	1.80E+02	1.62
25	727.65	722 -	731	727.54	4.97E+01	36.78	1.65E+02	2.07
26	741.32	739 -	744	741.21	2.04E+01	18.00	4.92E+01	2.90
27	768.69	765 -	771	768.56	2.39E+01	25.91	1.04E+02	1.40
M 28	786.72	782 -	799	786.58	2.02E+01	28.96	1.36E+02	3.08
m 29	795.69	782 -	799	795.55	3.84E+01	29.71	9.81E+01	3.09
30	860.57	855 -	865	860.40	4.15E+01	26.48	7.11E+01	5.43
31	896.50	893 -	899	896.31	1.81E+01	18.53	4.98E+01	2.50
32	912.19	906 -	918	912.00	1.45E+02	42.16	1.34E+02	2.27
33	934.74	929 -	938	934.54	3.19E+01	23.41	6.02E+01	3.09
34	969.78	966 -	975	969.56	6.54E+01	38.79	1.59E+02	2.31
35	1120.91	1117 -	1125	1120.62	5.21E+01	29.76	1.06E+02	2.24
36	1207.29	1202 -	1212	1206.97	3.50E+01	27.38	7.80E+01	4.01
37	1223.01	1212 -	1232	1222.68	5.02E+01	46.58	1.58E+02	17.70
M 38	1238.56	1233 -	1247	1238.23	2.69E+01	21.91	6.10E+01	2.81
m 39	1244.82	1233 -	1247	1244.49	1.68E+01	20.78	5.76E+01	2.81
40	1378.46	1375 -	1380	1378.07	1.49E+01	12.25	1.83E+01	1.50

Analysis Report for 1606041-05

CP-5028 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1461.63	1454 - 1467	1461.21	4.95E+02	49.22	4.92E+01	2.25
	42	1510.60	1505 - 1513	1510.16	1.45E+01	10.79	8.95E+00	3.84
M	43	1589.61	1585 - 1595	1589.14	1.30E+01	16.42	3.28E+01	3.61
m	44	1593.25	1585 - 1595	1592.78	1.32E+01	12.61	1.94E+01	2.57
	45	1633.92	1629 - 1639	1633.44	1.13E+01	14.04	1.54E+01	1.39
	46	1730.32	1726 - 1733	1729.80	1.08E+01	12.65	1.85E+01	2.16
	47	1764.81	1758 - 1770	1764.28	4.59E+01	20.12	2.62E+01	2.45
	48	1846.88	1843 - 1849	1846.32	7.45E+00	8.28	7.09E+00	1.09
	49	2095.49	2091 - 2097	2094.86	7.00E+00	5.29	0.00E+00	1.92
	50	2102.68	2099 - 2105	2102.04	9.59E+00	7.50	2.82E+00	1.57
	51	2204.25	2198 - 2206	2203.58	1.10E+01	11.52	1.40E+01	2.25
	52	2448.59	2443 - 2451	2447.85	7.00E+00	7.50	4.00E+00	2.88
	53	2615.65	2609 - 2619	2614.87	7.95E+01	18.93	5.10E+00	1.42

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 8:16:41AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.79	44 - 50	1.27E+02	78.96	1.04E+03	6.22E+01
	2	63.48	61 - 67	1.36E+02	93.74	1.49E+03	7.46E+01
M	3	74.94	71 - 83	4.26E+02	88.33	1.08E+03	5.40E+01
m	4	77.69	71 - 83	6.34E+02	95.30	1.06E+03	5.34E+01
M	5	85.50	83 - 97	1.86E+02	66.45	8.15E+02	4.69E+01
m	6	88.27	83 - 97	2.49E+02	88.44	1.07E+03	5.38E+01
m	7	93.41	83 - 97	3.53E+02	87.35	9.52E+02	5.07E+01
	8	99.52	98 - 104	6.95E+01	72.33	9.03E+02	5.79E+01
	9	115.24	113 - 118	6.08E+01	61.66	7.08E+02	4.90E+01
	10	130.36	126 - 134	1.23E+02	87.97	1.10E+03	7.00E+01
	11	186.22	182 - 190	1.74E+02	79.95	8.74E+02	6.20E+01
M	12	239.04	233 - 246	8.28E+02	71.40	3.53E+02	3.09E+01
m	13	242.70	233 - 246	1.19E+02	58.84	3.59E+02	3.11E+01
	14	270.72	267 - 274	9.03E+01	47.96	3.21E+02	3.62E+01
	15	277.30	275 - 280	4.51E+01	38.88	2.70E+02	3.00E+01

: 00423

Analysis Report for 1606041-05
CP-5028 02-05

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	16	295.73	292 -	304	2.22E+02	42.94	2.18E+02	2.43E+01
m	17	300.92	292 -	304	6.07E+01	38.67	2.59E+02	2.65E+01
	18	328.15	325 -	331	4.28E+01	43.15	3.06E+02	3.38E+01
	19	339.03	335 -	343	1.12E+02	56.17	4.12E+02	4.28E+01
	20	352.20	347 -	355	3.55E+02	55.91	3.06E+02	4.30E+01
	21	463.05	460 -	465	4.03E+01	30.38	1.51E+02	2.27E+01
	22	511.11	506 -	515	1.23E+02	46.25	2.36E+02	3.34E+01
	23	583.68	579 -	588	1.93E+02	44.71	1.75E+02	2.88E+01
	24	610.00	605 -	614	2.59E+02	48.18	1.80E+02	2.95E+01
	25	727.65	722 -	731	4.97E+01	36.78	1.65E+02	2.79E+01
	26	741.32	739 -	744	2.04E+01	18.00	4.92E+01	1.28E+01
	27	768.69	765 -	771	2.39E+01	25.91	1.04E+02	1.97E+01
M	28	786.72	782 -	799	2.02E+01	28.96	1.36E+02	1.92E+01
m	29	795.69	782 -	799	3.84E+01	29.71	9.81E+01	1.63E+01
	30	860.57	855 -	865	4.15E+01	26.48	7.11E+01	1.90E+01
	31	896.50	893 -	899	1.81E+01	18.53	4.98E+01	1.35E+01
	32	912.19	906 -	918	1.45E+02	42.16	1.34E+02	2.85E+01
	33	934.74	929 -	938	3.19E+01	23.41	6.02E+01	1.69E+01
	34	969.78	966 -	975	6.54E+01	38.79	1.59E+02	2.90E+01
	35	1120.91	1117 -	1125	5.21E+01	29.76	1.06E+02	2.14E+01
	36	1207.29	1202 -	1212	3.50E+01	27.38	7.80E+01	2.03E+01
	37	1223.01	1212 -	1232	5.02E+01	46.58	1.58E+02	3.65E+01
M	38	1238.56	1233 -	1247	2.69E+01	21.91	6.10E+01	1.28E+01
m	39	1244.82	1233 -	1247	1.68E+01	20.78	5.76E+01	1.25E+01
	40	1378.46	1375 -	1380	1.49E+01	12.25	1.83E+01	7.82E+00
	41	1461.63	1454 -	1467	4.95E+02	49.22	4.92E+01	1.73E+01
	42	1510.60	1505 -	1513	1.45E+01	10.79	8.95E+00	6.28E+00
M	43	1589.61	1585 -	1595	1.30E+01	16.42	3.28E+01	9.42E+00
m	44	1593.25	1585 -	1595	1.32E+01	12.61	1.94E+01	7.24E+00
	45	1633.92	1629 -	1639	1.13E+01	14.04	1.54E+01	1.01E+01
	46	1730.32	1726 -	1733	1.08E+01	12.65	1.85E+01	8.89E+00
	47	1764.81	1758 -	1770	4.59E+01	20.12	2.62E+01	1.22E+01
	48	1846.88	1843 -	1849	7.45E+00	8.28	7.09E+00	5.11E+00
	49	2095.49	2091 -	2097	7.00E+00	5.29	0.00E+00	0.00E+00
	50	2102.68	2099 -	2105	9.59E+00	7.50	2.82E+00	3.48E+00
	51	2204.25	2198 -	2206	1.10E+01	11.52	1.40E+01	7.74E+00
	52	2448.59	2443 -	2451	7.00E+00	7.50	4.00E+00	4.37E+00
	53	2615.65	2609 -	2619	7.95E+01	18.93	5.10E+00	5.23E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1606041-05
CP-5028 02-05

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 8:16:41AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	46.79	44 -	50	47.02	1.27E+02	78.96	1.04E+03	PB-210
2	63.48	61 -	67	63.70	1.36E+02	93.74	1.49E+03	TH-234 TH-230
M 3	74.94	71 -	83	75.15	4.26E+02	88.33	1.08E+03	AM-243
m 4	77.69	71 -	83	77.90	6.34E+02	95.30	1.06E+03	TI-44
M 5	85.50	83 -	97	85.71	1.86E+02	66.45	8.15E+02	.....
m 6	88.27	83 -	97	88.48	2.49E+02	88.44	1.07E+03	LU-176 CD-109 SN-126
m 7	93.41	83 -	97	93.61	3.53E+02	87.35	9.52E+02	GA-67
8	99.52	98 -	104	99.72	6.95E+01	72.33	9.03E+02	.....
9	115.24	113 -	118	115.44	6.08E+01	61.66	7.08E+02	.....
10	130.36	126 -	134	130.54	1.23E+02	87.97	1.10E+03	PA-234
11	186.22	182 -	190	186.38	1.74E+02	79.95	8.74E+02	RA-226
M 12	239.04	233 -	246	239.17	8.28E+02	71.40	3.53E+02	PB-212
m 13	242.70	233 -	246	242.83	1.19E+02	58.84	3.59E+02	.....
14	270.72	267 -	274	270.83	9.03E+01	47.96	3.21E+02	.....
15	277.30	275 -	280	277.41	4.51E+01	38.88	2.70E+02	CM-243 NP-239
M 16	295.73	292 -	304	295.83	2.22E+02	42.94	2.18E+02	PB-214
m 17	300.92	292 -	304	301.02	6.07E+01	38.67	2.59E+02	GA-67 PB-212 BI-210M
18	328.15	325 -	331	328.24	4.28E+01	43.15	3.06E+02	LA-140
19	339.03	335 -	343	339.10	1.12E+02	56.17	4.12E+02	AC-228
20	352.20	347 -	355	352.27	3.55E+02	55.91	3.06E+02	PB-214
21	463.05	460 -	465	463.07	4.03E+01	30.38	1.51E+02	SB-125
22	511.11	506 -	515	511.10	1.23E+02	46.25	2.36E+02	.....
23	583.68	579 -	588	583.64	1.93E+02	44.71	1.75E+02	TL-208
24	610.00	605 -	614	609.94	2.59E+02	48.18	1.80E+02	BI-214
25	727.65	722 -	731	727.54	4.97E+01	36.78	1.65E+02	BI-212
26	741.32	739 -	744	741.21	2.04E+01	18.00	4.92E+01	.....
27	768.69	765 -	771	768.56	2.39E+01	25.91	1.04E+02	.....
M 28	786.72	782 -	799	786.58	2.02E+01	28.96	1.36E+02	.....
m 29	795.69	782 -	799	795.55	3.84E+01	29.71	9.81E+01	CS-134
30	860.57	855 -	865	860.40	4.15E+01	26.48	7.11E+01	TL-208
31	896.50	893 -	899	896.31	1.81E+01	18.53	4.98E+01	.....
32	912.19	906 -	918	912.00	1.45E+02	42.16	1.34E+02	LU-172
33	934.74	929 -	938	934.54	3.19E+01	23.41	6.02E+01	.....
34	969.78	966 -	975	969.56	6.54E+01	38.79	1.59E+02	AC-228
35	1120.91	1117 -	1125	1120.62	5.21E+01	29.76	1.06E+02	TA-182

Analysis Report for 1606041-05
CP-5028 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
								SC-46 BI-214
	36	1207.29	1202 - 1212	1206.97	3.50E+01	27.38	7.80E+01	.....
	37	1223.01	1212 - 1232	1222.68	5.02E+01	46.58	1.58E+02	.....
M	38	1238.56	1233 - 1247	1238.23	2.69E+01	21.91	6.10E+01	CO-56
m	39	1244.82	1233 - 1247	1244.49	1.68E+01	20.78	5.76E+01	.....
	40	1378.46	1375 - 1380	1378.07	1.49E+01	12.25	1.83E+01	.....
	41	1461.63	1454 - 1467	1461.21	4.95E+02	49.22	4.92E+01	K-40
	42	1510.60	1505 - 1513	1510.16	1.45E+01	10.79	8.95E+00	.....
M	43	1589.61	1585 - 1595	1589.14	1.30E+01	16.42	3.28E+01	.....
m	44	1593.25	1585 - 1595	1592.78	1.32E+01	12.61	1.94E+01	.....
	45	1633.92	1629 - 1639	1633.44	1.13E+01	14.04	1.54E+01	.....
	46	1730.32	1726 - 1733	1729.80	1.08E+01	12.65	1.85E+01	.....
	47	1764.81	1758 - 1770	1764.28	4.59E+01	20.12	2.62E+01	BI-214
	48	1846.88	1843 - 1849	1846.32	7.45E+00	8.28	7.09E+00	.....
	49	2095.49	2091 - 2097	2094.86	7.00E+00	5.29	0.00E+00	.....
	50	2102.68	2099 - 2105	2102.04	9.59E+00	7.50	2.82E+00	.....
	51	2204.25	2198 - 2206	2203.58	1.10E+01	11.52	1.40E+01	BI-214
	52	2448.59	2443 - 2451	2447.85	7.00E+00	7.50	4.00E+00	.....
	53	2615.65	2609 - 2619	2614.87	7.95E+01	18.93	5.10E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 8:16:41AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
	1	46.79	1.27E+02	78.96	1.52E-02	1.58E-03
	2	63.48	1.36E+02	93.74	2.16E-02	1.71E-03
M	3	74.94	4.26E+02	88.33	2.36E-02	2.09E-03
m	4	77.69	6.34E+02	95.30	2.39E-02	2.18E-03
M	5	85.50	1.86E+02	66.45	2.44E-02	2.44E-03
m	6	88.27	2.49E+02	88.44	2.44E-02	2.52E-03
m	7	93.41	3.53E+02	87.35	2.44E-02	2.40E-03
	8	99.52	6.95E+01	72.33	2.43E-02	2.26E-03
	9	115.24	6.08E+01	61.66	2.35E-02	1.89E-03
	10	130.36	1.23E+02	87.97	2.24E-02	1.69E-03

Analysis Report for 1606041-05
CP-5028 02-05

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	11	186.22	1.74E+02	79.95	1.83E-02	1.42E-03
M	12	239.04	8.28E+02	71.40	1.52E-02	1.18E-03
m	13	242.70	1.19E+02	58.84	1.50E-02	1.16E-03
	14	270.72	9.03E+01	47.96	1.38E-02	1.04E-03
	15	277.30	4.51E+01	38.88	1.35E-02	1.01E-03
M	16	295.73	2.22E+02	42.94	1.28E-02	9.73E-04
m	17	300.92	6.07E+01	38.67	1.26E-02	9.66E-04
	18	328.15	4.28E+01	43.15	1.17E-02	9.27E-04
	19	339.03	1.12E+02	56.17	1.14E-02	9.12E-04
	20	352.20	3.55E+02	55.91	1.11E-02	8.93E-04
	21	463.05	4.03E+01	30.38	8.73E-03	7.66E-04
	22	511.11	1.23E+02	46.25	8.01E-03	7.18E-04
	23	583.68	1.93E+02	44.71	7.13E-03	6.46E-04
	24	610.00	2.59E+02	48.18	6.86E-03	6.19E-04
	25	727.65	4.97E+01	36.78	5.89E-03	5.14E-04
	26	741.32	2.04E+01	18.00	5.79E-03	5.03E-04
	27	768.69	2.39E+01	25.91	5.62E-03	4.80E-04
M	28	786.72	2.02E+01	28.96	5.50E-03	4.66E-04
m	29	795.69	3.84E+01	29.71	5.45E-03	4.58E-04
	30	860.57	4.15E+01	26.48	5.09E-03	4.05E-04
	31	896.50	1.81E+01	18.53	4.92E-03	3.76E-04
	32	912.19	1.45E+02	42.16	4.85E-03	3.72E-04
	33	934.74	3.19E+01	23.41	4.75E-03	3.68E-04
	34	969.78	6.54E+01	38.79	4.60E-03	3.61E-04
	35	1120.91	5.21E+01	29.76	4.08E-03	3.33E-04
	36	1207.29	3.50E+01	27.38	3.83E-03	3.16E-04
	37	1223.01	5.02E+01	46.58	3.79E-03	3.13E-04
M	38	1238.56	2.69E+01	21.91	3.75E-03	3.09E-04
m	39	1244.82	1.68E+01	20.78	3.74E-03	3.08E-04
	40	1378.46	1.49E+01	12.25	3.45E-03	2.82E-04
	41	1461.63	4.95E+02	49.22	3.29E-03	2.69E-04
	42	1510.60	1.45E+01	10.79	3.21E-03	2.62E-04
M	43	1589.61	1.30E+01	16.42	3.09E-03	2.50E-04
m	44	1593.25	1.32E+01	12.61	3.08E-03	2.50E-04
	45	1633.92	1.13E+01	14.04	3.02E-03	2.43E-04
	46	1730.32	1.08E+01	12.65	2.90E-03	2.29E-04
	47	1764.81	4.59E+01	20.12	2.86E-03	2.24E-04
	48	1846.88	7.45E+00	8.28	2.77E-03	2.13E-04
	49	2095.49	7.00E+00	5.29	2.54E-03	2.13E-04
	50	2102.68	9.59E+00	7.50	2.54E-03	2.13E-04
	51	2204.25	1.10E+01	11.52	2.46E-03	2.13E-04
	52	2448.59	7.00E+00	7.50	2.32E-03	2.13E-04
	53	2615.65	7.95E+01	18.93	2.24E-03	2.13E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

Analysis Report for 1606041-05

CP-5028 02-05

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 8:16:41AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038678.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
	1	46.79	1.27E+02	78.96	4.97E+01	7.81E+00	7.77E+01	7.93E+01
	2	63.48	1.36E+02	93.74	4.47E+01	1.66E+01	9.08E+01	9.52E+01
M	3	74.94	4.26E+02	88.33			4.26E+02	8.83E+01
m	4	77.69	6.34E+02	95.30	6.70E+00	3.28E+00	6.27E+02	9.54E+01
M	5	85.50	1.86E+02	66.45	9.95E+00	4.00E+00	1.76E+02	6.66E+01
m	6	88.27	2.49E+02	88.44	1.07E+01	3.99E+00	2.38E+02	8.85E+01
m	7	93.41	3.53E+02	87.35	8.20E+01	2.30E+01	2.71E+02	9.03E+01
	8	99.52	6.95E+01	72.33			6.95E+01	7.23E+01
	9	115.24	6.08E+01	61.66			6.08E+01	6.17E+01
	10	130.36	1.23E+02	87.97			1.23E+02	8.80E+01
	11	186.22	1.74E+02	79.95	3.45E+01	5.92E+00	1.39E+02	8.02E+01
M	12	239.04	8.28E+02	71.40	1.33E+01	5.09E+00	8.14E+02	7.16E+01
m	13	242.70	1.19E+02	58.84			1.19E+02	5.88E+01
	14	270.72	9.03E+01	47.96			9.03E+01	4.80E+01
	15	277.30	4.51E+01	38.88			4.51E+01	3.89E+01
M	16	295.73	2.22E+02	42.94	1.94E+00	4.39E+00	2.20E+02	4.32E+01
m	17	300.92	6.07E+01	38.67			6.07E+01	3.87E+01
	18	328.15	4.28E+01	43.15			4.28E+01	4.32E+01
	19	339.03	1.12E+02	56.17			1.12E+02	5.62E+01
	20	352.20	3.55E+02	55.91	4.00E+00	3.58E+00	3.51E+02	5.60E+01
	21	463.05	4.03E+01	30.38			4.03E+01	3.04E+01
	22	511.11	1.23E+02	46.25	6.05E+01	4.93E+00	6.27E+01	4.65E+01
	23	583.68	1.93E+02	44.71	5.50E+00	3.61E+00	1.88E+02	4.49E+01
	24	610.00	2.59E+02	48.18	5.07E+00	3.83E+00	2.54E+02	4.83E+01
	25	727.65	4.97E+01	36.78			4.97E+01	3.68E+01
	26	741.32	2.04E+01	18.00			2.04E+01	1.80E+01
	27	768.69	2.39E+01	25.91			2.39E+01	2.59E+01
M	28	786.72	2.02E+01	28.96			2.02E+01	2.90E+01
m	29	795.69	3.84E+01	29.71			3.84E+01	2.97E+01
	30	860.57	4.15E+01	26.48			4.15E+01	2.65E+01
	31	896.50	1.81E+01	18.53			1.81E+01	1.85E+01
	32	912.19	1.45E+02	42.16			1.45E+02	4.22E+01
	33	934.74	3.19E+01	23.41			3.19E+01	2.34E+01
	34	969.78	6.54E+01	38.79			6.54E+01	3.88E+01
	35	1120.91	5.21E+01	29.76	1.09E+00	2.08E+00	5.10E+01	2.98E+01
	36	1207.29	3.50E+01	27.38			3.50E+01	2.74E+01
	37	1223.01	5.02E+01	46.58			5.02E+01	4.66E+01
M	38	1238.56	2.69E+01	21.91			2.69E+01	2.19E+01
m	39	1244.82	1.68E+01	20.78			1.68E+01	2.08E+01
	40	1378.46	1.49E+01	12.25			1.49E+01	1.22E+01
	41	1461.63	4.95E+02	49.22	4.33E+00	2.02E+00	4.91E+02	4.93E+01
	42	1510.60	1.45E+01	10.79			1.45E+01	1.08E+01
M	43	1589.61	1.30E+01	16.42			1.30E+01	1.64E+01
m	44	1593.25	1.32E+01	12.61			1.32E+01	1.26E+01

Analysis Report for 1606041-05
CP-5028 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
45	1633.92	1.13E+01	14.04			1.13E+01	1.40E+01
46	1730.32	1.08E+01	12.65			1.08E+01	1.26E+01
47	1764.81	4.59E+01	20.12			4.59E+01	2.01E+01
48	1846.88	7.45E+00	8.28			7.45E+00	8.28E+00
49	2095.49	7.00E+00	5.29			7.00E+00	5.29E+00
50	2102.68	9.59E+00	7.50			9.59E+00	7.50E+00
51	2204.25	1.10E+01	11.52			1.10E+01	1.15E+01
52	2448.59	7.00E+00	7.50			7.00E+00	7.50E+00
53	2615.65	7.95E+01	18.93	2.52E+00	1.44E+00	7.69E+01	1.90E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 8:16:41AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038678.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
	1	46.79	1.27E+02	78.96	4.97E+01	7.81E+00	7.77E+01	7.93E+01
	2	63.48	1.36E+02	93.74	4.47E+01	1.66E+01	9.08E+01	9.52E+01
M	3	74.94	4.26E+02	88.33			4.26E+02	8.83E+01
m	4	77.69	6.34E+02	95.30	6.70E+00	3.28E+00	6.27E+02	9.54E+01
M	5	85.50	1.86E+02	66.45	9.95E+00	4.00E+00	1.76E+02	6.66E+01
m	6	88.27	2.49E+02	88.44	1.07E+01	3.99E+00	2.38E+02	8.85E+01
m	7	93.41	3.53E+02	87.35	8.20E+01	2.30E+01	2.71E+02	9.03E+01
	8	99.52	6.95E+01	72.33			6.95E+01	7.23E+01
	9	115.24	6.08E+01	61.66			6.08E+01	6.17E+01
	10	130.36	1.23E+02	87.97			1.23E+02	8.80E+01
	11	186.22	1.74E+02	79.95	3.45E+01	5.92E+00	1.39E+02	8.02E+01
M	12	239.04	8.28E+02	71.40	1.33E+01	5.09E+00	8.14E+02	7.16E+01
m	13	242.70	1.19E+02	58.84			1.19E+02	5.88E+01
	14	270.72	9.03E+01	47.96			9.03E+01	4.80E+01
	15	277.30	4.51E+01	38.88			4.51E+01	3.89E+01
M	16	295.73	2.22E+02	42.94	1.94E+00	4.39E+00	2.20E+02	4.32E+01
m	17	300.92	6.07E+01	38.67			6.07E+01	3.87E+01
	18	328.15	4.28E+01	43.15			4.28E+01	4.32E+01
	19	339.03	1.12E+02	56.17			1.12E+02	5.62E+01

Analysis Report for 1606041-05
CP-5028 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
20	352.20	3.55E+02	55.91	4.00E+00	3.58E+00	3.51E+02	5.60E+01
21	463.05	4.03E+01	30.38			4.03E+01	3.04E+01
22	511.11	1.23E+02	46.25	6.05E+01	4.93E+00	6.27E+01	4.65E+01
23	583.68	1.93E+02	44.71	5.50E+00	3.61E+00	1.88E+02	4.49E+01
24	610.00	2.59E+02	48.18	5.07E+00	3.83E+00	2.54E+02	4.83E+01
25	727.65	4.97E+01	36.78			4.97E+01	3.68E+01
26	741.32	2.04E+01	18.00			2.04E+01	1.80E+01
27	768.69	2.39E+01	25.91			2.39E+01	2.59E+01
M 28	786.72	2.02E+01	28.96			2.02E+01	2.90E+01
m 29	795.69	3.84E+01	29.71			3.84E+01	2.97E+01
30	860.57	4.15E+01	26.48			4.15E+01	2.65E+01
31	896.50	1.81E+01	18.53			1.81E+01	1.85E+01
32	912.19	1.45E+02	42.16			1.45E+02	4.22E+01
33	934.74	3.19E+01	23.41			3.19E+01	2.34E+01
34	969.78	6.54E+01	38.79			6.54E+01	3.88E+01
35	1120.91	5.21E+01	29.76	1.09E+00	2.08E+00	5.10E+01	2.98E+01
36	1207.29	3.50E+01	27.38			3.50E+01	2.74E+01
37	1223.01	5.02E+01	46.58			5.02E+01	4.66E+01
M 38	1238.56	2.69E+01	21.91			2.69E+01	2.19E+01
m 39	1244.82	1.68E+01	20.78			1.68E+01	2.08E+01
40	1378.46	1.49E+01	12.25			1.49E+01	1.22E+01
41	1461.63	4.95E+02	49.22	4.33E+00	2.02E+00	4.91E+02	4.93E+01
42	1510.60	1.45E+01	10.79			1.45E+01	1.08E+01
M 43	1589.61	1.30E+01	16.42			1.30E+01	1.64E+01
m 44	1593.25	1.32E+01	12.61			1.32E+01	1.26E+01
45	1633.92	1.13E+01	14.04			1.13E+01	1.40E+01
46	1730.32	1.08E+01	12.65			1.08E+01	1.26E+01
47	1764.81	4.59E+01	20.12			4.59E+01	2.01E+01
48	1846.88	7.45E+00	8.28			7.45E+00	8.28E+00
49	2095.49	7.00E+00	5.29			7.00E+00	5.29E+00
50	2102.68	9.59E+00	7.50			9.59E+00	7.50E+00
51	2204.25	1.10E+01	11.52			1.10E+01	1.15E+01
52	2448.59	7.00E+00	7.50			7.00E+00	7.50E+00
53	2615.65	7.95E+01	18.93	2.52E+00	1.44E+00	7.69E+01	1.90E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1606041-05
CP-5028 02-05

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.898	1460.81 *	10.67	2.26E+01	2.96E+00
GA-67	0.876	93.31 *	35.70	3.89E+00	6.67E+00
		208.95	2.24		
		300.22 *	16.00	3.76E+00	6.77E+00
CD-109	0.991	88.03 *	3.72	4.28E+00	1.67E+00
SN-126	0.924	87.57 *	37.00	4.25E-01	1.64E-01
TL-208	0.905	583.14 *	30.22	1.40E+00	3.59E-01
		860.37 *	4.48	2.93E+00	1.89E+00
		2614.66 *	35.85	1.55E+00	4.09E-01
PB-210	0.987	46.50 *	4.25	1.94E+00	2.00E+00
BI-212	0.741	727.17 *	11.80	1.15E+00	8.60E-01
		1620.62	2.75		
PB-212	0.967	238.63 *	44.60	1.94E+00	2.27E-01
		300.09 *	3.41	2.27E+00	1.46E+00
BI-214	0.945	609.31 *	46.30	1.29E+00	2.71E-01
		1120.29 *	15.10	1.34E+00	7.89E-01
		1764.49 *	15.80	1.64E+00	7.30E-01
		2204.22 *	4.98	1.45E+00	1.52E+00
PB-214	0.978	295.21 *	19.19	1.45E+00	3.04E-01
		351.92 *	37.19	1.38E+00	2.46E-01
RA-226	1.000	186.21 *	3.28	3.75E+00	7.19E+00
PA-234	0.419	131.20 *	20.40	4.34E-01	3.12E-01
		733.99	8.80		
		946.00	12.00		
TH-234	0.994	63.29 *	3.80	1.78E+00	1.87E+00
AM-243	0.989	74.67 *	66.00	4.40E-01	9.93E-02

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 8:16:41AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	4	77.69	1.74266E-01	7.60	
M	5	85.50	4.88134E-02	18.94	
	8	99.52	1.93125E-02	52.02	D-Esc

Analysis Report for 1606041-05
 CP-5028 02-05

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	9	115.24	1.68942E-02		
m	13	242.70	3.31478E-02		
	14	270.72	2.50708E-02		
	15	277.30	1.25185E-02	Tol.	NP-239 CM-243
	18	328.15	1.18963E-02	Sum	
	19	339.03	3.11395E-02	Tol.	AC-228
	21	463.05	1.12057E-02		
	22	511.11	1.74050E-02		
	26	741.32	5.66049E-03	Sum	
	27	768.69	6.62646E-03		
M	28	786.72	5.62456E-03		
m	29	795.69	1.06719E-02	Sum	
	31	896.50	5.03230E-03		
	32	912.19	4.02332E-02	Tol.	LU-172
	33	934.74	8.86201E-03	Sum	
	34	969.78	1.81686E-02	Tol.	AC-228
	36	1207.29	9.72598E-03		
	37	1223.01	1.39524E-02		
M	38	1238.56	7.47839E-03		
m	39	1244.82	4.66846E-03		
	40	1378.46	4.13194E-03		
	42	1510.60	4.03509E-03		
M	43	1589.61	3.61648E-03		
m	44	1593.25	3.67204E-03	D-Esc	
	45	1633.92	3.14328E-03		
	46	1730.32	2.98611E-03	Sum	
	48	1846.88	2.07071E-03		
	49	2095.49	1.94444E-03		
	50	2102.68	2.66414E-03		
	52	2448.59	1.94444E-03		

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1606041-05
CP-5028 02-05

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.89	1460.81 *	10.67	2.26E+01	2.96E+00
GA-67	0.87	93.31 *	35.70	3.89E+00	6.67E+00
		208.95	2.24		
		300.22 *	16.00	3.76E+00	6.77E+00
CD-109	0.99	88.03 *	3.72	4.28E+00	1.67E+00
SN-126	0.92	87.57 *	37.00	4.25E-01	1.64E-01
TL-208	0.90	583.14 *	30.22	1.40E+00	3.59E-01
		860.37 *	4.48	2.93E+00	1.89E+00
		2614.66 *	35.85	1.55E+00	4.09E-01
PB-210	0.98	46.50 *	4.25	1.94E+00	2.00E+00
BI-212	0.74	727.17 *	11.80	1.15E+00	8.60E-01
		1620.62	2.75		
PB-212	0.96	238.63 *	44.60	1.94E+00	2.27E-01
		300.09 *	3.41	2.27E+00	1.46E+00
BI-214	0.94	609.31 *	46.30	1.29E+00	2.71E-01
		1120.29 *	15.10	1.34E+00	7.89E-01
		1764.49 *	15.80	1.64E+00	7.30E-01
		2204.22 *	4.98	1.45E+00	1.52E+00
PB-214	0.97	295.21 *	19.19	1.45E+00	3.04E-01
		351.92 *	37.19	1.38E+00	2.46E-01
RA-226	1.00	186.21 *	3.28	3.75E+00	7.19E+00
PA-234	0.41	131.20 *	20.40	4.34E-01	3.12E-01
		733.99	8.80		
		946.00	12.00		
TH-234	0.99	63.29 *	3.80	1.78E+00	1.87E+00
AM-243	0.98	74.67 *	66.00	4.40E-01	9.93E-02

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.898	2.26E+01	2.96E+00	

Analysis Report for 1606041-05
CP-5028 02-05

<i>Nuclide Name</i>	<i>Nuclide Id Confidence</i>	<i>Wt mean Activity (pCi/grams)</i>	<i>Wt mean Activity Uncertainty</i>	<i>Comments</i>
	GA-67	0.876	3.11E+00	4.07E+00
?	CD-109	0.991	4.28E+00	1.67E+00
?	SN-126	0.924	4.25E-01	1.64E-01
	TL-208	0.905	1.50E+00	2.67E-01
	PB-210	0.987	1.94E+00	2.00E+00
	BI-212	0.741	1.15E+00	8.60E-01
	PB-212	0.967	1.90E+00	2.25E-01
	BI-214	0.945	1.33E+00	2.39E-01
	PB-214	0.978	1.40E+00	1.91E-01
	RA-226	1.000	3.75E+00	7.19E+00
	PA-234	0.419	4.34E-01	3.12E-01
	TH-234	0.994	1.78E+00	1.87E+00
	AM-243	0.989	4.40E-01	9.93E-02

- ? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1606041-05
CP-5028 02-05

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 8:16:41AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	4	77.69	1.74266E-01	7.60	
M	5	85.50	4.88134E-02	18.94	
	8	99.52	1.93125E-02	52.02	D-Esc
	9	115.24	1.68942E-02	50.69	
m	13	242.70	3.31478E-02	24.65	
	14	270.72	2.50708E-02	26.57	
	15	277.30	1.25185E-02	43.14	Tol. NP-239 CM-243
	18	328.15	1.18963E-02	50.38	Sum
	19	339.03	3.11395E-02	25.05	Tol. AC-228
	21	463.05	1.12057E-02	37.66	
	22	511.11	1.74050E-02	37.12	
	26	741.32	5.66049E-03	44.17	Sum
	27	768.69	6.62646E-03	54.31	
M	28	786.72	5.62456E-03	71.50	
m	29	795.69	1.06719E-02	38.66	Sum
	31	896.50	5.03230E-03	51.15	
	32	912.19	4.02332E-02	14.55	Tol. LU-172
	33	934.74	8.86201E-03	36.69	Sum
	34	969.78	1.81686E-02	29.66	Tol. AC-228
	36	1207.29	9.72598E-03	39.10	
	37	1223.01	1.39524E-02	46.37	
M	38	1238.56	7.47839E-03	40.69	
m	39	1244.82	4.66846E-03	61.84	
	40	1378.46	4.13194E-03	41.17	
	42	1510.60	4.03509E-03	37.15	
M	43	1589.61	3.61648E-03	63.08	
m	44	1593.25	3.67204E-03	47.69	D-Esc
	45	1633.92	3.14328E-03	62.02	
	46	1730.32	2.98611E-03	58.83	Sum
	48	1846.88	2.07071E-03	55.51	
	49	2095.49	1.94444E-03	37.80	
	50	2102.68	2.66414E-03	39.10	
	52	2448.59	1.94444E-03	53.57	

Analysis Report for 1606041-05
CP-5028 02-05

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	BE-7	477.59	10.42	3.81E-01	9.51E-01	9.51E-01
+	NA-22	1274.54	99.94	-1.63E-02	1.30E-01	1.30E-01
+	NA-24	1368.53	99.99	3.03E+03	8.75E+02	5.38E+03
		2754.09	99.86	0.00E+00		8.75E+02
+	AL-26	1808.65	99.76	-5.76E-03	5.35E-02	5.35E-02
+	K-40	1460.81	* 10.67	2.26E+01	1.75E+00	1.75E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-9.09E-03	8.06E-02	8.06E-02
		78.34	96.00	3.09E-01		1.14E-01
+	SC-46	889.25	99.98	4.13E-02	1.15E-01	1.15E-01
		1120.51	99.99	2.70E-01		2.09E-01
+	V-48	983.52	99.98	8.81E-02	1.92E-01	1.92E-01
		1312.10	97.50	-3.88E-02		2.01E-01
+	CR-51	320.08	9.83	1.74E-01	1.12E+00	1.12E+00
+	MN-54	834.83	99.97	4.57E-02	1.25E-01	1.25E-01
+	CO-56	846.75	99.96	-7.88E-02	9.87E-02	9.87E-02
		1037.75	14.03	-2.84E-01		8.70E-01
		1238.25	67.00	1.43E-01		2.60E-01
		1771.40	15.51	1.06E-01		7.20E-01
		2598.48	16.90	-4.62E-02		3.40E-01
+	CO-57	122.06	85.51	-1.59E-02	7.08E-02	7.08E-02
		136.48	10.60	-9.77E-02		5.85E-01
+	CO-58	810.76	99.40	-6.98E-02	1.13E-01	1.13E-01
+	FE-59	1099.22	56.50	-7.55E-02	2.51E-01	2.51E-01
		1291.56	43.20	1.63E-01		3.84E-01
+	CO-60	1173.22	100.00	-4.47E-02	1.31E-01	1.31E-01
		1332.49	100.00	9.66E-03		1.31E-01
+	ZN-65	1115.52	50.75	7.29E-02	2.73E-01	2.73E-01
+	GA-67	93.31	* 35.70	3.89E+00	3.33E+00	3.33E+00
		208.95	2.24	6.87E+00		3.08E+01
		300.22	* 16.00	3.76E+00		6.76E+00
+	SE-75	121.11	16.70	-1.43E-02	1.06E-01	3.75E-01

Analysis Report for 1606041-05
CP-5028 02-05

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)	
	SE-75	136.00	59.20	-2.04E-02	1.06E-01	1.06E-01
		264.65	59.80	-5.68E-03		1.35E-01
		279.53	25.20	1.28E-02		3.52E-01
		400.65	11.40	-6.39E-02		8.24E-01
+	RB-82	776.52	13.00	5.66E-01	1.14E+00	1.14E+00
+	RB-83	520.41	46.00	-1.55E-02	2.23E-01	2.23E-01
		529.64	30.30	6.12E-02		3.30E-01
		552.65	16.40	-2.15E-03		6.62E-01
+	KR-85	513.99	0.43	-1.95E+00	3.00E+01	3.00E+01
+	SR-85	513.99	99.27	-9.41E-03	1.45E-01	1.45E-01
+	Y-88	898.02	93.40	7.48E-04	8.77E-02	1.27E-01
		1836.01	99.38	4.15E-03		8.77E-02
+	NB-93M	16.57	9.43	3.43E+01	1.01E+02	1.01E+02
+	NB-94	702.63	100.00	-5.50E-03	9.37E-02	9.37E-02
		871.10	100.00	1.86E-02		9.67E-02
+	NB-95	765.79	99.81	7.52E-03	1.51E-01	1.51E-01
+	NB-95M	235.69	25.00	6.67E+00	3.53E+00	3.53E+00
+	ZR-95	724.18	43.70	-2.93E-01	2.13E-01	3.11E-01
		756.72	55.30	1.19E-01		2.13E-01
+	MO-99	181.06	6.20	2.85E+00	9.08E+00	1.21E+01
		739.58	12.80	-6.29E-01		9.08E+00
		778.00	4.50	-1.09E+01		2.55E+01
+	RU-103	497.08	89.00	1.46E-02	1.31E-01	1.31E-01
+	RU-106	621.84	9.80	1.07E-01	1.11E+00	1.11E+00
+	AG-108M	433.93	89.90	-1.73E-02	9.15E-02	9.15E-02
		614.37	90.40	-3.68E-02		1.24E-01
		722.95	90.50	2.88E-02		1.26E-01
+	CD-109	88.03	* 3.72	4.28E+00	4.12E+00	4.12E+00
+	AG-110M	657.75	93.14	4.01E-02	1.11E-01	1.11E-01
		677.61	10.53	2.87E-01		1.01E+00
		706.67	16.46	5.94E-02		6.15E-01
		763.93	21.98	-3.62E-02		4.88E-01
		884.67	71.63	-6.69E-02		1.33E-01
		1384.27	23.94	-5.90E-02		4.05E-01
+	CD-113M	263.70	0.02	4.71E+01	3.35E+02	3.35E+02
+	SN-113	255.12	1.93	1.47E+00	1.41E-01	4.26E+00
		391.69	64.90	-1.81E-02		1.41E-01
+	TE123M	159.00	84.10	-1.04E-02	8.10E-02	8.10E-02
+	SB-124	602.71	97.87	1.02E-02	1.25E-01	1.25E-01
		645.85	7.26	4.22E-01		1.56E+00
		722.78	11.10	2.62E-01		1.15E+00
		1691.02	49.00	-1.11E-01		1.98E-01
+	I-125	35.49	6.49	3.77E-02	2.80E+00	2.80E+00
+	SB-125	176.33	6.89	-1.74E-01	2.82E-01	9.26E-01
		427.89	29.33	5.13E-02		2.82E-01
		463.38	10.35	4.87E-01		1.01E+00
		600.56	17.80	-6.49E-02		5.81E-01
		635.90	11.32	-1.18E-01		8.39E-01

Analysis Report for 1606041-05
CP-5028 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-6.61E-02	1.74E-01	1.94E-01
		666.33	99.60	6.40E-02		1.97E-01
		695.00	99.60	6.91E-04		1.74E-01
		720.50	53.80	1.07E-01		3.53E-01
+	SN-126	87.57 *	37.00	4.25E-01	4.09E-01	4.09E-01
+	SB-127	473.00	25.00	3.84E-01	1.56E+00	1.93E+00
		685.20	35.70	-7.56E-01		1.56E+00
		783.80	14.70	1.34E+00		4.40E+00
+	I-129	29.78	57.00	-1.55E-01	4.93E-01	4.93E-01
		33.60	13.20	4.17E-01		1.47E+00
		39.58	7.52	3.91E-01		1.69E+00
+	I-131	284.30	6.05	3.90E-01	2.25E-01	3.11E+00
		364.48	81.20	-1.66E-02		2.25E-01
		636.97	7.26	-9.95E-01		2.87E+00
		722.89	1.80	3.32E+00		1.46E+01
+	TE-132	49.72	13.10	-9.19E-01	7.05E-01	5.54E+00
		228.16	88.00	-5.58E-03		7.05E-01
+	BA-133	81.00	33.00	-7.65E-01	2.00E-01	2.24E-01
		302.84	17.80	-2.00E-02		5.05E-01
		356.01	60.00	-1.53E-02		2.00E-01
+	I-133	529.87	86.30	4.42E+01	2.39E+02	2.39E+02
+	XE-133	81.00	38.00	-2.37E+00	6.94E-01	6.94E-01
+	CS-134	563.23	8.38	-4.51E-01	1.14E-01	1.11E+00
		569.32	15.43	-4.58E-01		5.90E-01
		604.70	97.60	-9.38E-03		1.14E-01
		795.84	85.40	1.38E-01		1.52E-01
		801.93	8.73	-3.14E-01		1.11E+00
+	CS-135	268.24	16.00	-3.84E-02	5.21E-01	5.21E-01
+	I-135	1131.51	22.50	-7.93E+09	1.59E+10	1.75E+10
		1260.41	28.60	1.50E+09		1.59E+10
		1678.03	9.54	-8.18E+09		2.91E+10
+	CS-136	153.22	7.46	8.71E-01	1.75E-01	1.47E+00
		163.89	4.61	1.13E+00		2.43E+00
		176.55	13.56	-4.54E-02		7.90E-01
		273.65	12.66	-7.20E-01		1.10E+00
		340.57	48.50	7.99E-01		3.89E-01
		818.50	99.70	-6.01E-02		1.75E-01
		1048.07	79.60	-1.79E-02		2.48E-01
		1235.34	19.70	-3.57E-01		1.23E+00
+	CS-137	661.65	85.12	-1.05E-02	1.24E-01	1.24E-01
+	LA-138	788.74	34.00	9.42E-02	1.64E-01	3.52E-01
		1435.80	66.00	4.76E-02		1.64E-01
+	CE-139	165.85	80.35	2.50E-02	8.54E-02	8.54E-02
+	BA-140	162.64	6.70	7.63E-01	6.02E-01	1.73E+00
		304.84	4.50	6.76E-01		3.01E+00
		423.70	3.20	-2.67E+00		4.41E+00
		437.55	2.00	2.45E+00		7.43E+00
		537.32	25.00	-2.25E-01		6.02E-01
+	LA-140	328.77	20.50	1.43E-01	2.27E-01	7.70E-01

Analysis Report for 1606041-05
CP-5028 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	487.03	45.50	-4.08E-02	2.27E-01	3.28E-01
		815.85	23.50	2.97E-01		7.93E-01
		1596.49	95.49	1.57E-02		2.27E-01
+	CE-141	145.44	48.40	3.70E-03	1.61E-01	1.61E-01
+	CE-143	57.36	11.80	-2.45E+01	3.44E+01	9.02E+01
		293.26	42.00	-1.17E-01		3.44E+01
		664.55	5.20	-2.18E+01		2.71E+02
+	CE-144	133.54	10.80	-1.12E-01	5.74E-01	5.74E-01
+	PM-144	476.78	42.00	-6.62E-02	1.03E-01	1.99E-01
		618.01	98.60	4.81E-03		1.03E-01
		696.49	99.49	4.31E-02		1.05E-01
+	PM-145	36.85	21.70	-6.67E-01	3.56E-01	6.55E-01
		37.36	39.70	-7.84E-02		3.56E-01
		42.30	15.10	-3.54E-01		7.52E-01
		72.40	2.31	-5.22E+00		4.19E+00
+	PM-146	453.90	39.94	-4.34E-02	2.17E-01	2.17E-01
		735.90	14.01	3.32E-02		6.79E-01
		747.13	13.10	2.80E-01		7.85E-01
+	ND-147	91.11	28.90	-4.66E-01	5.37E-01	5.37E-01
		531.02	13.10	-1.19E-01		1.26E+00
+	PM-149	285.90	3.10	9.65E+00	5.38E+01	5.38E+01
+	EU-152	121.78	20.50	-6.49E-02	2.88E-01	2.88E-01
		244.69	5.40	1.11E-01		1.78E+00
		344.27	19.13	-7.57E-02		4.18E-01
		778.89	9.20	-4.05E-01		1.09E+00
		964.01	10.40	4.09E-01		1.30E+00
		1085.78	7.22	4.54E-01		1.79E+00
		1112.02	9.60	1.51E-01		1.43E+00
		1407.95	14.94	1.03E-01		8.28E-01
+	GD-153	97.43	31.30	-3.98E-01	2.00E-01	2.00E-01
		103.18	22.20	-2.91E-01		2.77E-01
+	EU-154	123.07	40.50	7.34E-03	1.51E-01	1.51E-01
		723.30	19.70	1.32E-01		5.81E-01
		873.19	11.50	5.55E-02		8.44E-01
		996.32	10.30	-2.18E-01		1.09E+00
		1004.76	17.90	6.79E-02		6.64E-01
		1274.45	35.50	-4.57E-02		3.65E-01
+	EU-155	86.50	30.90	2.27E-01	2.80E-01	2.80E-01
		105.30	20.70	1.46E-01		3.03E-01
+	EU-156	811.77	10.40	-2.59E-01	1.52E+00	1.52E+00
		1153.47	7.20	1.02E+00		3.25E+00
		1230.71	8.90	1.43E+00		2.65E+00
+	HO-166M	184.41	72.60	1.84E-01	1.18E-01	1.18E-01
		280.45	29.60	-8.13E-02		2.78E-01
		410.94	11.10	2.18E-01		8.78E-01
		711.69	54.10	7.47E-02		1.80E-01
+	TM-171	66.72	0.14	5.95E+00	5.64E+01	5.64E+01
+	HF-172	81.75	4.52	-7.45E+00	5.50E-01	1.63E+00
		125.81	11.30	-3.09E-03		5.50E-01

Analysis Report for 1606041-05
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	1.10E-01	6.04E-01	8.80E-01
		810.06	16.63	-9.69E-01		1.64E+00
		912.12	15.25	7.81E+00		3.82E+00
		1093.66	62.50	7.91E-03		6.04E-01
+	LU-173	100.72	5.24	7.86E-01	4.09E-01	1.21E+00
		272.11	21.20	1.89E-01		4.09E-01
+	HF-175	343.40	84.00	-1.89E-02	1.16E-01	1.16E-01
+	LU-176	88.34	13.30	4.02E-02	8.17E-02	6.54E-01
		201.83	86.00	-2.33E-02		9.06E-02
		306.78	94.00	-3.33E-02		8.17E-02
+	TA-182	67.75	41.20	-2.21E-02	1.96E-01	1.96E-01
		1121.30	34.90	6.68E-01		5.83E-01
		1189.05	16.23	2.48E-01		9.48E-01
		1221.41	26.98	1.30E-01		5.60E-01
		1231.02	11.44	6.05E-01		1.40E+00
+	IR-192	308.46	29.68	1.25E-02	1.99E-01	2.93E-01
		468.07	48.10	1.84E-02		1.99E-01
+	HG-203	279.19	77.30	1.42E-02	1.26E-01	1.26E-01
+	BI-207	569.67	97.72	-3.85E-02	9.24E-02	9.24E-02
		1063.62	74.90	2.64E-02		1.66E-01
+	TL-208	583.14	* 30.22	1.40E+00	2.94E-01	4.57E-01
		860.37	* 4.48	2.93E+00		2.88E+00
		2614.66	* 35.85	1.55E+00		2.94E-01
+	BI-210M	262.00	45.00	7.52E-02	1.76E-01	1.76E-01
		300.00	23.00	-1.16E+00		3.99E-01
+	PB-210	46.50	* 4.25	1.94E+00	3.25E+00	3.25E+00
+	PB-211	404.84	2.90	-1.16E+00	3.20E+00	3.20E+00
		831.96	2.90	-6.39E-01		3.95E+00
+	BI-212	727.17	* 11.80	1.15E+00	1.36E+00	1.36E+00
		1620.62	2.75	-1.63E+00		3.50E+00
+	PB-212	238.63	* 44.60	1.94E+00	3.24E-01	3.24E-01
		300.09	* 3.41	2.27E+00		4.09E+00
+	BI-214	609.31	* 46.30	1.29E+00	3.17E-01	3.17E-01
		1120.29	* 15.10	1.34E+00		1.20E+00
		1764.49	* 15.80	1.64E+00		9.71E-01
		2204.22	* 4.98	1.45E+00		2.39E+00
+	PB-214	295.21	* 19.19	1.45E+00	3.50E-01	7.12E-01
		351.92	* 37.19	1.38E+00		3.50E-01
+	RN-219	401.80	6.50	-3.32E-01	1.36E+00	1.36E+00
+	RA-223	323.87	3.88	4.41E-01	2.31E+00	2.31E+00
+	RA-224	240.98	3.95	2.33E+01	4.30E+00	4.30E+00
+	RA-225	40.00	31.00	1.45E-01	6.29E-01	6.29E-01
+	RA-226	186.21	* 3.28	3.75E+00	3.46E+00	3.46E+00
+	TH-227	50.10	8.40	-1.83E-01	1.10E+00	1.10E+00
		236.00	11.50	2.28E+00		1.21E+00
		256.20	6.30	-1.78E-01		1.22E+00
+	AC-228	338.32	11.40	1.24E+00	7.71E-01	9.88E-01
		911.07	27.70	1.45E+00		7.71E-01

Analysis Report for 1606041-05
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	16.60	1.34E+00	7.71E-01	1.18E+00
+	TH-230	48.44	16.90	8.61E-01	6.42E-01	6.42E-01
		62.85	4.60	2.98E+00		2.05E+00
		67.67	0.37	-2.32E+00		2.06E+01
+	PA-231	283.67	1.60	6.42E-01	3.90E+00	5.12E+00
		302.67	2.30	-1.54E-01		3.90E+00
+	TH-231	25.64	14.70	-1.01E+00	1.18E+00	3.72E+00
		84.21	6.40	-2.03E+00		1.18E+00
+	PA-233	311.98	38.60	-5.60E-02	2.68E-01	2.68E-01
+	PA-234	131.20	* 20.40	4.34E-01	5.03E-01	5.03E-01
		733.99	8.80	6.11E-01		1.16E+00
		946.00	12.00	3.62E-01		9.99E-01
+	PA-234M	1001.03	0.92	3.83E-01	1.33E+01	1.33E+01
+	TH-234	63.29	* 3.80	1.78E+00	3.06E+00	3.06E+00
+	U-235	143.76	10.50	1.72E-01	6.14E-01	6.14E-01
		163.35	4.70	6.68E-01		1.43E+00
		205.31	4.70	-1.44E+00		1.71E+00
+	NP-237	86.50	12.60	5.55E-01	6.84E-01	6.84E-01
+	NP-239	106.10	22.70	1.32E+00	4.69E+00	4.69E+00
		228.18	10.70	-1.01E-01		1.27E+01
		277.60	14.10	5.72E+00		1.01E+01
+	AM-241	59.54	35.90	4.20E-02	2.45E-01	2.45E-01
+	AM-243	74.67	* 66.00	4.40E-01	2.44E-01	2.44E-01
+	CM-243	209.75	3.29	4.99E-01	5.99E-01	2.73E+00
		228.14	10.60	-5.97E-03		7.54E-01
		277.60	14.00	3.38E-01		5.99E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

: 00441

Analysis Report for 1606041-05
CP-5028 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	9.51E-01	9.51E-01	3.81E-01	4.48E-01
NA-22	1274.54	99.94	1.30E-01	1.30E-01	-1.63E-02	5.92E-02
NA-24	1368.53	99.99	5.38E+03	8.75E+02	3.03E+03	2.42E+03
	2754.09	99.86	8.75E+02		0.00E+00	0.00E+00
AL-26	1808.65	99.76	5.35E-02	5.35E-02	-5.76E-03	1.89E-02
+ K-40	1460.81	*	1.75E+00	1.75E+00	2.26E+01	8.13E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	8.06E-02	8.06E-02	-9.09E-03	3.93E-02
	78.34	96.00	1.14E-01		3.09E-01	5.62E-02
SC-46	889.25	99.98	1.15E-01	1.15E-01	4.13E-02	5.25E-02
	1120.51	99.99	2.09E-01		2.70E-01	9.87E-02
V-48	983.52	99.98	1.92E-01	1.92E-01	8.81E-02	8.86E-02
	1312.10	97.50	2.01E-01		-3.88E-02	9.08E-02
CR-51	320.08	9.83	1.12E+00	1.12E+00	1.74E-01	5.35E-01
MN-54	834.83	99.97	1.25E-01	1.25E-01	4.57E-02	5.82E-02
CO-56	846.75	99.96	9.87E-02	9.87E-02	-7.88E-02	4.47E-02
	1037.75	14.03	8.70E-01		-2.84E-01	3.96E-01
	1238.25	67.00	2.60E-01		1.43E-01	1.20E-01
	1771.40	15.51	7.20E-01		1.06E-01	3.06E-01
	2598.48	16.90	3.40E-01		-4.62E-02	1.08E-01
CO-57	122.06	85.51	7.08E-02	7.08E-02	-1.59E-02	3.43E-02
	136.48	10.60	5.85E-01		-9.77E-02	2.83E-01
CO-58	810.76	99.40	1.13E-01	1.13E-01	-6.98E-02	5.19E-02
FE-59	1099.22	56.50	2.51E-01	2.51E-01	-7.55E-02	1.15E-01
	1291.56	43.20	3.84E-01		1.63E-01	1.76E-01
CO-60	1173.22	100.00	1.31E-01	1.31E-01	-4.47E-02	5.99E-02
	1332.49	100.00	1.31E-01		9.66E-03	5.92E-02
ZN-65	1115.52	50.75	2.73E-01	2.73E-01	7.29E-02	1.26E-01
+ GA-67	93.31	*	3.33E+00	3.33E+00	3.89E+00	1.65E+00
	208.95	2.24	3.08E+01		6.87E+00	1.49E+01
	300.22	*	16.00		3.76E+00	3.30E+00
SE-75	121.11	16.70	3.75E-01	1.06E-01	-1.43E-02	1.82E-01
	136.00	59.20	1.06E-01		-2.04E-02	5.13E-02
	264.65	59.80	1.35E-01		-5.68E-03	6.45E-02
	279.53	25.20	3.52E-01		1.28E-02	1.69E-01
	400.65	11.40	8.24E-01		-6.39E-02	3.92E-01
RB-82	776.52	13.00	1.14E+00	1.14E+00	5.66E-01	5.30E-01
RB-83	520.41	46.00	2.23E-01	2.23E-01	-1.55E-02	1.05E-01
	529.64	30.30	3.30E-01		6.12E-02	1.55E-01
	552.65	16.40	6.62E-01		-2.15E-03	3.12E-01
KR-85	513.99	0.43	3.00E+01	3.00E+01	-1.95E+00	1.44E+01
SR-85	513.99	99.27	1.45E-01	1.45E-01	-9.41E-03	6.95E-02
Y-88	898.02	93.40	1.27E-01	8.77E-02	7.48E-04	5.84E-02
	1836.01	99.38	8.77E-02		4.15E-03	3.54E-02
NB-93M	16.57	9.43	1.01E+02	1.01E+02	3.43E+01	4.92E+01
NB-94	702.63	100.00	9.37E-02	9.37E-02	-5.50E-03	4.33E-02
	871.10	100.00	9.67E-02		1.86E-02	4.40E-02
NB-95	765.79	99.81	1.51E-01	1.51E-01	7.52E-03	7.08E-02
NB-95M	235.69	25.00	3.53E+00	3.53E+00	6.67E+00	1.73E+00
ZR-95	724.18	43.70	3.11E-01	2.13E-01	-2.93E-01	1.46E-01
	756.72	55.30	2.13E-01		1.19E-01	9.90E-02

Analysis Report for 1606041-05
CP-5028 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
MO-99	181.06	6.20	1.21E+01	9.08E+00	2.85E+00	5.84E+00
	739.58	12.80	9.08E+00		-6.29E-01	4.21E+00
	778.00	4.50	2.55E+01		-1.09E+01	1.18E+01
RU-103	497.08	89.00	1.31E-01	1.31E-01	1.46E-02	6.18E-02
RU-106	621.84	9.80	1.11E+00	1.11E+00	1.07E-01	5.20E-01
AG-108M	433.93	89.90	9.15E-02	9.15E-02	-1.73E-02	4.31E-02
	614.37	90.40	1.24E-01		-3.68E-02	5.87E-02
	722.95	90.50	1.26E-01		2.88E-02	5.90E-02
+ CD-109	88.03	* 3.72	4.12E+00	4.12E+00	4.28E+00	2.04E+00
AG-110M	657.75	93.14	1.11E-01	1.11E-01	4.01E-02	5.19E-02
	677.61	10.53	1.01E+00		2.87E-01	4.71E-01
	706.67	16.46	6.15E-01		5.94E-02	2.85E-01
	763.93	21.98	4.88E-01		-3.62E-02	2.26E-01
	884.67	71.63	1.33E-01		-6.69E-02	6.02E-02
	1384.27	23.94	4.05E-01		-5.90E-02	1.75E-01
CD-113M	263.70	0.02	3.35E+02	3.35E+02	4.71E+01	1.61E+02
SN-113	255.12	1.93	4.26E+00	1.41E-01	1.47E+00	2.05E+00
	391.69	64.90	1.41E-01		-1.81E-02	6.68E-02
TE123M	159.00	84.10	8.10E-02	8.10E-02	-1.04E-02	3.92E-02
SB-124	602.71	97.87	1.25E-01	1.25E-01	1.02E-02	5.89E-02
	645.85	7.26	1.56E+00		4.22E-01	7.29E-01
	722.78	11.10	1.15E+00		2.62E-01	5.37E-01
	1691.02	49.00	1.98E-01		-1.11E-01	8.21E-02
	I-125	35.49	6.49	2.80E+00	2.80E+00	3.77E-02	1.35E+00
SB-125	176.33	6.89	9.26E-01	2.82E-01	-1.74E-01	4.46E-01
	427.89	29.33	2.82E-01		5.13E-02	1.33E-01
	463.38	10.35	1.01E+00		4.87E-01	4.79E-01
	600.56	17.80	5.81E-01		-6.49E-02	2.73E-01
	635.90	11.32	8.39E-01		-1.18E-01	3.90E-01
	SB-126	414.70	83.30	1.94E-01	1.74E-01	-6.61E-02	9.23E-02
SB-126	666.33	99.60	1.97E-01		6.40E-02	9.25E-02
	695.00	99.60	1.74E-01		6.91E-04	8.09E-02
	720.50	53.80	3.53E-01		1.07E-01	1.65E-01
	+ SN-126	87.57	* 37.00	4.09E-01	4.09E-01	4.25E-01	2.02E-01
SB-127	473.00	25.00	1.93E+00	1.56E+00	3.84E-01	9.10E-01
	685.20	35.70	1.56E+00		-7.56E-01	7.25E-01
	783.80	14.70	4.40E+00		1.34E+00	2.05E+00
I-129	29.78	57.00	4.93E-01	4.93E-01	-1.55E-01	2.38E-01
	33.60	13.20	1.47E+00		4.17E-01	7.14E-01
	39.58	7.52	1.69E+00		3.91E-01	8.20E-01
I-131	284.30	6.05	3.11E+00	2.25E-01	3.90E-01	1.49E+00
	364.48	81.20	2.25E-01		-1.66E-02	1.07E-01
	636.97	7.26	2.87E+00		-9.95E-01	1.33E+00
	722.89	1.80	1.46E+01		3.32E+00	6.81E+00
TE-132	49.72	13.10	5.54E+00	7.05E-01	-9.19E-01	2.69E+00
	228.16	88.00	7.05E-01		-5.58E-03	3.40E-01
BA-133	81.00	33.00	2.24E-01	2.00E-01	-7.65E-01	1.09E-01
	302.84	17.80	5.05E-01		-2.00E-02	2.43E-01
	356.01	60.00	2.00E-01		-1.53E-02	9.69E-02
I-133	529.87	86.30	2.39E+02	2.39E+02	4.42E+01	1.12E+02
XE-133	81.00	38.00	6.94E-01	6.94E-01	-2.37E+00	3.38E-01
CS-134	563.23	8.38	1.11E+00	1.14E-01	-4.51E-01	5.17E-01
	569.32	15.43	5.90E-01		-4.58E-01	2.75E-01

Analysis Report for 1606041-05
CP-5028 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	604.70	97.60	1.14E-01	1.14E-01	-9.38E-03	5.38E-02
	795.84	85.40	1.52E-01		1.38E-01	7.14E-02
	801.93	8.73	1.11E+00		-3.14E-01	5.06E-01
CS-135	268.24	16.00	5.21E-01	5.21E-01	-3.84E-02	2.51E-01
I-135	1131.51	22.50	1.75E+10	1.59E+10	-7.93E+09	7.94E+09
	1260.41	28.60	1.59E+10		1.50E+09	7.23E+09
	1678.03	9.54	2.91E+10		-8.18E+09	1.19E+10
CS-136	153.22	7.46	1.47E+00	1.75E-01	8.71E-01	7.12E-01
	163.89	4.61	2.43E+00		1.13E+00	1.18E+00
	176.55	13.56	7.90E-01		-4.54E-02	3.81E-01
	273.65	12.66	1.10E+00		-7.20E-01	5.28E-01
	340.57	48.50	3.89E-01		7.99E-01	1.88E-01
	818.50	99.70	1.75E-01		-6.01E-02	8.06E-02
	1048.07	79.60	2.48E-01		-1.79E-02	1.13E-01
	1235.34	19.70	1.23E+00		-3.57E-01	5.64E-01
CS-137	661.65	85.12	1.24E-01	1.24E-01	-1.05E-02	5.81E-02
LA-138	788.74	34.00	3.52E-01	1.64E-01	9.42E-02	1.64E-01
	1435.80	66.00	1.64E-01		4.76E-02	7.23E-02
CE-139	165.85	80.35	8.54E-02	8.54E-02	2.50E-02	4.12E-02
BA-140	162.64	6.70	1.73E+00	6.02E-01	7.63E-01	8.36E-01
	304.84	4.50	3.01E+00		6.76E-01	1.44E+00
	423.70	3.20	4.41E+00		-2.67E+00	2.09E+00
	437.55	2.00	7.43E+00		2.45E+00	3.52E+00
	537.32	25.00	6.02E-01		-2.25E-01	2.82E-01
	537.32	25.00	6.02E-01		-2.25E-01	2.82E-01
LA-140	328.77	20.50	7.70E-01	2.27E-01	1.43E-01	3.70E-01
	487.03	45.50	3.28E-01		-4.08E-02	1.54E-01
	815.85	23.50	7.93E-01		2.97E-01	3.67E-01
CE-141	145.44	48.40	1.61E-01	1.61E-01	3.70E-03	7.77E-02
CE-143	57.36	11.80	9.02E+01	3.44E+01	-2.45E+01	4.39E+01
	293.26	42.00	3.44E+01		-1.17E-01	1.67E+01
	664.55	5.20	2.71E+02		-2.18E+01	1.27E+02
CE-144	133.54	10.80	5.74E-01	5.74E-01	-1.12E-01	2.78E-01
PM-144	476.78	42.00	1.99E-01	1.03E-01	-6.62E-02	9.32E-02
	618.01	98.60	1.03E-01		4.81E-03	4.81E-02
	696.49	99.49	1.05E-01		4.31E-02	4.86E-02
PM-145	36.85	21.70	6.55E-01	3.56E-01	-6.67E-01	3.17E-01
	37.36	39.70	3.56E-01		-7.84E-02	1.72E-01
	42.30	15.10	7.52E-01		-3.54E-01	3.64E-01
	72.40	2.31	4.19E+00		-5.22E+00	2.05E+00
PM-146	453.90	39.94	2.17E-01	2.17E-01	-4.34E-02	1.02E-01
	735.90	14.01	6.79E-01		3.32E-02	3.12E-01
	747.13	13.10	7.85E-01		2.80E-01	3.63E-01
ND-147	91.11	28.90	5.37E-01	5.37E-01	-4.66E-01	2.63E-01
	531.02	13.10	1.26E+00		-1.19E-01	5.92E-01
PM-149	285.90	3.10	5.38E+01	5.38E+01	9.65E+00	2.58E+01
EU-152	121.78	20.50	2.88E-01	2.88E-01	-6.49E-02	1.39E-01
	244.69	5.40	1.78E+00		1.11E-01	8.63E-01
	344.27	19.13	4.18E-01		-7.57E-02	1.99E-01
	778.89	9.20	1.09E+00		-4.05E-01	5.04E-01
	964.01	10.40	1.30E+00		4.09E-01	6.05E-01
	1085.78	7.22	1.79E+00		4.54E-01	8.25E-01
	1112.02	9.60	1.43E+00		1.51E-01	6.61E-01

Analysis Report for 1606041-05
CP-5028 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	1407.95	14.94	8.28E-01	2.88E-01	1.03E-01	3.71E-01
GD-153	97.43	31.30	2.00E-01	2.00E-01	-3.98E-01	9.68E-02
	103.18	22.20	2.77E-01		-2.91E-01	1.34E-01
EU-154	123.07	40.50	1.51E-01	1.51E-01	7.34E-03	7.32E-02
	723.30	19.70	5.81E-01		1.32E-01	2.72E-01
	873.19	11.50	8.44E-01		5.55E-02	3.84E-01
	996.32	10.30	1.09E+00		-2.18E-01	5.00E-01
	1004.76	17.90	6.64E-01		6.79E-02	3.05E-01
	1274.45	35.50	3.65E-01		-4.57E-02	1.66E-01
EU-155	86.50	30.90	2.80E-01	2.80E-01	2.27E-01	1.37E-01
	105.30	20.70	3.03E-01		1.46E-01	1.47E-01
EU-156	811.77	10.40	1.52E+00	1.52E+00	-2.59E-01	7.01E-01
	1153.47	7.20	3.25E+00		1.02E+00	1.51E+00
	1230.71	8.90	2.65E+00		1.43E+00	1.23E+00
HO-166M	184.41	72.60	1.18E-01	1.18E-01	1.84E-01	5.74E-02
	280.45	29.60	2.78E-01		-8.13E-02	1.34E-01
	410.94	11.10	8.78E-01		2.18E-01	4.19E-01
	711.69	54.10	1.80E-01		7.47E-02	8.33E-02
TM-171	66.72	0.14	5.64E+01	5.64E+01	5.95E+00	2.75E+01
HF-172	81.75	4.52	1.63E+00	5.50E-01	-7.45E+00	7.95E-01
	125.81	11.30	5.50E-01		-3.09E-03	2.67E-01
LU-172	181.53	20.60	8.80E-01	6.04E-01	1.10E-01	4.25E-01
	810.06	16.63	1.64E+00		-9.69E-01	7.56E-01
	912.12	15.25	3.82E+00		7.81E+00	1.83E+00
	1093.66	62.50	6.04E-01		7.91E-03	2.79E-01
LU-173	100.72	5.24	1.21E+00	4.09E-01	7.86E-01	5.86E-01
	272.11	21.20	4.09E-01		1.89E-01	1.97E-01
HF-175	343.40	84.00	1.16E-01	1.16E-01	-1.89E-02	5.54E-02
LU-176	88.34	13.30	6.54E-01	8.17E-02	4.02E-02	3.20E-01
	201.83	86.00	9.06E-02		-2.33E-02	4.38E-02
	306.78	94.00	8.17E-02		-3.33E-02	3.90E-02
TA-182	67.75	41.20	1.96E-01	1.96E-01	-2.21E-02	9.55E-02
	1121.30	34.90	5.83E-01		6.68E-01	2.75E-01
	1189.05	16.23	9.48E-01		2.48E-01	4.37E-01
	1221.41	26.98	5.60E-01		1.30E-01	2.57E-01
	1231.02	11.44	1.40E+00		6.05E-01	6.45E-01
IR-192	308.46	29.68	2.93E-01	1.99E-01	1.25E-02	1.40E-01
	468.07	48.10	1.99E-01		1.84E-02	9.36E-02
HG-203	279.19	77.30	1.26E-01	1.26E-01	1.42E-02	6.06E-02
BI-207	569.67	97.72	9.24E-02	9.24E-02	-3.85E-02	4.31E-02
	1063.62	74.90	1.66E-01		2.64E-02	7.63E-02
+ TL-208	583.14	* 30.22	4.57E-01	2.94E-01	1.40E+00	2.18E-01
	860.37	* 4.48	2.88E+00		2.93E+00	1.34E+00
	2614.66	* 35.85	2.94E-01		1.55E+00	1.20E-01
BI-210M	262.00	45.00	1.76E-01	1.76E-01	7.52E-02	8.46E-02
	300.00	23.00	3.99E-01		-1.16E+00	1.92E-01
+ PB-210	46.50	* 4.25	3.25E+00	3.25E+00	1.94E+00	1.59E+00
PB-211	404.84	2.90	3.20E+00	3.20E+00	-1.16E+00	1.52E+00
	831.96	2.90	3.95E+00		-6.39E-01	1.83E+00
+ BI-212	727.17	* 11.80	1.36E+00	1.36E+00	1.15E+00	6.48E-01
	1620.62	2.75	3.50E+00		-1.63E+00	1.49E+00
+ PB-212	238.63	* 44.60	3.24E-01	3.24E-01	1.94E+00	1.59E-01
	300.09	* 3.41	4.09E+00		2.27E+00	2.00E+00

Analysis Report for 1606041-05
CP-5028 02-05

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
+	BI-214	609.31	*	46.30	3.17E-01	3.17E-01	1.29E+00	1.52E-01	
		1120.29	*	15.10	1.20E+00		1.34E+00	5.64E-01	
		1764.49	*	15.80	9.71E-01		1.64E+00	4.37E-01	
		2204.22	*	4.98	2.39E+00		1.45E+00	1.02E+00	
+	PB-214	295.21	*	19.19	7.12E-01	3.50E-01	1.45E+00	3.47E-01	
		351.92	*	37.19	3.50E-01		1.38E+00	1.70E-01	
	RN-219	401.80		6.50	1.36E+00	1.36E+00	-3.32E-01	6.48E-01	
	RA-223	323.87		3.88	2.31E+00	2.31E+00	4.41E-01	1.11E+00	
	RA-224	240.98		3.95	4.30E+00	4.30E+00	2.33E+01	2.11E+00	
	RA-225	40.00		31.00	6.29E-01	6.29E-01	1.45E-01	3.05E-01	
+	RA-226	186.21	*	3.28	3.46E+00	3.46E+00	3.75E+00	1.70E+00	
		50.10		8.40	1.10E+00	1.10E+00	-1.83E-01	5.35E-01	
		236.00		11.50	1.21E+00		2.28E+00	5.92E-01	
		256.20		6.30	1.22E+00		-1.78E-01	5.88E-01	
	AC-228	338.32		11.40	9.88E-01	7.71E-01	1.24E+00	4.77E-01	
		911.07		27.70	7.71E-01		1.45E+00	3.69E-01	
		969.11		16.60	1.18E+00		1.34E+00	5.60E-01	
	TH-230	48.44		16.90	6.42E-01	6.42E-01	8.61E-01	3.13E-01	
		62.85		4.60	2.05E+00		2.98E+00	1.00E+00	
		67.67		0.37	2.06E+01		-2.32E+00	1.00E+01	
	PA-231	283.67		1.60	5.12E+00	3.90E+00	6.42E-01	2.46E+00	
		302.67		2.30	3.90E+00		-1.54E-01	1.87E+00	
	TH-231	25.64		14.70	3.72E+00	1.18E+00	-1.01E+00	1.80E+00	
		84.21		6.40	1.18E+00		-2.03E+00	5.76E-01	
	PA-233	311.98		38.60	2.68E-01	2.68E-01	-5.60E-02	1.28E-01	
+	PA-234	131.20	*	20.40	5.03E-01	5.03E-01	4.34E-01	2.47E-01	
		733.99		8.80	1.16E+00		6.11E-01	5.36E-01	
		946.00		12.00	9.99E-01		3.62E-01	4.61E-01	
	PA-234M	1001.03		0.92	1.33E+01	1.33E+01	3.83E-01	6.11E+00	
+	TH-234	63.29	*	3.80	3.06E+00	3.06E+00	1.78E+00	1.51E+00	
		U-235	143.76		10.50	6.14E-01	6.14E-01	1.72E-01	2.97E-01
			163.35		4.70	1.43E+00		6.68E-01	6.93E-01
		205.31		4.70	1.71E+00		-1.44E+00	8.27E-01	
	NP-237	86.50		12.60	6.84E-01	6.84E-01	5.55E-01	3.35E-01	
	NP-239	106.10		22.70	4.69E+00	4.69E+00	1.32E+00	2.28E+00	
		228.18		10.70	1.27E+01		-1.01E-01	6.14E+00	
		277.60		14.10	1.01E+01		5.72E+00	4.87E+00	
	AM-241	59.54		35.90	2.45E-01	2.45E-01	4.20E-02	1.20E-01	
+	AM-243	74.67	*	66.00	2.44E-01	2.44E-01	4.40E-01	1.21E-01	
		CM-243	209.75		3.29	2.73E+00	5.99E-01	4.99E-01	1.32E+00
			228.14		10.60	7.54E-01		-5.97E-03	3.64E-01
		277.60		14.00	5.99E-01		3.38E-01	2.88E-01	

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

Analysis Report for 1606041-05
CP-5028 02-05

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP-5028 02-05

Elapsed Live time: 3600
Elapsed Real Time: 3613

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	8	161	137	103	90	96	109	102
17:	90	67	75	74	68	71	86	69
25:	79	56	56	59	58	56	53	64
33:	68	75	53	54	61	58	55	71
41:	71	67	60	84	59	71	177	100
49:	80	78	75	74	84	100	74	71
57:	68	98	102	113	114	125	137	198
65:	122	95	89	114	97	103	118	111
73:	129	170	339	313	334	488	131	115
81:	119	88	83	122	156	121	158	207
89:	110	149	145	113	208	226	84	73
97:	50	76	88	79	81	71	65	61
105:	70	88	95	63	83	73	64	65
113:	59	71	83	86	64	52	62	55
121:	73	55	67	58	75	67	71	57
129:	86	113	84	75	61	60	47	57
137:	60	60	69	50	74	66	63	71
145:	69	48	52	61	62	52	58	58
153:	64	73	57	50	47	59	68	43
161:	65	57	67	64	59	51	58	43
169:	44	43	61	51	48	45	50	49
177:	45	49	53	49	56	45	48	58
185:	66	125	120	64	47	38	56	59
193:	44	53	43	54	42	45	45	38
201:	43	46	40	48	41	51	45	41
209:	63	68	63	44	56	55	58	50
217:	40	47	44	53	52	36	47	51
225:	40	30	38	40	45	39	30	31
233:	27	45	44	42	49	109	459	275
241:	75	95	84	31	40	30	30	33
249:	34	19	25	31	25	34	28	28
257:	30	30	27	31	33	23	27	38
265:	27	21	22	28	19	51	52	36
273:	30	13	25	30	28	42	35	20
281:	30	26	27	19	34	30	27	24
289:	27	26	20	24	21	29	77	154
297:	44	18	16	40	53	23	28	19
305:	24	21	25	23	20	15	24	29
313:	25	20	26	22	28	22	29	15
321:	25	29	26	28	18	32	27	29
329:	41	26	23	19	27	30	23	16
337:	25	52	90	48	21	25	18	22
345:	16	12	16	23	20	18	40	172
353:	176	36	7	19	18	17	14	24
361:	10	12	15	19	19	17	18	17

369: 17 18 21 13 17 19 15 14

Sample Title: CP-5028 02-05

Channel	17	18	21	13	17	19	15	14
377:	17	19	19	17	12	18	22	17
385:	22	22	21	24	17	12	26	14
393:	13	22	17	11	19	22	11	16
401:	14	19	25	17	21	21	16	14
409:	24	29	21	20	16	20	20	17
417:	19	20	16	22	20	16	13	14
425:	18	7	11	17	19	9	12	10
433:	12	13	16	17	11	13	16	17
441:	14	12	13	16	9	14	14	12
449:	19	12	7	16	18	16	11	14
457:	11	10	18	10	16	20	35	27
465:	8	15	15	16	10	14	12	13
473:	7	11	13	14	6	12	5	15
481:	22	8	13	11	12	14	15	10
489:	15	9	13	17	12	12	21	16
497:	12	12	17	13	15	12	22	16
505:	9	13	11	16	17	33	58	45
513:	27	15	6	19	5	13	16	13
521:	14	13	14	14	13	11	14	8
529:	10	7	11	16	15	9	9	12
537:	7	16	14	6	11	10	5	7
545:	10	13	11	10	13	20	10	11
553:	17	11	9	11	12	15	17	8
561:	11	4	10	14	13	11	9	10
569:	12	9	5	11	11	18	6	11
577:	12	8	9	13	11	11	79	96
585:	34	11	10	7	11	9	6	12
593:	13	11	10	13	7	6	11	17
601:	9	11	11	15	11	17	8	19
609:	74	144	44	10	14	8	3	10
617:	4	12	8	19	15	4	13	13
625:	9	13	13	8	7	15	14	13
633:	14	11	6	7	8	8	6	9
641:	5	9	9	10	8	11	12	7
649:	11	11	7	12	8	3	10	8
657:	10	8	12	7	10	9	8	12
665:	13	7	17	9	17	8	12	12
673:	15	8	11	4	10	11	8	10
681:	11	5	4	12	9	9	8	10
689:	12	10	11	6	11	14	5	9
697:	8	6	7	7	3	9	6	6
705:	10	8	11	5	8	6	7	7
713:	6	7	11	2	4	10	9	15
721:	12	6	11	12	8	7	26	31
729:	16	11	4	11	10	3	12	3
737:	11	4	3	10	11	12	6	3
745:	6	7	6	17	6	8	8	7
753:	3	11	8	8	10	6	3	10
761:	6	4	12	6	10	7	8	13
769:	21	9	8	6	11	14	9	6
777:	7	5	10	2	9	8	5	5
785:	5	17	12	9	7	10	8	4
793:	7	12	18	20	11	6	3	6

801: 4 5 5 10 7 15 6 8

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Channel	1	2	3	4	5	6	7	8	9
809:	5	4	4	6	11	7	8	9	
817:	6	3	9	2	10	9	7	6	
825:	9	10	7	7	3	7	8	8	
833:	7	11	11	9	12	5	6	7	
841:	6	12	6	2	8	4	2	6	
849:	7	3	7	7	3	4	3	3	
857:	8	10	8	6	13	13	7	5	
865:	1	5	1	7	3	6	5	4	
873:	4	6	3	7	5	4	4	7	
881:	4	1	4	6	3	7	6	8	
889:	7	4	7	2	4	4	6	9	
897:	11	7	2	6	4	7	3	7	
905:	8	8	6	5	12	10	58	56	
913:	27	7	7	10	4	2	4	8	
921:	8	6	7	2	2	6	10	6	
929:	1	7	2	3	5	14	12	11	
937:	6	1	4	10	5	4	7	8	
945:	7	3	5	7	11	5	6	8	
953:	9	6	7	4	7	4	9	1	
961:	4	6	4	14	16	12	4	21	
969:	38	34	14	7	5	5	5	4	
977:	7	3	6	8	12	2	10	7	
985:	6	5	5	5	8	3	7	4	
993:	5	5	4	4	8	9	3	5	
1001:	9	8	5	6	5	8	4	6	
1009:	3	6	7	4	2	5	3	5	
1017:	3	6	3	9	7	5	10	5	
1025:	4	6	6	4	3	3	7	5	
1033:	5	5	5	5	5	4	6	4	
1041:	6	8	7	6	7	7	6	4	
1049:	4	4	7	6	5	3	6	3	
1057:	4	5	5	2	6	5	9	6	
1065:	7	7	3	8	10	8	7	4	
1073:	6	7	12	5	4	6	3	12	
1081:	4	4	4	5	7	8	4	12	
1089:	4	8	4	6	6	7	11	9	
1097:	5	8	3	3	5	5	4	7	
1105:	5	2	9	7	6	8	4	9	
1113:	6	8	7	6	4	6	11	26	
1121:	29	13	9	3	4	9	5	3	
1129:	6	3	5	5	6	4	7	5	
1137:	3	7	2	4	4	3	8	5	
1145:	7	5	7	10	5	5	8	4	
1153:	12	9	8	9	8	2	7	6	
1161:	3	8	8	2	6	6	3	6	
1169:	10	7	4	3	8	9	5	3	
1177:	7	6	5	4	6	6	4	4	
1185:	3	6	5	10	11	5	5	6	
1193:	10	4	3	4	2	4	6	4	
1201:	4	6	3	8	12	5	13	10	
1209:	4	6	6	1	4	10	6	9	
1217:	5	7	1	6	7	8	9	6	
1225:	4	3	6	11	8	4	13	1	

1233: 7 5 5 5 8 14 9 5

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Channel	1	2	3	4	5	6	7	8	9
1241:	9	3	5	11	6	7	2	5	
1249:	10	4	1	5	8	4	4	6	
1257:	4	6	3	4	9	4	6	4	
1265:	5	2	2	3	4	6	4	2	
1273:	3	3	3	5	4	3	6	3	
1281:	4	8	4	6	5	2	8	4	
1289:	4	2	2	7	3	4	6	2	
1297:	3	5	5	3	6	2	5	2	
1305:	4	3	2	6	2	1	3	0	
1313:	7	4	2	6	4	7	5	3	
1321:	2	4	5	3	5	4	3	3	
1329:	3	3	3	7	4	5	3	0	
1337:	2	4	4	2	1	3	6	1	
1345:	2	2	2	4	4	5	3	5	
1353:	3	3	2	2	5	2	1	2	
1361:	2	1	2	0	5	2	3	4	
1369:	3	3	4	2	1	1	1	1	
1377:	4	12	6	0	4	0	0	1	
1385:	3	5	1	0	3	0	4	2	
1393:	2	3	0	1	3	2	0	2	
1401:	0	6	3	2	1	3	2	4	
1409:	4	5	3	1	0	1	3	1	
1417:	4	4	2	1	1	2	1	1	
1425:	2	2	0	2	2	0	2	4	
1433:	0	2	0	4	2	2	2	1	
1441:	2	0	3	3	3	4	3	4	
1449:	1	2	1	3	2	2	1	3	
1457:	5	4	16	83	205	154	40	4	
1465:	1	1	1	2	1	0	1	3	
1473:	0	2	0	2	2	1	1	2	
1481:	5	2	2	1	1	1	0	3	
1489:	3	1	0	1	1	0	5	0	
1497:	1	1	5	1	0	1	2	1	
1505:	1	2	1	1	4	2	4	4	
1513:	0	0	0	2	3	1	1	2	
1521:	2	1	0	3	1	2	4	2	
1529:	2	3	1	1	4	1	2	2	
1537:	2	0	3	0	3	0	3	2	
1545:	1	1	0	1	1	1	0	1	
1553:	1	0	2	1	2	1	3	2	
1561:	1	0	1	1	1	0	1	1	
1569:	0	2	2	0	1	1	1	3	
1577:	2	0	2	2	2	2	2	4	
1585:	0	1	1	5	4	4	3	8	
1593:	6	3	0	3	1	0	1	0	
1601:	1	0	1	0	0	1	1	0	
1609:	1	2	0	2	1	2	0	0	
1617:	2	1	0	3	0	1	1	3	
1625:	3	4	0	2	2	0	3	6	
1633:	2	1	2	1	1	1	0	0	
1641:	0	1	2	0	1	0	1	0	
1649:	2	0	0	3	0	0	0	1	
1657:	0	1	0	3	2	1	0	0	

1665: 5 0 1 0 1 0 0 1

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Channel	1	2	3	4	5	6	7	8	9
1673:	2	1	1	0	0	0	3	0	
1681:	1	1	1	1	4	1	0	0	
1689:	1	0	1	1	2	2	1	1	
1697:	3	1	2	1	1	3	0	1	
1705:	1	2	0	0	0	2	0	0	
1713:	1	0	0	0	2	0	1	2	
1721:	1	0	0	1	2	2	0	0	
1729:	8	5	4	1	0	1	0	1	
1737:	0	0	2	1	0	3	0	0	
1745:	0	1	2	1	2	0	1	0	
1753:	5	1	0	0	1	0	1	2	
1761:	4	0	5	15	18	9	3	1	
1769:	1	0	3	1	0	0	2	0	
1777:	0	2	0	0	1	1	2	0	
1785:	2	0	2	0	3	0	1	0	
1793:	1	0	0	0	0	1	0	2	
1801:	0	0	1	0	0	2	0	0	
1809:	0	0	0	0	0	0	1	1	
1817:	1	1	3	0	1	0	0	1	
1825:	0	2	0	0	1	0	1	0	
1833:	0	0	1	0	1	1	2	2	
1841:	1	0	0	2	1	0	6	2	
1849:	0	2	0	1	0	1	1	1	
1857:	1	1	1	2	2	0	0	1	
1865:	0	0	2	0	1	0	0	1	
1873:	1	0	2	0	1	0	0	0	
1881:	0	1	1	1	0	0	2	0	
1889:	1	1	0	0	1	1	1	1	
1897:	2	0	1	2	0	1	0	1	
1905:	1	2	1	0	3	2	2	0	
1913:	1	0	1	0	1	1	1	0	
1921:	0	0	0	0	0	1	2	2	
1929:	0	1	0	3	2	1	4	1	
1937:	1	0	2	2	1	1	0	1	
1945:	2	0	1	1	1	2	0	0	
1953:	2	0	2	0	0	0	1	2	
1961:	0	2	0	0	1	3	0	1	
1969:	1	0	3	0	2	0	0	0	
1977:	0	2	0	0	2	1	1	2	
1985:	1	1	1	0	0	0	2	0	
1993:	0	0	1	1	0	0	2	0	
2001:	0	0	0	1	1	3	0	1	
2009:	1	0	2	1	1	1	0	1	
2017:	0	0	0	1	0	0	1	0	
2025:	1	0	2	1	1	1	1	0	
2033:	1	1	0	0	1	4	1	2	
2041:	0	1	0	2	0	0	0	3	
2049:	1	1	0	0	0	2	1	1	
2057:	1	1	1	1	2	1	1	2	
2065:	0	1	0	0	0	0	0	1	
2073:	0	0	0	0	1	0	1	0	
2081:	0	0	1	2	0	2	0	0	
2089:	0	0	0	1	0	1	2	3	

2097: 0 0 1 2 1 2 4 1

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Channel	1	2	3	4	5	6	7	8
2105:	0	0	2	1	0	1	0	0
2113:	0	1	0	0	0	2	3	0
2121:	2	1	0	0	0	0	0	1
2129:	1	0	0	1	1	0	0	2
2137:	1	0	1	1	2	0	1	3
2145:	0	2	1	2	0	1	0	0
2153:	1	1	3	0	2	1	1	1
2161:	1	2	2	0	1	1	1	0
2169:	0	1	1	0	1	0	0	0
2177:	2	1	1	1	2	0	0	1
2185:	1	1	2	1	1	0	0	1
2193:	2	0	2	3	1	1	2	0
2201:	0	2	3	5	5	0	1	0
2209:	2	0	0	1	0	0	0	0
2217:	1	1	0	1	0	0	0	0
2225:	1	1	1	0	2	2	0	1
2233:	0	1	0	1	1	0	0	1
2241:	0	1	2	0	2	0	0	2
2249:	3	1	0	3	2	1	0	1
2257:	0	1	1	0	2	2	2	1
2265:	0	2	1	1	2	1	2	0
2273:	0	0	2	0	0	1	0	0
2281:	0	0	0	1	2	1	1	0
2289:	0	0	1	2	0	1	1	1
2297:	2	2	1	0	0	1	1	2
2305:	0	2	1	0	1	1	2	1
2313:	0	0	0	2	0	0	0	1
2321:	2	0	1	1	1	1	2	0
2329:	1	0	0	0	0	1	0	0
2337:	0	3	0	1	2	2	1	4
2345:	1	0	1	1	1	0	1	1
2353:	0	2	1	1	1	1	0	1
2361:	3	3	1	1	0	3	0	0
2369:	0	3	2	1	0	2	0	1
2377:	1	0	0	0	1	1	1	0
2385:	1	0	1	1	1	2	1	1
2393:	1	0	1	1	1	3	1	2
2401:	1	1	0	0	2	1	2	1
2409:	1	0	0	1	2	1	0	0
2417:	1	0	0	0	0	0	0	2
2425:	0	0	1	1	1	1	0	1
2433:	0	0	1	1	0	0	1	1
2441:	0	0	0	0	1	0	2	2
2449:	3	1	0	1	0	0	0	0
2457:	0	2	0	0	0	0	0	0
2465:	0	0	1	0	0	0	0	0
2473:	0	0	0	0	0	1	0	1
2481:	0	0	4	2	1	1	0	1
2489:	1	1	0	1	1	0	1	1
2497:	0	0	0	0	0	0	0	2
2505:	0	1	1	0	0	1	1	0
2513:	0	0	1	1	0	0	1	0
2521:	0	0	1	0	0	0	0	0

2529: 0 0 0 1 1 1 0 0

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Channel	1	2	3	4	5	6	7	8	9
2537:	1	0	0	0	0	0	0	0	0
2545:	0	0	0	0	0	0	0	1	0
2553:	0	0	0	2	0	0	0	0	1
2561:	0	0	0	0	0	3	0	0	0
2569:	0	0	0	0	0	1	0	0	2
2577:	1	0	0	0	0	0	1	0	0
2585:	0	0	1	0	0	0	1	1	1
2593:	0	0	0	0	1	0	0	0	0
2601:	0	0	0	0	0	0	0	0	0
2609:	0	1	1	1	6	12	42	13	13
2617:	3	3	0	1	0	0	0	0	0
2625:	0	1	0	0	0	0	0	0	0
2633:	0	0	1	0	0	0	0	0	0
2641:	1	0	0	0	0	1	2	0	0
2649:	0	0	0	0	0	0	0	0	2
2657:	1	0	1	0	0	0	0	0	0
2665:	0	0	1	0	0	0	0	0	0
2673:	0	0	0	0	0	1	0	0	0
2681:	0	0	0	1	0	0	0	0	0
2689:	0	0	0	0	1	0	0	0	0
2697:	1	1	0	0	0	0	0	0	0
2705:	0	0	0	0	0	1	1	0	0
2713:	0	0	1	0	0	0	0	0	0
2721:	0	1	2	0	0	0	0	0	0
2729:	0	0	0	0	1	0	0	0	1
2737:	0	0	0	0	0	0	0	0	0
2745:	1	0	0	0	0	0	0	0	0
2753:	0	0	0	0	0	0	0	0	0
2761:	0	0	0	0	0	0	0	0	0
2769:	0	1	0	0	0	0	0	0	0
2777:	0	0	0	0	1	0	1	0	0
2785:	0	0	1	0	1	0	0	0	0
2793:	0	0	0	0	0	0	0	0	0
2801:	0	0	0	0	1	2	1	1	1
2809:	0	0	0	0	0	0	1	0	0
2817:	0	0	0	0	0	0	0	0	0
2825:	0	1	0	0	0	1	0	0	0
2833:	0	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	0	0
2849:	0	0	0	0	1	0	0	0	0
2857:	0	0	1	0	0	0	1	0	0
2865:	0	0	0	0	0	0	0	0	0
2873:	0	1	0	0	0	2	0	0	0
2881:	0	0	1	0	1	0	1	1	1
2889:	0	1	0	0	0	0	0	0	0
2897:	0	1	0	0	1	0	1	0	0
2905:	0	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0	1
2921:	0	0	0	0	1	0	0	0	0
2929:	0	1	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0	0
2945:	1	0	0	0	1	0	0	0	0
2953:	0	0	0	0	0	0	0	0	0

2961: 0 0 0 0 0 0 0 0 2

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Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	0	2	0	0
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	1	0	0	0	0	0	0
3009:	1	1	0	0	0	0	0	0
3017:	0	1	0	0	0	0	1	0
3025:	0	0	0	1	1	0	0	0
3033:	0	0	0	1	0	0	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	1	0	0
3065:	0	0	0	0	0	1	3	0
3073:	0	1	0	0	1	0	0	0
3081:	0	0	0	2	0	0	0	0
3089:	0	0	0	0	0	0	0	0
3097:	0	1	0	0	0	0	1	0
3105:	0	0	0	0	1	0	0	1
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	0	0	0	0	0
3129:	0	0	0	0	1	0	0	1
3137:	0	0	1	0	0	0	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	1	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	1	0	0	0	1	1
3201:	0	0	0	0	0	0	0	0
3209:	0	0	1	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	1	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	1	0	0
3249:	0	0	1	0	1	0	0	0
3257:	0	0	0	0	0	1	0	0
3265:	0	0	1	0	0	1	0	0
3273:	0	1	0	0	0	0	1	0
3281:	1	1	0	0	0	0	0	0
3289:	0	0	0	0	1	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	1	1
3313:	2	0	0	0	0	1	0	0
3321:	0	0	0	0	0	0	1	0
3329:	0	0	0	0	0	0	0	1
3337:	0	0	1	0	0	0	0	1
3345:	1	0	0	0	0	1	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	1	0	0	0	0	0
3377:	0	0	0	0	0	0	0	1
3385:	0	0	0	0	0	1	0	0

3393: 0 0 1 0 0 0 0 0

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Channel	1	2	3	4	5	6	7	8
3401:	0	1	0	1	1	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	1	0	1	0	0	0
3425:	0	0	0	1	0	0	0	0
3433:	0	1	1	0	0	1	1	0
3441:	1	0	1	0	0	1	0	0
3449:	0	0	0	1	0	0	0	1
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	1	0	0	1	0
3473:	0	0	1	0	0	0	0	1
3481:	0	1	0	0	0	0	0	0
3489:	0	0	0	1	0	0	0	0
3497:	0	0	1	0	0	0	0	1
3505:	0	0	0	0	0	1	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	1	0	0	0	0	0	0
3529:	0	0	0	0	0	1	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	1	0	0	0	1	1
3569:	0	0	0	0	0	0	0	0
3577:	1	0	0	0	0	0	0	0
3585:	1	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	1	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	1	0	0	0
3649:	0	0	0	0	0	0	0	1
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	1
3673:	0	0	1	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	1	0
3705:	0	0	0	0	0	0	1	1
3713:	1	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	1	0	0	0	0	0
3737:	0	0	0	0	0	0	0	1
3745:	0	0	0	1	0	0	0	0
3753:	0	1	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	1	1	1	0	0	0
3777:	0	0	0	0	0	1	0	0
3785:	0	0	1	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	1	0	0	0	0	0	0	0
3817:	0	1	0	0	0	0	0	0

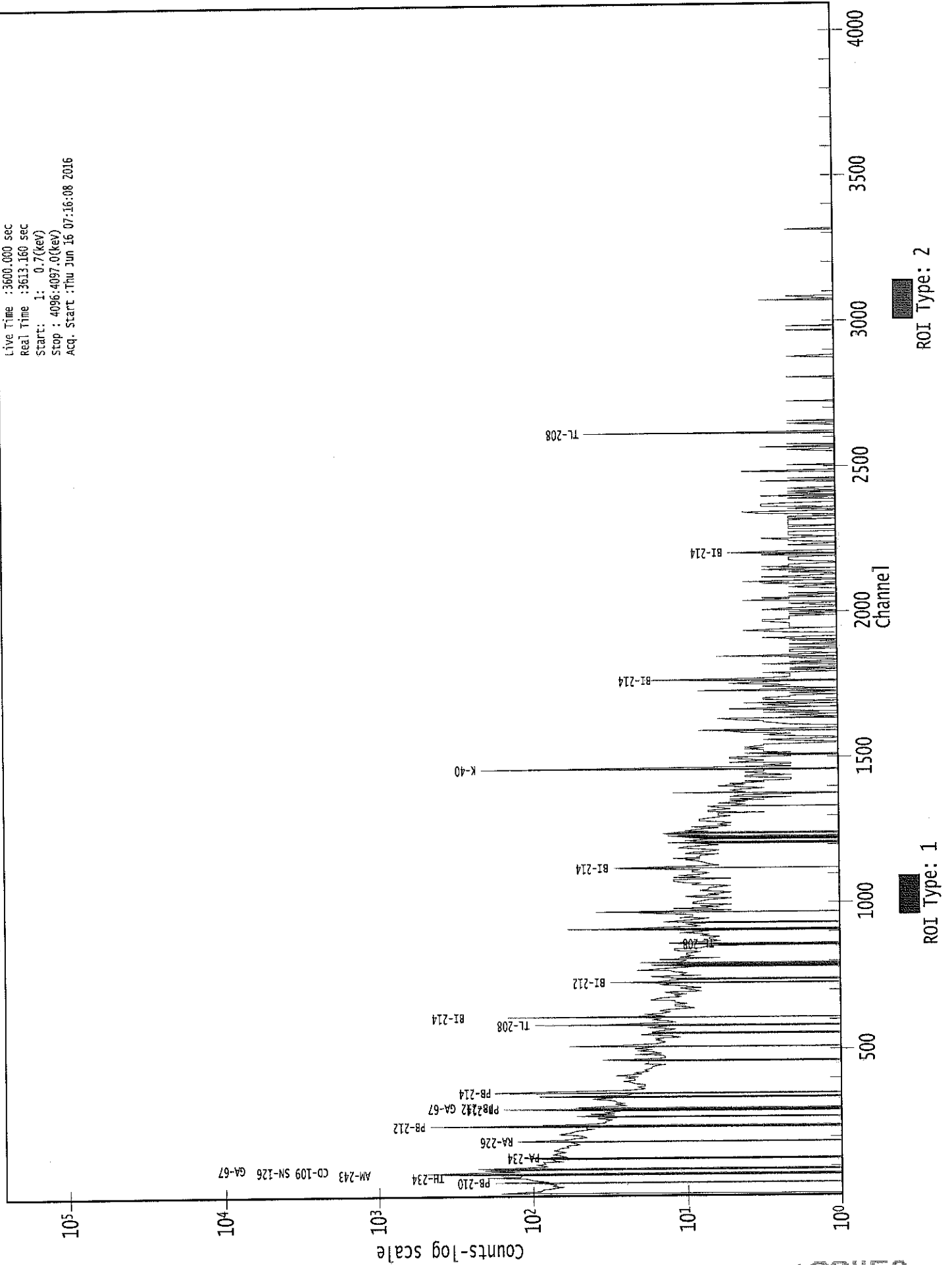
3825: 0 0 0 0 0 0 0 0 1

Sample Title: CP-5028 02-05

Channel	1	2	3	4	5	6	7	8	9
3833:	0	0	0	0	0	0	0	0	0
3841:	1	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0	0
3865:	0	0	0	1	0	0	0	0	0
3873:	0	0	0	0	0	0	1	0	0
3881:	1	0	0	0	0	0	0	0	0
3889:	1	0	1	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0	0
3905:	0	0	0	0	1	0	0	0	0
3913:	0	0	0	0	0	0	1	0	0
3921:	0	0	0	0	0	0	0	0	0
3929:	0	0	1	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	1	0	0
3953:	0	0	0	0	0	0	0	0	0
3961:	0	0	0	0	1	0	1	0	0
3969:	0	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	1	0	0
3993:	0	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0	0
4009:	0	1	0	0	0	0	0	0	1
4017:	0	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	1	0	0	1
4041:	0	0	1	0	0	0	0	0	0
4049:	0	0	1	0	1	0	0	0	0
4057:	0	0	0	0	0	1	0	0	0
4065:	0	0	0	0	0	0	0	0	0
4073:	0	1	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0	1

0000038974.CNF

Live Time : 3600.000 sec
Real Time : 3613.160 sec
Start : 1: 0.7(key)
Stop : 4096:4097.0(key)
Acq. Start : Thu Jun 16 07:16:08 2016



Analysis Report for 1606041-06
CP-5028 05-10

6/16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-06
Sample Description : CP-5028 05-10
Sample Type : SOIL

Sample Size : 2.759E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 4:33:35PM
Acquisition Started : 6/16/2016 7:16:18AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.2 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 15 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 11/8/2014
Efficiency Calibration Description :

Sample Number : 38975

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606041-06
CP-5028 05-10

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 8:16:27AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	75.86	75.13	0.0000	0.00
2	92.86	92.14	0.0000	0.00
3	185.80	185.11	0.0000	0.00
4	239.25	238.59	0.0000	0.00
5	295.50	294.86	0.0000	0.00
6	328.01	327.38	0.0000	0.00
7	339.11	338.49	0.0000	0.00
8	351.94	351.32	0.0000	0.00
9	512.43	511.89	0.0000	0.00
10	583.61	583.10	0.0000	0.00
11	609.08	608.59	0.0000	0.00
12	663.88	663.42	0.0000	0.00
13	755.59	755.17	0.0000	0.00
14	816.68	816.29	0.0000	0.00
15	909.04	908.70	0.0000	0.00
16	934.85	934.52	0.0000	0.00
17	967.93	967.62	0.0000	0.00
18	1039.30	1039.03	0.0000	0.00
19	1045.69	1045.42	0.0000	0.00
20	1068.48	1068.22	0.0000	0.00
21	1099.62	1099.38	0.0000	0.00
22	1287.37	1287.24	0.0000	0.00
23	1357.95	1357.86	0.0000	0.00
24	1460.41	1460.38	0.0000	0.00
25	1471.08	1471.06	0.0000	0.00
26	1592.22	1592.27	0.0000	0.00
27	1727.99	1728.13	0.0000	0.00
28	1764.04	1764.21	0.0000	0.00
29	1768.75	1768.92	0.0000	0.00
30	2613.68	2614.45	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606041-06
CP-5028 05-10

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 8:16:27AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	75.86	68 -	81	75.13	6.97E+02	140.66	1.88E+03	4.04
2	92.86	89 -	96	92.14	1.88E+02	77.90	8.58E+02	2.54
3	185.80	180 -	189	185.11	9.43E+01	67.40	5.95E+02	1.82
4	239.25	233 -	244	238.59	5.21E+02	78.71	5.09E+02	2.55
5	295.50	289 -	299	294.86	5.96E+01	57.36	4.07E+02	1.87
6	328.01	322 -	332	327.38	5.04E+01	47.14	2.69E+02	2.85
7	339.11	333 -	344	338.49	1.18E+02	49.80	2.48E+02	3.08
8	351.94	346 -	357	351.32	1.93E+02	51.42	2.35E+02	2.20
9	512.43	503 -	522	511.89	1.39E+02	55.28	2.01E+02	4.43
10	583.61	577 -	588	583.10	7.82E+01	40.64	1.66E+02	1.89
11	609.08	602 -	614	608.59	1.15E+02	43.48	1.67E+02	2.41
12	663.88	659 -	667	663.42	2.36E+01	24.34	7.68E+01	4.68
13	755.59	751 -	760	755.17	1.87E+01	23.09	6.65E+01	5.60
14	816.68	802 -	833	816.29	5.25E+01	58.10	1.75E+02	28.97
15	909.04	901 -	915	908.70	5.77E+01	30.70	7.47E+01	2.86
16	934.85	928 -	941	934.52	2.40E+01	28.12	7.79E+01	3.77
17	967.93	961 -	974	967.62	5.53E+01	32.26	9.13E+01	2.33
M 18	1039.30	1036 -	1062	1039.03	2.03E+01	12.68	1.29E+01	2.91
m 19	1045.69	1036 -	1062	1045.42	1.26E+01	14.66	1.61E+01	3.48
20	1068.48	1063 -	1074	1068.22	2.47E+01	15.62	1.86E+01	7.07
21	1099.62	1094 -	1103	1099.38	2.04E+01	19.62	3.92E+01	4.93
22	1287.37	1281 -	1293	1287.24	2.08E+01	21.53	4.25E+01	2.91
23	1357.95	1353 -	1363	1357.86	1.25E+01	11.51	1.10E+01	2.05
24	1460.41	1455 -	1465	1460.38	2.38E+02	32.13	1.10E+01	2.24
25	1471.08	1467 -	1475	1471.06	6.50E+00	9.19	9.00E+00	2.57
26	1592.22	1589 -	1595	1592.27	1.11E+01	8.97	5.71E+00	1.99
27	1727.99	1724 -	1731	1728.13	8.10E+00	7.48	3.80E+00	1.49
28	1764.04	1760 -	1766	1764.21	7.61E+00	6.95	2.78E+00	2.65
29	1768.75	1767 -	1772	1768.92	9.10E+00	7.00	1.80E+00	1.60
30	2613.68	2610 -	2618	2614.45	4.40E+01	13.27	0.00E+00	3.44

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1606041-06
CP-5028 05-10

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 8:16:27AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	75.86	68 -	81	6.97E+02	140.66	1.88E+03	1.07E+02
2	92.86	89 -	96	1.88E+02	77.90	8.58E+02	5.99E+01
3	185.80	180 -	189	9.43E+01	67.40	5.95E+02	5.31E+01
4	239.25	233 -	244	5.21E+02	78.71	5.09E+02	5.27E+01
5	295.50	289 -	299	5.96E+01	57.36	4.07E+02	4.54E+01
6	328.01	322 -	332	5.04E+01	47.14	2.69E+02	3.69E+01
7	339.11	333 -	344	1.18E+02	49.80	2.48E+02	3.68E+01
8	351.94	346 -	357	1.93E+02	51.42	2.35E+02	3.56E+01
9	512.43	503 -	522	1.39E+02	55.28	2.01E+02	4.11E+01
10	583.61	577 -	588	7.82E+01	40.64	1.66E+02	3.01E+01
11	609.08	602 -	614	1.15E+02	43.48	1.67E+02	3.11E+01
12	663.88	659 -	667	2.36E+01	24.34	7.68E+01	1.83E+01
13	755.59	751 -	760	1.87E+01	23.09	6.65E+01	1.76E+01
14	816.68	802 -	833	5.25E+01	58.10	1.75E+02	4.63E+01
15	909.04	901 -	915	5.77E+01	30.70	7.47E+01	2.19E+01
16	934.85	928 -	941	2.40E+01	28.12	7.79E+01	2.17E+01
17	967.93	961 -	974	5.53E+01	32.26	9.13E+01	2.35E+01
M 18	1039.30	1036 -	1062	2.03E+01	12.68	1.29E+01	5.90E+00
m 19	1045.69	1036 -	1062	1.26E+01	14.66	1.61E+01	6.59E+00
20	1068.48	1063 -	1074	2.47E+01	15.62	1.86E+01	9.90E+00
21	1099.62	1094 -	1103	2.04E+01	19.62	3.92E+01	1.43E+01
22	1287.37	1281 -	1293	2.08E+01	21.53	4.25E+01	1.60E+01
23	1357.95	1353 -	1363	1.25E+01	11.51	1.10E+01	7.47E+00
24	1460.41	1455 -	1465	2.38E+02	32.13	1.10E+01	7.47E+00
25	1471.08	1467 -	1475	6.50E+00	9.19	9.00E+00	6.29E+00
26	1592.22	1589 -	1595	1.11E+01	8.97	5.71E+00	4.93E+00
27	1727.99	1724 -	1731	8.10E+00	7.48	3.80E+00	3.99E+00
28	1764.04	1760 -	1766	7.61E+00	6.95	2.78E+00	3.47E+00
29	1768.75	1767 -	1772	9.10E+00	7.00	1.80E+00	2.92E+00
30	2613.68	2610 -	2618	4.40E+01	13.27	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1606041-06
CP-5028 05-10

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 8:16:27AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	75.86	68 -	81	75.13	6.97E+02	140.66	1.88E+03	.....
2	92.86	89 -	96	92.14	1.88E+02	77.90	8.58E+02	GA-67
3	185.80	180 -	189	185.11	9.43E+01	67.40	5.95E+02	RA-226
4	239.25	233 -	244	238.59	5.21E+02	78.71	5.09E+02	PB-212
5	295.50	289 -	299	294.86	5.96E+01	57.36	4.07E+02	PB-214
6	328.01	322 -	332	327.38	5.04E+01	47.14	2.69E+02	LA-140
7	339.11	333 -	344	338.49	1.18E+02	49.80	2.48E+02	AC-228
8	351.94	346 -	357	351.32	1.93E+02	51.42	2.35E+02	PB-214
9	512.43	503 -	522	511.89	1.39E+02	55.28	2.01E+02	.....
10	583.61	577 -	588	583.10	7.82E+01	40.64	1.66E+02	TL-208
11	609.08	602 -	614	608.59	1.15E+02	43.48	1.67E+02	BI-214
12	663.88	659 -	667	663.42	2.36E+01	24.34	7.68E+01	CE-143
13	755.59	751 -	760	755.17	1.87E+01	23.09	6.65E+01	.....
14	816.68	802 -	833	816.29	5.25E+01	58.10	1.75E+02	LA-140
15	909.04	901 -	915	908.70	5.77E+01	30.70	7.47E+01	.....
16	934.85	928 -	941	934.52	2.40E+01	28.12	7.79E+01	.....
17	967.93	961 -	974	967.62	5.53E+01	32.26	9.13E+01	.....
M 18	1039.30	1036 -	1062	1039.03	2.03E+01	12.68	1.29E+01	.....
m 19	1045.69	1036 -	1062	1045.42	1.26E+01	14.66	1.61E+01	.....
20	1068.48	1063 -	1074	1068.22	2.47E+01	15.62	1.86E+01	.....
21	1099.62	1094 -	1103	1099.38	2.04E+01	19.62	3.92E+01	FE-59
22	1287.37	1281 -	1293	1287.24	2.08E+01	21.53	4.25E+01	.....
23	1357.95	1353 -	1363	1357.86	1.25E+01	11.51	1.10E+01	.....
24	1460.41	1455 -	1465	1460.38	2.38E+02	32.13	1.10E+01	K-40
25	1471.08	1467 -	1475	1471.06	6.50E+00	9.19	9.00E+00	.....
26	1592.22	1589 -	1595	1592.27	1.11E+01	8.97	5.71E+00	.....
27	1727.99	1724 -	1731	1728.13	8.10E+00	7.48	3.80E+00	.....
28	1764.04	1760 -	1766	1764.21	7.61E+00	6.95	2.78E+00	BI-214
29	1768.75	1767 -	1772	1768.92	9.10E+00	7.00	1.80E+00	.....
30	2613.68	2610 -	2618	2614.45	4.40E+01	13.27	0.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.00sigma

Analysis Report for 1606041-06
CP-5028 05-10

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 8:16:27AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	75.86	6.97E+02	140.66	2.13E-02	1.70E-03
2	92.86	1.88E+02	77.90	1.90E-02	1.62E-03
3	185.80	9.43E+01	67.40	1.16E-02	1.15E-03
4	239.25	5.21E+02	78.71	9.40E-03	9.85E-04
5	295.50	5.96E+01	57.36	7.78E-03	8.43E-04
6	328.01	5.04E+01	47.14	7.06E-03	8.07E-04
7	339.11	1.18E+02	49.80	6.84E-03	7.94E-04
8	351.94	1.93E+02	51.42	6.61E-03	7.80E-04
9	512.43	1.39E+02	55.28	4.60E-03	5.59E-04
10	583.61	7.82E+01	40.64	4.04E-03	4.55E-04
11	609.08	1.15E+02	43.48	3.88E-03	4.17E-04
12	663.88	2.36E+01	24.34	3.56E-03	3.39E-04
13	755.59	1.87E+01	23.09	3.13E-03	2.88E-04
14	816.68	5.25E+01	58.10	2.90E-03	2.53E-04
15	909.04	5.77E+01	30.70	2.62E-03	2.07E-04
16	934.85	2.40E+01	28.12	2.55E-03	2.03E-04
17	967.93	5.53E+01	32.26	2.46E-03	1.99E-04
M	1039.30	2.03E+01	12.68	2.30E-03	1.90E-04
m	1045.69	1.26E+01	14.66	2.29E-03	1.89E-04
20	1068.48	2.47E+01	15.62	2.24E-03	1.86E-04
21	1099.62	2.04E+01	19.62	2.18E-03	1.82E-04
22	1287.37	2.08E+01	21.53	1.89E-03	2.03E-04
23	1357.95	1.25E+01	11.51	1.80E-03	2.10E-04
24	1460.41	2.38E+02	32.13	1.68E-03	1.89E-04
25	1471.08	6.50E+00	9.19	1.67E-03	1.87E-04
26	1592.22	1.11E+01	8.97	1.56E-03	1.62E-04
27	1727.99	8.10E+00	7.48	1.46E-03	1.33E-04
28	1764.04	7.61E+00	6.95	1.43E-03	1.26E-04
29	1768.75	9.10E+00	7.00	1.43E-03	1.25E-04
30	2613.68	4.40E+01	13.27	1.07E-03	1.11E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 8:16:27AM

Analysis Report for 1606041-06

CP-5028 05-10

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038679.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	75.86	6.97E+02	140.66	1.70E+01	4.04E+00	6.80E+02	1.41E+02
2	92.86	1.88E+02	77.90	5.93E+01	9.62E+00	1.29E+02	7.85E+01
3	185.80	9.43E+01	67.40	2.90E+01	7.24E+00	6.53E+01	6.78E+01
4	239.25	5.21E+02	78.71	7.10E+00	5.46E+00	5.14E+02	7.89E+01
5	295.50	5.96E+01	57.36			5.96E+01	5.74E+01
6	328.01	5.04E+01	47.14			5.04E+01	4.71E+01
7	339.11	1.18E+02	49.80			1.18E+02	4.98E+01
8	351.94	1.93E+02	51.42	1.61E+00	4.34E+00	1.91E+02	5.16E+01
9	512.43	1.39E+02	55.28			1.39E+02	5.53E+01
10	583.61	7.82E+01	40.64	2.37E+00	3.72E+00	7.58E+01	4.08E+01
11	609.08	1.15E+02	43.48			1.15E+02	4.35E+01
12	663.88	2.36E+01	24.34			2.36E+01	2.43E+01
13	755.59	1.87E+01	23.09			1.87E+01	2.31E+01
14	816.68	5.25E+01	58.10			5.25E+01	5.81E+01
15	909.04	5.77E+01	30.70			5.77E+01	3.07E+01
16	934.85	2.40E+01	28.12			2.40E+01	2.81E+01
17	967.93	5.53E+01	32.26			5.53E+01	3.23E+01
M 18	1039.30	2.03E+01	12.68			2.03E+01	1.27E+01
m 19	1045.69	1.26E+01	14.66			1.26E+01	1.47E+01
20	1068.48	2.47E+01	15.62			2.47E+01	1.56E+01
21	1099.62	2.04E+01	19.62			2.04E+01	1.96E+01
22	1287.37	2.08E+01	21.53			2.08E+01	2.15E+01
23	1357.95	1.25E+01	11.51			1.25E+01	1.15E+01
24	1460.41	2.38E+02	32.13	9.79E-01	1.85E+00	2.37E+02	3.22E+01
25	1471.08	6.50E+00	9.19			6.50E+00	9.19E+00
26	1592.22	1.11E+01	8.97			1.11E+01	8.97E+00
27	1727.99	8.10E+00	7.48			8.10E+00	7.48E+00
28	1764.04	7.61E+00	6.95			7.61E+00	6.95E+00
29	1768.75	9.10E+00	7.00			9.10E+00	7.00E+00
30	2613.68	4.40E+01	13.27			4.40E+01	1.33E+01

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1606041-06
CP-5028 05-10

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 8:16:27AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038679.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	75.86	6.97E+02	140.66	1.70E+01	4.04E+00	6.80E+02	1.41E+02
2	92.86	1.88E+02	77.90	5.93E+01	9.62E+00	1.29E+02	7.85E+01
3	185.80	9.43E+01	67.40	2.90E+01	7.24E+00	6.53E+01	6.78E+01
4	239.25	5.21E+02	78.71	7.10E+00	5.46E+00	5.14E+02	7.89E+01
5	295.50	5.96E+01	57.36			5.96E+01	5.74E+01
6	328.01	5.04E+01	47.14			5.04E+01	4.71E+01
7	339.11	1.18E+02	49.80			1.18E+02	4.98E+01
8	351.94	1.93E+02	51.42	1.61E+00	4.34E+00	1.91E+02	5.16E+01
9	512.43	1.39E+02	55.28			1.39E+02	5.53E+01
10	583.61	7.82E+01	40.64	2.37E+00	3.72E+00	7.58E+01	4.08E+01
11	609.08	1.15E+02	43.48			1.15E+02	4.35E+01
12	663.88	2.36E+01	24.34			2.36E+01	2.43E+01
13	755.59	1.87E+01	23.09			1.87E+01	2.31E+01
14	816.68	5.25E+01	58.10			5.25E+01	5.81E+01
15	909.04	5.77E+01	30.70			5.77E+01	3.07E+01
16	934.85	2.40E+01	28.12			2.40E+01	2.81E+01
17	967.93	5.53E+01	32.26			5.53E+01	3.23E+01
M 18	1039.30	2.03E+01	12.68			2.03E+01	1.27E+01
m 19	1045.69	1.26E+01	14.66			1.26E+01	1.47E+01
20	1068.48	2.47E+01	15.62			2.47E+01	1.56E+01
21	1099.62	2.04E+01	19.62			2.04E+01	1.96E+01
22	1287.37	2.08E+01	21.53			2.08E+01	2.15E+01
23	1357.95	1.25E+01	11.51			1.25E+01	1.15E+01
24	1460.41	2.38E+02	32.13	9.79E-01	1.85E+00	2.37E+02	3.22E+01
25	1471.08	6.50E+00	9.19			6.50E+00	9.19E+00
26	1592.22	1.11E+01	8.97			1.11E+01	8.97E+00
27	1727.99	8.10E+00	7.48			8.10E+00	7.48E+00
28	1764.04	7.61E+00	6.95			7.61E+00	6.95E+00
29	1768.75	9.10E+00	7.00			9.10E+00	7.00E+00
30	2613.68	4.40E+01	13.27			4.40E+01	1.33E+01

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

Analysis Report for 1606041-06
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NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.975	1460.81 *	10.67	3.58E+01	6.36E+00
FE-59	0.322	1099.22 *	56.50	5.23E-01	5.05E-01
		1291.56	43.20		
GA-67	0.556	93.31 *	35.70	4.00E+00	7.16E+00
		208.95	2.24		
		300.22	16.00		
TL-208	0.799	583.14 *	30.22	1.69E+00	9.28E-01
		860.37	4.48		
		2614.66 *	35.85	3.12E+00	9.93E-01
PB-212	0.841	238.63 *	44.60	3.33E+00	6.20E-01
		300.09	3.41		
BI-214	0.668	609.31 *	46.30	1.74E+00	6.85E-01
		1120.29	15.10		
		1764.49 *	15.80	9.14E-01	8.38E-01
		2204.22	4.98		
PB-214	0.996	295.21 *	19.19	1.09E+00	1.05E+00
		351.92 *	37.19	2.12E+00	6.23E-01
RA-226	0.973	186.21 *	3.28	4.66E+00	9.81E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 8:16:27AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1606041-06
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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	75.86	1.88826E-01	10.35		
6	328.01	1.40075E-02	46.74	Tol.	LA-140
7	339.11	3.27422E-02	21.12	Tol.	AC-228
9	512.43	3.85361E-02	19.92		
12	663.88	6.55466E-03	51.57	Tol.	CE-143
13	755.59	5.20833E-03	61.56		
14	816.68	1.45794E-02	55.35	Tol.	LA-140
15	909.04	1.60146E-02	26.63		
16	934.85	6.67989E-03	58.48	Sum	
17	967.93	1.53699E-02	29.16		
M	1039.30	5.65034E-03	31.17		
m	1045.69	3.50153E-03	58.16		
	1068.48	6.86275E-03	31.61		
	1287.37	5.76389E-03	51.89		
	1357.95	3.47222E-03	46.04		
	1471.08	1.80556E-03	70.71		
	1592.22	3.09524E-03	40.26	D-Esc	
	1727.99	2.25000E-03	46.19		
	1768.75	2.52778E-03	38.46		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.97	1460.81 *	10.67	3.58E+01	6.36E+00
FE-59	0.32	1099.22 *	56.50	5.23E-01	5.05E-01
		1291.56	43.20		
GA-67	0.55	93.31 *	35.70	4.00E+00	7.16E+00
		208.95	2.24		
		300.22	16.00		
TL-208	0.79	583.14 *	30.22	1.69E+00	9.28E-01
		860.37	4.48		
		2614.66 *	35.85	3.12E+00	9.93E-01

Analysis Report for 1606041-06
CP-5028 05-10

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-212	0.84	238.63 *	44.60	3.33E+00	6.20E-01
		300.09	3.41		
BI-214	0.66	609.31 *	46.30	1.74E+00	6.85E-01
		1120.29	15.10		
		1764.49 *	15.80	9.14E-01	8.38E-01
		2204.22	4.98		
PB-214	0.99	295.21 *	19.19	1.09E+00	1.05E+00
		351.92 *	37.19	2.12E+00	6.23E-01
RA-226	0.97	186.21 *	3.28	4.66E+00	9.81E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.975	3.58E+01	6.36E+00	
FE-59	0.322	5.23E-01	5.05E-01	
GA-67	0.556	4.00E+00	7.16E+00	
TL-208	0.799	2.35E+00	6.78E-01	
PB-212	0.841	3.33E+00	6.20E-01	
BI-214	0.668	1.41E+00	5.30E-01	
PB-214	0.996	1.85E+00	5.36E-01	
RA-226	0.973	4.66E+00	9.81E+00	

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1606041-06
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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 8:16:27AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	75.86	1.88826E-01	10.35		
6	328.01	1.40075E-02	46.74	Tol.	LA-140
7	339.11	3.27422E-02	21.12	Tol.	AC-228
9	512.43	3.85361E-02	19.92		
12	663.88	6.55466E-03	51.57	Tol.	CE-143
13	755.59	5.20833E-03	61.56		
14	816.68	1.45794E-02	55.35	Tol.	LA-140
15	909.04	1.60146E-02	26.63		
16	934.85	6.67989E-03	58.48	Sum	
17	967.93	1.53699E-02	29.16		
M	18	1039.30	5.65034E-03	31.17	
m	19	1045.69	3.50153E-03	58.16	
	20	1068.48	6.86275E-03	31.61	
	22	1287.37	5.76389E-03	51.89	
	23	1357.95	3.47222E-03	46.04	
	25	1471.08	1.80556E-03	70.71	
	26	1592.22	3.09524E-03	40.26	D-Esc
	27	1727.99	2.25000E-03	46.19	
	29	1768.75	2.52778E-03	38.46	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Analysis Report for 1606041-06
CP-5028 05-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	3.34E-01	2.55E+00	2.55E+00
+	NA-22	1274.54	99.94	-4.98E-02	3.31E-01	3.31E-01
+	NA-24	1368.53	99.99	-8.63E+02	1.07E+04	1.11E+04
		2754.09	99.86	-9.56E+02		1.07E+04
+	AL-26	1808.65	99.76	1.83E-01	3.52E-01	3.52E-01
+	K-40	1460.81	* 10.67	3.58E+01	2.77E+00	2.77E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.73E-02	1.63E-01	1.63E-01
		78.34	96.00	5.40E-01		2.19E-01
+	SC-46	889.25	99.98	-7.63E-02	3.29E-01	3.29E-01
		1120.51	99.99	1.59E-01		4.71E-01
+	V-48	983.52	99.98	6.82E-02	3.99E-01	4.66E-01
		1312.10	97.50	-1.46E-01		3.99E-01
+	CR-51	320.08	9.83	3.32E-01	2.73E+00	2.73E+00
+	MN-54	834.83	99.97	6.61E-02	3.32E-01	3.32E-01
+	CO-56	846.75	99.96	-4.60E-02	3.20E-01	3.20E-01
		1037.75	14.03	2.54E-02		2.73E+00
		1238.25	67.00	3.99E-01		8.13E-01
		1771.40	15.51	8.90E-02		2.69E+00
		2598.48	16.90	-2.71E-01		1.51E+00
+	CO-57	122.06	85.51	-8.69E-02	1.80E-01	1.80E-01
		136.48	10.60	-1.02E+00		1.58E+00
+	CO-58	810.76	99.40	-6.28E-02	3.34E-01	3.34E-01
+	FE-59	1099.22	* 56.50	5.23E-01	8.04E-01	8.04E-01
		1291.56	43.20	3.13E-01		1.16E+00
+	CO-60	1173.22	100.00	-8.79E-02	3.10E-01	3.39E-01
		1332.49	100.00	2.29E-02		3.10E-01
+	ZN-65	1115.52	50.75	-1.99E-01	7.94E-01	7.94E-01
+	GA-67	93.31	* 35.70	4.00E+00	3.93E+00	3.93E+00
		208.95	2.24	3.30E+01		7.15E+01
		300.22	16.00	8.85E-01		1.13E+01
+	SE-75	121.11	16.70	-2.20E-01	2.92E-01	9.47E-01
		136.00	59.20	-1.68E-01		2.92E-01
		264.65	59.80	-2.93E-01		3.48E-01
		279.53	25.20	-1.75E-01		8.77E-01
		400.65	11.40	-1.59E-01		2.13E+00
+	RB-82	776.52	13.00	8.02E-01	3.29E+00	3.29E+00
+	RB-83	520.41	46.00	-8.38E-02	5.68E-01	5.68E-01
		529.64	30.30	3.15E-02		8.77E-01
		552.65	16.40	1.76E-01		1.76E+00
+	KR-85	513.99	0.43	1.09E+02	8.31E+01	8.31E+01
+	SR-85	513.99	99.27	5.29E-01	4.02E-01	4.02E-01
+	Y-88	898.02	93.40	-3.91E-03	2.96E-01	3.59E-01
		1836.01	99.38	-1.01E-01		2.96E-01
+	NB-93M	16.57	9.43	1.64E+00	8.30E-01	8.30E-01
+	NB-94	702.63	100.00	-7.79E-02	2.64E-01	2.71E-01
		871.10	100.00	-1.50E-01		2.64E-01

Analysis Report for 1606041-06
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95	765.79	99.81	1.33E-01	4.03E-01	4.03E-01
+	NB-95M	235.69	25.00	1.13E+00	8.66E+00	8.66E+00
+	ZR-95	724.18	43.70	6.94E-02	6.16E-01	8.51E-01
		756.72	55.30	8.84E-02		6.16E-01
+	MO-99	181.06	6.20	-4.04E-01	2.70E+01	3.36E+01
		739.58	12.80	7.42E+00		2.70E+01
		778.00	4.50	1.54E+01		8.23E+01
+	RU-103	497.08	89.00	9.94E-02	3.23E-01	3.23E-01
+	RU-106	621.84	9.80	9.87E-01	2.84E+00	2.84E+00
+	AG-108M	433.93	89.90	4.05E-02	2.36E-01	2.36E-01
		614.37	90.40	6.42E-03		3.28E-01
		722.95	90.50	7.84E-02		3.67E-01
+	CD-109	88.03	3.72	2.53E+00	4.87E+00	4.87E+00
+	AG-110M	657.75	93.14	2.49E-02	3.00E-01	3.00E-01
		677.61	10.53	1.71E-01		2.88E+00
		706.67	16.46	2.76E-01		1.74E+00
		763.93	21.98	6.94E-01		1.51E+00
		884.67	71.63	-2.13E-01		3.63E-01
		1384.27	23.94	6.33E-02		1.41E+00
+	CD-113M	263.70	0.02	-9.16E+02	8.43E+02	8.43E+02
+	SN-113	255.12	1.93	4.27E+00	3.85E-01	1.06E+01
		391.69	64.90	7.32E-02		3.85E-01
+	TE123M	159.00	84.10	5.30E-02	2.32E-01	2.32E-01
+	SB-124	602.71	97.87	2.18E-02	3.12E-01	3.12E-01
		645.85	7.26	-5.09E-02		3.88E+00
		722.78	11.10	1.19E-01		3.22E+00
		1691.02	49.00	-2.78E-01		5.48E-01
+	I-125	35.49	6.49	-7.45E-01	1.66E+00	1.66E+00
+	SB-125	176.33	6.89	-2.88E-01	7.46E-01	2.47E+00
		427.89	29.33	-4.56E-02		7.46E-01
		463.38	10.35	1.32E+00		2.54E+00
		600.56	17.80	-1.57E-01		1.47E+00
		635.90	11.32	-1.60E-01		2.19E+00
+	SB-126	414.70	83.30	-2.86E-01	4.71E-01	4.71E-01
		666.33	99.60	-3.43E-02		5.27E-01
		695.00	99.60	2.34E-01		5.53E-01
		720.50	53.80	-3.16E-01		9.57E-01
+	SN-126	87.57	37.00	2.50E-01	4.82E-01	4.82E-01
+	SB-127	473.00	25.00	-2.08E-01	4.50E+00	5.06E+00
		685.20	35.70	-1.67E+00		4.50E+00
		783.80	14.70	5.03E-01		1.19E+01
+	I-129	29.78	57.00	-6.48E-02	1.59E-01	1.59E-01
		33.60	13.20	4.18E-01		7.36E-01
		39.58	7.52	-1.76E+00		1.32E+00
+	I-131	284.30	6.05	2.98E-01	6.17E-01	7.60E+00
		364.48	81.20	1.51E-01		6.17E-01
		636.97	7.26	1.12E+00		8.02E+00
		722.89	1.80	1.51E+00		4.07E+01

Analysis Report for 1606041-06
CP-5028 05-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE-132	49.72	13.10	-1.08E+00	1.71E+00	6.94E+00
		228.16	88.00	-3.01E-01		1.71E+00
+	BA-133	81.00	33.00	-7.63E-02	5.24E-01	5.89E-01
		302.84	17.80	-9.79E-02		1.24E+00
		356.01	60.00	-2.43E-02		5.24E-01
+	I-133	529.87	86.30	2.28E+01	6.33E+02	6.33E+02
+	XE-133	81.00	38.00	-2.36E-01	1.83E+00	1.83E+00
+	CS-134	563.23	8.38	-3.79E-01	3.70E-01	3.05E+00
		569.32	15.43	2.66E-02		1.64E+00
		604.70	97.60	4.52E-02		3.85E-01
		795.84	85.40	6.03E-02		3.70E-01
		801.93	8.73	-6.12E-01		3.72E+00
+	CS-135	268.24	16.00	1.63E-01	1.37E+00	1.37E+00
+	I-135	1131.51	22.50	1.16E+10	4.79E+10	6.40E+10
		1260.41	28.60	1.87E+10		4.79E+10
		1678.03	9.54	-2.58E+10		9.70E+10
+	CS-136	153.22	7.46	-6.01E-02	4.85E-01	3.99E+00
		163.89	4.61	-5.31E-01		6.29E+00
		176.55	13.56	-2.42E-01		2.07E+00
		273.65	12.66	3.71E+00		3.12E+00
		340.57	48.50	1.31E+00		9.43E-01
		818.50	99.70	-1.05E-01		4.85E-01
		1048.07	79.60	-1.30E-02		7.22E-01
		1235.34	19.70	1.68E+00		4.29E+00
+	CS-137	661.65	85.12	-3.43E-02	3.42E-01	3.42E-01
+	LA-138	788.74	34.00	-2.91E-01	4.85E-01	8.66E-01
		1435.80	66.00	-4.82E-02		4.85E-01
+	CE-139	165.85	80.35	1.79E-02	2.27E-01	2.27E-01
+	BA-140	162.64	6.70	5.49E-01	1.61E+00	4.50E+00
		304.84	4.50	6.74E-01		8.47E+00
		423.70	3.20	-2.38E+00		1.16E+01
		437.55	2.00	-8.89E+00		1.71E+01
		537.32	25.00	-3.83E-02		1.61E+00
+	LA-140	328.77	20.50	1.25E+00	4.89E-01	1.95E+00
		487.03	45.50	1.08E-01		8.63E-01
		815.85	23.50	-4.66E-01		2.00E+00
		1596.49	95.49	-1.47E-01		4.89E-01
+	CE-141	145.44	48.40	2.53E-01	4.54E-01	4.54E-01
+	CE-143	57.36	11.80	-1.16E+02	7.74E+01	1.42E+02
		293.26	42.00	5.87E+01		7.74E+01
		664.55	5.20	2.83E+02		7.50E+02
+	CE-144	133.54	10.80	-1.59E-01	1.55E+00	1.55E+00
+	PM-144	476.78	42.00	-3.65E-02	2.69E-01	5.49E-01
		618.01	98.60	1.73E-02		2.69E-01
		696.49	99.49	1.36E-01		3.25E-01
+	PM-145	36.85	21.70	5.29E-02	2.51E-01	4.56E-01
		37.36	39.70	-4.90E-03		2.51E-01
		42.30	15.10	1.92E-01		7.10E-01
		72.40	2.31	1.55E+01		8.66E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-146	453.90	39.94	-5.25E-02	5.89E-01	5.89E-01
		735.90	14.01	-1.38E-01		2.12E+00
		747.13	13.10	2.34E-01		2.11E+00
+	ND-147	91.11	28.90	4.44E-01	1.22E+00	1.22E+00
		531.02	13.10	1.79E-01		3.51E+00
+	PM-149	285.90	3.10	5.83E+01	1.33E+02	1.33E+02
+	EU-152	121.78	20.50	-3.54E-01	7.34E-01	7.34E-01
		244.69	5.40	-6.00E-01		4.40E+00
		344.27	19.13	-5.32E+00		1.13E+00
		778.89	9.20	6.68E-01		3.56E+00
		964.01	10.40	6.33E-01		4.14E+00
		1085.78	7.22	-2.23E+00		4.11E+00
		1112.02	9.60	-1.54E+00		3.65E+00
		1407.95	14.94	7.52E-01		2.29E+00
+	GD-153	97.43	31.30	3.49E-02	5.10E-01	5.10E-01
		103.18	22.20	-9.79E-02		6.61E-01
+	EU-154	123.07	40.50	-2.02E-02	3.82E-01	3.82E-01
		723.30	19.70	3.61E-01		1.69E+00
		873.19	11.50	-5.23E-01		2.34E+00
		996.32	10.30	-6.82E-01		3.07E+00
		1004.76	17.90	8.28E-01		1.86E+00
		1274.45	35.50	-1.40E-01		9.28E-01
+	EU-155	86.50	30.90	3.61E-01	5.67E-01	5.67E-01
		105.30	20.70	-6.02E-02		6.91E-01
+	EU-156	811.77	10.40	-5.03E-01	4.52E+00	4.52E+00
		1153.47	7.20	-2.52E+00		7.17E+00
		1230.71	8.90	-1.97E+00		8.28E+00
+	HO-166M	184.41	72.60	3.10E-01	2.95E-01	2.95E-01
		280.45	29.60	-1.01E-01		6.98E-01
		410.94	11.10	-7.59E-01		2.15E+00
		711.69	54.10	-1.10E-01		4.92E-01
+	TM-171	66.72	0.14	5.39E+01	1.10E+02	1.10E+02
+	HF-172	81.75	4.52	-9.28E-01	1.46E+00	3.96E+00
		125.81	11.30	9.95E-01		1.46E+00
+	LU-172	181.53	20.60	6.26E-02	1.56E+00	2.65E+00
		810.06	16.63	-9.25E-01		4.92E+00
		912.12	15.25	4.81E+00		7.51E+00
		1093.66	62.50	2.56E-02		1.56E+00
+	LU-173	100.72	5.24	-1.23E+00	1.10E+00	2.72E+00
		272.11	21.20	5.02E-01		1.10E+00
+	HF-175	343.40	84.00	-4.24E-01	3.06E-01	3.06E-01
+	LU-176	88.34	13.30	6.57E-01	2.30E-01	1.39E+00
		201.83	86.00	1.36E-02		2.30E-01
		306.78	94.00	3.35E-03		2.39E-01
+	TA-182	67.75	41.20	4.20E-02	3.95E-01	3.95E-01
		1121.30	34.90	5.50E-01		1.36E+00
		1189.05	16.23	-2.71E-01		2.47E+00
		1221.41	26.98	1.72E-01		1.81E+00
		1231.02	11.44	-1.05E+00		4.40E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	IR-192	308.46	29.68	-9.06E-02	5.13E-01	8.09E-01
		468.07	48.10	-3.14E-01		5.13E-01
+	HG-203	279.19	77.30	-6.23E-02	3.12E-01	3.12E-01
+	BI-207	569.67	97.72	4.18E-03	2.57E-01	2.57E-01
		1063.62	74.90	-1.86E-02		4.27E-01
+	TL-208	583.14	* 30.22	1.69E+00	1.92E-01	1.41E+00
		860.37	4.48	-5.51E-01		7.31E+00
		2614.66	* 35.85	3.12E+00		1.92E-01
+	BI-210M	262.00	45.00	5.37E-02	4.43E-01	4.43E-01
		300.00	23.00	2.56E-01		1.13E+00
+	PB-210	46.50	4.25	1.11E+00	2.68E+00	2.68E+00
+	PB-211	404.84	2.90	2.54E+00	8.43E+00	8.43E+00
		831.96	2.90	3.10E-01		1.07E+01
+	BI-212	727.17	11.80	1.99E+00	2.91E+00	2.91E+00
		1620.62	2.75	2.38E+00		1.17E+01
+	PB-212	238.63	* 44.60	3.33E+00	7.07E-01	7.07E-01
		300.09	3.41	1.73E+00		7.63E+00
+	BI-214	609.31	* 46.30	1.74E+00	9.85E-01	9.85E-01
		1120.29	15.10	9.71E-01		2.88E+00
		1764.49	* 15.80	9.14E-01		1.16E+00
		2204.22	4.98	2.42E+00		7.55E+00
+	PB-214	295.21	* 19.19	1.09E+00	8.23E-01	1.71E+00
		351.92	* 37.19	2.12E+00		8.23E-01
+	RN-219	401.80	6.50	-6.21E-01	3.54E+00	3.54E+00
+	RA-223	323.87	3.88	1.36E+00	5.84E+00	5.84E+00
+	RA-224	240.98	3.95	3.89E+01	9.37E+00	9.37E+00
+	RA-225	40.00	31.00	-6.72E-01	5.03E-01	5.03E-01
+	RA-226	186.21	* 3.28	4.66E+00	7.92E+00	7.92E+00
+	TH-227	50.10	8.40	-2.18E-01	1.40E+00	1.40E+00
		236.00	11.50	3.88E-01		2.96E+00
		256.20	6.30	-4.58E-01		3.03E+00
+	AC-228	338.32	11.40	3.21E+00	1.52E+00	2.40E+00
		911.07	27.70	8.26E-01		1.52E+00
		969.11	16.60	3.13E+00		2.94E+00
+	TH-230	48.44	16.90	1.79E-01	6.93E-01	6.93E-01
		62.85	4.60	1.54E+00		3.18E+00
		67.67	0.37	4.41E+00		4.14E+01
+	PA-231	283.67	1.60	-6.28E+00	9.57E+00	1.23E+01
		302.67	2.30	-7.56E-01		9.57E+00
+	TH-231	25.64	14.70	-3.06E-01	6.04E-01	6.04E-01
		84.21	6.40	1.78E+00		2.61E+00
+	PA-233	311.98	38.60	5.12E-01	7.51E-01	7.51E-01
+	PA-234	131.20	20.40	1.78E-01	8.13E-01	8.13E-01
		733.99	8.80	-6.78E-01		3.38E+00
		946.00	12.00	5.40E-01		2.86E+00
+	PA-234M	1001.03	0.92	5.42E+00	3.70E+01	3.70E+01
+	TH-234	63.29	3.80	1.73E+00	3.87E+00	3.87E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	U-235	143.76	10.50	8.00E-01	1.68E+00	1.68E+00
		163.35	4.70	-3.13E-01		3.71E+00
		205.31	4.70	2.83E+00		4.42E+00
+	NP-237	86.50	12.60	8.82E-01	1.39E+00	1.39E+00
+	NP-239	106.10	22.70	-9.36E-01	1.07E+01	1.07E+01
		228.18	10.70	7.63E+00		3.14E+01
		277.60	14.10	-3.71E+00		2.59E+01
+	AM-241	59.54	35.90	2.74E-01	3.93E-01	3.93E-01
+	AM-243	74.67	66.00	1.36E+00	3.29E-01	3.29E-01
+	CM-243	209.75	3.29	7.84E-02	1.53E+00	6.19E+00
		228.14	10.60	-3.22E-01		1.83E+00
		277.60	14.00	-2.20E-01		1.53E+00

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	2.55E+00	2.55E+00	3.34E-01	1.19E+00
	NA-22	1274.54	99.94	3.31E-01	3.31E-01	-4.98E-02	1.46E-01
	NA-24	1368.53	99.99	1.11E+04	1.07E+04	-8.63E+02	4.65E+03
		2754.09	99.86	1.07E+04		-9.56E+02	3.78E+03
	AL-26	1808.65	99.76	3.52E-01	3.52E-01	1.83E-01	1.50E-01
+	K-40	1460.81	* 10.67	2.77E+00	2.77E+00	3.58E+01	1.18E+00
@	AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88	94.40	1.63E-01	1.63E-01	1.73E-02	7.96E-02
		78.34	96.00	2.19E-01		5.40E-01	1.07E-01
	SC-46	889.25	99.98	3.29E-01	3.29E-01	-7.63E-02	1.50E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SC-46	1120.51	99.99	4.71E-01	3.29E-01	1.59E-01	2.17E-01
V-48	983.52	99.98	4.66E-01	3.99E-01	6.82E-02	2.10E-01
	1312.10	97.50	3.99E-01		-1.46E-01	1.68E-01
CR-51	320.08	9.83	2.73E+00	2.73E+00	3.32E-01	1.30E+00
MN-54	834.83	99.97	3.32E-01	3.32E-01	6.61E-02	1.53E-01
CO-56	846.75	99.96	3.20E-01	3.20E-01	-4.60E-02	1.45E-01
	1037.75	14.03	2.73E+00		2.54E-02	1.24E+00
	1238.25	67.00	8.13E-01		3.99E-01	3.76E-01
	1771.40	15.51	2.69E+00		8.90E-02	1.16E+00
	2598.48	16.90	1.51E+00		-2.71E-01	5.36E-01
CO-57	122.06	85.51	1.80E-01	1.80E-01	-8.69E-02	8.75E-02
	136.48	10.60	1.58E+00		-1.02E+00	7.65E-01
CO-58	810.76	99.40	3.34E-01	3.34E-01	-6.28E-02	1.53E-01
+ FE-59	1099.22	* 56.50	8.04E-01	8.04E-01	5.23E-01	3.67E-01
	1291.56	43.20	1.16E+00		3.13E-01	5.28E-01
CO-60	1173.22	100.00	3.39E-01	3.10E-01	-8.79E-02	1.52E-01
	1332.49	100.00	3.10E-01		2.29E-02	1.35E-01
ZN-65	1115.52	50.75	7.94E-01	7.94E-01	-1.99E-01	3.62E-01
+ GA-67	93.31	* 35.70	3.93E+00	3.93E+00	4.00E+00	1.92E+00
	208.95	2.24	7.15E+01		3.30E+01	3.45E+01
	300.22	16.00	1.13E+01		8.85E-01	5.43E+00
SE-75	121.11	16.70	9.47E-01	2.92E-01	-2.20E-01	4.59E-01
	136.00	59.20	2.92E-01		-1.68E-01	1.42E-01
	264.65	59.80	3.48E-01		-2.93E-01	1.66E-01
	279.53	25.20	8.77E-01		-1.75E-01	4.20E-01
	400.65	11.40	2.13E+00		-1.59E-01	1.01E+00
RB-82	776.52	13.00	3.29E+00	3.29E+00	8.02E-01	1.52E+00
RB-83	520.41	46.00	5.68E-01	5.68E-01	-8.38E-02	2.65E-01
	529.64	30.30	8.77E-01		3.15E-02	4.09E-01
	552.65	16.40	1.76E+00		1.76E-01	8.24E-01
KR-85	513.99	0.43	8.31E+01	8.31E+01	1.09E+02	3.97E+01
SR-85	513.99	99.27	4.02E-01	4.02E-01	5.29E-01	1.92E-01
Y-88	898.02	93.40	3.59E-01	2.96E-01	-3.91E-03	1.64E-01
	1836.01	99.38	2.96E-01		-1.01E-01	1.20E-01
NB-93M	16.57	9.43	8.30E-01	8.30E-01	1.64E+00	4.02E-01
NB-94	702.63	100.00	2.71E-01	2.64E-01	-7.79E-02	1.25E-01
	871.10	100.00	2.64E-01		-1.50E-01	1.18E-01
NB-95	765.79	99.81	4.03E-01	4.03E-01	1.33E-01	1.87E-01
NB-95M	235.69	25.00	8.66E+00	8.66E+00	1.13E+00	4.23E+00
ZR-95	724.18	43.70	8.51E-01	6.16E-01	6.94E-02	3.97E-01
	756.72	55.30	6.16E-01		8.84E-02	2.84E-01
MO-99	181.06	6.20	3.36E+01	2.70E+01	-4.04E-01	1.62E+01
	739.58	12.80	2.70E+01		7.42E+00	1.25E+01
	778.00	4.50	8.23E+01		1.54E+01	3.81E+01
RU-103	497.08	89.00	3.23E-01	3.23E-01	9.94E-02	1.51E-01
RU-106	621.84	9.80	2.84E+00	2.84E+00	9.87E-01	1.32E+00
AG-108M	433.93	89.90	2.36E-01	2.36E-01	4.05E-02	1.11E-01
	614.37	90.40	3.28E-01		6.42E-03	1.54E-01
	722.95	90.50	3.67E-01		7.84E-02	1.71E-01
CD-109	88.03	3.72	4.87E+00	4.87E+00	2.53E+00	2.39E+00
AG-110M	657.75	93.14	3.00E-01	3.00E-01	2.49E-02	1.39E-01
	677.61	10.53	2.88E+00		1.71E-01	1.34E+00
	706.67	16.46	1.74E+00		2.76E-01	8.00E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AG-110M	763.93	21.98	1.51E+00	3.00E-01	6.94E-01	7.01E-01
	884.67	71.63	3.63E-01		-2.13E-01	1.62E-01
	1384.27	23.94	1.41E+00		6.33E-02	6.15E-01
CD-113M	263.70	0.02	8.43E+02	8.43E+02	-9.16E+02	4.03E+02
	SN-113	255.12	1.93		1.06E+01	3.85E-01	4.27E+00
TE123M	391.69	64.90	3.85E-01	2.32E-01	7.32E-02	1.82E-01
	159.00	84.10	2.32E-01		5.30E-02	1.13E-01
	SB-124	602.71	97.87		3.12E-01	3.12E-01	2.18E-02
I-125	645.85	7.26	3.88E+00	1.66E+00	-5.09E-02	1.79E+00
	722.78	11.10	3.22E+00		1.19E-01	1.49E+00
	1691.02	49.00	5.48E-01		-2.78E-01	2.17E-01
	35.49	6.49	1.66E+00		-7.45E-01	8.06E-01
SB-125	176.33	6.89	2.47E+00	7.46E-01	-2.88E-01	1.19E+00
	427.89	29.33	7.46E-01		-4.56E-02	3.50E-01
	463.38	10.35	2.54E+00		1.32E+00	1.20E+00
	600.56	17.80	1.47E+00		-1.57E-01	6.81E-01
	635.90	11.32	2.19E+00		-1.60E-01	1.01E+00
SB-126	414.70	83.30	4.71E-01	4.71E-01	-2.86E-01	2.22E-01
	666.33	99.60	5.27E-01		-3.43E-02	2.46E-01
	695.00	99.60	5.53E-01		2.34E-01	2.58E-01
	720.50	53.80	9.57E-01		-3.16E-01	4.43E-01
SN-126	87.57	37.00	4.82E-01	4.82E-01	2.50E-01	2.36E-01
SB-127	473.00	25.00	5.06E+00	4.50E+00	-2.08E-01	2.36E+00
	685.20	35.70	4.50E+00		-1.67E+00	2.08E+00
	783.80	14.70	1.19E+01		5.03E-01	5.47E+00
I-129	29.78	57.00	1.59E-01	1.59E-01	-6.48E-02	7.75E-02
	33.60	13.20	7.36E-01		4.18E-01	3.58E-01
	39.58	7.52	1.32E+00		-1.76E+00	6.41E-01
I-131	284.30	6.05	7.60E+00	6.17E-01	2.98E-01	3.63E+00
	364.48	81.20	6.17E-01		1.51E-01	2.92E-01
	636.97	7.26	8.02E+00		1.12E+00	3.70E+00
	722.89	1.80	4.07E+01		1.51E+00	1.89E+01
TE-132	49.72	13.10	6.94E+00	1.71E+00	-1.08E+00	3.39E+00
	228.16	88.00	1.71E+00		-3.01E-01	8.23E-01
BA-133	81.00	33.00	5.89E-01	5.24E-01	-7.63E-02	2.89E-01
	302.84	17.80	1.24E+00		-9.79E-02	5.93E-01
	356.01	60.00	5.24E-01		-2.43E-02	2.53E-01
I-133	529.87	86.30	6.33E+02	6.33E+02	2.28E+01	2.95E+02
XE-133	81.00	38.00	1.83E+00	1.83E+00	-2.36E-01	8.96E-01
CS-134	563.23	8.38	3.05E+00	3.70E-01	-3.79E-01	1.42E+00
	569.32	15.43	1.64E+00		2.66E-02	7.61E-01
	604.70	97.60	3.85E-01		4.52E-02	1.83E-01
	795.84	85.40	3.70E-01		6.03E-02	1.70E-01
	801.93	8.73	3.72E+00		-6.12E-01	1.71E+00
CS-135	268.24	16.00	1.37E+00	1.37E+00	1.63E-01	6.57E-01
I-135	1131.51	22.50	6.40E+10	4.79E+10	1.16E+10	2.94E+10
	1260.41	28.60	4.79E+10		1.87E+10	2.17E+10
	1678.03	9.54	9.70E+10		-2.58E+10	3.97E+10
CS-136	153.22	7.46	3.99E+00	4.85E-01	-6.01E-02	1.93E+00
	163.89	4.61	6.29E+00		-5.31E-01	3.04E+00
	176.55	13.56	2.07E+00		-2.42E-01	1.00E+00
	273.65	12.66	3.12E+00		3.71E+00	1.50E+00
	340.57	48.50	9.43E-01		1.31E+00	4.53E-01

Analysis Report for 1606041-06
CP-5028 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
CS-136	818.50	99.70	4.85E-01	4.85E-01	-1.05E-01	2.21E-01	
	1048.07	79.60	7.22E-01		-1.30E-02	3.27E-01	
	1235.34	19.70	4.29E+00		1.68E+00	1.98E+00	
CS-137	661.65	85.12	3.42E-01	3.42E-01	-3.43E-02	1.59E-01	
	LA-138	788.74	34.00	8.66E-01	4.85E-01	-2.91E-01	3.97E-01
CE-139	1435.80	66.00	4.85E-01	2.27E-01	-4.82E-02	2.10E-01	
	165.85	80.35	2.27E-01		1.79E-02	1.09E-01	
BA-140	162.64	6.70	4.50E+00	1.61E+00	5.49E-01	2.18E+00	
	304.84	4.50	8.47E+00		6.74E-01	4.05E+00	
	423.70	3.20	1.16E+01		-2.38E+00	5.46E+00	
	437.55	2.00	1.71E+01		-8.89E+00	7.96E+00	
	537.32	25.00	1.61E+00		-3.83E-02	7.47E-01	
LA-140	328.77	20.50	1.95E+00	4.89E-01	1.25E+00	9.32E-01	
	487.03	45.50	8.63E-01	1.08E-01	4.03E-01		
	815.85	23.50	2.00E+00	-4.66E-01	9.11E-01		
	1596.49	95.49	4.89E-01	-1.47E-01	2.03E-01		
CE-141	145.44	48.40	4.54E-01	4.54E-01	2.53E-01	2.21E-01	
CE-143	57.36	11.80	1.42E+02	7.74E+01	-1.16E+02	6.94E+01	
	293.26	42.00	7.74E+01	5.87E+01	3.73E+01		
	664.55	5.20	7.50E+02	2.83E+02	3.49E+02		
CE-144	133.54	10.80	1.55E+00	1.55E+00	-1.59E-01	7.51E-01	
PM-144	476.78	42.00	5.49E-01	2.69E-01	-3.65E-02	2.57E-01	
	618.01	98.60	2.69E-01	1.73E-02	1.25E-01		
	696.49	99.49	3.25E-01	1.36E-01	1.51E-01		
	PM-145	36.85	21.70	4.56E-01	2.51E-01	5.29E-02	2.22E-01
PM-146	37.36	39.70	2.51E-01	2.51E-01	-4.90E-03	1.22E-01	
	42.30	15.10	7.10E-01		1.92E-01	3.46E-01	
	72.40	2.31	8.66E+00		1.55E+01	4.26E+00	
	453.90	39.94	5.89E-01		5.89E-01	-5.25E-02	2.77E-01
ND-147	735.90	14.01	2.12E+00	1.22E+00	-1.38E-01	9.76E-01	
	747.13	13.10	2.11E+00		2.34E-01	9.68E-01	
	91.11	28.90	1.22E+00		4.44E-01	5.95E-01	
PM-149	531.02	13.10	3.51E+00	1.79E-01	1.64E+00		
	285.90	3.10	1.33E+02	1.33E+02	5.83E+01	6.37E+01	
EU-152	121.78	20.50	7.34E-01	7.34E-01	-3.54E-01	3.56E-01	
	244.69	5.40	4.40E+00	-6.00E-01	2.13E+00		
	344.27	19.13	1.13E+00	-5.32E+00	5.38E-01		
	778.89	9.20	3.56E+00	6.68E-01	1.65E+00		
	964.01	10.40	4.14E+00	6.33E-01	1.93E+00		
	1085.78	7.22	4.11E+00	-2.23E+00	1.82E+00		
	1112.02	9.60	3.65E+00	-1.54E+00	1.65E+00		
	1407.95	14.94	2.29E+00	7.52E-01	1.01E+00		
	GD-153	97.43	31.30	5.10E-01	5.10E-01	3.49E-02	2.48E-01
	EU-154	103.18	22.20	6.61E-01	3.82E-01	-9.79E-02	3.21E-01
123.07		40.50	3.82E-01	-2.02E-02		1.85E-01	
723.30		19.70	1.69E+00	3.61E-01		7.87E-01	
873.19		11.50	2.34E+00	-5.23E-01		1.05E+00	
996.32		10.30	3.07E+00	-6.82E-01		1.38E+00	
1004.76		17.90	1.86E+00	8.28E-01		8.44E-01	
1274.45		35.50	9.28E-01	-1.40E-01		4.09E-01	
EU-155	86.50	30.90	5.67E-01	5.67E-01	3.61E-01	2.78E-01	
	105.30	20.70	6.91E-01	-6.02E-02	3.35E-01		
EU-156	811.77	10.40	4.52E+00	4.52E+00	-5.03E-01	2.07E+00	

Analysis Report for 1606041-06
 CP-5028 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-156	1153.47	7.20	7.17E+00	4.52E+00	-2.52E+00	3.20E+00
	1230.71	8.90	8.28E+00		-1.97E+00	3.81E+00
HO-166M	184.41	72.60	2.95E-01	2.95E-01	3.10E-01	1.43E-01
	280.45	29.60	6.98E-01		-1.01E-01	3.34E-01
	410.94	11.10	2.15E+00		-7.59E-01	1.02E+00
	711.69	54.10	4.92E-01		-1.10E-01	2.25E-01
TM-171	66.72	0.14	1.10E+02	1.10E+02	5.39E+01	5.37E+01
HF-172	81.75	4.52	3.96E+00	1.46E+00	-9.28E-01	1.94E+00
	125.81	11.30	1.46E+00		9.95E-01	7.10E-01
LU-172	181.53	20.60	2.65E+00	1.56E+00	6.26E-02	1.29E+00
	810.06	16.63	4.92E+00		-9.25E-01	2.26E+00
	912.12	15.25	7.51E+00		4.81E+00	3.50E+00
LU-173	1093.66	62.50	1.56E+00		2.56E-02	7.08E-01
	100.72	5.24	2.72E+00	1.10E+00	-1.23E+00	1.32E+00
	272.11	21.20	1.10E+00		5.02E-01	5.31E-01
HF-175	343.40	84.00	3.06E-01	3.06E-01	-4.24E-01	1.46E-01
LU-176	88.34	13.30	1.39E+00	2.30E-01	6.57E-01	6.80E-01
	201.83	86.00	2.30E-01		1.36E-02	1.11E-01
	306.78	94.00	2.39E-01		3.35E-03	1.14E-01
TA-182	67.75	41.20	3.95E-01	3.95E-01	4.20E-02	1.93E-01
	1121.30	34.90	1.36E+00		5.50E-01	6.28E-01
	1189.05	16.23	2.47E+00		-2.71E-01	1.12E+00
	1221.41	26.98	1.81E+00		1.72E-01	8.34E-01
	1231.02	11.44	4.40E+00		-1.05E+00	2.03E+00
IR-192	308.46	29.68	8.09E-01	5.13E-01	-9.06E-02	3.86E-01
	468.07	48.10	5.13E-01		3.14E-01	2.40E-01
HG-203	279.19	77.30	3.12E-01	3.12E-01	-6.23E-02	1.49E-01
BI-207	569.67	97.72	2.57E-01	2.57E-01	4.18E-03	1.19E-01
	1063.62	74.90	4.27E-01		-1.86E-02	1.92E-01
+ TL-208	583.14	* 30.22	1.41E+00	1.92E-01	1.69E+00	6.76E-01
	860.37	4.48	7.31E+00		-5.51E-01	3.36E+00
	2614.66	* 35.85	1.92E-01		3.12E+00	0.00E+00
BI-210M	262.00	45.00	4.43E-01	4.43E-01	5.37E-02	2.12E-01
	300.00	23.00	1.13E+00		2.56E-01	5.44E-01
PB-210	46.50	4.25	2.68E+00	2.68E+00	1.11E+00	1.30E+00
PB-211	404.84	2.90	8.43E+00	8.43E+00	2.54E+00	4.00E+00
	831.96	2.90	1.07E+01		3.10E-01	4.90E+00
BI-212	727.17	11.80	2.91E+00	2.91E+00	1.99E+00	1.36E+00
	1620.62	2.75	1.17E+01		2.38E+00	4.96E+00
+ PB-212	238.63	* 44.60	7.07E-01	7.07E-01	3.33E+00	3.45E-01
	300.09	3.41	7.63E+00		1.73E+00	3.67E+00
+ BI-214	609.31	* 46.30	9.85E-01	9.85E-01	1.74E+00	4.72E-01
	1120.29	15.10	2.88E+00		9.71E-01	1.33E+00
	1764.49	* 15.80	1.16E+00		9.14E-01	4.17E-01
+ PB-214	2204.22	4.98	7.55E+00		2.42E+00	3.16E+00
	295.21	* 19.19	1.71E+00	8.23E-01	1.09E+00	8.28E-01
	351.92	* 37.19	8.23E-01		2.12E+00	3.97E-01
RN-219	401.80	6.50	3.54E+00	3.54E+00	-6.21E-01	1.67E+00
RA-223	323.87	3.88	5.84E+00	5.84E+00	1.36E+00	2.79E+00
RA-224	240.98	3.95	9.37E+00	9.37E+00	3.89E+01	4.58E+00
RA-225	40.00	31.00	5.03E-01	5.03E-01	-6.72E-01	2.45E-01
+ RA-226	186.21	* 3.28	7.92E+00	7.92E+00	4.66E+00	3.86E+00
TH-227	50.10	8.40	1.40E+00	1.40E+00	-2.18E-01	6.82E-01

Analysis Report for 1606041-06
 CP-5028 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TH-227	236.00	11.50	2.96E+00	1.40E+00	3.88E-01	1.45E+00
	256.20	6.30	3.03E+00		-4.58E-01	1.45E+00
AC-228	338.32	11.40	2.40E+00	1.52E+00	3.21E+00	1.15E+00
	911.07	27.70	1.52E+00		8.26E-01	7.11E-01
	969.11	16.60	2.94E+00		3.13E+00	1.38E+00
TH-230	48.44	16.90	6.93E-01	6.93E-01	1.79E-01	3.38E-01
	62.85	4.60	3.18E+00		1.54E+00	1.56E+00
	67.67	0.37	4.14E+01		4.41E+00	2.03E+01
PA-231	283.67	1.60	1.23E+01	9.57E+00	-6.28E+00	5.84E+00
	302.67	2.30	9.57E+00		-7.56E-01	4.58E+00
TH-231	25.64	14.70	6.04E-01	6.04E-01	-3.06E-01	2.94E-01
	84.21	6.40	2.61E+00		1.78E+00	1.27E+00
PA-233	311.98	38.60	7.51E-01	7.51E-01	5.12E-01	3.59E-01
PA-234	131.20	20.40	8.13E-01	8.13E-01	1.78E-01	3.95E-01
	733.99	8.80	3.38E+00		-6.78E-01	1.56E+00
	946.00	12.00	2.86E+00		5.40E-01	1.31E+00
PA-234M	1001.03	0.92	3.70E+01	3.70E+01	5.42E+00	1.68E+01
TH-234	63.29	3.80	3.87E+00	3.87E+00	1.73E+00	1.89E+00
U-235	143.76	10.50	1.68E+00	1.68E+00	8.00E-01	8.17E-01
	163.35	4.70	3.71E+00		-3.13E-01	1.79E+00
	205.31	4.70	4.42E+00		2.83E+00	2.14E+00
NP-237	86.50	12.60	1.39E+00	1.39E+00	8.82E-01	6.79E-01
NP-239	106.10	22.70	1.07E+01	1.07E+01	-9.36E-01	5.21E+00
	228.18	10.70	3.14E+01		7.63E+00	1.51E+01
	277.60	14.10	2.59E+01		-3.71E+00	1.24E+01
AM-241	59.54	35.90	3.93E-01	3.93E-01	2.74E-01	1.92E-01
AM-243	74.67	66.00	3.29E-01	3.29E-01	1.36E+00	1.62E-01
CM-243	209.75	3.29	6.19E+00	1.53E+00	7.84E-02	2.99E+00
	228.14	10.60	1.83E+00		-3.22E-01	8.80E-01
	277.60	14.00	1.53E+00		-2.20E-01	7.33E-01

- + = Nuclide identified during the nuclide identification
- * = Energy line found in the spectrum
- > = MDA value not calculated
- @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User
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Analysis Report for 1606041-06
CP-5028 05-10

No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP-5028 05-10

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	7	88
17:	60	61	75	41	57	47	41	46
25:	44	42	37	55	52	52	34	55
33:	51	67	56	48	47	46	38	51
41:	58	56	43	66	61	81	63	53
49:	47	60	56	61	56	60	69	71
57:	60	75	67	75	64	100	99	77
65:	74	66	77	66	79	76	100	90
73:	139	174	179	242	198	116	62	64
81:	54	73	70	78	71	93	107	80
89:	58	86	92	116	114	63	42	46
97:	41	39	54	51	36	42	33	38
105:	51	36	47	45	41	38	37	35
113:	43	43	40	37	31	27	42	26
121:	55	33	38	48	38	44	31	58
129:	39	46	37	33	42	42	35	39
137:	38	42	35	33	39	50	51	36
145:	43	37	46	39	32	29	38	38
153:	37	43	53	36	38	43	34	32
161:	36	32	38	39	29	29	25	32
169:	24	32	27	22	30	26	26	26
177:	26	29	29	30	29	25	32	51
185:	84	57	37	24	23	37	37	32
193:	21	20	30	28	38	30	26	25
201:	24	34	31	36	25	25	26	45
209:	43	26	23	28	26	28	19	32
217:	26	20	20	25	26	23	22	28
225:	23	33	25	13	15	23	26	29
233:	21	23	18	51	103	193	162	76
241:	50	43	18	17	19	28	15	13
249:	19	24	15	16	15	16	18	21
257:	26	17	19	15	14	23	20	18
265:	19	16	15	23	32	29	19	28
273:	24	24	22	26	24	18	14	10
281:	16	22	15	17	13	19	16	20
289:	11	17	14	14	19	38	59	37
297:	18	17	19	24	18	18	20	13
305:	16	15	21	22	13	25	16	12
313:	20	14	17	10	18	8	21	16
321:	15	10	16	13	15	20	23	27
329:	18	17	14	12	12	9	18	17
337:	35	43	34	22	12	13	18	9
345:	9	10	15	12	19	32	81	61
353:	31	10	18	12	9	11	11	16
361:	11	11	13	14	11	9	12	12

369: 13 10 10 14 14 12 12 13

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Channel	1	2	3	4	5	6	7	8
377:	15	16	11	16	13	14	7	8
385:	11	13	4	17	22	9	14	11
393:	18	9	7	15	7	13	9	10
401:	16	6	12	12	15	10	10	21
409:	19	11	5	11	9	7	12	16
417:	13	9	13	10	9	5	8	14
425:	10	3	10	8	10	7	8	11
433:	6	12	6	5	7	6	7	9
441:	6	11	8	11	7	16	5	9
449:	12	9	8	8	4	14	7	7
457:	12	7	7	13	14	12	19	9
465:	10	5	9	9	5	9	5	9
473:	9	5	8	8	8	7	7	7
481:	14	6	7	9	9	9	7	9
489:	8	5	4	6	6	8	7	6
497:	7	10	10	10	8	9	5	10
505:	6	9	11	13	22	27	31	20
513:	19	7	4	11	14	5	6	10
521:	6	3	4	6	5	8	13	5
529:	5	11	10	5	3	7	10	10
537:	6	3	5	6	9	6	5	4
545:	5	6	8	11	5	8	6	8
553:	5	8	13	7	6	12	7	10
561:	8	6	9	7	4	5	5	6
569:	5	9	6	6	12	4	3	9
577:	9	1	9	5	12	25	49	28
585:	4	5	9	5	5	3	9	8
593:	4	9	7	2	7	4	4	12
601:	7	9	8	3	6	9	22	43
609:	51	23	10	6	5	3	7	6
617:	8	3	5	5	9	7	12	5
625:	4	7	4	3	4	4	5	5
633:	2	7	6	7	2	7	3	8
641:	5	6	4	5	7	5	2	8
649:	3	2	3	8	6	5	10	5
657:	4	4	4	6	7	9	4	11
665:	9	8	4	5	5	9	5	6
673:	11	5	5	5	4	10	6	6
681:	5	8	6	3	4	3	8	9
689:	5	5	9	7	9	7	7	10
697:	5	8	3	7	3	4	6	5
705:	3	5	5	4	6	8	4	4
713:	6	3	1	2	8	8	7	8
721:	4	3	8	4	6	11	13	8
729:	5	6	7	4	3	5	10	4
737:	5	5	5	5	3	7	7	1
745:	7	7	6	2	5	2	3	6
753:	2	6	9	6	9	4	5	2
761:	6	9	3	5	6	6	11	6
769:	5	3	7	8	6	4	9	6
777:	6	4	10	1	6	7	2	2
785:	7	6	5	5	4	5	4	3
793:	5	5	9	3	9	2	6	7

801: 5 1 7 10 1 9 1 4

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Channel	1	2	3	4	5	6	7	8	9	10
809:	2	10	3	3	3	6	9	3		
817:	2	4	1	4	3	5	4	8		
825:	6	3	4	5	3	1	7	6		
833:	2	3	4	10	7	5	5	4		
841:	3	4	6	4	2	3	3	4		
849:	4	5	5	5	4	5	5	5		
857:	4	2	7	9	8	3	2	3		
865:	9	4	3	4	5	1	3	0		
873:	3	5	2	3	5	4	3	4		
881:	0	3	4	2	1	5	1	3		
889:	4	5	4	5	6	6	6	7		
897:	1	5	3	2	2	4	6	6		
905:	8	3	3	4	8	16	14	10		
913:	4	4	3	3	6	4	3	3		
921:	4	3	3	5	2	4	2	2		
929:	3	5	5	2	6	4	8	9		
937:	5	3	4	6	1	6	2	6		
945:	4	4	1	6	1	9	3	4		
953:	4	3	5	3	1	5	4	3		
961:	3	4	6	5	9	7	8	16		
969:	18	8	4	5	4	4	3	1		
977:	2	5	2	2	6	5	4	3		
985:	1	3	2	3	4	1	5	1		
993:	4	5	3	3	7	3	1	2		
1001:	5	5	3	4	4	5	1	3		
1009:	2	1	0	2	0	3	2	2		
1017:	3	4	4	2	5	4	1	3		
1025:	2	2	4	3	3	1	1	3		
1033:	2	3	1	1	2	3	11	9		
1041:	2	3	2	5	5	2	1	3		
1049:	3	6	1	6	3	7	4	3		
1057:	3	5	4	2	3	1	0	2		
1065:	4	5	5	2	2	3	6	2		
1073:	3	0	2	0	4	0	5	5		
1081:	2	4	4	1	5	0	1	3		
1089:	1	2	5	2	4	4	5	3		
1097:	6	1	5	6	7	3	0	1		
1105:	2	3	2	2	5	3	5	2		
1113:	4	5	3	0	3	6	9	8		
1121:	4	8	6	2	3	3	5	6		
1129:	3	6	3	3	6	3	8	4		
1137:	6	6	5	2	5	7	7	1		
1145:	4	3	2	7	2	3	3	2		
1153:	1	3	3	2	5	2	3	5		
1161:	1	2	3	4	3	3	4	5		
1169:	2	1	2	3	2	2	2	5		
1177:	5	2	3	3	5	2	1	4		
1185:	2	3	3	2	4	4	5	3		
1193:	4	5	6	4	3	6	10	1		
1201:	5	3	4	2	4	2	1	3		
1209:	4	7	3	1	7	2	9	2		
1217:	6	10	4	1	3	6	8	3		
1225:	3	4	7	3	4	8	8	3		

1233: 2 6 5 11 6 7 5 5

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Channel	1	2	3	4	5	6	7	8	9
1241:	4	2	2	3	5	1	4	1	
1249:	5	3	4	4	4	2	3	6	
1257:	3	3	4	2	3	5	1	4	
1265:	1	2	2	1	5	4	1	1	
1273:	0	1	3	5	1	3	2	3	
1281:	2	2	5	2	2	7	4	9	
1289:	3	3	1	2	0	2	10	2	
1297:	4	2	1	2	3	3	1	1	
1305:	2	0	3	1	2	0	1	0	
1313:	1	1	0	4	1	2	3	1	
1321:	0	0	3	3	1	3	2	1	
1329:	2	2	0	2	1	1	6	0	
1337:	2	0	1	0	1	1	2	2	
1345:	4	2	0	0	1	2	0	1	
1353:	0	0	4	3	2	1	2	2	
1361:	2	2	0	1	0	2	1	2	
1369:	1	0	1	1	1	0	2	2	
1377:	2	1	3	1	1	1	1	5	
1385:	1	2	2	2	1	0	3	1	
1393:	2	2	2	0	0	0	2	0	
1401:	1	0	1	2	0	1	1	1	
1409:	2	4	3	3	1	2	2	0	
1417:	2	2	0	2	2	2	3	1	
1425:	0	1	2	2	2	2	3	0	
1433:	3	1	1	4	2	0	2	1	
1441:	0	3	1	1	2	1	1	1	
1449:	1	1	2	1	6	0	1	1	
1457:	4	13	25	90	69	30	8	2	
1465:	0	1	0	0	0	5	1	3	
1473:	1	1	0	1	0	0	0	0	
1481:	2	0	0	0	0	1	2	0	
1489:	1	0	0	0	1	2	0	0	
1497:	2	1	1	1	2	2	1	3	
1505:	2	0	2	2	2	3	0	0	
1513:	5	1	1	2	0	2	1	1	
1521:	2	0	0	1	1	1	1	2	
1529:	0	0	0	1	0	2	0	0	
1537:	2	2	0	1	2	2	2	0	
1545:	3	1	0	2	1	3	3	2	
1553:	0	1	0	2	0	2	1	3	
1561:	2	0	2	2	2	1	0	1	
1569:	1	0	0	0	2	1	2	1	
1577:	0	0	1	2	3	0	0	1	
1585:	1	1	2	1	1	2	1	5	
1593:	4	1	0	0	0	0	0	1	
1601:	2	0	0	0	2	2	0	1	
1609:	1	0	1	3	1	1	1	1	
1617:	0	2	1	1	3	2	0	2	
1625:	0	1	1	0	2	2	0	3	
1633:	2	0	1	1	1	1	1	1	
1641:	1	0	1	2	1	0	0	0	
1649:	1	1	0	0	0	0	2	1	
1657:	1	0	0	0	0	2	1	0	

1665: 0 0 0 1 0 1 1 0

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Channel	1	2	3	4	5	6	7	8
1673:	0	0	0	1	1	2	0	0
1681:	2	1	3	1	3	1	1	1
1689:	0	0	0	0	2	1	0	2
1697:	1	0	1	0	2	1	1	1
1705:	3	0	0	1	0	1	2	3
1713:	1	0	3	2	0	0	2	2
1721:	1	0	0	0	1	1	1	1
1729:	4	2	0	1	0	0	0	1
1737:	1	2	0	0	0	0	0	2
1745:	0	0	1	0	1	0	1	1
1753:	0	1	1	0	0	0	0	0
1761:	0	0	3	1	5	0	1	2
1769:	5	2	0	0	0	0	2	1
1777:	1	0	1	1	0	0	1	0
1785:	0	0	0	0	1	0	0	0
1793:	1	0	2	0	0	0	0	1
1801:	0	0	1	1	2	1	1	2
1809:	0	0	0	1	1	2	0	0
1817:	0	0	0	1	1	0	1	1
1825:	0	2	2	0	0	1	1	0
1833:	2	0	0	1	1	0	1	0
1841:	0	0	0	4	1	1	0	2
1849:	0	0	1	2	0	0	2	1
1857:	1	0	0	3	1	0	0	0
1865:	1	1	2	0	0	0	0	2
1873:	2	1	2	0	1	0	0	0
1881:	0	0	2	1	0	0	0	0
1889:	0	1	0	1	0	2	0	0
1897:	0	1	1	0	0	0	0	1
1905:	0	1	0	1	0	0	0	0
1913:	0	1	0	1	1	0	1	0
1921:	0	0	0	0	0	0	0	0
1929:	0	1	1	2	2	0	0	1
1937:	0	0	1	1	2	0	1	0
1945:	0	1	0	1	0	0	2	2
1953:	0	0	2	0	0	1	2	0
1961:	1	1	1	0	0	1	0	0
1969:	0	2	2	0	1	0	0	1
1977:	0	1	1	0	1	0	0	1
1985:	2	0	0	1	0	0	0	0
1993:	1	0	0	1	1	1	0	1
2001:	0	0	0	1	1	1	0	1
2009:	1	1	1	1	1	0	0	1
2017:	0	0	1	0	0	0	0	0
2025:	1	1	0	2	1	2	0	1
2033:	0	1	0	1	0	1	1	3
2041:	0	1	2	0	0	0	0	0
2049:	1	0	1	1	1	0	0	0
2057:	1	0	0	1	0	1	0	0
2065:	1	0	1	2	1	1	0	0
2073:	0	3	0	0	0	3	1	0
2081:	1	1	0	0	0	0	0	0
2089:	0	1	0	1	0	0	1	0

2097: 0 2 0 2 0 1 4 4

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Channel	1	2	3	4	5	6	7	8
2105:	1	1	0	2	0	1	1	0
2113:	1	0	0	1	0	1	0	2
2121:	0	1	1	0	0	1	0	0
2129:	2	0	1	0	2	0	3	0
2137:	1	0	0	0	1	1	0	1
2145:	0	0	1	0	1	0	0	0
2153:	2	2	1	1	0	1	2	0
2161:	1	2	1	1	1	2	1	0
2169:	1	1	0	1	0	0	1	1
2177:	1	2	1	0	0	0	2	0
2185:	1	0	0	0	1	1	1	2
2193:	1	1	0	1	1	0	0	0
2201:	0	0	1	1	1	2	1	1
2209:	0	2	0	0	1	2	0	1
2217:	1	0	0	0	1	1	0	0
2225:	0	0	0	0	0	2	0	0
2233:	1	0	1	0	0	0	0	0
2241:	1	0	1	0	2	0	0	0
2249:	0	1	2	1	1	0	1	0
2257:	0	0	2	1	1	1	2	0
2265:	0	1	0	1	1	0	0	0
2273:	0	0	1	0	0	0	0	1
2281:	0	0	0	0	0	0	1	1
2289:	1	0	1	0	0	0	0	0
2297:	0	2	0	1	0	0	2	0
2305:	0	0	1	2	0	2	0	0
2313:	0	0	0	0	1	0	0	0
2321:	1	0	0	2	1	2	0	2
2329:	0	0	0	0	0	0	0	0
2337:	0	0	1	2	0	0	1	0
2345:	0	1	0	0	0	2	1	0
2353:	1	0	1	0	1	3	1	2
2361:	0	1	1	1	0	2	0	0
2369:	1	0	0	0	1	1	0	3
2377:	0	1	0	1	0	1	1	0
2385:	0	0	1	0	1	0	0	0
2393:	1	0	0	1	0	0	1	0
2401:	0	0	1	0	0	1	0	0
2409:	1	0	0	1	0	0	2	0
2417:	1	1	1	2	0	0	0	1
2425:	1	0	1	1	0	0	0	1
2433:	3	1	1	0	0	0	0	0
2441:	1	0	1	0	0	1	0	3
2449:	0	0	1	2	1	0	0	2
2457:	0	2	0	0	1	0	1	0
2465:	0	0	0	0	0	0	0	0
2473:	0	0	0	1	0	0	0	0
2481:	1	0	0	1	0	0	0	0
2489:	1	0	0	0	1	0	1	0
2497:	0	1	0	0	0	0	0	0
2505:	0	1	1	0	0	0	1	0
2513:	0	0	1	0	0	0	0	1
2521:	0	2	0	0	0	0	0	0

2529: 1 0 1 0 0 0 1 0

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Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	1	0	0	0	1	0	
2545:	0	0	0	1	0	1	0	0	
2553:	0	0	1	1	0	0	0	1	
2561:	0	1	1	1	0	1	1	0	
2569:	0	1	1	1	0	1	0	0	
2577:	0	0	2	1	1	0	1	0	
2585:	0	0	0	1	0	1	0	1	
2593:	0	0	0	0	0	1	0	0	
2601:	0	0	1	0	0	1	0	1	
2609:	0	0	1	1	8	13	11	8	
2617:	2	0	0	0	1	0	0	0	
2625:	0	0	0	0	0	0	0	0	
2633:	1	0	1	0	0	0	0	0	
2641:	0	0	0	1	0	1	1	0	
2649:	1	1	0	0	0	2	0	0	
2657:	0	0	0	0	0	0	0	0	
2665:	0	0	0	0	0	0	0	0	
2673:	0	1	0	0	0	0	0	0	
2681:	0	0	0	2	1	0	0	1	
2689:	0	1	0	0	0	0	0	0	
2697:	0	1	0	1	0	0	0	0	
2705:	0	1	0	1	1	0	0	0	
2713:	0	0	0	0	1	0	0	1	
2721:	0	0	0	0	0	0	0	0	
2729:	0	0	0	1	0	0	0	0	
2737:	0	0	0	0	0	1	0	0	
2745:	0	0	0	1	0	0	0	0	
2753:	0	0	0	0	0	1	1	0	
2761:	0	0	0	0	0	0	1	0	
2769:	1	0	0	0	0	1	0	0	
2777:	0	0	0	0	0	0	0	0	
2785:	0	0	0	0	0	0	0	0	
2793:	0	1	0	0	0	0	0	1	
2801:	0	0	3	0	1	0	0	0	
2809:	0	0	0	1	0	0	0	0	
2817:	0	0	0	0	1	0	0	0	
2825:	0	0	0	0	0	0	0	0	
2833:	0	0	0	0	0	0	0	0	
2841:	0	0	0	0	1	1	0	0	
2849:	0	0	0	0	0	0	0	1	
2857:	0	0	0	0	0	1	0	0	
2865:	0	1	1	0	0	0	0	0	
2873:	0	1	0	0	0	0	0	0	
2881:	0	0	0	0	0	0	0	0	
2889:	0	0	0	0	0	0	0	0	
2897:	0	0	1	0	0	0	0	0	
2905:	0	0	0	0	0	1	0	0	
2913:	0	1	0	0	0	0	1	0	
2921:	0	0	0	0	0	0	0	0	
2929:	0	0	0	0	1	0	0	0	
2937:	0	0	0	0	0	2	1	0	
2945:	0	0	1	0	0	1	0	0	
2953:	1	0	0	0	0	0	0	0	

2961: 0 2 1 1 1 0 1 0

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Channel	1	2	3	4	5	6	7	8	9
2969:	0	0	0	0	0	0	0	0	0
2977:	0	1	1	0	0	0	0	2	0
2985:	0	0	0	2	0	0	0	1	0
2993:	0	0	0	0	1	0	0	0	0
3001:	0	1	0	2	0	0	0	0	1
3009:	0	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0	0
3033:	0	1	0	0	0	0	0	0	0
3041:	0	0	0	0	1	1	0	0	0
3049:	0	0	0	0	0	0	0	1	0
3057:	0	0	1	0	0	0	0	0	0
3065:	0	0	0	1	0	0	0	0	0
3073:	0	0	0	0	1	0	0	0	0
3081:	0	0	0	0	0	0	0	0	1
3089:	0	0	0	0	0	0	0	0	0
3097:	0	0	0	0	0	1	0	0	0
3105:	0	0	0	0	1	0	0	0	1
3113:	0	0	0	0	0	1	0	0	0
3121:	0	0	0	1	0	0	0	0	0
3129:	0	0	1	0	0	0	0	0	0
3137:	2	1	0	0	0	0	0	0	0
3145:	0	0	0	0	1	0	0	0	0
3153:	0	0	0	0	0	0	0	1	0
3161:	0	0	0	0	0	0	0	1	0
3169:	0	0	0	0	1	1	0	0	0
3177:	0	0	0	0	0	0	0	0	0
3185:	2	0	0	1	0	0	0	0	0
3193:	0	1	0	0	0	0	0	1	0
3201:	2	0	0	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0	0
3225:	0	0	0	0	0	0	0	0	0
3233:	1	0	1	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	1	0
3249:	0	0	0	1	0	0	0	0	0
3257:	0	0	0	0	0	0	0	0	0
3265:	0	0	0	1	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0	0
3313:	1	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0	0
3353:	0	0	1	0	0	1	0	0	0
3361:	0	0	0	0	0	0	0	0	0
3369:	1	0	0	0	0	1	0	0	0
3377:	0	1	0	0	0	1	0	0	0
3385:	0	0	0	0	0	0	1	0	0

3393: 0 0 0 0 1 0 1 0

Sample Title: CP-5028 05-10

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	0	1	0	0	
3409:	0	0	2	0	0	0	0	1	
3417:	0	0	0	1	0	0	0	0	
3425:	0	0	0	0	0	0	0	0	
3433:	0	0	0	0	0	0	0	0	
3441:	0	0	0	0	0	0	1	1	
3449:	0	0	0	0	0	0	0	0	
3457:	0	0	0	0	0	0	0	0	
3465:	1	0	0	0	1	0	0	0	
3473:	0	0	0	0	0	1	0	1	
3481:	0	0	0	1	0	1	0	1	
3489:	1	0	0	0	0	0	0	0	
3497:	0	0	0	0	0	0	0	1	
3505:	0	0	0	1	0	0	0	0	
3513:	0	1	1	1	0	0	0	0	
3521:	0	0	0	0	0	0	0	0	
3529:	0	1	0	0	0	0	0	0	
3537:	0	0	1	0	0	0	0	1	
3545:	0	0	1	0	0	0	0	0	
3553:	0	0	0	0	0	0	1	0	
3561:	0	0	0	0	0	0	1	0	
3569:	0	0	0	0	0	0	0	0	
3577:	0	0	0	0	0	0	0	0	
3585:	0	0	0	0	0	0	0	0	
3593:	1	0	0	1	0	0	0	0	
3601:	0	0	0	0	0	0	1	0	
3609:	0	0	0	0	0	1	0	0	
3617:	0	0	0	0	0	0	0	0	
3625:	0	0	0	0	0	0	0	1	
3633:	0	1	0	0	0	1	0	1	
3641:	1	0	0	0	1	0	0	0	
3649:	0	0	0	0	0	0	0	0	
3657:	0	0	0	0	0	1	0	0	
3665:	0	0	0	0	0	0	0	0	
3673:	0	0	0	0	0	0	1	1	
3681:	0	0	0	0	0	0	0	0	
3689:	0	0	0	0	0	1	0	0	
3697:	0	0	0	0	0	0	0	0	
3705:	0	0	0	1	0	0	0	0	
3713:	0	0	0	0	0	0	0	0	
3721:	0	0	0	0	0	1	0	0	
3729:	0	0	0	0	0	1	1	0	
3737:	0	0	0	0	0	0	0	1	
3745:	0	0	0	0	0	0	0	0	
3753:	0	0	0	0	0	1	1	0	
3761:	0	0	0	0	0	0	0	0	
3769:	0	0	1	0	0	0	0	0	
3777:	0	0	0	1	0	0	0	0	
3785:	0	0	0	0	0	0	0	0	
3793:	0	0	0	0	0	0	0	0	
3801:	0	0	0	1	1	0	0	0	
3809:	0	0	0	0	0	1	0	0	
3817:	0	0	0	0	0	0	1	0	

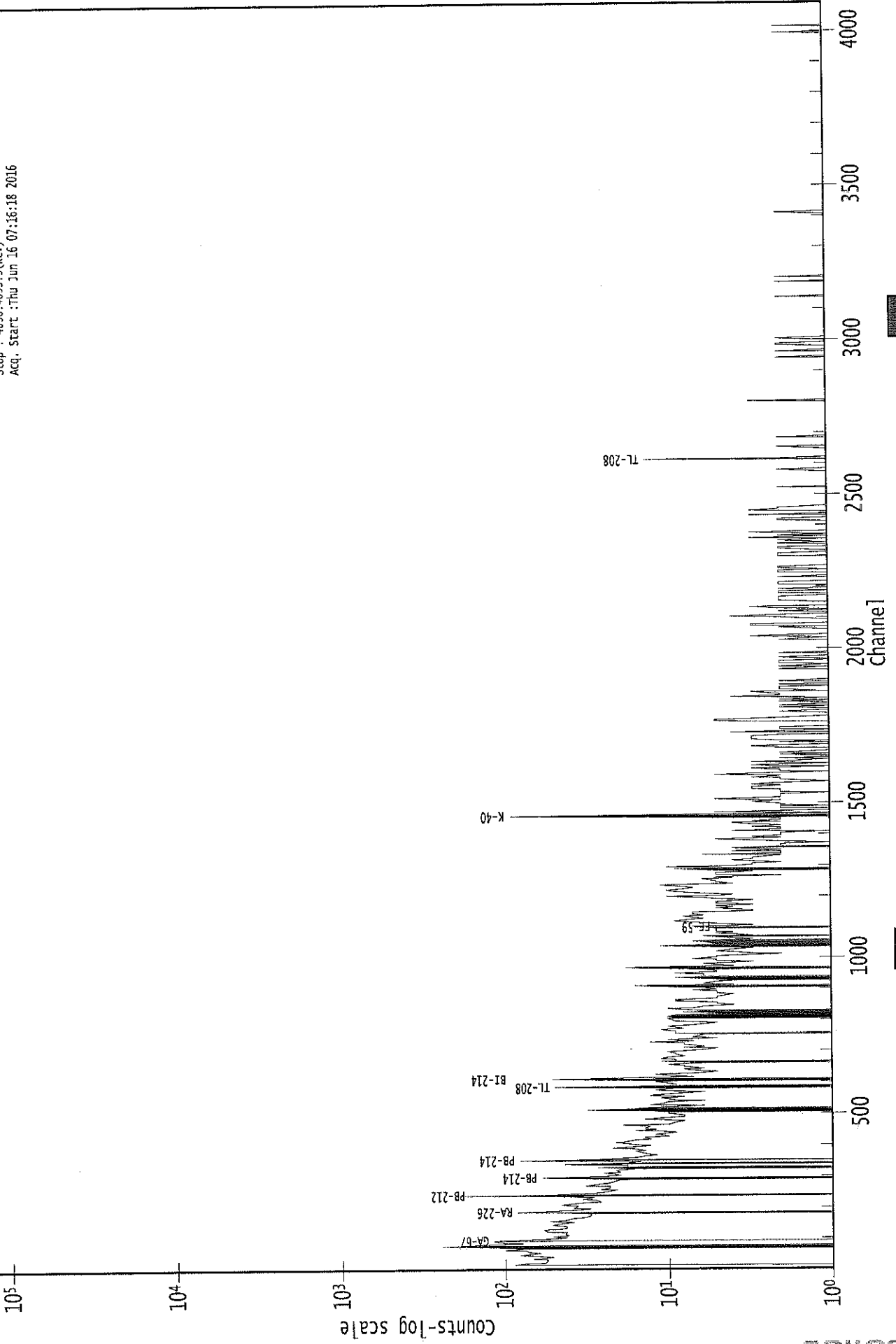
3825: 0 0 0 0 1 0 0 0

Sample Title: CP-5028 05-10

Channel								
3833:	0	0	1	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	1	0	0	1	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	1	0	0	1	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	1	0	0	0	0	0	0	0
3905:	0	0	1	0	0	0	0	0
3913:	0	0	1	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	1	1	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	1	0	0	1	0	1	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	1	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	1	0	0	0	1	1	0
3993:	0	2	0	1	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	2
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	1
4065:	0	0	0	0	0	0	1	1
4073:	0	0	0	1	0	1	0	0
4081:	0	0	0	0	0	0	1	0
4089:	0	0	0	0	0	0	0	0

0000038975.CNF

Live Time :3600.000 sec
Real Time :3601.240 sec
Start: 1: 1.8(keV)
Stop : 4096.4093.9(keV)
Acq. Start :Thu Jun 16 07:16:18 2016



Analysis Report for 1606041-07
CP-5028 10-15

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[Handwritten initials]

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-07
Sample Description : CP-5028 10-15
Sample Type : SOIL

Sample Size : 2.737E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 4:34:15PM
Acquisition Started : 6/16/2016 7:28:34AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.0 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 19 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 38976

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606041-07
CP-5028 10-15

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 8:28:39AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.52	46.87	0.0000	0.00
2	64.65	65.00	0.0000	0.00
3	76.93	77.27	0.0000	0.00
4	87.80	88.13	0.0000	0.00
5	90.80	91.14	0.0000	0.00
6	129.69	130.01	0.0000	0.00
7	186.56	186.87	0.0000	0.00
8	195.20	195.50	0.0000	0.00
9	239.03	239.32	0.0000	0.00
10	242.39	242.68	0.0000	0.00
11	270.52	270.80	0.0000	0.00
12	278.49	278.76	0.0000	0.00
13	295.66	295.93	0.0000	0.00
14	300.53	300.79	0.0000	0.00
15	338.92	339.18	0.0000	0.00
16	352.49	352.74	0.0000	0.00
17	463.41	463.62	0.0000	0.00
18	511.55	511.74	0.0000	0.00
19	546.22	546.41	0.0000	0.00
20	570.83	571.00	0.0000	0.00
21	583.80	583.97	0.0000	0.00
22	610.14	610.30	0.0000	0.00
23	615.84	616.00	0.0000	0.00
24	655.81	655.95	0.0000	0.00
25	728.28	728.40	0.0000	0.00
26	785.94	786.03	0.0000	0.00
27	795.85	795.94	0.0000	0.00
28	847.72	847.80	0.0000	0.00
29	861.12	861.19	0.0000	0.00
30	871.49	871.56	0.0000	0.00
31	912.07	912.13	0.0000	0.00
32	923.97	924.02	0.0000	0.00
33	935.42	935.47	0.0000	0.00
34	965.28	965.31	0.0000	0.00
35	970.25	970.29	0.0000	0.00
36	1055.20	1055.21	0.0000	0.00
37	1066.15	1066.15	0.0000	0.00
38	1089.33	1089.32	0.0000	0.00
39	1111.59	1111.58	0.0000	0.00
40	1121.02	1121.00	0.0000	0.00
41	1124.45	1124.43	0.0000	0.00
42	1152.24	1152.21	0.0000	0.00

Analysis Report for 1606041-07
CP-5028 10-15

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1163.85	1163.81	0.0000	0.00
44	1239.64	1239.58	0.0000	0.00
45	1290.73	1290.65	0.0000	0.00
46	1406.16	1406.04	0.0000	0.00
47	1461.79	1461.65	0.0000	0.00
48	1465.61	1465.46	0.0000	0.00
49	1471.68	1471.54	0.0000	0.00
50	1559.97	1559.80	0.0000	0.00
51	1582.69	1582.50	0.0000	0.00
52	1591.77	1591.58	0.0000	0.00
53	1662.11	1661.90	0.0000	0.00
54	1732.32	1732.08	0.0000	0.00
55	1765.66	1765.41	0.0000	0.00
56	1781.46	1781.20	0.0000	0.00
57	1791.98	1791.71	0.0000	0.00
58	1849.23	1848.94	0.0000	0.00
59	1856.70	1856.41	0.0000	0.00
60	1943.82	1943.50	0.0000	0.00
61	1958.85	1958.52	0.0000	0.00
62	2077.17	2076.80	0.0000	0.00
63	2104.70	2104.31	0.0000	0.00
64	2121.03	2120.64	0.0000	0.00
65	2205.43	2205.01	0.0000	0.00
66	2220.18	2219.75	0.0000	0.00
67	2295.74	2295.29	0.0000	0.00
68	2374.13	2373.64	0.0000	0.00
69	2615.73	2615.15	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606041-07
CP-5028 10-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 8:28:39AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.52	43 -	49	46.87	1.57E+02	68.92	7.50E+02	1.68
	2	64.65	61 -	69	65.00	2.30E+02	109.81	1.72E+03	1.70
	3	76.93	72 -	82	77.27	1.17E+03	137.60	1.89E+03	2.86
m	4	87.80	83 -	98	88.13	1.78E+02	55.96	5.68E+02	1.48
m	5	90.80	83 -	98	91.14	1.43E+02	53.70	5.37E+02	1.49
	6	129.69	127 -	132	130.01	4.77E+01	59.20	6.63E+02	1.00
	7	186.56	183 -	189	186.87	2.29E+02	63.50	5.67E+02	1.53
	8	195.20	193 -	198	195.50	4.98E+01	48.05	4.20E+02	3.52
M	9	239.03	234 -	247	239.32	8.04E+02	67.31	2.96E+02	1.76
m	10	242.39	234 -	247	242.68	1.52E+02	62.10	3.27E+02	1.85
	11	270.52	267 -	274	270.80	7.14E+01	48.74	3.49E+02	2.09
	12	278.49	275 -	283	278.76	7.82E+01	53.42	3.90E+02	2.27
	13	295.66	292 -	299	295.93	2.14E+02	54.07	3.45E+02	1.32
	14	300.53	300 -	304	300.79	2.80E+01	34.49	2.42E+02	1.21
	15	338.92	335 -	342	339.18	1.73E+02	50.12	3.01E+02	1.59
	16	352.49	349 -	357	352.74	3.83E+02	58.59	2.92E+02	1.82
	17	463.41	460 -	467	463.62	4.85E+01	36.66	1.91E+02	1.48
	18	511.55	507 -	518	511.74	1.80E+02	51.03	2.39E+02	2.27
	19	546.22	544 -	548	546.41	1.77E+01	21.32	8.25E+01	1.82
M	20	570.83	568 -	588	571.00	2.04E+01	21.59	9.11E+01	1.77
m	21	583.80	568 -	588	583.97	2.48E+02	37.82	1.02E+02	1.71
M	22	610.14	600 -	622	610.30	3.13E+02	40.90	1.12E+02	2.10
m	23	615.84	600 -	622	616.00	1.74E+01	21.15	6.08E+01	1.80
	24	655.81	654 -	658	655.95	1.64E+01	18.89	6.13E+01	2.75
	25	728.28	725 -	733	728.40	9.85E+01	32.09	9.49E+01	2.00
	26	785.94	783 -	789	786.03	2.10E+01	24.55	9.40E+01	1.13
	27	795.85	792 -	800	795.94	3.20E+01	29.30	1.12E+02	1.66
	28	847.72	845 -	851	847.80	2.36E+01	20.50	5.89E+01	1.34
	29	861.12	856 -	864	861.19	4.25E+01	26.32	7.90E+01	2.68
	30	871.49	866 -	876	871.56	3.11E+01	25.71	7.17E+01	5.69
	31	912.07	907 -	916	912.13	1.43E+02	38.97	1.35E+02	1.73
	32	923.97	920 -	927	924.02	1.74E+01	21.54	6.13E+01	1.92
	33	935.42	929 -	942	935.47	4.62E+01	31.70	9.15E+01	8.20
M	34	965.28	962 -	976	965.31	2.69E+01	24.55	9.96E+01	2.26
m	35	970.25	962 -	976	970.29	7.05E+01	28.54	8.67E+01	2.30
	36	1055.20	1051 -	1060	1055.21	2.58E+01	24.29	6.84E+01	3.33
	37	1066.15	1061 -	1070	1066.15	2.64E+01	23.69	6.52E+01	3.32
	38	1089.33	1084 -	1093	1089.32	1.99E+01	24.56	7.43E+01	4.26
	39	1111.59	1109 -	1115	1111.58	2.14E+01	19.38	5.31E+01	1.34
M	40	1121.02	1116 -	1129	1121.00	6.25E+01	21.56	4.10E+01	2.06

Analysis Report for 1606041-07

CP-5028 10-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
m	41	1124.45	1116 -	1129	1124.43	2.31E+01	23.39	4.04E+01	2.49
M	42	1152.24	1151 -	1166	1152.21	1.95E+01	9.66	1.58E+01	2.28
m	43	1163.85	1151 -	1166	1163.81	1.78E+01	18.09	5.22E+01	2.28
	44	1239.64	1236 -	1243	1239.58	2.58E+01	25.92	9.25E+01	1.92
	45	1290.73	1288 -	1293	1290.65	1.63E+01	11.87	1.54E+01	2.84
	46	1406.16	1400 -	1410	1406.04	2.70E+01	20.93	4.40E+01	1.12
M	47	1461.79	1456 -	1474	1461.65	6.28E+02	51.83	3.50E+01	2.20
m	48	1465.61	1456 -	1474	1465.46	1.29E+01	40.58	3.50E+01	2.49
m	49	1471.68	1456 -	1474	1471.54	1.03E+01	12.73	3.00E+01	2.66
	50	1559.97	1554 -	1567	1559.80	2.21E+01	12.37	7.88E+00	5.59
	51	1582.69	1579 -	1584	1582.50	7.00E+00	9.38	1.20E+01	1.76
	52	1591.77	1586 -	1596	1591.58	3.13E+01	15.71	1.54E+01	5.74
	53	1662.11	1658 -	1666	1661.90	1.05E+01	8.50	4.92E+00	5.38
	54	1732.32	1728 -	1735	1732.08	1.41E+01	8.94	3.88E+00	4.02
	55	1765.66	1760 -	1771	1765.41	5.40E+01	17.66	1.20E+01	2.24
	56	1781.46	1775 -	1785	1781.20	1.50E+01	7.75	0.00E+00	4.36
	57	1791.98	1788 -	1795	1791.71	9.92E+00	8.00	4.17E+00	3.92
	58	1849.23	1846 -	1851	1848.94	1.70E+01	8.25	0.00E+00	1.65
	59	1856.70	1853 -	1859	1856.41	8.45E+00	7.23	3.10E+00	1.21
	60	1943.82	1942 -	1946	1943.50	6.00E+00	4.90	0.00E+00	1.16
	61	1958.85	1955 -	1961	1958.52	5.67E+00	7.78	6.67E+00	2.70
	62	2077.17	2074 -	2078	2076.80	5.00E+00	4.47	0.00E+00	1.16
	63	2104.70	2100 -	2109	2104.31	1.59E+01	11.58	1.03E+01	2.01
	64	2121.03	2116 -	2125	2120.64	1.10E+01	6.63	0.00E+00	1.12
	65	2205.43	2200 -	2209	2205.01	1.60E+01	12.92	1.40E+01	1.83
	66	2220.18	2213 -	2224	2219.75	9.13E+00	11.49	1.17E+01	3.70
	67	2295.74	2291 -	2300	2295.29	1.40E+01	7.48	0.00E+00	1.25
	68	2374.13	2370 -	2377	2373.64	1.10E+01	6.63	0.00E+00	3.16
	69	2615.73	2610 -	2619	2615.15	8.20E+01	18.11	0.00E+00	2.18

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 8:28:39AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
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Analysis Report for 1606041-07

CP-5028 10-15

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.52	43 -	49	1.57E+02	68.92	7.50E+02	5.28E+01
	2	64.65	61 -	69	2.30E+02	109.81	1.72E+03	8.68E+01
	3	76.93	72 -	82	1.17E+03	137.60	1.89E+03	9.81E+01
m	4	87.80	83 -	98	1.78E+02	55.96	5.68E+02	3.92E+01
m	5	90.80	83 -	98	1.43E+02	53.70	5.37E+02	3.81E+01
	6	129.69	127 -	132	4.77E+01	59.20	6.63E+02	4.73E+01
	7	186.56	183 -	189	2.29E+02	63.50	5.67E+02	4.59E+01
	8	195.20	193 -	198	4.98E+01	48.05	4.20E+02	3.78E+01
M	9	239.03	234 -	247	8.04E+02	67.31	2.96E+02	2.83E+01
m	10	242.39	234 -	247	1.52E+02	62.10	3.27E+02	2.97E+01
	11	270.52	267 -	274	7.14E+01	48.74	3.49E+02	3.76E+01
	12	278.49	275 -	283	7.82E+01	53.42	3.90E+02	4.14E+01
	13	295.66	292 -	299	2.14E+02	54.07	3.45E+02	3.74E+01
	14	300.53	300 -	304	2.80E+01	34.49	2.42E+02	2.70E+01
	15	338.92	335 -	342	1.73E+02	50.12	3.01E+02	3.51E+01
	16	352.49	349 -	357	3.83E+02	58.59	2.92E+02	3.58E+01
	17	463.41	460 -	467	4.85E+01	36.66	1.91E+02	2.79E+01
	18	511.55	507 -	518	1.80E+02	51.03	2.39E+02	3.57E+01
	19	546.22	544 -	548	1.77E+01	21.32	8.25E+01	1.61E+01
M	20	570.83	568 -	588	2.04E+01	21.59	9.11E+01	1.57E+01
m	21	583.80	568 -	588	2.48E+02	37.82	1.02E+02	1.66E+01
M	22	610.14	600 -	622	3.13E+02	40.90	1.12E+02	1.74E+01
m	23	615.84	600 -	622	1.74E+01	21.15	6.08E+01	1.28E+01
	24	655.81	654 -	658	1.64E+01	18.89	6.13E+01	1.40E+01
	25	728.28	725 -	733	9.85E+01	32.09	9.49E+01	2.07E+01
	26	785.94	783 -	789	2.10E+01	24.55	9.40E+01	1.87E+01
	27	795.85	792 -	800	3.20E+01	29.30	1.12E+02	2.22E+01
	28	847.72	845 -	851	2.36E+01	20.50	5.89E+01	1.48E+01
	29	861.12	856 -	864	4.25E+01	26.32	7.90E+01	1.88E+01
	30	871.49	866 -	876	3.11E+01	25.71	7.17E+01	1.90E+01
	31	912.07	907 -	916	1.43E+02	38.97	1.35E+02	2.53E+01
	32	923.97	920 -	927	1.74E+01	21.54	6.13E+01	1.63E+01
	33	935.42	929 -	942	4.62E+01	31.70	9.15E+01	2.35E+01
M	34	965.28	962 -	976	2.69E+01	24.55	9.96E+01	1.64E+01
m	35	970.25	962 -	976	7.05E+01	28.54	8.67E+01	1.53E+01
	36	1055.20	1051 -	1060	2.58E+01	24.29	6.84E+01	1.81E+01
	37	1066.15	1061 -	1070	2.64E+01	23.69	6.52E+01	1.75E+01
	38	1089.33	1084 -	1093	1.99E+01	24.56	7.43E+01	1.88E+01
	39	1111.59	1109 -	1115	2.14E+01	19.38	5.31E+01	1.40E+01
M	40	1121.02	1116 -	1129	6.25E+01	21.56	4.10E+01	1.05E+01
m	41	1124.45	1116 -	1129	2.31E+01	23.39	4.04E+01	1.05E+01
M	42	1152.24	1151 -	1166	1.95E+01	9.66	1.58E+01	6.55E+00
m	43	1163.85	1151 -	1166	1.78E+01	18.09	5.22E+01	1.19E+01
	44	1239.64	1236 -	1243	2.58E+01	25.92	9.25E+01	1.96E+01
	45	1290.73	1288 -	1293	1.63E+01	11.87	1.54E+01	7.15E+00
	46	1406.16	1400 -	1410	2.70E+01	20.93	4.40E+01	1.49E+01
M	47	1461.79	1456 -	1474	6.28E+02	51.83	3.50E+01	9.73E+00
m	48	1465.61	1456 -	1474	1.29E+01	40.58	3.50E+01	9.73E+00
m	49	1471.68	1456 -	1474	1.03E+01	12.73	3.00E+01	9.00E+00
	50	1559.97	1554 -	1567	2.21E+01	12.37	7.88E+00	6.62E+00
	51	1582.69	1579 -	1584	7.00E+00	9.38	1.20E+01	6.37E+00

Analysis Report for 1606041-07
CP-5028 10-15

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
52	1591.77	1586 -	1596	3.13E+01	15.71	1.54E+01	9.06E+00
53	1662.11	1658 -	1666	1.05E+01	8.50	4.92E+00	4.51E+00
54	1732.32	1728 -	1735	1.41E+01	8.94	3.88E+00	4.01E+00
55	1765.66	1760 -	1771	5.40E+01	17.66	1.20E+01	8.05E+00
56	1781.46	1775 -	1785	1.50E+01	7.75	0.00E+00	0.00E+00
57	1791.98	1788 -	1795	9.92E+00	8.00	4.17E+00	4.05E+00
58	1849.23	1846 -	1851	1.70E+01	8.25	0.00E+00	0.00E+00
59	1856.70	1853 -	1859	8.45E+00	7.23	3.10E+00	3.53E+00
60	1943.82	1942 -	1946	6.00E+00	4.90	0.00E+00	0.00E+00
61	1958.85	1955 -	1961	5.67E+00	7.78	6.67E+00	5.06E+00
62	2077.17	2074 -	2078	5.00E+00	4.47	0.00E+00	0.00E+00
63	2104.70	2100 -	2109	1.59E+01	11.58	1.03E+01	6.91E+00
64	2121.03	2116 -	2125	1.10E+01	6.63	0.00E+00	0.00E+00
65	2205.43	2200 -	2209	1.60E+01	12.92	1.40E+01	8.34E+00
66	2220.18	2213 -	2224	9.13E+00	11.49	1.17E+01	8.03E+00
67	2295.74	2291 -	2300	1.40E+01	7.48	0.00E+00	0.00E+00
68	2374.13	2370 -	2377	1.10E+01	6.63	0.00E+00	0.00E+00
69	2615.73	2610 -	2619	8.20E+01	18.11	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 8:28:39AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	46.52	43 -	49	46.87	1.57E+02	68.92	7.50E+02	PB-210
2	64.65	61 -	69	65.00	2.30E+02	109.81	1.72E+03	.....
3	76.93	72 -	82	77.27	1.17E+03	137.60	1.89E+03	.....
m 4	87.80	83 -	98	88.13	1.78E+02	55.96	5.68E+02	SN-126 CD-109 LU-176
m 5	90.80	83 -	98	91.14	1.43E+02	53.70	5.37E+02	ND-147

Analysis Report for 1606041-07

CP-5028 10-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	6	129.69	127 -	132	130.01	4.77E+01	59.20	6.63E+02	.....
	7	186.56	183 -	189	186.87	2.29E+02	63.50	5.67E+02	RA-226
	8	195.20	193 -	198	195.50	4.98E+01	48.05	4.20E+02	.....
M	9	239.03	234 -	247	239.32	8.04E+02	67.31	2.96E+02	PB-212
m	10	242.39	234 -	247	242.68	1.52E+02	62.10	3.27E+02	.....
	11	270.52	267 -	274	270.80	7.14E+01	48.74	3.49E+02	.....
	12	278.49	275 -	283	278.76	7.82E+01	53.42	3.90E+02	HG-203 CM-243 NP-239
	13	295.66	292 -	299	295.93	2.14E+02	54.07	3.45E+02	PB-214
	14	300.53	300 -	304	300.79	2.80E+01	34.49	2.42E+02	GA-67 PB-212 BI-210M
	15	338.92	335 -	342	339.18	1.73E+02	50.12	3.01E+02	AC-228
	16	352.49	349 -	357	352.74	3.83E+02	58.59	2.92E+02	PB-214
	17	463.41	460 -	467	463.62	4.85E+01	36.66	1.91E+02	SB-125
	18	511.55	507 -	518	511.74	1.80E+02	51.03	2.39E+02	.....
	19	546.22	544 -	548	546.41	1.77E+01	21.32	8.25E+01	.....
M	20	570.83	568 -	588	571.00	2.04E+01	21.59	9.11E+01	.....
m	21	583.80	568 -	588	583.97	2.48E+02	37.82	1.02E+02	TL-208
M	22	610.14	600 -	622	610.30	3.13E+02	40.90	1.12E+02	BI-214
m	23	615.84	600 -	622	616.00	1.74E+01	21.15	6.08E+01	.....
	24	655.81	654 -	658	655.95	1.64E+01	18.89	6.13E+01	.....
	25	728.28	725 -	733	728.40	9.85E+01	32.09	9.49E+01	.....
	26	785.94	783 -	789	786.03	2.10E+01	24.55	9.40E+01	.....
	27	795.85	792 -	800	795.94	3.20E+01	29.30	1.12E+02	CS-134
	28	847.72	845 -	851	847.80	2.36E+01	20.50	5.89E+01	CO-56
	29	861.12	856 -	864	861.19	4.25E+01	26.32	7.90E+01	TL-208
	30	871.49	866 -	876	871.56	3.11E+01	25.71	7.17E+01	NB-94
	31	912.07	907 -	916	912.13	1.43E+02	38.97	1.35E+02	LU-172
	32	923.97	920 -	927	924.02	1.74E+01	21.54	6.13E+01	.....
	33	935.42	929 -	942	935.47	4.62E+01	31.70	9.15E+01	.....
M	34	965.28	962 -	976	965.31	2.69E+01	24.55	9.96E+01	.....
m	35	970.25	962 -	976	970.29	7.05E+01	28.54	8.67E+01	.....
	36	1055.20	1051 -	1060	1055.21	2.58E+01	24.29	6.84E+01	.....
	37	1066.15	1061 -	1070	1066.15	2.64E+01	23.69	6.52E+01	.....
	38	1089.33	1084 -	1093	1089.32	1.99E+01	24.56	7.43E+01	.....
	39	1111.59	1109 -	1115	1111.58	2.14E+01	19.38	5.31E+01	EU-152
M	40	1121.02	1116 -	1129	1121.00	6.25E+01	21.56	4.10E+01	TA-182 SC-46 BI-214
m	41	1124.45	1116 -	1129	1124.43	2.31E+01	23.39	4.04E+01	.....
M	42	1152.24	1151 -	1166	1152.21	1.95E+01	9.66	1.58E+01	.....
m	43	1163.85	1151 -	1166	1163.81	1.78E+01	18.09	5.22E+01	.....
	44	1239.64	1236 -	1243	1239.58	2.58E+01	25.92	9.25E+01	.....
	45	1290.73	1288 -	1293	1290.65	1.63E+01	11.87	1.54E+01	FE-59
	46	1406.16	1400 -	1410	1406.04	2.70E+01	20.93	4.40E+01	.....
M	47	1461.79	1456 -	1474	1461.65	6.28E+02	51.83	3.50E+01	K-40
m	48	1465.61	1456 -	1474	1465.46	1.29E+01	40.58	3.50E+01	.....
m	49	1471.68	1456 -	1474	1471.54	1.03E+01	12.73	3.00E+01	.....
	50	1559.97	1554 -	1567	1559.80	2.21E+01	12.37	7.88E+00	.....
	51	1582.69	1579 -	1584	1582.50	7.00E+00	9.38	1.20E+01	.....
	52	1591.77	1586 -	1596	1591.58	3.13E+01	15.71	1.54E+01	.....
	53	1662.11	1658 -	1666	1661.90	1.05E+01	8.50	4.92E+00	.....

Analysis Report for 1606041-07

CP-5028 10-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
54	1732.32	1728 -	1735	1732.08	1.41E+01	8.94	3.88E+00	.....
55	1765.66	1760 -	1771	1765.41	5.40E+01	17.66	1.20E+01	.....
56	1781.46	1775 -	1785	1781.20	1.50E+01	7.75	0.00E+00	.....
57	1791.98	1788 -	1795	1791.71	9.92E+00	8.00	4.17E+00	.....
58	1849.23	1846 -	1851	1848.94	1.70E+01	8.25	0.00E+00	.....
59	1856.70	1853 -	1859	1856.41	8.45E+00	7.23	3.10E+00	.....
60	1943.82	1942 -	1946	1943.50	6.00E+00	4.90	0.00E+00	.....
61	1958.85	1955 -	1961	1958.52	5.67E+00	7.78	6.67E+00	.....
62	2077.17	2074 -	2078	2076.80	5.00E+00	4.47	0.00E+00	.....
63	2104.70	2100 -	2109	2104.31	1.59E+01	11.58	1.03E+01	.....
64	2121.03	2116 -	2125	2120.64	1.10E+01	6.63	0.00E+00	.....
65	2205.43	2200 -	2209	2205.01	1.60E+01	12.92	1.40E+01	.....
66	2220.18	2213 -	2224	2219.75	9.13E+00	11.49	1.17E+01	.....
67	2295.74	2291 -	2300	2295.29	1.40E+01	7.48	0.00E+00	.....
68	2374.13	2370 -	2377	2373.64	1.10E+01	6.63	0.00E+00	.....
69	2615.73	2610 -	2619	2615.15	8.20E+01	18.11	0.00E+00	.....

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 8:28:39AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.52	1.57E+02	68.92	1.68E-02	1.78E-03
	2	64.65	2.30E+02	109.81	2.53E-02	1.95E-03
	3	76.93	1.17E+03	137.60	2.77E-02	2.37E-03
m	4	87.80	1.78E+02	55.96	2.85E-02	2.73E-03
m	5	90.80	1.43E+02	53.70	2.86E-02	2.69E-03
	6	129.69	4.77E+01	59.20	2.67E-02	2.09E-03
	7	186.56	2.29E+02	63.50	2.24E-02	2.02E-03
	8	195.20	4.98E+01	48.05	2.18E-02	1.96E-03
M	9	239.03	8.04E+02	67.31	1.92E-02	1.64E-03
m	10	242.39	1.52E+02	62.10	1.90E-02	1.61E-03
	11	270.52	7.14E+01	48.74	1.77E-02	1.40E-03
	12	278.49	7.82E+01	53.42	1.74E-02	1.34E-03
	13	295.66	2.14E+02	54.07	1.67E-02	1.31E-03
	14	300.53	2.80E+01	34.49	1.65E-02	1.30E-03

: 00502

Analysis Report for 1606041-07
CP-5028 10-15

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	15	338.92	1.73E+02	50.12	1.52E-02	1.22E-03
	16	352.49	3.83E+02	58.59	1.47E-02	1.19E-03
	17	463.41	4.85E+01	36.66	1.21E-02	1.04E-03
	18	511.55	1.80E+02	51.03	1.12E-02	9.90E-04
	19	546.22	1.77E+01	21.32	1.07E-02	9.54E-04
M	20	570.83	2.04E+01	21.59	1.03E-02	9.28E-04
m	21	583.80	2.48E+02	37.82	1.02E-02	9.15E-04
M	22	610.14	3.13E+02	40.90	9.82E-03	8.88E-04
m	23	615.84	1.74E+01	21.15	9.75E-03	8.82E-04
	24	655.81	1.64E+01	18.89	9.28E-03	8.40E-04
	25	728.28	9.85E+01	32.09	8.55E-03	7.74E-04
	26	785.94	2.10E+01	24.55	8.04E-03	7.23E-04
	27	795.85	3.20E+01	29.30	7.96E-03	7.14E-04
	28	847.72	2.36E+01	20.50	7.57E-03	6.67E-04
	29	861.12	4.25E+01	26.32	7.48E-03	6.55E-04
	30	871.49	3.11E+01	25.71	7.41E-03	6.46E-04
	31	912.07	1.43E+02	38.97	7.14E-03	6.15E-04
	32	923.97	1.74E+01	21.54	7.07E-03	6.09E-04
	33	935.42	4.62E+01	31.70	7.00E-03	6.03E-04
M	34	965.28	2.69E+01	24.55	6.83E-03	5.87E-04
m	35	970.25	7.05E+01	28.54	6.80E-03	5.85E-04
	36	1055.20	2.58E+01	24.29	6.36E-03	5.41E-04
	37	1066.15	2.64E+01	23.69	6.31E-03	5.35E-04
	38	1089.33	1.99E+01	24.56	6.20E-03	5.23E-04
	39	1111.59	2.14E+01	19.38	6.10E-03	5.11E-04
M	40	1121.02	6.25E+01	21.56	6.06E-03	5.06E-04
m	41	1124.45	2.31E+01	23.39	6.05E-03	5.05E-04
M	42	1152.24	1.95E+01	9.66	5.93E-03	4.90E-04
m	43	1163.85	1.78E+01	18.09	5.89E-03	4.84E-04
	44	1239.64	2.58E+01	25.92	5.61E-03	4.67E-04
	45	1290.73	1.63E+01	11.87	5.44E-03	4.59E-04
	46	1406.16	2.70E+01	20.93	5.11E-03	4.33E-04
M	47	1461.79	6.28E+02	51.83	4.97E-03	4.19E-04
m	48	1465.61	1.29E+01	40.58	4.96E-03	4.18E-04
m	49	1471.68	1.03E+01	12.73	4.94E-03	4.17E-04
	50	1559.97	2.21E+01	12.37	4.75E-03	3.95E-04
	51	1582.69	7.00E+00	9.38	4.71E-03	3.89E-04
	52	1591.77	3.13E+01	15.71	4.69E-03	3.87E-04
	53	1662.11	1.05E+01	8.50	4.56E-03	3.69E-04
	54	1732.32	1.41E+01	8.94	4.44E-03	3.52E-04
	55	1765.66	5.40E+01	17.66	4.39E-03	3.43E-04
	56	1781.46	1.50E+01	7.75	4.37E-03	3.39E-04
	57	1791.98	9.92E+00	8.00	4.36E-03	3.37E-04
	58	1849.23	1.70E+01	8.25	4.28E-03	3.26E-04
	59	1856.70	8.45E+00	7.23	4.27E-03	3.26E-04
	60	1943.82	6.00E+00	4.90	4.17E-03	3.26E-04
	61	1958.85	5.67E+00	7.78	4.15E-03	3.26E-04
	62	2077.17	5.00E+00	4.47	4.04E-03	3.26E-04
	63	2104.70	1.59E+01	11.58	4.02E-03	3.26E-04
	64	2121.03	1.10E+01	6.63	4.01E-03	3.26E-04
	65	2205.43	1.60E+01	12.92	3.95E-03	3.26E-04
	66	2220.18	9.13E+00	11.49	3.94E-03	3.26E-04
	67	2295.74	1.40E+01	7.48	3.90E-03	3.26E-04

Analysis Report for 1606041-07
CP-5028 10-15

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
68	2374.13	1.10E+01	6.63	3.86E-03	3.26E-04
69	2615.73	8.20E+01	18.11	3.79E-03	3.26E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 8:28:39AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038676.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
	1	46.52	1.57E+02	68.92	4.33E+01	8.35E+00	1.14E+02	6.94E+01
	2	64.65	2.30E+02	109.81	1.14E+02	2.81E+01	1.16E+02	1.13E+02
	3	76.93	1.17E+03	137.60			1.17E+03	1.38E+02
m	4	87.80	1.78E+02	55.96			1.78E+02	5.60E+01
m	5	90.80	1.43E+02	53.70			1.43E+02	5.37E+01
	6	129.69	4.77E+01	59.20			4.77E+01	5.92E+01
	7	186.56	2.29E+02	63.50	5.81E+01	8.50E+00	1.71E+02	6.41E+01
	8	195.20	4.98E+01	48.05			4.98E+01	4.81E+01
M	9	239.03	8.04E+02	67.31	1.81E+01	5.76E+00	7.85E+02	6.76E+01
m	10	242.39	1.52E+02	62.10			1.52E+02	6.21E+01
	11	270.52	7.14E+01	48.74			7.14E+01	4.87E+01
	12	278.49	7.82E+01	53.42			7.82E+01	5.34E+01
	13	295.66	2.14E+02	54.07	1.02E+00	5.38E+00	2.13E+02	5.43E+01
	14	300.53	2.80E+01	34.49			2.80E+01	3.45E+01
	15	338.92	1.73E+02	50.12	3.86E+00	4.98E+00	1.69E+02	5.04E+01
	16	352.49	3.83E+02	58.59	7.25E+00	4.86E+00	3.76E+02	5.88E+01
	17	463.41	4.85E+01	36.66			4.85E+01	3.67E+01
	18	511.55	1.80E+02	51.03	7.58E+01	5.38E+00	1.04E+02	5.13E+01
	19	546.22	1.77E+01	21.32			1.77E+01	2.13E+01
M	20	570.83	2.04E+01	21.59			2.04E+01	2.16E+01
m	21	583.80	2.48E+02	37.82	6.11E+00	3.78E+00	2.42E+02	3.80E+01
M	22	610.14	3.13E+02	40.90	6.74E+00	3.64E+00	3.06E+02	4.11E+01
m	23	615.84	1.74E+01	21.15			1.74E+01	2.11E+01
	24	655.81	1.64E+01	18.89			1.64E+01	1.89E+01
	25	728.28	9.85E+01	32.09			9.85E+01	3.21E+01
	26	785.94	2.10E+01	24.55			2.10E+01	2.46E+01
	27	795.85	3.20E+01	29.30			3.20E+01	2.93E+01
	28	847.72	2.36E+01	20.50			2.36E+01	2.05E+01

Analysis Report for 1606041-07

CP-5028 10-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
29	861.12	4.25E+01	26.32			4.25E+01	2.63E+01
30	871.49	3.11E+01	25.71			3.11E+01	2.57E+01
31	912.07	1.43E+02	38.97	4.21E+00	2.98E+00	1.39E+02	3.91E+01
32	923.97	1.74E+01	21.54			1.74E+01	2.15E+01
33	935.42	4.62E+01	31.70			4.62E+01	3.17E+01
M 34	965.28	2.69E+01	24.55			2.69E+01	2.45E+01
m 35	970.25	7.05E+01	28.54			7.05E+01	2.85E+01
36	1055.20	2.58E+01	24.29			2.58E+01	2.43E+01
37	1066.15	2.64E+01	23.69			2.64E+01	2.37E+01
38	1089.33	1.99E+01	24.56			1.99E+01	2.46E+01
39	1111.59	2.14E+01	19.38			2.14E+01	1.94E+01
M 40	1121.02	6.25E+01	21.56			6.25E+01	2.16E+01
m 41	1124.45	2.31E+01	23.39			2.31E+01	2.34E+01
M 42	1152.24	1.95E+01	9.66			1.95E+01	9.66E+00
m 43	1163.85	1.78E+01	18.09			1.78E+01	1.81E+01
44	1239.64	2.58E+01	25.92			2.58E+01	2.59E+01
45	1290.73	1.63E+01	11.87			1.63E+01	1.19E+01
46	1406.16	2.70E+01	20.93			2.70E+01	2.09E+01
M 47	1461.79	6.28E+02	51.83	6.83E+00	2.10E+00	6.21E+02	5.19E+01
m 48	1465.61	1.29E+01	40.58			1.29E+01	4.06E+01
m 49	1471.68	1.03E+01	12.73			1.03E+01	1.27E+01
50	1559.97	2.21E+01	12.37			2.21E+01	1.24E+01
51	1582.69	7.00E+00	9.38			7.00E+00	9.38E+00
52	1591.77	3.13E+01	15.71			3.13E+01	1.57E+01
53	1662.11	1.05E+01	8.50			1.05E+01	8.50E+00
54	1732.32	1.41E+01	8.94			1.41E+01	8.94E+00
55	1765.66	5.40E+01	17.66	1.66E+00	1.65E+00	5.23E+01	1.77E+01
56	1781.46	1.50E+01	7.75			1.50E+01	7.75E+00
57	1791.98	9.92E+00	8.00			9.92E+00	8.00E+00
58	1849.23	1.70E+01	8.25			1.70E+01	8.25E+00
59	1856.70	8.45E+00	7.23			8.45E+00	7.23E+00
60	1943.82	6.00E+00	4.90			6.00E+00	4.90E+00
61	1958.85	5.67E+00	7.78			5.67E+00	7.78E+00
62	2077.17	5.00E+00	4.47			5.00E+00	4.47E+00
63	2104.70	1.59E+01	11.58			1.59E+01	1.16E+01
64	2121.03	1.10E+01	6.63			1.10E+01	6.63E+00
65	2205.43	1.60E+01	12.92			1.60E+01	1.29E+01
66	2220.18	9.13E+00	11.49			9.13E+00	1.15E+01
67	2295.74	1.40E+01	7.48			1.40E+01	7.48E+00
68	2374.13	1.10E+01	6.63			1.10E+01	6.63E+00
69	2615.73	8.20E+01	18.11	4.95E+00	1.35E+00	7.70E+01	1.82E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1606041-07

CP-5028 10-15

AREA CORRECTION REPORT

REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 8:28:39AM

Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038676.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.52	1.57E+02	68.92	4.33E+01	8.35E+00	1.14E+02	6.94E+01
	2	64.65	2.30E+02	109.81	1.14E+02	2.81E+01	1.16E+02	1.13E+02
	3	76.93	1.17E+03	137.60			1.17E+03	1.38E+02
m	4	87.80	1.78E+02	55.96			1.78E+02	5.60E+01
m	5	90.80	1.43E+02	53.70			1.43E+02	5.37E+01
	6	129.69	4.77E+01	59.20			4.77E+01	5.92E+01
	7	186.56	2.29E+02	63.50	5.81E+01	8.50E+00	1.71E+02	6.41E+01
	8	195.20	4.98E+01	48.05			4.98E+01	4.81E+01
M	9	239.03	8.04E+02	67.31	1.81E+01	5.76E+00	7.85E+02	6.76E+01
m	10	242.39	1.52E+02	62.10			1.52E+02	6.21E+01
	11	270.52	7.14E+01	48.74			7.14E+01	4.87E+01
	12	278.49	7.82E+01	53.42			7.82E+01	5.34E+01
	13	295.66	2.14E+02	54.07	1.02E+00	5.38E+00	2.13E+02	5.43E+01
	14	300.53	2.80E+01	34.49			2.80E+01	3.45E+01
	15	338.92	1.73E+02	50.12	3.86E+00	4.98E+00	1.69E+02	5.04E+01
	16	352.49	3.83E+02	58.59	7.25E+00	4.86E+00	3.76E+02	5.88E+01
	17	463.41	4.85E+01	36.66			4.85E+01	3.67E+01
	18	511.55	1.80E+02	51.03	7.58E+01	5.38E+00	1.04E+02	5.13E+01
	19	546.22	1.77E+01	21.32			1.77E+01	2.13E+01
M	20	570.83	2.04E+01	21.59			2.04E+01	2.16E+01
m	21	583.80	2.48E+02	37.82	6.11E+00	3.78E+00	2.42E+02	3.80E+01
M	22	610.14	3.13E+02	40.90	6.74E+00	3.64E+00	3.06E+02	4.11E+01
m	23	615.84	1.74E+01	21.15			1.74E+01	2.11E+01
	24	655.81	1.64E+01	18.89			1.64E+01	1.89E+01
	25	728.28	9.85E+01	32.09			9.85E+01	3.21E+01
	26	785.94	2.10E+01	24.55			2.10E+01	2.46E+01
	27	795.85	3.20E+01	29.30			3.20E+01	2.93E+01
	28	847.72	2.36E+01	20.50			2.36E+01	2.05E+01
	29	861.12	4.25E+01	26.32			4.25E+01	2.63E+01
	30	871.49	3.11E+01	25.71			3.11E+01	2.57E+01
	31	912.07	1.43E+02	38.97	4.21E+00	2.98E+00	1.39E+02	3.91E+01
	32	923.97	1.74E+01	21.54			1.74E+01	2.15E+01
	33	935.42	4.62E+01	31.70			4.62E+01	3.17E+01
M	34	965.28	2.69E+01	24.55			2.69E+01	2.45E+01
m	35	970.25	7.05E+01	28.54			7.05E+01	2.85E+01
	36	1055.20	2.58E+01	24.29			2.58E+01	2.43E+01
	37	1066.15	2.64E+01	23.69			2.64E+01	2.37E+01
	38	1089.33	1.99E+01	24.56			1.99E+01	2.46E+01
	39	1111.59	2.14E+01	19.38			2.14E+01	1.94E+01
M	40	1121.02	6.25E+01	21.56			6.25E+01	2.16E+01
m	41	1124.45	2.31E+01	23.39			2.31E+01	2.34E+01

Analysis Report for 1606041-07

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	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	42	1152.24	1.95E+01	9.66			1.95E+01	9.66E+00
m	43	1163.85	1.78E+01	18.09			1.78E+01	1.81E+01
	44	1239.64	2.58E+01	25.92			2.58E+01	2.59E+01
	45	1290.73	1.63E+01	11.87			1.63E+01	1.19E+01
	46	1406.16	2.70E+01	20.93			2.70E+01	2.09E+01
M	47	1461.79	6.28E+02	51.83	6.83E+00	2.10E+00	6.21E+02	5.19E+01
m	48	1465.61	1.29E+01	40.58			1.29E+01	4.06E+01
m	49	1471.68	1.03E+01	12.73			1.03E+01	1.27E+01
	50	1559.97	2.21E+01	12.37			2.21E+01	1.24E+01
	51	1582.69	7.00E+00	9.38			7.00E+00	9.38E+00
	52	1591.77	3.13E+01	15.71			3.13E+01	1.57E+01
	53	1662.11	1.05E+01	8.50			1.05E+01	8.50E+00
	54	1732.32	1.41E+01	8.94			1.41E+01	8.94E+00
	55	1765.66	5.40E+01	17.66	1.66E+00	1.65E+00	5.23E+01	1.77E+01
	56	1781.46	1.50E+01	7.75			1.50E+01	7.75E+00
	57	1791.98	9.92E+00	8.00			9.92E+00	8.00E+00
	58	1849.23	1.70E+01	8.25			1.70E+01	8.25E+00
	59	1856.70	8.45E+00	7.23			8.45E+00	7.23E+00
	60	1943.82	6.00E+00	4.90			6.00E+00	4.90E+00
	61	1958.85	5.67E+00	7.78			5.67E+00	7.78E+00
	62	2077.17	5.00E+00	4.47			5.00E+00	4.47E+00
	63	2104.70	1.59E+01	11.58			1.59E+01	1.16E+01
	64	2121.03	1.10E+01	6.63			1.10E+01	6.63E+00
	65	2205.43	1.60E+01	12.92			1.60E+01	1.29E+01
	66	2220.18	9.13E+00	11.49			9.13E+00	1.15E+01
	67	2295.74	1.40E+01	7.48			1.40E+01	7.48E+00
	68	2374.13	1.10E+01	6.63			1.10E+01	6.63E+00
	69	2615.73	8.20E+01	18.11	4.95E+00	1.35E+00	7.70E+01	1.82E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\QR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.857	1460.81	* 10.67	3.21E+01	3.87E+00
CD-109	0.991	88.03	* 3.72	4.67E+00	1.56E+00
SN-126	0.992	87.57	* 37.00	4.63E-01	1.52E-01

: 00507

Analysis Report for 1606041-07
CP-5028 10-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
ND-147	0.637	91.11 *	28.90	8.75E-01	3.38E-01
		531.02	13.10		
HG-203	0.924	279.19 *	77.30	1.84E-01	1.27E-01
TL-208	0.339	583.14 *	30.22	2.17E+00	3.92E-01
		860.37 *	4.48	3.48E+00	2.18E+00
		2614.66	35.85		
PB-210	1.000	46.50 *	4.25	4.37E+00	2.71E+00
PB-212	0.974	238.63 *	44.60	2.52E+00	3.04E-01
		300.09 *	3.41	1.37E+00	1.69E+00
BI-214	0.620	609.31 *	46.30	1.85E+00	2.99E-01
		1120.29 *	15.10	1.87E+00	6.65E-01
		1764.49	15.80		
		2204.22	4.98		
PB-214	0.956	295.21 *	19.19	1.83E+00	4.87E-01
		351.92 *	37.19	1.88E+00	3.31E-01
RA-226	0.981	186.21 *	3.28	6.38E+00	1.19E+01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 8:28:39AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	64.65	3.22666E-02	48.79		
3	76.93	3.26127E-01	5.86		
6	129.69	1.32520E-02	62.05		
8	195.20	1.38328E-02	48.25		
m 10	242.39	4.23608E-02	20.36		
11	270.52	1.98205E-02	34.16		
15	338.92	4.70794E-02	14.86	Tol.	AC-228
17	463.41	1.34857E-02	37.76	Tol.	SB-125
18	511.55	2.90191E-02	24.56		
19	546.22	4.92467E-03	60.14		
M 20	570.83	5.65356E-03	53.03		
m 23	615.84	4.84022E-03	60.68		
24	655.81	4.54492E-03	57.72	Sum	

Analysis Report for 1606041-07
CP-5028 10-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
25	728.28	2.73725E-02	16.28		
26	785.94	5.83946E-03	58.39		
27	795.85	8.89520E-03	45.74	Sum	
28	847.72	6.54612E-03	43.49		
30	871.49	8.64635E-03	41.31	Tol.	NB-94
31	912.07	3.86920E-02	14.03	Tol.	LU-172
32	923.97	4.82639E-03	61.99		
33	935.42	1.28412E-02	34.29	Sum	
M	34	965.28	7.45955E-03		
m	35	970.25	1.95714E-02		
36	1055.20	7.16204E-03	47.10		
37	1066.15	7.33992E-03	44.82		
38	1089.33	5.51901E-03	61.80		
39	1111.59	5.95197E-03	45.23	Tol.	EU-152
m	41	1124.45	6.41531E-03		
M	42	1152.24	5.40464E-03		
m	43	1163.85	4.93227E-03		
44	1239.64	7.15278E-03	50.34		
45	1290.73	4.53125E-03	36.40	Tol.	FE-59
46	1406.16	7.50000E-03	38.76		
m	48	1465.61	3.57290E-03	157.73	
m	49	1471.68	2.85649E-03	61.89	Sum
50	1559.97	6.12714E-03	28.04		
51	1582.69	1.94444E-03	67.01		
52	1591.77	8.69658E-03	25.09		
53	1662.11	2.92735E-03	40.33		
54	1732.32	3.90625E-03	31.80		
55	1765.66	1.45377E-02	16.95		
56	1781.46	4.16667E-03	25.82		
57	1791.98	2.75463E-03	40.34		
58	1849.23	4.72222E-03	24.25		
59	1856.70	2.34722E-03	42.77		
60	1943.82	1.66667E-03	40.82		
61	1958.85	1.57407E-03	68.63		
62	2077.17	1.38889E-03	44.72		
63	2104.70	4.40476E-03	36.50		
64	2121.03	3.05556E-03	30.15		
65	2205.43	4.45048E-03	40.33		
66	2220.18	2.53704E-03	62.90		
67	2295.74	3.88889E-03	26.73		
68	2374.13	3.05556E-03	30.15		
69	2615.73	2.14027E-02	11.79		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1606041-07
CP-5028 10-15

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.85	1460.81	*	10.67	3.21E+01	3.87E+00
CD-109	0.99	88.03	*	3.72	4.67E+00	1.56E+00
SN-126	0.99	87.57	*	37.00	4.63E-01	1.52E-01
ND-147	0.63	91.11	*	28.90	8.75E-01	3.38E-01
		531.02		13.10		
HG-203	0.92	279.19	*	77.30	1.84E-01	1.27E-01
TL-208	0.33	583.14	*	30.22	2.17E+00	3.92E-01
		860.37	*	4.48	3.48E+00	2.18E+00
		2614.66		35.85		
PB-210	1.00	46.50	*	4.25	4.37E+00	2.71E+00
PB-212	0.97	238.63	*	44.60	2.52E+00	3.04E-01
		300.09	*	3.41	1.37E+00	1.69E+00
BI-214	0.62	609.31	*	46.30	1.85E+00	2.99E-01
		1120.29	*	15.10	1.87E+00	6.65E-01
		1764.49		15.80		
		2204.22		4.98		
PB-214	0.95	295.21	*	19.19	1.83E+00	4.87E-01
		351.92	*	37.19	1.88E+00	3.31E-01
RA-226	0.98	186.21	*	3.28	6.38E+00	1.19E+01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Analysis Report for 1606041-07
CP-5028 10-15

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.857	3.21E+01	3.87E+00	
?	CD-109	0.991	4.67E+00	1.56E+00	
?	SN-126	0.992	4.63E-01	1.52E-01	
	ND-147	0.637	8.75E-01	3.38E-01	
	HG-203	0.924	1.84E-01	1.27E-01	
	TL-208	0.339	2.21E+00	3.85E-01	
	PB-210	1.000	4.37E+00	2.71E+00	
	PB-212	0.974	2.48E+00	3.00E-01	
	BI-214	0.620	1.85E+00	2.73E-01	
	PB-214	0.956	1.86E+00	2.74E-01	
	RA-226	0.981	6.38E+00	1.19E+01	

- ? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 8:28:39AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	64.65	3.22666E-02	48.79		
3	76.93	3.26127E-01	5.86		
6	129.69	1.32520E-02	62.05		
8	195.20	1.38328E-02	48.25		
m 10	242.39	4.23608E-02	20.36		
11	270.52	1.98205E-02	34.16		
15	338.92	4.70794E-02	14.86	Tol.	AC-228
17	463.41	1.34857E-02	37.76	Tol.	SB-125
18	511.55	2.90191E-02	24.56		
19	546.22	4.92467E-03	60.14		
M 20	570.83	5.65356E-03	53.03		
m 23	615.84	4.84022E-03	60.68		
24	655.81	4.54492E-03	57.72	Sum	
25	728.28	2.73725E-02	16.28		
26	785.94	5.83946E-03	58.39		
27	795.85	8.89520E-03	45.74	Sum	
28	847.72	6.54612E-03	43.49		
30	871.49	8.64635E-03	41.31	Tol.	NB-94
31	912.07	3.86920E-02	14.03	Tol.	LU-172
32	923.97	4.82639E-03	61.99		
33	935.42	1.28412E-02	34.29	Sum	
M 34	965.28	7.45955E-03	45.70		
m 35	970.25	1.95714E-02	20.25		
36	1055.20	7.16204E-03	47.10		
37	1066.15	7.33992E-03	44.82		
38	1089.33	5.51901E-03	61.80		
39	1111.59	5.95197E-03	45.23	Tol.	EU-152
m 41	1124.45	6.41531E-03	50.65		
M 42	1152.24	5.40464E-03	24.82		
m 43	1163.85	4.93227E-03	50.94		
44	1239.64	7.15278E-03	50.34		
45	1290.73	4.53125E-03	36.40	Tol.	FE-59
46	1406.16	7.50000E-03	38.76		
m 48	1465.61	3.57290E-03	157.73		
m 49	1471.68	2.85649E-03	61.89	Sum	

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
50	1559.97	6.12714E-03	28.04		
51	1582.69	1.94444E-03	67.01		
52	1591.77	8.69658E-03	25.09		
53	1662.11	2.92735E-03	40.33		
54	1732.32	3.90625E-03	31.80		
55	1765.66	1.45377E-02	16.95		
56	1781.46	4.16667E-03	25.82		
57	1791.98	2.75463E-03	40.34		
58	1849.23	4.72222E-03	24.25		
59	1856.70	2.34722E-03	42.77		
60	1943.82	1.66667E-03	40.82		
61	1958.85	1.57407E-03	68.63		
62	2077.17	1.38889E-03	44.72		
63	2104.70	4.40476E-03	36.50		
64	2121.03	3.05556E-03	30.15		
65	2205.43	4.45048E-03	40.33		
66	2220.18	2.53704E-03	62.90		
67	2295.74	3.88889E-03	26.73		
68	2374.13	3.05556E-03	30.15		
69	2615.73	2.14027E-02	11.79		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	5.93E-01	1.18E+00	1.18E+00
+	NA-22	1274.54	99.94	7.35E-02	1.56E-01	1.56E-01
+	NA-24	1368.53	99.99	-9.28E+02	2.35E+03	4.04E+03
		2754.09	99.86	-8.52E+02		2.35E+03
+	AL-26	1808.65	99.76	1.74E-02	8.95E-02	8.95E-02
+	K-40	1460.81	* 10.67	3.21E+01	2.84E+00	2.84E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TI-44	67.88	94.40	-6.85E-02	1.24E-01	1.24E-01
		78.34	96.00	3.81E-01		1.66E-01
+	SC-46	889.25	99.98	1.44E-02	1.45E-01	1.45E-01
		1120.51	99.99	2.17E-01		2.33E-01
+	V-48	983.52	99.98	-4.25E-03	1.87E-01	1.87E-01
		1312.10	97.50	-2.84E-02		1.91E-01
+	CR-51	320.08	9.83	-4.89E-01	1.03E+00	1.03E+00
+	MN-54	834.83	99.97	1.58E-02	1.38E-01	1.38E-01
+	CO-56	846.75	99.96	5.59E-02	1.43E-01	1.43E-01
		1037.75	14.03	-1.58E-01		9.17E-01
		1238.25	67.00	2.56E-01		3.33E-01
		1771.40	15.51	-2.19E-02		6.19E-01
		2598.48	16.90	1.76E-01		6.56E-01
+	CO-57	122.06	85.51	-3.97E-03	9.31E-02	9.31E-02
		136.48	10.60	-3.66E-01		7.78E-01
+	CO-58	810.76	99.40	-3.49E-02	1.31E-01	1.31E-01
+	FE-59	1099.22	56.50	4.08E-02	3.04E-01	3.04E-01
		1291.56	43.20	1.18E-01		3.58E-01
+	CO-60	1173.22	100.00	-8.77E-02	1.30E-01	1.33E-01
		1332.49	100.00	-1.22E-02		1.30E-01
+	ZN-65	1115.52	50.75	-6.55E-01	2.93E-01	2.93E-01
+	GA-67	93.31	35.70	5.26E+00	2.65E+00	2.65E+00
		208.95	2.24	2.75E+01		3.54E+01
		300.22	16.00	-1.49E+01		4.72E+00
+	SE-75	121.11	16.70	2.28E-01	1.47E-01	4.96E-01
		136.00	59.20	7.05E-03		1.47E-01
		264.65	59.80	4.28E-02		1.48E-01
		279.53	25.20	3.55E-01		4.20E-01
		400.65	11.40	2.20E-01		8.57E-01
+	RB-82	776.52	13.00	-4.28E-01	1.24E+00	1.24E+00
+	RB-83	520.41	46.00	-1.05E-01	2.42E-01	2.42E-01
		529.64	30.30	-9.39E-02		3.67E-01
		552.65	16.40	4.56E-01		7.56E-01
+	KR-85	513.99	0.43	7.36E+01	4.11E+01	4.11E+01
+	SR-85	513.99	99.27	3.56E-01	1.99E-01	1.99E-01
+	Y-88	898.02	93.40	4.32E-03	1.03E-01	1.44E-01
		1836.01	99.38	-2.83E-02		1.03E-01
+	NB-93M	16.57	9.43	-1.40E+02	1.19E+02	1.19E+02
+	NB-94	702.63	100.00	1.12E-02	1.27E-01	1.27E-01
		871.10	100.00	6.61E-02		1.32E-01
+	NB-95	765.79	99.81	4.05E-03	1.70E-01	1.70E-01
+	NB-95M	235.69	25.00	-3.11E+01	2.53E+00	2.53E+00
+	ZR-95	724.18	43.70	2.96E-02	2.21E-01	3.53E-01
		756.72	55.30	-7.99E-02		2.21E-01
+	MO-99	181.06	6.20	-4.24E+00	9.77E+00	1.54E+01
		739.58	12.80	-7.43E+00		9.77E+00
		778.00	4.50	-1.80E+01		3.07E+01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RU-103	497.08	89.00	1.78E-02	1.44E-01	1.44E-01
+	RU-106	621.84	9.80	2.26E-01	1.14E+00	1.14E+00
+	AG-108M	433.93	89.90	-1.07E-02	1.14E-01	1.14E-01
		614.37	90.40	-1.07E+00		1.39E-01
		722.95	90.50	3.80E-02		1.42E-01
+	CD-109	88.03	* 3.72	4.67E+00	5.93E+00	5.93E+00
+	AG-110M	657.75	93.14	-2.01E-02	1.28E-01	1.28E-01
		677.61	10.53	1.18E-01		1.08E+00
		706.67	16.46	-2.55E-01		7.40E-01
		763.93	21.98	-1.50E-01		6.17E-01
		884.67	71.63	1.89E-02		1.80E-01
		1384.27	23.94	1.74E-01		5.70E-01
+	CD-113M	263.70	0.02	-1.53E+01	3.63E+02	3.63E+02
+	SN-113	255.12	1.93	1.59E+00	1.54E-01	4.96E+00
		391.69	64.90	2.30E-02		1.54E-01
+	TE123M	159.00	84.10	-2.33E-02	1.04E-01	1.04E-01
+	SB-124	602.71	97.87	8.11E-02	1.54E-01	1.54E-01
		645.85	7.26	-1.14E-02		1.73E+00
		722.78	11.10	3.46E-01		1.29E+00
		1691.02	49.00	0.00E+00		1.67E-01
+	I-125	35.49	6.49	1.31E+00	4.56E+00	4.56E+00
+	SB-125	176.33	6.89	9.39E-01	3.63E-01	1.29E+00
		427.89	29.33	3.41E-02		3.63E-01
		463.38	10.35	7.48E-01		1.24E+00
		600.56	17.80	3.44E-02		7.76E-01
		635.90	11.32	1.03E-01		9.94E-01
+	SB-126	414.70	83.30	-1.21E-01	2.19E-01	2.37E-01
		666.33	99.60	1.25E-01		2.31E-01
		695.00	99.60	6.44E-02		2.19E-01
		720.50	53.80	7.10E-02		4.02E-01
+	SN-126	87.57	* 37.00	4.63E-01	5.88E-01	5.88E-01
+	SB-127	473.00	25.00	3.57E-01	1.71E+00	2.41E+00
		685.20	35.70	3.79E-01		1.71E+00
		783.80	14.70	2.63E-01		5.50E+00
+	I-129	29.78	57.00	-1.33E-01	8.54E-01	8.54E-01
		33.60	13.20	-1.71E+00		2.35E+00
		39.58	7.52	-9.86E-01		2.49E+00
+	I-131	284.30	6.05	6.63E-01	2.46E-01	3.26E+00
		364.48	81.20	3.28E-02		2.46E-01
		636.97	7.26	8.28E-01		3.57E+00
		722.89	1.80	4.39E+00		1.64E+01
+	TE-132	49.72	13.10	-2.03E-01	7.56E-01	7.81E+00
		228.16	88.00	-1.57E-01		7.56E-01
+	BA-133	81.00	33.00	-1.88E+00	1.74E-01	3.28E-01
		302.84	17.80	4.02E-01		5.53E-01
		356.01	60.00	-5.20E-01		1.74E-01
+	I-133	529.87	86.30	-6.81E+01	2.67E+02	2.67E+02
+	XE-133	81.00	38.00	-5.84E+00	1.02E+00	1.02E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CS-134	563.23	8.38	-1.15E-01	1.33E-01	1.26E+00
		569.32	15.43	1.06E-01		7.49E-01
		604.70	97.60	-1.20E+00		1.33E-01
		795.84	85.40	1.40E-01		1.78E-01
		801.93	8.73	-4.23E-02		1.39E+00
+	CS-135	268.24	16.00	1.10E-01	5.96E-01	5.96E-01
+	I-135	1131.51	22.50	-5.78E+08	1.74E+10	2.09E+10
		1260.41	28.60	1.15E+09		1.74E+10
		1678.03	9.54	5.20E+09		3.48E+10
+	CS-136	153.22	7.46	6.12E-01	2.18E-01	1.94E+00
		163.89	4.61	1.15E+00		2.98E+00
		176.55	13.56	7.89E-01		1.08E+00
		273.65	12.66	-1.01E+00		1.18E+00
		340.57	48.50	7.51E-01		4.64E-01
		818.50	99.70	9.12E-02		2.18E-01
		1048.07	79.60	1.29E-01		2.88E-01
		1235.34	19.70	-4.11E-02		1.45E+00
+	CS-137	661.65	85.12	-3.08E-02	1.44E-01	1.44E-01
+	LA-138	788.74	34.00	1.74E-02	1.44E-01	4.04E-01
		1435.80	66.00	-9.08E-02		1.44E-01
+	CE-139	165.85	80.35	-8.97E-03	1.04E-01	1.04E-01
+	BA-140	162.64	6.70	1.32E+00	6.92E-01	2.13E+00
		304.84	4.50	2.64E-01		3.16E+00
		423.70	3.20	-2.51E+00		5.59E+00
		437.55	2.00	9.85E-01		8.94E+00
		537.32	25.00	-2.08E-01		6.92E-01
+	LA-140	328.77	20.50	3.11E-01	2.32E-01	8.03E-01
		487.03	45.50	-3.91E-02		3.91E-01
		815.85	23.50	6.18E-02		8.97E-01
		1596.49	95.49	-2.59E-02		2.32E-01
+	CE-141	145.44	48.40	4.87E-02	2.28E-01	2.28E-01
+	CE-143	57.36	11.80	-2.28E+01	4.08E+01	1.24E+02
		293.26	42.00	6.95E+01		4.08E+01
		664.55	5.20	2.15E+02		3.34E+02
+	CE-144	133.54	10.80	1.10E-01	7.95E-01	7.95E-01
+	PM-144	476.78	42.00	-2.89E-02	1.25E-01	2.47E-01
		618.01	98.60	5.62E-02		1.25E-01
		696.49	99.49	-1.45E-03		1.33E-01
+	PM-145	36.85	21.70	-6.01E-01	5.78E-01	1.08E+00
		37.36	39.70	3.69E-01		5.78E-01
		42.30	15.10	-3.15E-01		1.05E+00
		72.40	2.31	-2.43E+01		5.12E+00
+	PM-146	453.90	39.94	7.35E-02	2.79E-01	2.79E-01
		735.90	14.01	2.24E-01		8.33E-01
		747.13	13.10	3.13E-01		9.25E-01
+	ND-147	91.11	* 28.90	8.75E-01	1.38E+00	1.38E+00
		531.02	13.10	-3.27E-01		1.42E+00
+	PM-149	285.90	3.10	5.32E-01	5.60E+01	5.60E+01
+	EU-152	121.78	20.50	-1.62E-02	3.79E-01	3.79E-01

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Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
EU-152	244.69	5.40	6.56E-02	3.79E-01	1.86E+00
	344.27	19.13	1.41E-01		4.71E-01
	778.89	9.20	-6.01E-02		1.36E+00
	964.01	10.40	1.02E-01		1.67E+00
	1085.78	7.22	-3.76E-01		1.92E+00
	1112.02	9.60	1.00E+00		1.64E+00
	1407.95	14.94	-3.60E-03		1.02E+00
+ GD-153	97.43	31.30	5.59E-02	2.77E-01	2.77E-01
EU-154	103.18	22.20	-4.48E-02	1.91E-01	3.85E-01
	123.07	40.50	-1.20E-01		1.91E-01
	723.30	19.70	1.75E-01		6.53E-01
	873.19	11.50	2.54E-01		1.13E+00
	996.32	10.30	-4.76E-02		1.16E+00
EU-155	1004.76	17.90	2.23E-01	3.77E-01	7.38E-01
	1274.45	35.50	2.06E-01		4.37E-01
	86.50	30.90	4.72E-01		3.77E-01
+ EU-156	105.30	20.70	-3.04E-03	1.72E+00	4.02E-01
811.77	10.40	-1.18E+00	1.72E+00		
1153.47	7.20	6.30E-01	3.49E+00		
+ HO-166M	1230.71	8.90	-6.91E-01	1.61E-01	2.82E+00
	184.41	72.60	2.13E-01		1.61E-01
	280.45	29.60	7.47E-02		3.19E-01
	410.94	11.10	2.07E-01		1.07E+00
+ TM-171	711.69	54.10	7.30E-02	8.99E+01	2.38E-01
	66.72	0.14	-3.65E+01		8.99E+01
	81.75	4.52	-7.38E+00		7.09E-01	2.17E+00
+ HF-172	125.81	11.30	-1.46E-01	6.59E-01	7.09E-01
	181.53	20.60	-2.11E-01		1.08E+00
	810.06	16.63	-3.70E-02		1.97E+00
	912.12	15.25	1.02E+01		4.60E+00
+ LU-173	1093.66	62.50	-6.42E-02	4.71E-01	6.59E-01
	100.72	5.24	6.14E-01		1.63E+00
	272.11	21.20	2.35E-01		4.71E-01
	343.40	84.00	2.87E-02		1.16E-01
+ HF-175	343.40	84.00	2.87E-02	1.16E-01	1.16E-01
+ LU-176	88.34	13.30	1.55E+00	9.29E-02	8.86E-01
	201.83	86.00	-1.81E-02		1.05E-01
	306.78	94.00	3.05E-02		9.29E-02
+ TA-182	67.75	41.20	-1.67E-01	3.01E-01	3.01E-01
	1121.30	34.90	7.39E-01		6.73E-01
	1189.05	16.23	1.80E-02		1.14E+00
	1221.41	26.98	-7.73E-02		6.31E-01
	1231.02	11.44	-3.67E-01		1.50E+00
	308.46	29.68	1.29E-02		2.52E-01	3.13E-01
+ IR-192	468.07	48.10	8.59E-02	2.52E-01	2.52E-01
+ HG-203	279.19	* 77.30	1.84E-01	2.02E-01	2.02E-01
+ BI-207	569.67	97.72	-3.40E-02	1.24E-01	1.24E-01
	1063.62	74.90	6.20E-02		1.93E-01
+ TL-208	583.14	* 30.22	2.17E+00	9.04E-01	1.03E+00
	860.37	* 4.48	3.48E+00		3.30E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TL-208	2614.66	35.85	1.65E+00	9.04E-01	9.04E-01
+	BI-210M	262.00	45.00	-1.20E-02	1.86E-01	1.86E-01
		300.00	23.00	-1.34E+00		4.23E-01
+	PB-210	46.50	* 4.25	4.37E+00	4.28E+00	4.28E+00
+	PB-211	404.84	2.90	-3.00E-01	3.08E+00	3.08E+00
		831.96	2.90	-3.05E+00		4.22E+00
+	BI-212	727.17	11.80	1.75E+00	1.52E+00	1.52E+00
		1620.62	2.75	2.32E+00		4.71E+00
+	PB-212	238.63	* 44.60	2.52E+00	4.31E-01	4.31E-01
		300.09	* 3.41	1.37E+00		2.77E+00
+	BI-214	609.31	* 46.30	1.85E+00	7.29E-01	7.29E-01
		1120.29	* 15.10	1.87E+00		1.40E+00
		1764.49	15.80	1.92E+00		1.47E+00
		2204.22	4.98	2.56E+00		3.49E+00
+	PB-214	295.21	* 19.19	1.83E+00	3.77E-01	6.69E-01
		351.92	* 37.19	1.88E+00		3.77E-01
+	RN-219	401.80	6.50	9.28E-01	1.47E+00	1.47E+00
+	RA-223	323.87	3.88	1.10E+00	2.31E+00	2.31E+00
+	RA-224	240.98	3.95	3.22E+01	5.55E+00	5.55E+00
+	RA-225	40.00	31.00	-3.66E-01	9.22E-01	9.22E-01
+	RA-226	186.21	* 3.28	6.38E+00	3.70E+00	3.70E+00
+	TH-227	50.10	8.40	-4.03E-02	8.64E-01	1.55E+00
		236.00	11.50	-1.06E+01		8.64E-01
		256.20	6.30	4.20E-01		1.44E+00
+	AC-228	338.32	11.40	2.74E+00	9.19E-01	1.25E+00
		911.07	27.70	1.85E+00		9.19E-01
		969.11	16.60	2.05E+00		1.40E+00
+	TH-230	48.44	16.90	-8.98E-02	8.79E-01	8.79E-01
		62.85	4.60	3.21E+00		2.89E+00
		67.67	0.37	-1.75E+01		3.16E+01
+	PA-231	283.67	1.60	-8.00E-01	4.27E+00	5.28E+00
		302.67	2.30	3.10E+00		4.27E+00
+	TH-231	25.64	14.70	-6.69E+01	1.60E+00	8.58E+00
		84.21	6.40	-3.79E+00		1.60E+00
+	PA-233	311.98	38.60	-1.17E-01	2.71E-01	2.71E-01
+	PA-234	131.20	20.40	8.55E-03	4.45E-01	4.45E-01
		733.99	8.80	1.36E-01		1.35E+00
		946.00	12.00	-1.20E-01		1.02E+00
+	PA-234M	1001.03	0.92	3.14E+00	1.43E+01	1.43E+01
+	TH-234	63.29	3.80	5.15E+00	3.55E+00	3.55E+00
+	U-235	143.76	10.50	-3.27E-01	8.50E-01	8.50E-01
		163.35	4.70	6.77E-01		1.76E+00
		205.31	4.70	-5.73E-01		2.00E+00
+	NP-237	86.50	12.60	1.15E+00	9.22E-01	9.22E-01
+	NP-239	106.10	22.70	-4.72E-02	6.25E+00	6.25E+00
		228.18	10.70	-2.84E+00		1.37E+01
		277.60	14.10	6.42E+00		1.19E+01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	AM-241	59.54	35.90	4.13E-02	3.18E-01	3.18E-01
+	AM-243	74.67	66.00	-9.77E-01	2.26E-01	2.26E-01
+	CM-243	209.75	3.29	2.36E+00	7.04E-01	3.05E+00
		228.14	10.60	-1.68E-01		8.08E-01
		277.60	14.00	3.79E-01		7.04E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	1.18E+00	1.18E+00	5.93E-01	5.57E-01
	NA-22	1274.54	99.94	1.56E-01	1.56E-01	7.35E-02	7.12E-02
	NA-24	1368.53	99.99	4.04E+03	2.35E+03	-9.28E+02	1.71E+03
		2754.09	99.86	2.35E+03		-8.52E+02	7.44E+02
	AL-26	1808.65	99.76	8.95E-02	8.95E-02	1.74E-02	3.62E-02
+	K-40	1460.81	* 10.67	2.84E+00	2.84E+00	3.21E+01	1.35E+00
@	AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88	94.40	1.24E-01	1.24E-01	-6.85E-02	6.03E-02
		78.34	96.00	1.66E-01		3.81E-01	8.16E-02
	SC-46	889.25	99.98	1.45E-01	1.45E-01	1.44E-02	6.70E-02
		1120.51	99.99	2.33E-01		2.17E-01	1.10E-01
	V-48	983.52	99.98	1.87E-01	1.87E-01	-4.25E-03	8.53E-02
		1312.10	97.50	1.91E-01		-2.84E-02	8.48E-02
	CR-51	320.08	9.83	1.03E+00	1.03E+00	-4.89E-01	4.85E-01
	MN-54	834.83	99.97	1.38E-01	1.38E-01	1.58E-02	6.42E-02
	CO-56	846.75	99.96	1.43E-01	1.43E-01	5.59E-02	6.61E-02
		1037.75	14.03	9.17E-01		-1.58E-01	4.14E-01
		1238.25	67.00	3.33E-01		2.56E-01	1.56E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
CO-56	1771.40	15.51	6.19E-01	1.43E-01	-2.19E-02	2.50E-01	
	2598.48	16.90	6.56E-01		1.76E-01	2.65E-01	
CO-57	122.06	85.51	9.31E-02	9.31E-02	-3.97E-03	4.49E-02	
	136.48	10.60	7.78E-01		-3.66E-01	3.75E-01	
CO-58	810.76	99.40	1.31E-01	1.31E-01	-3.49E-02	6.03E-02	
FE-59	1099.22	56.50	3.04E-01	3.04E-01	4.08E-02	1.40E-01	
	1291.56	43.20	3.58E-01		1.18E-01	1.61E-01	
CO-60	1173.22	100.00	1.33E-01	1.30E-01	-8.77E-02	5.99E-02	
	1332.49	100.00	1.30E-01		-1.22E-02	5.78E-02	
ZN-65	1115.52	50.75	2.93E-01	2.93E-01	-6.55E-01	1.34E-01	
GA-67	93.31	35.70	2.65E+00	2.65E+00	5.26E+00	1.30E+00	
	208.95	2.24	3.54E+01		2.75E+01	1.71E+01	
	300.22	16.00	4.72E+00		-1.49E+01	2.25E+00	
SE-75	121.11	16.70	4.96E-01	1.47E-01	2.28E-01	2.39E-01	
	136.00	59.20	1.47E-01		7.05E-03	7.10E-02	
	264.65	59.80	1.48E-01		4.28E-02	7.05E-02	
	279.53	25.20	4.20E-01		3.55E-01	2.01E-01	
RB-82	400.65	11.40	8.57E-01		2.20E-01	4.03E-01	
	776.52	13.00	1.24E+00	1.24E+00	-4.28E-01	5.77E-01	
RB-83	520.41	46.00	2.42E-01	2.42E-01	-1.05E-01	1.13E-01	
	529.64	30.30	3.67E-01		-9.39E-02	1.71E-01	
	552.65	16.40	7.56E-01		4.56E-01	3.55E-01	
KR-85	513.99	0.43	4.11E+01	4.11E+01	7.36E+01	1.98E+01	
SR-85	513.99	99.27	1.99E-01	1.99E-01	3.56E-01	9.57E-02	
Y-88	898.02	93.40	1.44E-01	1.03E-01	4.32E-03	6.60E-02	
	1836.01	99.38	1.03E-01		-2.83E-02	4.21E-02	
NB-93M	16.57	9.43	1.19E+02	1.19E+02	-1.40E+02	5.47E+01	
NB-94	702.63	100.00	1.27E-01	1.27E-01	1.12E-02	5.94E-02	
	871.10	100.00	1.32E-01		6.61E-02	6.09E-02	
NB-95	765.79	99.81	1.70E-01	1.70E-01	4.05E-03	7.94E-02	
NB-95M	235.69	25.00	2.53E+00	2.53E+00	-3.11E+01	1.22E+00	
ZR-95	724.18	43.70	3.53E-01	2.21E-01	2.96E-02	1.66E-01	
	756.72	55.30	2.21E-01		-7.99E-02	1.01E-01	
MO-99	181.06	6.20	1.54E+01	9.77E+00	-4.24E+00	7.38E+00	
	739.58	12.80	9.77E+00		-7.43E+00	4.50E+00	
	778.00	4.50	3.07E+01		-1.80E+01	1.42E+01	
RU-103	497.08	89.00	1.44E-01	1.44E-01	1.78E-02	6.78E-02	
RU-106	621.84	9.80	1.14E+00	1.14E+00	2.26E-01	5.31E-01	
AG-108M	433.93	89.90	1.14E-01	1.14E-01	-1.07E-02	5.39E-02	
	614.37	90.40	1.39E-01		-1.07E+00	6.51E-02	
	722.95	90.50	1.42E-01		3.80E-02	6.61E-02	
+ CD-109	88.03	* 3.72	5.93E+00	5.93E+00	4.67E+00	2.93E+00	
	AG-110M	657.75	93.14	1.28E-01	1.28E-01	-2.01E-02	5.94E-02
		677.61	10.53	1.08E+00		1.18E-01	5.01E-01
		706.67	16.46	7.40E-01		-2.55E-01	3.43E-01
		763.93	21.98	6.17E-01		-1.50E-01	2.88E-01
		884.67	71.63	1.80E-01		1.89E-02	8.29E-02
CD-113M	1384.27	23.94	5.70E-01		1.74E-01	2.54E-01	
	263.70	0.02	3.63E+02	3.63E+02	-1.53E+01	1.72E+02	
SN-113	255.12	1.93	4.96E+00	1.54E-01	1.59E+00	2.37E+00	
	391.69	64.90	1.54E-01		2.30E-02	7.27E-02	
TE123M	159.00	84.10	1.04E-01	1.04E-01	-2.33E-02	4.99E-02	
SB-124	602.71	97.87	1.54E-01	1.54E-01	8.11E-02	7.28E-02	

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-124	645.85	7.26	1.73E+00	1.54E-01	-1.14E-02	8.03E-01
	722.78	11.10	1.29E+00		3.46E-01	6.02E-01
	1691.02	49.00	1.67E-01		0.00E+00	6.45E-02
I-125	35.49	6.49	4.56E+00	4.56E+00	1.31E+00	2.21E+00
SB-125	176.33	6.89	1.29E+00	3.63E-01	9.39E-01	6.19E-01
	427.89	29.33	3.63E-01		3.41E-02	1.72E-01
	463.38	10.35	1.24E+00		7.48E-01	5.89E-01
	600.56	17.80	7.76E-01		3.44E-02	3.67E-01
	635.90	11.32	9.94E-01		1.03E-01	4.62E-01
SB-126	414.70	83.30	2.37E-01	2.19E-01	-1.21E-01	1.13E-01
	666.33	99.60	2.31E-01		1.25E-01	1.08E-01
	695.00	99.60	2.19E-01		6.44E-02	1.02E-01
	720.50	53.80	4.02E-01		7.10E-02	1.87E-01
+ SN-126	87.57	* 37.00	5.88E-01	5.88E-01	4.63E-01	2.90E-01
SB-127	473.00	25.00	2.41E+00	1.71E+00	3.57E-01	1.13E+00
	685.20	35.70	1.71E+00		3.79E-01	7.92E-01
	783.80	14.70	5.50E+00		2.63E-01	2.57E+00
I-129	29.78	57.00	8.54E-01	8.54E-01	-1.33E-01	4.13E-01
	33.60	13.20	2.35E+00		-1.71E+00	1.13E+00
	39.58	7.52	2.49E+00		-9.86E-01	1.20E+00
I-131	284.30	6.05	3.26E+00	2.46E-01	6.63E-01	1.55E+00
	364.48	81.20	2.46E-01		3.28E-02	1.15E-01
	636.97	7.26	3.57E+00		8.28E-01	1.66E+00
	722.89	1.80	1.64E+01		4.39E+00	7.63E+00
TE-132	49.72	13.10	7.81E+00	7.56E-01	-2.03E-01	3.79E+00
	228.16	88.00	7.56E-01		-1.57E-01	3.62E-01
BA-133	81.00	33.00	3.28E-01	1.74E-01	-1.88E+00	1.60E-01
	302.84	17.80	5.53E-01		4.02E-01	2.64E-01
	356.01	60.00	1.74E-01		-5.20E-01	8.29E-02
I-133	529.87	86.30	2.67E+02	2.67E+02	-6.81E+01	1.25E+02
XE-133	81.00	38.00	1.02E+00	1.02E+00	-5.84E+00	4.96E-01
CS-134	563.23	8.38	1.26E+00	1.33E-01	-1.15E-01	5.89E-01
	569.32	15.43	7.49E-01		1.06E-01	3.51E-01
	604.70	97.60	1.33E-01		-1.20E+00	6.26E-02
	795.84	85.40	1.78E-01		1.40E-01	8.36E-02
	801.93	8.73	1.39E+00		-4.23E-02	6.39E-01
CS-135	268.24	16.00	5.96E-01	5.96E-01	1.10E-01	2.85E-01
I-135	1131.51	22.50	2.09E+10	1.74E+10	-5.78E+08	9.49E+09
	1260.41	28.60	1.74E+10		1.15E+09	7.87E+09
	1678.03	9.54	3.48E+10		5.20E+09	1.44E+10
CS-136	153.22	7.46	1.94E+00	2.18E-01	6.12E-01	9.39E-01
	163.89	4.61	2.98E+00		1.15E+00	1.43E+00
	176.55	13.56	1.08E+00		7.89E-01	5.20E-01
	273.65	12.66	1.18E+00		-1.01E+00	5.62E-01
	340.57	48.50	4.64E-01		7.51E-01	2.24E-01
	818.50	99.70	2.18E-01		9.12E-02	1.01E-01
	1048.07	79.60	2.88E-01		1.29E-01	1.32E-01
	1235.34	19.70	1.45E+00		-4.11E-02	6.70E-01
CS-137	661.65	85.12	1.44E-01	1.44E-01	-3.08E-02	6.71E-02
LA-138	788.74	34.00	4.04E-01	1.44E-01	1.74E-02	1.89E-01
	1435.80	66.00	1.44E-01		-9.08E-02	6.08E-02
CE-139	165.85	80.35	1.04E-01	1.04E-01	-8.97E-03	5.02E-02
BA-140	162.64	6.70	2.13E+00	6.92E-01	1.32E+00	1.02E+00

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-140	304.84	4.50	3.16E+00	6.92E-01	2.64E-01	1.49E+00
	423.70	3.20	5.59E+00		-2.51E+00	2.64E+00
	437.55	2.00	8.94E+00		9.85E-01	4.22E+00
	537.32	25.00	6.92E-01		-2.08E-01	3.23E-01
LA-140	328.77	20.50	8.03E-01	2.32E-01	3.11E-01	3.82E-01
	487.03	45.50	3.91E-01		-3.91E-02	1.84E-01
	815.85	23.50	8.97E-01		6.18E-02	4.15E-01
	1596.49	95.49	2.32E-01		-2.59E-02	1.02E-01
CE-141	145.44	48.40	2.28E-01	2.28E-01	4.87E-02	1.10E-01
CE-143	57.36	11.80	1.24E+02	4.08E+01	-2.28E+01	6.02E+01
	293.26	42.00	4.08E+01		6.95E+01	1.97E+01
	664.55	5.20	3.34E+02		2.15E+02	1.57E+02
CE-144	133.54	10.80	7.95E-01	7.95E-01	1.10E-01	3.84E-01
PM-144	476.78	42.00	2.47E-01	1.25E-01	-2.89E-02	1.16E-01
	618.01	98.60	1.25E-01		5.62E-02	5.87E-02
	696.49	99.49	1.33E-01		-1.45E-03	6.22E-02
PM-145	36.85	21.70	1.08E+00	5.78E-01	-6.01E-01	5.20E-01
	37.36	39.70	5.78E-01		3.69E-01	2.80E-01
	42.30	15.10	1.05E+00		-3.15E-01	5.08E-01
	72.40	2.31	5.12E+00		-2.43E+01	2.50E+00
PM-146	453.90	39.94	2.79E-01	2.79E-01	7.35E-02	1.32E-01
	735.90	14.01	8.33E-01		2.24E-01	3.85E-01
	747.13	13.10	9.25E-01		3.13E-01	4.29E-01
+ ND-147	91.11	* 28.90	1.38E+00	1.38E+00	8.75E-01	6.81E-01
	531.02	13.10	1.42E+00		-3.27E-01	6.61E-01
PM-149	285.90	3.10	5.60E+01	5.60E+01	5.32E-01	2.66E+01
EU-152	121.78	20.50	3.79E-01	3.79E-01	-1.62E-02	1.83E-01
	244.69	5.40	1.86E+00		6.56E-02	8.93E-01
	344.27	19.13	4.71E-01		1.41E-01	2.23E-01
	778.89	9.20	1.36E+00		-6.01E-02	6.30E-01
	964.01	10.40	1.67E+00		1.02E-01	7.84E-01
	1085.78	7.22	1.92E+00		-3.76E-01	8.77E-01
	1112.02	9.60	1.64E+00		1.00E+00	7.56E-01
	1407.95	14.94	1.02E+00		-3.60E-03	4.59E-01
GD-153	97.43	31.30	2.77E-01	2.77E-01	5.59E-02	1.34E-01
	103.18	22.20	3.85E-01		-4.48E-02	1.86E-01
EU-154	123.07	40.50	1.91E-01	1.91E-01	-1.20E-01	9.19E-02
	723.30	19.70	6.53E-01		1.75E-01	3.05E-01
	873.19	11.50	1.13E+00		2.54E-01	5.21E-01
	996.32	10.30	1.16E+00		-4.76E-02	5.28E-01
	1004.76	17.90	7.38E-01		2.23E-01	3.37E-01
EU-155	1274.45	35.50	4.37E-01	3.77E-01	2.06E-01	1.99E-01
	86.50	30.90	3.77E-01		4.72E-01	1.84E-01
EU-156	105.30	20.70	4.02E-01	1.72E+00	-3.04E-03	1.95E-01
	811.77	10.40	1.72E+00		-1.18E+00	7.87E-01
	1153.47	7.20	3.49E+00		6.30E-01	1.61E+00
HO-166M	1230.71	8.90	2.82E+00	1.61E-01	-6.91E-01	1.29E+00
	184.41	72.60	1.61E-01		2.13E-01	7.82E-02
	280.45	29.60	3.19E-01		7.47E-02	1.52E-01
	410.94	11.10	1.07E+00		2.07E-01	5.09E-01
	711.69	54.10	2.38E-01		7.30E-02	1.11E-01
TM-171	66.72	0.14	8.99E+01	8.99E+01	-3.65E+01	4.39E+01
HF-172	81.75	4.52	2.17E+00	7.09E-01	-7.38E+00	1.06E+00

Analysis Report for 1606041-07
CP-5028 10-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
HF-172	125.81	11.30	7.09E-01	7.09E-01	-1.46E-01	3.42E-01
LU-172	181.53	20.60	1.08E+00	6.59E-01	-2.11E-01	5.19E-01
	810.06	16.63	1.97E+00		-3.70E-02	9.08E-01
	912.12	15.25	4.60E+00		1.02E+01	2.21E+00
	1093.66	62.50	6.59E-01		-6.42E-02	3.04E-01
LU-173	100.72	5.24	1.63E+00	4.71E-01	6.14E-01	7.92E-01
	272.11	21.20	4.71E-01		2.35E-01	2.26E-01
HF-175	343.40	84.00	1.16E-01	1.16E-01	2.87E-02	5.48E-02
LU-176	88.34	13.30	8.86E-01	9.29E-02	1.55E+00	4.33E-01
	201.83	86.00	1.05E-01		-1.81E-02	5.05E-02
	306.78	94.00	9.29E-02		3.05E-02	4.40E-02
TA-182	67.75	41.20	3.01E-01	3.01E-01	-1.67E-01	1.47E-01
	1121.30	34.90	6.73E-01		7.39E-01	3.18E-01
	1189.05	16.23	1.14E+00		1.80E-02	5.29E-01
	1221.41	26.98	6.31E-01		-7.73E-02	2.90E-01
	1231.02	11.44	1.50E+00		-3.67E-01	6.88E-01
IR-192	308.46	29.68	3.13E-01	2.52E-01	1.29E-02	1.48E-01
	468.07	48.10	2.52E-01		8.59E-02	1.19E-01
+ HG-203	279.19	* 77.30	2.02E-01	2.02E-01	1.84E-01	9.78E-02
BI-207	569.67	97.72	1.24E-01	1.24E-01	-3.40E-02	5.85E-02
	1063.62	74.90	1.93E-01		6.20E-02	8.84E-02
+ TL-208	583.14	* 30.22	1.03E+00	9.04E-01	2.17E+00	5.01E-01
	860.37	* 4.48	3.30E+00		3.48E+00	1.54E+00
	2614.66	35.85	9.04E-01		1.65E+00	4.25E-01
BI-210M	262.00	45.00	1.86E-01	1.86E-01	-1.20E-02	8.84E-02
	300.00	23.00	4.23E-01		-1.34E+00	2.02E-01
+ PB-210	46.50	* 4.25	4.28E+00	4.28E+00	4.37E+00	2.09E+00
PB-211	404.84	2.90	3.08E+00	3.08E+00	-3.00E-01	1.45E+00
	831.96	2.90	4.22E+00		-3.05E+00	1.94E+00
BI-212	727.17	11.80	1.52E+00	1.52E+00	1.75E+00	7.23E-01
	1620.62	2.75	4.71E+00		2.32E+00	2.06E+00
+ PB-212	238.63	* 44.60	4.31E-01	4.31E-01	2.52E+00	2.11E-01
	300.09	* 3.41	2.77E+00		1.37E+00	1.32E+00
+ BI-214	609.31	* 46.30	7.29E-01	7.29E-01	1.85E+00	3.56E-01
	1120.29	* 15.10	1.40E+00		1.87E+00	6.61E-01
	1764.49	15.80	1.47E+00		1.92E+00	6.81E-01
	2204.22	4.98	3.49E+00		2.56E+00	1.56E+00
+ PB-214	295.21	* 19.19	6.69E-01	3.77E-01	1.83E+00	3.23E-01
	351.92	* 37.19	3.77E-01		1.88E+00	1.82E-01
RN-219	401.80	6.50	1.47E+00	1.47E+00	9.28E-01	6.93E-01
RA-223	323.87	3.88	2.31E+00	2.31E+00	1.10E+00	1.09E+00
RA-224	240.98	3.95	5.55E+00	5.55E+00	3.22E+01	2.73E+00
RA-225	40.00	31.00	9.22E-01	9.22E-01	-3.66E-01	4.46E-01
+ RA-226	186.21	* 3.28	3.70E+00	3.70E+00	6.38E+00	1.80E+00
TH-227	50.10	8.40	1.55E+00	8.64E-01	-4.03E-02	7.50E-01
	236.00	11.50	8.64E-01		-1.06E+01	4.15E-01
	256.20	6.30	1.44E+00		4.20E-01	6.89E-01
AC-228	338.32	11.40	1.25E+00	9.19E-01	2.74E+00	6.02E-01
	911.07	27.70	9.19E-01		1.85E+00	4.41E-01
	969.11	16.60	1.40E+00		2.05E+00	6.68E-01
TH-230	48.44	16.90	8.79E-01	8.79E-01	-8.98E-02	4.27E-01
	62.85	4.60	2.89E+00		3.21E+00	1.41E+00
	67.67	0.37	3.16E+01		-1.75E+01	1.54E+01

Analysis Report for 1606041-07
CP-5028 10-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PA-231	283.67	1.60	5.28E+00	4.27E+00	-8.00E-01	2.51E+00
	302.67	2.30	4.27E+00		3.10E+00	2.04E+00
TH-231	25.64	14.70	8.58E+00	1.60E+00	-6.69E+01	4.17E+00
	84.21	6.40	1.60E+00		-3.79E+00	7.79E-01
PA-233	311.98	38.60	2.71E-01	2.71E-01	-1.17E-01	1.28E-01
PA-234	131.20	20.40	4.45E-01	4.45E-01	8.55E-03	2.16E-01
	733.99	8.80	1.35E+00		1.36E-01	6.27E-01
	946.00	12.00	1.02E+00		-1.20E-01	4.66E-01
PA-234M	1001.03	0.92	1.43E+01	1.43E+01	3.14E+00	6.53E+00
TH-234	63.29	3.80	3.55E+00	3.55E+00	5.15E+00	1.73E+00
U-235	143.76	10.50	8.50E-01	8.50E-01	-3.27E-01	4.11E-01
	163.35	4.70	1.76E+00		6.77E-01	8.45E-01
	205.31	4.70	2.00E+00		-5.73E-01	9.62E-01
NP-237	86.50	12.60	9.22E-01	9.22E-01	1.15E+00	4.51E-01
NP-239	106.10	22.70	6.25E+00	6.25E+00	-4.72E-02	3.02E+00
	228.18	10.70	1.37E+01		-2.84E+00	6.53E+00
	277.60	14.10	1.19E+01		6.42E+00	5.71E+00
AM-241	59.54	35.90	3.18E-01	3.18E-01	4.13E-02	1.55E-01
AM-243	74.67	66.00	2.26E-01	2.26E-01	-9.77E-01	1.11E-01
CM-243	209.75	3.29	3.05E+00	7.04E-01	2.36E+00	1.47E+00
	228.14	10.60	8.08E-01		-1.68E-01	3.86E-01
	277.60	14.00	7.04E-01		3.79E-01	3.37E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User
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Analysis Report for 1606041-07
CP-5028 10-15

No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP-5028 10-15

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	43	82	66	123	763	186
25:	63	67	64	55	40	54	66	58
33:	52	65	54	54	70	56	57	69
41:	48	48	57	66	57	59	135	104
49:	54	55	69	72	73	89	73	71
57:	65	79	82	88	86	87	108	200
65:	155	112	105	122	116	90	100	92
73:	95	102	212	360	221	565	198	98
81:	90	84	70	94	128	100	99	196
89:	118	101	149	83	200	242	110	80
97:	59	52	64	78	66	72	53	65
105:	58	72	66	55	70	54	49	47
113:	58	59	55	67	48	54	45	62
121:	46	47	62	39	56	58	53	56
129:	53	105	57	55	55	64	60	47
137:	53	42	51	54	65	61	55	63
145:	67	53	67	49	57	49	47	51
153:	52	66	58	42	50	47	45	38
161:	50	54	46	46	40	38	33	49
169:	40	44	44	33	53	35	44	52
177:	36	55	48	37	39	41	41	39
185:	43	100	178	73	38	42	48	44
193:	29	50	54	49	50	28	40	41
201:	32	47	44	47	48	45	47	37
209:	52	70	54	36	32	47	28	37
217:	41	34	37	34	40	32	31	29
225:	31	32	29	35	34	31	43	33
233:	35	29	38	32	43	68	386	376
241:	77	98	103	26	21	28	26	27
249:	22	22	31	28	32	29	31	29
257:	34	33	18	34	21	19	26	27
265:	31	22	20	28	28	37	49	34
273:	33	17	28	27	27	42	41	28
281:	30	28	22	20	26	20	32	17
289:	22	21	17	24	25	31	39	165
297:	71	19	13	32	55	25	15	22
305:	28	17	22	16	28	18	20	23
313:	15	18	20	27	15	14	16	17
321:	12	27	26	18	17	20	16	20
329:	50	20	21	15	31	21	22	22
337:	23	38	117	66	23	13	20	30
345:	14	20	16	20	13	10	37	140
353:	218	58	21	19	13	19	17	14
361:	22	9	14	13	20	19	19	15

369: 17 21 13 17 15 15 14 12

Sample Title: CP-5028 10-15

Channel	1	2	3	4	5	6	7	8
377:	15	12	19	18	14	11	9	11
385:	20	10	13	18	15	15	16	26
393:	16	18	16	18	17	9	14	18
401:	19	16	17	20	11	14	15	19
409:	12	32	22	16	21	15	19	22
417:	16	18	15	22	15	15	16	15
425:	15	12	15	15	20	13	11	12
433:	13	10	8	19	20	9	14	20
441:	8	12	17	15	19	13	12	14
449:	11	15	13	19	16	16	14	13
457:	11	12	13	12	15	13	26	42
465:	15	12	9	14	16	16	15	13
473:	10	4	12	17	8	10	13	15
481:	15	10	13	14	9	8	12	17
489:	14	8	9	17	11	17	17	8
497:	7	15	12	8	9	10	10	11
505:	10	9	7	12	13	28	58	78
513:	36	17	14	10	13	14	9	13
521:	7	6	8	13	10	13	14	9
529:	6	6	9	15	9	11	11	5
537:	13	14	5	9	9	12	12	10
545:	10	18	15	6	7	9	11	12
553:	14	12	8	14	6	11	10	7
561:	6	16	8	8	10	9	13	5
569:	10	9	20	10	19	26	11	12
577:	16	9	11	8	14	11	67	152
585:	51	19	10	7	15	14	12	10
593:	7	15	5	10	11	14	13	14
601:	12	11	21	17	12	11	9	7
609:	54	158	95	12	13	11	8	15
617:	7	15	10	12	8	3	7	10
625:	10	8	6	8	13	6	7	9
633:	7	10	7	8	11	10	7	8
641:	8	6	6	12	9	8	9	9
649:	6	10	9	5	11	7	14	11
657:	11	4	5	8	8	12	8	14
665:	13	18	11	7	11	4	10	6
673:	11	7	8	6	8	9	8	6
681:	8	2	9	10	5	11	8	4
689:	6	4	7	9	8	11	11	9
697:	6	14	9	11	13	10	7	10
705:	7	9	11	4	11	5	12	10
713:	10	8	11	7	9	8	6	12
721:	10	11	9	7	6	10	24	46
729:	27	11	9	9	4	5	7	12
737:	8	5	10	3	9	7	3	10
745:	11	8	7	3	7	8	9	4
753:	5	5	12	5	5	5	6	5
761:	11	9	9	9	4	8	13	8
769:	20	8	12	9	13	14	3	5
777:	10	7	6	9	11	6	8	7
785:	8	22	9	8	6	7	8	5
793:	8	8	13	22	12	8	7	5

801: 7 8 6 7 7 6 10 9

Sample Title: CP-5028 10-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	5	3	8	5	7	8	6	9
817:	9	4	7	5	9	12	3	6
825:	4	10	9	6	6	6	8	7
833:	9	4	6	8	16	7	3	13
841:	11	6	8	4	5	9	8	14
849:	5	7	5	3	6	4	7	6
857:	7	5	8	12	16	18	8	2
865:	3	3	2	7	7	8	12	4
873:	6	6	11	1	6	4	7	4
881:	7	6	3	9	6	8	10	2
889:	10	2	11	7	3	9	3	11
897:	5	9	6	6	3	4	8	11
905:	5	7	6	5	9	10	30	79
913:	43	11	11	7	7	6	6	7
921:	4	7	6	8	10	4	2	2
929:	2	3	6	7	4	10	12	10
937:	6	6	9	9	5	3	6	8
945:	3	7	3	4	6	7	7	6
953:	7	4	4	4	5	8	4	6
961:	10	5	7	8	14	24	8	5
969:	27	50	18	8	8	3	9	4
977:	7	5	2	2	5	3	7	7
985:	3	3	7	6	9	7	4	6
993:	3	8	1	3	5	3	9	5
1001:	4	7	9	2	7	3	2	9
1009:	7	1	4	2	5	4	1	6
1017:	6	3	3	5	4	3	9	5
1025:	8	5	3	3	2	4	3	3
1033:	9	3	8	3	0	5	5	2
1041:	6	3	5	1	4	8	8	6
1049:	6	4	4	4	7	12	6	8
1057:	7	6	3	3	3	4	3	8
1065:	5	12	8	7	6	3	4	7
1073:	6	4	6	7	2	7	7	6
1081:	6	4	5	4	1	8	6	11
1089:	3	2	13	7	2	4	5	10
1097:	5	9	8	5	4	2	7	5
1105:	5	13	4	3	4	12	7	7
1113:	6	6	6	2	6	9	5	14
1121:	32	22	5	12	8	9	9	5
1129:	3	2	5	8	6	5	6	7
1137:	3	7	7	10	6	2	3	3
1145:	8	8	4	5	6	3	2	10
1153:	4	8	9	12	9	4	6	7
1161:	2	5	5	12	7	4	4	14
1169:	5	5	3	5	4	5	2	6
1177:	6	4	8	5	7	9	6	5
1185:	5	7	9	9	7	8	7	7
1193:	13	6	4	7	8	6	3	9
1201:	5	9	5	6	5	7	6	10
1209:	4	7	3	7	7	9	10	5
1217:	9	5	2	10	9	5	6	6
1225:	7	6	8	7	6	10	4	6

1233: 6 4 11 4 10 8 17 12

Sample Title: CP-5028 10-15

Channel	1	2	3	4	5	6	7	8	9	10
1241:	9	8	4	5	7	3	6	20		
1249:	6	7	6	3	5	5	8	2		
1257:	3	2	2	6	7	5	7	2		
1265:	5	7	1	3	4	3	2	7		
1273:	10	7	3	5	3	4	2	5		
1281:	4	6	2	3	4	2	0	2		
1289:	3	5	7	6	1	2	5	2		
1297:	3	2	4	3	3	3	0	4		
1305:	6	3	1	7	2	2	0	6		
1313:	5	1	5	2	4	2	2	0		
1321:	4	2	4	4	2	4	5	5		
1329:	4	6	4	5	1	1	2	3		
1337:	3	3	2	3	3	8	3	4		
1345:	8	2	2	4	1	3	0	0		
1353:	3	5	2	2	2	2	4	0		
1361:	2	3	1	0	2	1	2	1		
1369:	1	2	1	2	4	5	3	2		
1377:	1	7	6	2	3	7	2	2		
1385:	2	3	4	2	0	1	4	3		
1393:	1	2	1	2	2	2	2	2		
1401:	3	4	5	7	4	3	3	4		
1409:	12	2	2	4	2	2	3	5		
1417:	3	3	2	2	2	1	0	4		
1425:	1	4	4	2	1	0	3	3		
1433:	1	4	1	1	0	1	2	4		
1441:	2	3	3	9	1	3	4	1		
1449:	1	1	2	3	2	0	4	1		
1457:	3	3	9	46	218	263	91	11		
1465:	10	1	1	4	1	4	4	7		
1473:	2	0	5	1	1	3	3	0		
1481:	1	1	2	1	4	1	0	0		
1489:	1	1	1	1	1	1	3	2		
1497:	4	1	2	2	3	1	1	1		
1505:	3	0	0	0	2	5	1	1		
1513:	3	2	2	1	2	2	1	3		
1521:	2	1	1	2	4	1	3	2		
1529:	0	0	3	3	0	3	2	2		
1537:	2	3	2	4	0	1	1	2		
1545:	1	1	1	3	1	0	1	1		
1553:	0	0	2	1	4	5	1	2		
1561:	1	3	2	1	1	3	0	1		
1569:	0	2	1	2	2	4	1	1		
1577:	2	1	1	1	1	5	5	0		
1585:	2	1	1	3	12	2	1	3		
1593:	6	6	4	0	0	1	1	0		
1601:	2	1	1	2	1	0	1	0		
1609:	1	0	1	2	4	1	0	3		
1617:	1	5	3	3	0	4	1	0		
1625:	1	0	4	1	2	2	8	6		
1633:	1	1	1	1	1	0	1	1		
1641:	2	2	1	0	2	1	2	1		
1649:	2	1	2	0	1	1	1	2		
1657:	0	0	2	1	1	4	1	3		

1665: 1 0 1 0 0 2 1 0

Sample Title: CP-5028 10-15

Channel	1	2	3	4	5	6	7	8
1673:	2	0	0	0	1	2	1	2
1681:	2	0	1	1	0	2	0	1
1689:	2	1	0	0	0	0	0	1
1697:	4	2	1	4	1	1	1	0
1705:	2	0	1	0	0	2	2	1
1713:	1	2	0	0	1	0	1	0
1721:	2	0	0	1	1	1	0	0
1729:	1	2	3	3	2	5	0	1
1737:	1	0	0	1	1	0	2	1
1745:	2	0	0	1	1	0	0	0
1753:	2	1	2	1	1	1	1	0
1761:	2	1	0	9	22	17	4	1
1769:	2	2	0	1	0	0	0	1
1777:	1	0	0	4	0	4	3	2
1785:	0	0	0	0	2	0	2	4
1793:	2	2	0	1	1	0	1	2
1801:	1	0	0	3	1	1	1	2
1809:	1	0	0	0	0	1	1	0
1817:	3	0	2	2	0	1	2	1
1825:	0	1	3	0	0	1	0	2
1833:	0	2	1	2	1	0	1	2
1841:	2	0	2	0	0	0	1	3
1849:	9	4	0	0	1	1	1	1
1857:	5	1	0	0	1	0	0	0
1865:	1	0	1	1	1	2	1	0
1873:	4	1	1	1	1	0	0	1
1881:	0	1	0	0	1	1	2	0
1889:	1	0	2	0	1	0	0	1
1897:	0	1	0	1	1	0	2	1
1905:	0	2	1	0	1	2	4	4
1913:	3	0	1	0	0	0	0	1
1921:	1	3	1	2	0	1	1	2
1929:	1	1	0	2	0	2	0	2
1937:	1	1	2	0	0	0	4	1
1945:	1	0	0	2	0	1	4	0
1953:	2	0	0	1	0	3	2	3
1961:	0	2	1	1	0	1	1	0
1969:	1	2	1	1	0	0	0	0
1977:	2	0	2	0	2	1	3	1
1985:	2	0	0	1	1	1	1	0
1993:	1	1	0	0	4	0	0	1
2001:	0	1	1	0	1	3	0	1
2009:	3	2	2	0	2	0	2	0
2017:	0	1	1	0	1	2	0	0
2025:	1	2	0	1	3	1	1	1
2033:	2	1	0	0	0	0	2	1
2041:	2	0	1	0	1	0	2	0
2049:	2	1	2	1	1	1	2	1
2057:	0	3	0	1	0	1	2	1
2065:	0	1	1	2	0	0	0	0
2073:	0	0	0	1	4	0	0	0
2081:	1	2	1	1	0	1	1	2
2089:	2	2	1	1	1	0	1	0

2097: 0 3 0 0 0 2 4 6

Sample Title: CP-5028 10-15

Channel	1	2	3	4	5	6	7	8
2105:	1	3	2	2	1	1	2	1
2113:	0	0	0	0	0	0	5	1
2121:	1	2	1	1	0	0	0	1
2129:	1	1	1	1	2	1	0	1
2137:	1	1	1	0	1	0	1	0
2145:	1	1	3	0	2	1	2	1
2153:	0	1	0	0	0	1	0	0
2161:	1	1	0	2	1	2	1	3
2169:	0	0	3	1	1	2	1	0
2177:	0	2	0	2	0	0	0	0
2185:	0	0	1	1	1	2	0	0
2193:	0	0	0	1	0	0	2	1
2201:	0	0	2	7	9	1	2	1
2209:	0	0	1	2	0	2	1	1
2217:	1	0	2	3	2	2	1	0
2225:	0	0	1	1	0	1	1	1
2233:	1	0	0	1	2	0	0	1
2241:	0	1	1	1	0	0	0	3
2249:	2	0	1	2	0	2	1	0
2257:	1	1	0	0	0	1	1	0
2265:	2	1	1	0	1	3	0	2
2273:	0	0	2	2	2	2	1	0
2281:	0	0	3	0	1	2	1	2
2289:	3	0	0	1	1	5	1	2
2297:	1	2	1	0	0	1	0	1
2305:	1	0	1	0	3	2	0	2
2313:	0	3	1	1	1	1	0	0
2321:	1	2	0	1	1	2	1	2
2329:	1	1	1	2	0	1	0	2
2337:	1	1	0	1	0	0	1	2
2345:	0	0	1	2	0	0	1	0
2353:	1	2	0	1	0	0	2	1
2361:	1	0	0	0	0	2	1	1
2369:	0	0	1	1	3	3	2	1
2377:	0	0	1	0	0	0	0	0
2385:	1	1	1	1	0	0	0	0
2393:	1	1	0	0	1	0	0	1
2401:	2	1	0	0	1	0	0	0
2409:	0	0	0	2	1	3	1	2
2417:	0	1	1	1	0	0	0	0
2425:	1	1	0	0	0	2	1	2
2433:	0	1	0	0	0	0	1	1
2441:	0	0	0	1	1	0	1	1
2449:	1	0	0	1	1	1	1	1
2457:	0	0	2	2	1	0	0	0
2465:	0	0	0	0	0	0	2	0
2473:	0	0	0	0	0	1	1	2
2481:	0	1	0	0	0	1	0	0
2489:	1	0	1	0	0	0	0	0
2497:	0	0	0	0	1	0	3	1
2505:	0	0	0	0	0	2	0	1
2513:	1	1	1	0	1	0	0	0
2521:	0	0	1	0	0	1	0	0

2529: 1 1 0 0 1 1 1 0

Sample Title: CP-5028 10-15

Channel	1	2	3	4	5	6	7	8
2537:	0	0	1	2	0	0	1	0
2545:	0	1	0	1	3	1	0	0
2553:	0	1	0	0	1	0	1	0
2561:	1	0	0	2	0	1	0	1
2569:	0	0	0	0	2	1	1	0
2577:	0	0	1	0	0	1	0	0
2585:	0	0	0	0	1	1	0	1
2593:	1	0	1	2	0	0	3	0
2601:	0	0	0	0	0	0	0	0
2609:	0	0	1	0	6	13	32	21
2617:	7	2	0	0	0	0	1	0
2625:	2	0	0	0	0	0	1	0
2633:	0	0	1	1	1	0	0	0
2641:	0	1	0	0	0	0	0	0
2649:	0	0	1	0	0	1	1	0
2657:	1	0	1	0	1	2	0	0
2665:	0	0	1	1	0	0	0	2
2673:	0	2	1	1	0	0	0	0
2681:	0	0	0	0	0	1	1	0
2689:	0	0	0	0	1	0	0	0
2697:	0	1	0	0	0	1	0	0
2705:	0	0	0	0	0	0	0	0
2713:	1	0	0	0	0	0	0	1
2721:	0	0	1	0	0	1	0	0
2729:	0	1	1	0	0	0	0	0
2737:	0	0	0	1	0	0	0	0
2745:	0	1	0	0	0	0	0	0
2753:	0	0	0	1	0	1	0	1
2761:	0	0	1	0	1	0	0	0
2769:	0	0	0	1	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	1	0	0	0	0	0	0
2793:	2	0	0	1	0	0	0	1
2801:	0	2	0	0	1	0	0	0
2809:	0	0	1	2	0	0	0	0
2817:	0	1	0	0	0	0	0	0
2825:	0	0	0	0	0	0	0	0
2833:	0	1	0	0	1	0	0	0
2841:	1	1	1	1	0	1	0	0
2849:	1	2	0	2	1	0	0	1
2857:	0	0	0	0	0	0	1	2
2865:	0	0	0	1	0	0	2	0
2873:	0	0	0	1	0	0	0	1
2881:	1	0	1	0	0	0	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	0	0	1	0	0	0
2905:	0	0	0	0	0	0	0	1
2913:	0	0	0	1	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	2	1	0	0	1
2937:	0	0	0	0	1	2	0	0
2945:	0	0	0	0	0	0	1	0
2953:	1	0	0	1	0	0	0	0

2961: 1 0 0 0 3 0 0 0

Sample Title: CP-5028 10-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2969:	0	0	0	0	0	1	1	1
2977:	0	0	0	0	0	0	0	1
2985:	1	0	1	1	0	1	0	0
2993:	0	0	0	0	0	0	0	0
3001:	1	1	0	1	0	0	2	0
3009:	0	0	0	0	0	0	0	0
3017:	1	0	0	2	0	0	0	0
3025:	0	0	0	1	0	1	0	0
3033:	0	1	0	0	0	0	0	2
3041:	0	0	0	0	0	0	1	0
3049:	0	2	0	0	1	0	0	1
3057:	0	0	0	0	2	0	0	0
3065:	0	0	1	1	0	0	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	2	0	0	0	0
3089:	0	0	0	0	1	1	0	0
3097:	0	1	0	1	1	0	0	0
3105:	0	0	0	0	0	0	1	2
3113:	1	0	0	0	0	1	0	0
3121:	0	0	0	1	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	1	0	0	0
3145:	0	0	0	0	1	0	0	0
3153:	0	1	0	0	0	0	0	0
3161:	0	0	1	0	0	0	1	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	1	0	0
3201:	2	0	0	1	0	1	0	0
3209:	0	0	1	0	1	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	1	0	0	0	1	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	1	1	0
3249:	0	0	0	0	0	1	0	0
3257:	1	0	1	0	0	0	0	1
3265:	0	1	0	0	1	0	0	0
3273:	0	0	1	0	0	0	0	0
3281:	1	0	0	0	0	0	0	0
3289:	0	0	0	1	0	0	0	1
3297:	1	0	0	1	0	1	0	0
3305:	1	1	0	0	0	0	0	1
3313:	0	0	0	0	0	0	0	1
3321:	0	0	0	1	0	0	0	0
3329:	0	1	0	0	0	0	0	1
3337:	0	0	1	1	0	0	0	1
3345:	0	1	0	1	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	1	0	0	0

3393: 0 1 0 0 0 0 0 0

Sample Title: CP-5028 10-15

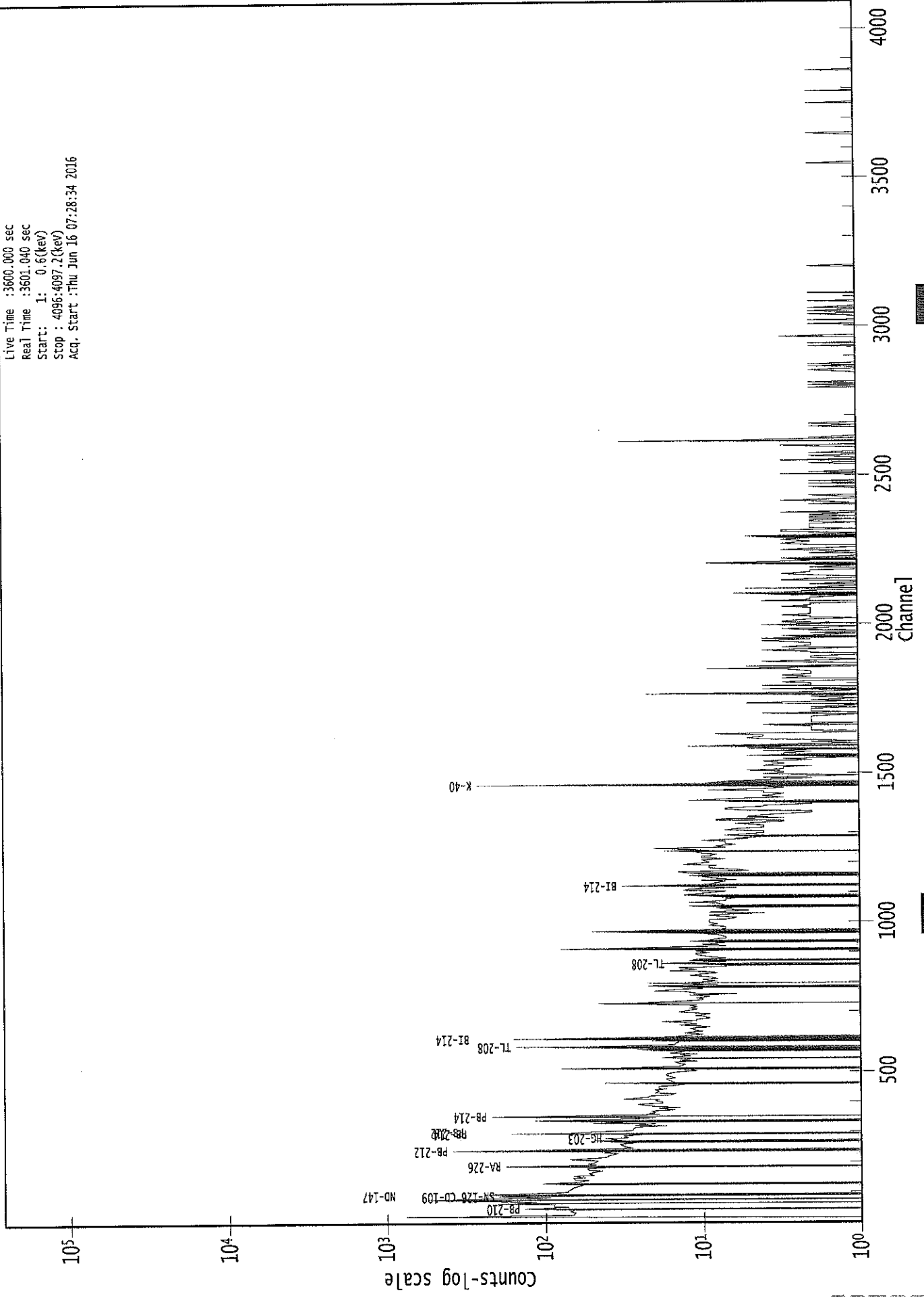
Channel	1	2	3	4	5	6	7	8
3401:	0	0	0	1	0	0	0	0
3409:	0	0	0	1	1	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	1	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	1	0	0	0	0	0	0
3449:	0	1	0	0	0	0	0	0
3457:	1	0	0	0	0	0	0	0
3465:	1	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	1	0	0	0	1	0	0
3497:	0	0	1	1	0	0	0	1
3505:	1	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	1	0
3537:	0	0	0	0	0	1	0	1
3545:	0	2	0	0	0	0	1	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	1	0	0	0	0	0	1
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	1
3593:	0	0	0	0	0	0	0	1
3601:	0	0	1	0	0	0	0	0
3609:	0	0	0	1	0	0	0	0
3617:	0	0	0	0	0	1	0	0
3625:	1	0	0	0	0	0	0	0
3633:	1	0	0	0	0	0	0	0
3641:	0	1	0	0	0	0	0	2
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	1
3665:	0	0	0	0	0	0	1	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	1	0	0
3689:	0	0	0	1	0	0	0	0
3697:	0	0	1	1	0	0	0	0
3705:	0	0	1	0	0	0	0	0
3713:	0	1	1	0	0	0	0	1
3721:	0	0	0	0	0	1	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	2	1	0	0
3753:	1	0	0	0	0	0	0	0
3761:	1	0	1	0	0	0	0	0
3769:	0	0	0	0	1	0	0	1
3777:	0	0	0	0	0	0	0	1
3785:	0	0	0	0	0	2	1	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	1	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5028 10-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	1	0	0	0	0	0
3841:	0	0	0	0	0	1	1	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	2	0	0	0	1
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	1
3881:	0	1	0	0	0	0	0	0
3889:	0	0	0	1	0	0	0	1
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	1	0
3913:	0	1	0	0	0	0	1	0
3921:	0	0	1	0	0	0	0	0
3929:	1	0	0	0	0	0	0	0
3937:	0	1	0	0	0	0	1	0
3945:	0	0	0	0	0	1	1	0
3953:	0	0	0	0	0	0	0	0
3961:	0	1	0	1	0	0	0	0
3969:	0	0	0	1	1	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	1	0	0
4017:	0	0	0	0	1	0	0	1
4025:	0	0	0	0	0	0	1	0
4033:	0	0	0	1	0	0	0	0
4041:	0	0	0	1	0	0	0	0
4049:	0	0	0	1	0	0	0	1
4057:	0	0	1	0	0	0	0	0
4065:	0	0	1	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000038976.CNF



ROI Type: 2

ROI Type: 1

Analysis Report for 1606041-08
CP-5029 00-02

✓
6/16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-08
Sample Description : CP-5029 00-02
Sample Type : SOIL

Sample Size : 5.951E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 4:34:40PM
Acquisition Started : 6/16/2016 8:23:04AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3613.6 seconds

Dead Time : 0.38 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 9 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 38978

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606041-08
CP-5029 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 9:23:38AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.51	46.74	0.0000	0.00
2	74.95	75.16	0.0000	0.00
3	77.54	77.76	0.0000	0.00
4	87.39	87.60	0.0000	0.00
5	92.96	93.17	0.0000	0.00
6	130.45	130.64	0.0000	0.00
7	186.81	186.97	0.0000	0.00
8	209.95	210.09	0.0000	0.00
9	235.22	235.35	0.0000	0.00
10	239.14	239.27	0.0000	0.00
11	242.51	242.64	0.0000	0.00
12	295.61	295.71	0.0000	0.00
13	301.40	301.50	0.0000	0.00
14	338.76	338.83	0.0000	0.00
15	352.43	352.50	0.0000	0.00
16	463.68	463.69	0.0000	0.00
17	511.14	511.13	0.0000	0.00
18	526.05	526.04	0.0000	0.00
19	583.73	583.69	0.0000	0.00
20	609.83	609.78	0.0000	0.00
21	649.66	649.58	0.0000	0.00
22	727.87	727.75	0.0000	0.00
23	770.12	769.98	0.0000	0.00
24	784.98	784.84	0.0000	0.00
25	795.56	795.42	0.0000	0.00
26	840.38	840.21	0.0000	0.00
27	847.87	847.71	0.0000	0.00
28	860.46	860.29	0.0000	0.00
29	866.08	865.91	0.0000	0.00
30	911.56	911.36	0.0000	0.00
31	968.76	968.53	0.0000	0.00
32	1043.75	1043.50	0.0000	0.00
33	1112.92	1112.64	0.0000	0.00
34	1120.72	1120.43	0.0000	0.00
35	1167.75	1167.44	0.0000	0.00
36	1175.18	1174.87	0.0000	0.00
37	1209.13	1208.80	0.0000	0.00
38	1215.08	1214.75	0.0000	0.00
39	1235.14	1234.81	0.0000	0.00
40	1239.10	1238.77	0.0000	0.00
41	1244.90	1244.56	0.0000	0.00
42	1269.56	1269.22	0.0000	0.00

Analysis Report for 1606041-08
CP-5029 00-02

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1377.65	1377.26	0.0000	0.00
44	1401.33	1400.93	0.0000	0.00
45	1408.71	1408.30	0.0000	0.00
46	1461.39	1460.97	0.0000	0.00
47	1509.43	1508.99	0.0000	0.00
48	1563.91	1563.45	0.0000	0.00
49	1589.16	1588.69	0.0000	0.00
50	1592.64	1592.17	0.0000	0.00
51	1621.69	1621.21	0.0000	0.00
52	1745.04	1744.52	0.0000	0.00
53	1765.43	1764.90	0.0000	0.00
54	1938.87	1938.29	0.0000	0.00
55	1946.51	1945.92	0.0000	0.00
56	1968.17	1967.57	0.0000	0.00
57	1976.96	1976.36	0.0000	0.00
58	2169.83	2169.17	0.0000	0.00
59	2204.84	2204.17	0.0000	0.00
60	2292.53	2291.83	0.0000	0.00
61	2465.94	2465.20	0.0000	0.00
62	2479.68	2478.93	0.0000	0.00
63	2559.07	2558.31	0.0000	0.00
64	2615.42	2614.64	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606041-08
CP-5029 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 9:23:38AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	44 -	49	46.74	1.32E+02	64.24	7.25E+02	1.30
m	2	71 -	82	75.16	4.07E+02	78.08	9.89E+02	1.83
M	3	71 -	82	77.76	5.67E+02	89.81	9.60E+02	1.83
m	4	83 -	97	87.60	3.31E+02	102.18	1.49E+03	3.65
M	5	83 -	97	93.17	3.29E+02	85.91	9.64E+02	2.22
m	6	126 -	134	130.64	8.14E+01	83.99	1.03E+03	2.83
	7	183 -	190	186.97	2.62E+02	73.57	7.10E+02	1.80
	8	207 -	213	210.09	5.32E+01	59.32	6.06E+02	1.56
M	9	234 -	250	235.35	6.65E+01	27.24	1.78E+02	1.83
m	10	234 -	250	239.27	5.95E+02	60.41	2.81E+02	1.83
M	11	234 -	250	242.64	1.81E+02	55.78	3.18E+02	1.97
m	12	292 -	298	295.71	1.98E+02	53.30	4.12E+02	1.63
	13	299 -	305	301.50	7.10E+01	44.47	3.08E+02	3.89
	14	335 -	343	338.83	1.11E+02	53.18	3.63E+02	1.43
	15	348 -	356	352.50	4.45E+02	61.85	3.15E+02	2.00
	16	460 -	467	463.69	4.05E+01	35.61	1.85E+02	1.81
	17	505 -	516	511.13	1.33E+02	49.92	2.43E+02	2.10
	18	524 -	528	526.04	2.40E+01	19.13	6.00E+01	2.54
	19	579 -	588	583.69	1.86E+02	41.07	1.35E+02	2.08
	20	606 -	612	609.78	2.88E+02	42.72	1.23E+02	1.78
	21	647 -	652	649.58	2.62E+01	18.44	4.56E+01	3.31
	22	724 -	732	727.75	4.45E+01	28.38	9.10E+01	3.88
	23	762 -	777	769.98	6.83E+01	42.10	1.41E+02	2.75
	24	780 -	788	784.84	3.27E+01	25.62	8.06E+01	1.98
	25	792 -	798	795.42	2.19E+01	20.30	5.83E+01	1.40
	26	835 -	844	840.21	3.86E+01	20.78	3.88E+01	7.65
M	27	845 -	876	847.71	2.16E+01	12.88	1.14E+01	2.84
m	28	845 -	876	860.29	3.30E+01	21.40	3.51E+01	2.85
M	29	845 -	876	865.91	3.21E+01	19.95	4.31E+01	2.86
m	30	907 -	915	911.36	8.08E+01	33.39	1.22E+02	2.08
	31	963 -	973	968.53	5.82E+01	34.41	1.28E+02	2.04
	32	1033 -	1052	1043.50	4.32E+01	38.52	1.06E+02	12.66
	33	1110 -	1115	1112.64	1.26E+01	11.92	1.87E+01	2.44
	34	1116 -	1124	1120.43	7.28E+01	25.91	5.84E+01	1.70
	35	1165 -	1171	1167.44	1.49E+01	18.21	5.03E+01	2.15
	36	1172 -	1177	1174.87	1.83E+01	16.79	4.14E+01	2.68
M	37	1206 -	1225	1208.80	1.83E+01	14.73	2.90E+01	3.41
m	38	1206 -	1225	1214.75	1.87E+01	18.22	3.58E+01	2.80
M	39	1234 -	1256	1234.81	1.09E+01	7.87	1.76E+01	2.81
m	40	1234 -	1256	1238.77	3.49E+01	24.16	7.14E+01	3.09

Analysis Report for 1606041-08

CP-5029 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
m	41	1244.90	1234 -	1256	1244.56	1.64E+01	20.49	5.37E+01	2.81
	42	1269.56	1267 -	1272	1269.22	1.32E+01	13.75	2.76E+01	2.21
	43	1377.65	1373 -	1381	1377.26	1.71E+01	19.67	4.77E+01	1.84
	44	1401.33	1395 -	1405	1400.93	1.30E+01	14.73	2.20E+01	2.48
	45	1408.71	1406 -	1411	1408.30	9.93E+00	9.11	8.14E+00	1.41
	46	1461.39	1455 -	1467	1460.97	3.32E+02	43.39	6.68E+01	2.24
	47	1509.43	1504 -	1511	1508.99	1.13E+01	13.71	2.33E+01	1.34
	48	1563.91	1561 -	1566	1563.45	6.55E+00	8.19	6.90E+00	3.55
M	49	1589.16	1586 -	1596	1588.69	1.31E+01	9.43	1.56E+00	2.71
m	50	1592.64	1586 -	1596	1592.17	1.67E+01	12.17	5.21E+00	2.71
	51	1621.69	1617 -	1625	1621.21	1.40E+01	7.48	0.00E+00	2.48
	52	1745.04	1740 -	1749	1744.52	8.69E+00	10.10	8.62E+00	3.34
	53	1765.43	1760 -	1769	1764.90	6.36E+01	18.95	1.48E+01	2.43
	54	1938.87	1935 -	1940	1938.29	7.00E+00	5.29	0.00E+00	1.47
	55	1946.51	1943 -	1948	1945.92	4.50E+00	5.74	3.00E+00	1.25
	56	1968.17	1965 -	1970	1967.57	7.00E+00	5.29	0.00E+00	3.00
	57	1976.96	1973 -	1978	1976.36	6.69E+00	6.40	2.63E+00	1.26
	58	2169.83	2165 -	2171	2169.17	6.00E+00	4.90	0.00E+00	2.74
	59	2204.84	2200 -	2208	2204.17	1.26E+01	11.69	1.29E+01	2.84
	60	2292.53	2289 -	2294	2291.83	6.00E+00	4.90	0.00E+00	1.98
	61	2465.94	2462 -	2467	2465.20	5.50E+00	6.08	3.00E+00	1.69
	62	2479.68	2475 -	2481	2478.93	4.50E+00	6.02	3.00E+00	2.70
	63	2559.07	2555 -	2560	2558.31	4.67E+00	5.74	2.67E+00	1.89
	64	2615.42	2609 -	2618	2614.64	4.42E+01	14.59	5.55E+00	3.08

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 9:23:38AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.51	44 -	49	1.32E+02	64.24	7.25E+02	4.93E+01
M	2	74.95	71 -	82	4.07E+02	78.08	9.89E+02	5.17E+01
m	3	77.54	71 -	82	5.67E+02	89.81	9.60E+02	5.09E+01
M	4	87.39	83 -	97	3.31E+02	102.18	1.49E+03	6.36E+01

Analysis Report for 1606041-08

CP-5029 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	5	92.96	83 -	97	3.29E+02	85.91	9.64E+02	5.10E+01
	6	130.45	126 -	134	8.14E+01	83.99	1.03E+03	6.74E+01
	7	186.81	183 -	190	2.62E+02	73.57	7.10E+02	5.43E+01
	8	209.95	207 -	213	5.32E+01	59.32	6.06E+02	4.73E+01
M	9	235.22	234 -	250	6.65E+01	27.24	1.78E+02	2.20E+01
m	10	239.14	234 -	250	5.95E+02	60.41	2.81E+02	2.76E+01
m	11	242.51	234 -	250	1.81E+02	55.78	3.18E+02	2.93E+01
	12	295.61	292 -	298	1.98E+02	53.30	4.12E+02	5.28E+01
	13	301.40	299 -	305	7.10E+01	44.47	3.08E+02	3.38E+01
	14	338.76	335 -	343	1.11E+02	53.18	3.63E+02	4.01E+01
	15	352.43	348 -	356	4.45E+02	61.85	3.15E+02	3.72E+01
	16	463.68	460 -	467	4.05E+01	35.61	1.85E+02	2.73E+01
	17	511.14	505 -	516	1.33E+02	49.92	2.43E+02	3.64E+01
	18	526.05	524 -	528	2.40E+01	19.13	6.00E+01	1.35E+01
	19	583.73	579 -	588	1.86E+02	41.07	1.35E+02	2.53E+01
	20	609.83	606 -	612	2.88E+02	42.72	1.23E+02	2.13E+01
	21	649.66	647 -	652	2.62E+01	18.44	4.56E+01	1.26E+01
	22	727.87	724 -	732	4.45E+01	28.38	9.10E+01	2.06E+01
	23	770.12	762 -	777	6.83E+01	42.10	1.41E+02	3.18E+01
	24	784.98	780 -	788	3.27E+01	25.62	8.06E+01	1.88E+01
	25	795.56	792 -	798	2.19E+01	20.30	5.83E+01	1.48E+01
	26	840.38	835 -	844	3.86E+01	20.78	3.88E+01	1.37E+01
M	27	847.87	845 -	876	2.16E+01	12.88	1.14E+01	5.55E+00
m	28	860.46	845 -	876	3.30E+01	21.40	3.51E+01	9.74E+00
m	29	866.08	845 -	876	3.21E+01	19.95	4.31E+01	1.08E+01
	30	911.56	907 -	915	8.08E+01	33.39	1.22E+02	2.31E+01
	31	968.76	963 -	973	5.82E+01	34.41	1.28E+02	2.53E+01
	32	1043.75	1033 -	1052	4.32E+01	38.52	1.06E+02	2.98E+01
	33	1112.92	1110 -	1115	1.26E+01	11.92	1.87E+01	7.86E+00
	34	1120.72	1116 -	1124	7.28E+01	25.91	5.84E+01	1.60E+01
	35	1167.75	1165 -	1171	1.49E+01	18.21	5.03E+01	1.36E+01
	36	1175.18	1172 -	1177	1.83E+01	16.79	4.14E+01	1.19E+01
M	37	1209.13	1206 -	1225	1.83E+01	14.73	2.90E+01	8.85E+00
m	38	1215.08	1206 -	1225	1.87E+01	18.22	3.58E+01	9.84E+00
M	39	1235.14	1234 -	1256	1.09E+01	7.87	1.76E+01	6.89E+00
m	40	1239.10	1234 -	1256	3.49E+01	24.16	7.14E+01	1.39E+01
m	41	1244.90	1234 -	1256	1.64E+01	20.49	5.37E+01	1.21E+01
	42	1269.56	1267 -	1272	1.32E+01	13.75	2.76E+01	9.60E+00
	43	1377.65	1373 -	1381	1.71E+01	19.67	4.77E+01	1.47E+01
	44	1401.33	1395 -	1405	1.30E+01	14.73	2.20E+01	1.06E+01
	45	1408.71	1406 -	1411	9.93E+00	9.11	8.14E+00	5.41E+00
	46	1461.39	1455 -	1467	3.32E+02	43.39	6.68E+01	1.94E+01
	47	1509.43	1504 -	1511	1.13E+01	13.71	2.33E+01	9.82E+00
	48	1563.91	1561 -	1566	6.55E+00	8.19	6.90E+00	5.25E+00
M	49	1589.16	1586 -	1596	1.31E+01	9.43	1.56E+00	2.05E+00
m	50	1592.64	1586 -	1596	1.67E+01	12.17	5.21E+00	3.75E+00
	51	1621.69	1617 -	1625	1.40E+01	7.48	0.00E+00	0.00E+00
	52	1745.04	1740 -	1749	8.69E+00	10.10	8.62E+00	6.74E+00
	53	1765.43	1760 -	1769	6.36E+01	18.95	1.48E+01	8.41E+00
	54	1938.87	1935 -	1940	7.00E+00	5.29	0.00E+00	0.00E+00
	55	1946.51	1943 -	1948	4.50E+00	5.74	3.00E+00	3.18E+00

Analysis Report for 1606041-08
CP-5029 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
56	1968.17	1965 -	1970	7.00E+00	5.29	0.00E+00	0.00E+00
57	1976.96	1973 -	1978	6.69E+00	6.40	2.63E+00	3.10E+00
58	2169.83	2165 -	2171	6.00E+00	4.90	0.00E+00	0.00E+00
59	2204.84	2200 -	2208	1.26E+01	11.69	1.29E+01	7.65E+00
60	2292.53	2289 -	2294	6.00E+00	4.90	0.00E+00	0.00E+00
61	2465.94	2462 -	2467	5.50E+00	6.08	3.00E+00	3.18E+00
62	2479.68	2475 -	2481	4.50E+00	6.02	3.00E+00	3.51E+00
63	2559.07	2555 -	2560	4.67E+00	5.74	2.67E+00	3.11E+00
64	2615.42	2609 -	2618	4.42E+01	14.59	5.55E+00	4.94E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 9:23:38AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	44 -	49	46.74	1.32E+02	64.24	7.25E+02	PB-210
M	2	71 -	82	75.16	4.07E+02	78.08	9.89E+02	AM-243
m	3	71 -	82	77.76	5.67E+02	89.81	9.60E+02	TI-44
M	4	83 -	97	87.60	3.31E+02	102.18	1.49E+03	SN-126 CD-109 NP-237 EU-155 LU-176
m	5	83 -	97	93.17	3.29E+02	85.91	9.64E+02	GA-67
	6	126 -	134	130.64	8.14E+01	83.99	1.03E+03	PA-234
	7	183 -	190	186.97	2.62E+02	73.57	7.10E+02	RA-226
	8	207 -	213	210.09	5.32E+01	59.32	6.06E+02	CM-243 GA-67
M	9	234 -	250	235.35	6.65E+01	27.24	1.78E+02	NB-95M TH-227
m	10	234 -	250	239.27	5.95E+02	60.41	2.81E+02	PB-212
m	11	234 -	250	242.64	1.81E+02	55.78	3.18E+02	.....

Analysis Report for 1606041-08

CP-5029 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide	
12	295.61	292 -	298	295.71	1.98E+02	53.30	4.12E+02	PB-214	
13	301.40	299 -	305	301.50	7.10E+01	44.47	3.08E+02	.....
14	338.76	335 -	343	338.83	1.11E+02	53.18	3.63E+02	AC-228	
15	352.43	348 -	356	352.50	4.45E+02	61.85	3.15E+02	PB-214	
16	463.68	460 -	467	463.69	4.05E+01	35.61	1.85E+02	SB-125	
17	511.14	505 -	516	511.13	1.33E+02	49.92	2.43E+02	.....
18	526.05	524 -	528	526.04	2.40E+01	19.13	6.00E+01	.....
19	583.73	579 -	588	583.69	1.86E+02	41.07	1.35E+02	TL-208	
20	609.83	606 -	612	609.78	2.88E+02	42.72	1.23E+02	BI-214	
21	649.66	647 -	652	649.58	2.62E+01	18.44	4.56E+01	.....
22	727.87	724 -	732	727.75	4.45E+01	28.38	9.10E+01	BI-212	
23	770.12	762 -	777	769.98	6.83E+01	42.10	1.41E+02	.....
24	784.98	780 -	788	784.84	3.27E+01	25.62	8.06E+01	.....
25	795.56	792 -	798	795.42	2.19E+01	20.30	5.83E+01	CS-134	
26	840.38	835 -	844	840.21	3.86E+01	20.78	3.88E+01	.....
M	27	847.87	845 -	876	847.71	2.16E+01	12.88	1.14E+01
m	28	860.46	845 -	876	860.29	3.30E+01	21.40	3.51E+01	TL-208
m	29	866.08	845 -	876	865.91	3.21E+01	19.95	4.31E+01
30	911.56	907 -	915	911.36	8.08E+01	33.39	1.22E+02	AC-228	
								LU-172	
31	968.76	963 -	973	968.53	5.82E+01	34.41	1.28E+02	AC-228	
32	1043.75	1033 -	1052	1043.50	4.32E+01	38.52	1.06E+02	.....
33	1112.92	1110 -	1115	1112.64	1.26E+01	11.92	1.87E+01	EU-152	
34	1120.72	1116 -	1124	1120.43	7.28E+01	25.91	5.84E+01	SC-46	
								BI-214	
								TA-182	
35	1167.75	1165 -	1171	1167.44	1.49E+01	18.21	5.03E+01	.....
36	1175.18	1172 -	1177	1174.87	1.83E+01	16.79	4.14E+01	.....
M	37	1209.13	1206 -	1225	1208.80	1.83E+01	14.73	2.90E+01
m	38	1215.08	1206 -	1225	1214.75	1.87E+01	18.22	3.58E+01
M	39	1235.14	1234 -	1256	1234.81	1.09E+01	7.87	1.76E+01	CS-136
m	40	1239.10	1234 -	1256	1238.77	3.49E+01	24.16	7.14E+01	CO-56
m	41	1244.90	1234 -	1256	1244.56	1.64E+01	20.49	5.37E+01
42	1269.56	1267 -	1272	1269.22	1.32E+01	13.75	2.76E+01	.....
43	1377.65	1373 -	1381	1377.26	1.71E+01	19.67	4.77E+01	.....
44	1401.33	1395 -	1405	1400.93	1.30E+01	14.73	2.20E+01	.....
45	1408.71	1406 -	1411	1408.30	9.93E+00	9.11	8.14E+00	EU-152	
46	1461.39	1455 -	1467	1460.97	3.32E+02	43.39	6.68E+01	K-40	
47	1509.43	1504 -	1511	1508.99	1.13E+01	13.71	2.33E+01	.....
48	1563.91	1561 -	1566	1563.45	6.55E+00	8.19	6.90E+00	.....
M	49	1589.16	1586 -	1596	1588.69	1.31E+01	9.43	1.56E+00
m	50	1592.64	1586 -	1596	1592.17	1.67E+01	12.17	5.21E+00
51	1621.69	1617 -	1625	1621.21	1.40E+01	7.48	0.00E+00	.....
52	1745.04	1740 -	1749	1744.52	8.69E+00	10.10	8.62E+00	.....
53	1765.43	1760 -	1769	1764.90	6.36E+01	18.95	1.48E+01	BI-214	
54	1938.87	1935 -	1940	1938.29	7.00E+00	5.29	0.00E+00	.....
55	1946.51	1943 -	1948	1945.92	4.50E+00	5.74	3.00E+00	.....
56	1968.17	1965 -	1970	1967.57	7.00E+00	5.29	0.00E+00	.....
57	1976.96	1973 -	1978	1976.36	6.69E+00	6.40	2.63E+00	.....
58	2169.83	2165 -	2171	2169.17	6.00E+00	4.90	0.00E+00	.....
59	2204.84	2200 -	2208	2204.17	1.26E+01	11.69	1.29E+01	BI-214	
60	2292.53	2289 -	2294	2291.83	6.00E+00	4.90	0.00E+00	.....
61	2465.94	2462 -	2467	2465.20	5.50E+00	6.08	3.00E+00	.....
62	2479.68	2475 -	2481	2478.93	4.50E+00	6.02	3.00E+00	.....

Analysis Report for 1606041-08
CP-5029 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
63	2559.07	2555 -	2560	2558.31	4.67E+00	5.74	2.67E+00	.....
64	2615.42	2609 -	2618	2614.64	4.42E+01	14.59	5.55E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 9:23:38AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.51	1.32E+02	64.24	1.50E-02	1.58E-03
M	2	74.95	4.07E+02	78.08	2.36E-02	2.09E-03
m	3	77.54	5.67E+02	89.81	2.39E-02	2.18E-03
M	4	87.39	3.31E+02	102.18	2.44E-02	2.50E-03
m	5	92.96	3.29E+02	85.91	2.44E-02	2.41E-03
	6	130.45	8.14E+01	83.99	2.24E-02	1.69E-03
	7	186.81	2.62E+02	73.57	1.82E-02	1.42E-03
	8	209.95	5.32E+01	59.32	1.68E-02	1.31E-03
M	9	235.22	6.65E+01	27.24	1.54E-02	1.20E-03
m	10	239.14	5.95E+02	60.41	1.52E-02	1.18E-03
m	11	242.51	1.81E+02	55.78	1.50E-02	1.16E-03
	12	295.61	1.98E+02	53.30	1.28E-02	9.73E-04
	13	301.40	7.10E+01	44.47	1.26E-02	9.65E-04
	14	338.76	1.11E+02	53.18	1.14E-02	9.12E-04
	15	352.43	4.45E+02	61.85	1.10E-02	8.93E-04
	16	463.68	4.05E+01	35.61	8.72E-03	7.65E-04
	17	511.14	1.33E+02	49.92	8.01E-03	7.18E-04
	18	526.05	2.40E+01	19.13	7.81E-03	7.03E-04
	19	583.73	1.86E+02	41.07	7.13E-03	6.46E-04
	20	609.83	2.88E+02	42.72	6.87E-03	6.20E-04
	21	649.66	2.62E+01	18.44	6.50E-03	5.80E-04
	22	727.87	4.45E+01	28.38	5.89E-03	5.14E-04
	23	770.12	6.83E+01	42.10	5.61E-03	4.79E-04
	24	784.98	3.27E+01	25.62	5.51E-03	4.67E-04
	25	795.56	2.19E+01	20.30	5.45E-03	4.58E-04
	26	840.38	3.86E+01	20.78	5.20E-03	4.22E-04
M	27	847.87	2.16E+01	12.88	5.16E-03	4.16E-04
m	28	860.46	3.30E+01	21.40	5.10E-03	4.05E-04

Analysis Report for 1606041-08
CP-5029 00-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	29	866.08	3.21E+01	19.95	5.07E-03	4.01E-04
	30	911.56	8.08E+01	33.39	4.85E-03	3.72E-04
	31	968.76	5.82E+01	34.41	4.61E-03	3.61E-04
	32	1043.75	4.32E+01	38.52	4.33E-03	3.48E-04
	33	1112.92	1.26E+01	11.92	4.10E-03	3.35E-04
	34	1120.72	7.28E+01	25.91	4.08E-03	3.33E-04
	35	1167.75	1.49E+01	18.21	3.94E-03	3.24E-04
	36	1175.18	1.83E+01	16.79	3.92E-03	3.23E-04
M	37	1209.13	1.83E+01	14.73	3.83E-03	3.16E-04
m	38	1215.08	1.87E+01	18.22	3.81E-03	3.14E-04
M	39	1235.14	1.09E+01	7.87	3.76E-03	3.10E-04
m	40	1239.10	3.49E+01	24.16	3.75E-03	3.09E-04
m	41	1244.90	1.64E+01	20.49	3.74E-03	3.08E-04
	42	1269.56	1.32E+01	13.75	3.68E-03	3.02E-04
	43	1377.65	1.71E+01	19.67	3.45E-03	2.82E-04
	44	1401.33	1.30E+01	14.73	3.40E-03	2.78E-04
	45	1408.71	9.93E+00	9.11	3.39E-03	2.77E-04
	46	1461.39	3.32E+02	43.39	3.29E-03	2.69E-04
	47	1509.43	1.13E+01	13.71	3.21E-03	2.62E-04
	48	1563.91	6.55E+00	8.19	3.12E-03	2.54E-04
M	49	1589.16	1.31E+01	9.43	3.09E-03	2.50E-04
m	50	1592.64	1.67E+01	12.17	3.08E-03	2.50E-04
	51	1621.69	1.40E+01	7.48	3.04E-03	2.45E-04
	52	1745.04	8.69E+00	10.10	2.88E-03	2.27E-04
	53	1765.43	6.36E+01	18.95	2.86E-03	2.24E-04
	54	1938.87	7.00E+00	5.29	2.68E-03	2.13E-04
	55	1946.51	4.50E+00	5.74	2.67E-03	2.13E-04
	56	1968.17	7.00E+00	5.29	2.65E-03	2.13E-04
	57	1976.96	6.69E+00	6.40	2.64E-03	2.13E-04
	58	2169.83	6.00E+00	4.90	2.49E-03	2.13E-04
	59	2204.84	1.26E+01	11.69	2.46E-03	2.13E-04
	60	2292.53	6.00E+00	4.90	2.41E-03	2.13E-04
	61	2465.94	5.50E+00	6.08	2.31E-03	2.13E-04
	62	2479.68	4.50E+00	6.02	2.30E-03	2.13E-04
	63	2559.07	4.67E+00	5.74	2.26E-03	2.13E-04
	64	2615.42	4.42E+01	14.59	2.24E-03	2.13E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 9:23:38AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038678.CNF

: 00546

Analysis Report for 1606041-08

CP-5029 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.51	1.32E+02	64.24	4.97E+01	7.81E+00	8.19E+01	6.47E+01
M	2	74.95	4.07E+02	78.08			4.07E+02	7.81E+01
m	3	77.54	5.67E+02	89.81	6.70E+00	3.28E+00	5.60E+02	8.99E+01
M	4	87.39	3.31E+02	102.18	1.07E+01	3.99E+00	3.21E+02	1.02E+02
m	5	92.96	3.29E+02	85.91	8.20E+01	2.30E+01	2.47E+02	8.89E+01
	6	130.45	8.14E+01	83.99			8.14E+01	8.40E+01
	7	186.81	2.62E+02	73.57	3.45E+01	5.92E+00	2.28E+02	7.38E+01
	8	209.95	5.32E+01	59.32			5.32E+01	5.93E+01
M	9	235.22	6.65E+01	27.24			6.65E+01	2.72E+01
m	10	239.14	5.95E+02	60.41	1.33E+01	5.09E+00	5.81E+02	6.06E+01
m	11	242.51	1.81E+02	55.78			1.81E+02	5.58E+01
	12	295.61	1.98E+02	53.30	1.94E+00	4.39E+00	1.96E+02	5.35E+01
	13	301.40	7.10E+01	44.47			7.10E+01	4.45E+01
	14	338.76	1.11E+02	53.18			1.11E+02	5.32E+01
	15	352.43	4.45E+02	61.85	4.00E+00	3.58E+00	4.40E+02	6.20E+01
	16	463.68	4.05E+01	35.61			4.05E+01	3.56E+01
	17	511.14	1.33E+02	49.92	6.05E+01	4.93E+00	7.22E+01	5.02E+01
	18	526.05	2.40E+01	19.13			2.40E+01	1.91E+01
	19	583.73	1.86E+02	41.07	5.50E+00	3.61E+00	1.80E+02	4.12E+01
	20	609.83	2.88E+02	42.72	5.07E+00	3.83E+00	2.83E+02	4.29E+01
	21	649.66	2.62E+01	18.44			2.62E+01	1.84E+01
	22	727.87	4.45E+01	28.38			4.45E+01	2.84E+01
	23	770.12	6.83E+01	42.10			6.83E+01	4.21E+01
	24	784.98	3.27E+01	25.62			3.27E+01	2.56E+01
	25	795.56	2.19E+01	20.30			2.19E+01	2.03E+01
	26	840.38	3.86E+01	20.78			3.86E+01	2.08E+01
M	27	847.87	2.16E+01	12.88			2.16E+01	1.29E+01
m	28	860.46	3.30E+01	21.40			3.30E+01	2.14E+01
m	29	866.08	3.21E+01	19.95			3.21E+01	1.99E+01
	30	911.56	8.08E+01	33.39			8.08E+01	3.34E+01
	31	968.76	5.82E+01	34.41			5.82E+01	3.44E+01
	32	1043.75	4.32E+01	38.52			4.32E+01	3.85E+01
	33	1112.92	1.26E+01	11.92			1.26E+01	1.19E+01
	34	1120.72	7.28E+01	25.91	1.09E+00	2.08E+00	7.17E+01	2.60E+01
	35	1167.75	1.49E+01	18.21			1.49E+01	1.82E+01
	36	1175.18	1.83E+01	16.79			1.83E+01	1.68E+01
M	37	1209.13	1.83E+01	14.73			1.83E+01	1.47E+01
m	38	1215.08	1.87E+01	18.22			1.87E+01	1.82E+01
M	39	1235.14	1.09E+01	7.87			1.09E+01	7.87E+00
m	40	1239.10	3.49E+01	24.16			3.49E+01	2.42E+01
m	41	1244.90	1.64E+01	20.49			1.64E+01	2.05E+01
	42	1269.56	1.32E+01	13.75			1.32E+01	1.37E+01
	43	1377.65	1.71E+01	19.67			1.71E+01	1.97E+01
	44	1401.33	1.30E+01	14.73			1.30E+01	1.47E+01
	45	1408.71	9.93E+00	9.11			9.93E+00	9.11E+00
	46	1461.39	3.32E+02	43.39	4.33E+00	2.02E+00	3.27E+02	4.34E+01
	47	1509.43	1.13E+01	13.71			1.13E+01	1.37E+01
	48	1563.91	6.55E+00	8.19			6.55E+00	8.19E+00
M	49	1589.16	1.31E+01	9.43			1.31E+01	9.43E+00
m	50	1592.64	1.67E+01	12.17			1.67E+01	1.22E+01
	51	1621.69	1.40E+01	7.48			1.40E+01	7.48E+00

Analysis Report for 1606041-08

CP-5029 00-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
52	1745.04	8.69E+00	10.10			8.69E+00	1.01E+01
53	1765.43	6.36E+01	18.95			6.36E+01	1.89E+01
54	1938.87	7.00E+00	5.29			7.00E+00	5.29E+00
55	1946.51	4.50E+00	5.74			4.50E+00	5.74E+00
56	1968.17	7.00E+00	5.29			7.00E+00	5.29E+00
57	1976.96	6.69E+00	6.40			6.69E+00	6.40E+00
58	2169.83	6.00E+00	4.90			6.00E+00	4.90E+00
59	2204.84	1.26E+01	11.69			1.26E+01	1.17E+01
60	2292.53	6.00E+00	4.90			6.00E+00	4.90E+00
61	2465.94	5.50E+00	6.08			5.50E+00	6.08E+00
62	2479.68	4.50E+00	6.02			4.50E+00	6.02E+00
63	2559.07	4.67E+00	5.74			4.67E+00	5.74E+00
64	2615.42	4.42E+01	14.59	2.52E+00	1.44E+00	4.17E+01	1.47E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 9:23:38AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038678.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
	1	46.51	1.32E+02	64.24	4.97E+01	7.81E+00	8.19E+01	6.47E+01
M	2	74.95	4.07E+02	78.08			4.07E+02	7.81E+01
m	3	77.54	5.67E+02	89.81	6.70E+00	3.28E+00	5.60E+02	8.99E+01
M	4	87.39	3.31E+02	102.18	1.07E+01	3.99E+00	3.21E+02	1.02E+02
m	5	92.96	3.29E+02	85.91	8.20E+01	2.30E+01	2.47E+02	8.89E+01
	6	130.45	8.14E+01	83.99			8.14E+01	8.40E+01
	7	186.81	2.62E+02	73.57	3.45E+01	5.92E+00	2.28E+02	7.38E+01
	8	209.95	5.32E+01	59.32			5.32E+01	5.93E+01
M	9	235.22	6.65E+01	27.24			6.65E+01	2.72E+01
m	10	239.14	5.95E+02	60.41	1.33E+01	5.09E+00	5.81E+02	6.06E+01
m	11	242.51	1.81E+02	55.78			1.81E+02	5.58E+01
	12	295.61	1.98E+02	53.30	1.94E+00	4.39E+00	1.96E+02	5.35E+01
	13	301.40	7.10E+01	44.47			7.10E+01	4.45E+01
	14	338.76	1.11E+02	53.18			1.11E+02	5.32E+01
	15	352.43	4.45E+02	61.85	4.00E+00	3.58E+00	4.40E+02	6.20E+01

: 00548

Analysis Report for 1606041-08

CP-5029 00-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
16	463.68	4.05E+01	35.61			4.05E+01	3.56E+01
17	511.14	1.33E+02	49.92	6.05E+01	4.93E+00	7.22E+01	5.02E+01
18	526.05	2.40E+01	19.13			2.40E+01	1.91E+01
19	583.73	1.86E+02	41.07	5.50E+00	3.61E+00	1.80E+02	4.12E+01
20	609.83	2.88E+02	42.72	5.07E+00	3.83E+00	2.83E+02	4.29E+01
21	649.66	2.62E+01	18.44			2.62E+01	1.84E+01
22	727.87	4.45E+01	28.38			4.45E+01	2.84E+01
23	770.12	6.83E+01	42.10			6.83E+01	4.21E+01
24	784.98	3.27E+01	25.62			3.27E+01	2.56E+01
25	795.56	2.19E+01	20.30			2.19E+01	2.03E+01
26	840.38	3.86E+01	20.78			3.86E+01	2.08E+01
M	27	847.87	2.16E+01			2.16E+01	1.29E+01
m	28	860.46	3.30E+01			3.30E+01	2.14E+01
m	29	866.08	3.21E+01			3.21E+01	1.99E+01
30	911.56	8.08E+01	33.39			8.08E+01	3.34E+01
31	968.76	5.82E+01	34.41			5.82E+01	3.44E+01
32	1043.75	4.32E+01	38.52			4.32E+01	3.85E+01
33	1112.92	1.26E+01	11.92			1.26E+01	1.19E+01
34	1120.72	7.28E+01	25.91	1.09E+00	2.08E+00	7.17E+01	2.60E+01
35	1167.75	1.49E+01	18.21			1.49E+01	1.82E+01
36	1175.18	1.83E+01	16.79			1.83E+01	1.68E+01
M	37	1209.13	1.83E+01			1.83E+01	1.47E+01
m	38	1215.08	1.87E+01			1.87E+01	1.82E+01
M	39	1235.14	1.09E+01			1.09E+01	7.87E+00
m	40	1239.10	3.49E+01			3.49E+01	2.42E+01
m	41	1244.90	1.64E+01			1.64E+01	2.05E+01
42	1269.56	1.32E+01	13.75			1.32E+01	1.37E+01
43	1377.65	1.71E+01	19.67			1.71E+01	1.97E+01
44	1401.33	1.30E+01	14.73			1.30E+01	1.47E+01
45	1408.71	9.93E+00	9.11			9.93E+00	9.11E+00
46	1461.39	3.32E+02	43.39	4.33E+00	2.02E+00	3.27E+02	4.34E+01
47	1509.43	1.13E+01	13.71			1.13E+01	1.37E+01
48	1563.91	6.55E+00	8.19			6.55E+00	8.19E+00
M	49	1589.16	1.31E+01			1.31E+01	9.43E+00
m	50	1592.64	1.67E+01			1.67E+01	1.22E+01
51	1621.69	1.40E+01	7.48			1.40E+01	7.48E+00
52	1745.04	8.69E+00	10.10			8.69E+00	1.01E+01
53	1765.43	6.36E+01	18.95			6.36E+01	1.89E+01
54	1938.87	7.00E+00	5.29			7.00E+00	5.29E+00
55	1946.51	4.50E+00	5.74			4.50E+00	5.74E+00
56	1968.17	7.00E+00	5.29			7.00E+00	5.29E+00
57	1976.96	6.69E+00	6.40			6.69E+00	6.40E+00
58	2169.83	6.00E+00	4.90			6.00E+00	4.90E+00
59	2204.84	1.26E+01	11.69			1.26E+01	1.17E+01
60	2292.53	6.00E+00	4.90			6.00E+00	4.90E+00
61	2465.94	5.50E+00	6.08			5.50E+00	6.08E+00
62	2479.68	4.50E+00	6.02			4.50E+00	6.02E+00
63	2559.07	4.67E+00	5.74			4.67E+00	5.74E+00
64	2615.42	4.42E+01	14.59	2.52E+00	1.44E+00	4.17E+01	1.47E+01

Analysis Report for 1606041-08

CP-5029 00-02

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.948	1460.81 *	10.67	1.18E+01	1.85E+00
GA-67	0.579	93.31 *	35.70	2.80E+00	4.83E+00
		208.95 *	2.24	1.40E+01	2.35E+01
		300.22	16.00		
NB-95M	0.932	235.69 *	25.00	1.40E+00	5.83E-01
CD-109	0.937	88.03 *	3.72	4.52E+00	1.54E+00
SN-126	0.995	87.57 *	37.00	4.48E-01	1.50E-01
TL-208	0.931	583.14 *	30.22	1.05E+00	2.59E-01
		860.37 *	4.48	1.83E+00	1.19E+00
		2614.66 *	35.85	6.55E-01	2.39E-01
PB-210	1.000	46.50 *	4.25	1.62E+00	1.29E+00
BI-212	0.710	727.17 *	11.80	8.08E-01	5.20E-01
		1620.62	2.75		
PB-212	0.857	238.63 *	44.60	1.08E+00	1.41E-01
		300.09	3.41		
BI-214	0.941	609.31 *	46.30	1.12E+00	1.98E-01
		1120.29 *	15.10	1.47E+00	5.46E-01
		1764.49 *	15.80	1.78E+00	5.48E-01
		2204.22 *	4.98	1.29E+00	1.21E+00
PB-214	0.965	295.21 *	19.19	1.01E+00	2.85E-01
		351.92 *	37.19	1.35E+00	2.19E-01
RA-226	0.944	186.21 *	3.28	4.80E+00	8.93E+00
AC-228	0.969	338.32 *	11.40	1.07E+00	5.22E-01
		911.07 *	27.70	7.59E-01	3.19E-01
		969.11 *	16.60	9.60E-01	5.73E-01
PA-234	0.430	131.20 *	20.40	2.24E-01	2.32E-01
		733.99	8.80		
		946.00	12.00		
NP-237	0.881	86.50 *	12.60	1.32E+00	4.41E-01
AM-243	0.988	74.67 *	66.00	3.29E-01	6.95E-02

Analysis Report for 1606041-08
CP-5029 00-02

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 9:23:38AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 3	77.54	1.55541E-01	8.02		
m 11	242.51	5.02210E-02	15.43		
13	301.40	1.97222E-02	31.32		
16	463.68	1.12615E-02	43.92	Tol.	SB-125
17	511.14	2.00428E-02	34.76		
18	526.05	6.66667E-03	39.86	Sum	
21	649.66	7.27324E-03	35.21		
23	770.12	1.89618E-02	30.83	Sum	
24	784.98	9.07915E-03	39.20		
25	795.56	6.07026E-03	46.46	Tol.	CS-134
26	840.38	1.07184E-02	26.93		
M 27	847.87	6.00398E-03	29.80		
m 29	866.08	8.92254E-03	31.05		
32	1043.75	1.20038E-02	44.57	Sum	
33	1112.92	3.51010E-03	47.15	Tol.	EU-152
35	1167.75	4.13194E-03	61.20	Sum	
36	1175.18	5.08547E-03	45.86		
M 37	1209.13	5.08549E-03	40.23		
m 38	1215.08	5.19759E-03	48.69		
M 39	1235.14	3.03944E-03	35.98	Tol.	CS-136
m 40	1239.10	9.69315E-03	34.61		
m 41	1244.90	4.55069E-03	62.55		
42	1269.56	3.66255E-03	52.13		
43	1377.65	4.76287E-03	57.35		
44	1401.33	3.61111E-03	56.66		
45	1408.71	2.75794E-03	45.88	Tol.	EU-152
47	1509.43	3.15217E-03	60.41		
48	1563.91	1.81944E-03	62.48		
M 49	1589.16	3.64397E-03	35.96	Sum	
m 50	1592.64	4.63188E-03	36.48	D-Esc	
51	1621.69	3.88889E-03	26.73		
52	1745.04	2.41453E-03	58.09		
54	1938.87	1.94444E-03	37.80		
55	1946.51	1.25000E-03	63.83		

Analysis Report for 1606041-08
CP-5029 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
56	1968.17	1.94444E-03	37.80		
57	1976.96	1.85764E-03	47.87		
58	2169.83	1.66667E-03	40.82		
60	2292.53	1.66667E-03	40.82	Sum	
61	2465.94	1.52778E-03	55.30		
62	2479.68	1.25000E-03	66.90		
63	2559.07	1.29630E-03	61.55		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.94	1460.81 *	10.67	1.18E+01	1.85E+00
GA-67	0.57	93.31 *	35.70	2.80E+00	4.83E+00
		208.95 *	2.24	1.40E+01	2.35E+01
		300.22	16.00		
NB-95M	0.93	235.69 *	25.00	1.40E+00	5.83E-01
CD-109	0.93	88.03 *	3.72	4.52E+00	1.54E+00
SN-126	0.99	87.57 *	37.00	4.48E-01	1.50E-01
TL-208	0.93	583.14 *	30.22	1.05E+00	2.59E-01
		860.37 *	4.48	1.83E+00	1.19E+00
		2614.66 *	35.85	6.55E-01	2.39E-01
PB-210	1.00	46.50 *	4.25	1.62E+00	1.29E+00
BI-212	0.71	727.17 *	11.80	8.08E-01	5.20E-01
		1620.62	2.75		
PB-212	0.85	238.63 *	44.60	1.08E+00	1.41E-01
		300.09	3.41		
BI-214	0.94	609.31 *	46.30	1.12E+00	1.98E-01
		1120.29 *	15.10	1.47E+00	5.46E-01
		1764.49 *	15.80	1.78E+00	5.48E-01
		2204.22 *	4.98	1.29E+00	1.21E+00
PB-214	0.96	295.21 *	19.19	1.01E+00	2.85E-01
		351.92 *	37.19	1.35E+00	2.19E-01

Analysis Report for 1606041-08
CP-5029 00-02

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RA-226	0.94	186.21 *	3.28	4.80E+00	8.93E+00
AC-228	0.96	338.32 *	11.40	1.07E+00	5.22E-01
		911.07 *	27.70	7.59E-01	3.19E-01
		969.11 *	16.60	9.60E-01	5.73E-01
PA-234	0.43	131.20 *	20.40	2.24E-01	2.32E-01
		733.99	8.80		
		946.00	12.00		
NP-237	0.88	86.50 *	12.60	1.32E+00	4.41E-01
AM-243	0.98	74.67 *	66.00	3.29E-01	6.95E-02

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.948	1.18E+01	1.85E+00	
GA-67	0.579	3.28E+00	5.24E+00	
NB-95M	0.932	1.40E+00	5.83E-01	
? CD-109	0.937	4.52E+00	1.54E+00	
? SN-126	0.995	4.48E-01	1.50E-01	
TL-208	0.931	8.59E-01	1.74E-01	
PB-210	1.000	1.62E+00	1.29E+00	
BI-212	0.710	8.08E-01	5.20E-01	
PB-212	0.857	1.08E+00	1.41E-01	
BI-214	0.941	1.23E+00	1.74E-01	
PB-214	0.965	1.22E+00	1.74E-01	
RA-226	0.944	4.80E+00	8.93E+00	
AC-228	0.969	8.65E-01	2.46E-01	
PA-234	0.430	2.24E-01	2.32E-01	
? NP-237	0.881	1.32E+00	4.41E-01	
AM-243	0.988	3.29E-01	6.95E-02	

Analysis Report for 1606041-08

CP-5029 00-02

- ? = nuclide is part of an undetermined solution
- X = nuclide rejected by the interference analysis
- @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1606041-08
CP-5029 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 9:23:38AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	3	77.54	1.55541E-01	8.02		
m	11	242.51	5.02210E-02	15.43		
	13	301.40	1.97222E-02	31.32		
	16	463.68	1.12615E-02	43.92	Tol.	SB-125
	17	511.14	2.00428E-02	34.76		
	18	526.05	6.66667E-03	39.86	Sum	
	21	649.66	7.27324E-03	35.21		
	23	770.12	1.89618E-02	30.83	Sum	
	24	784.98	9.07915E-03	39.20		
	25	795.56	6.07026E-03	46.46	Tol.	CS-134
	26	840.38	1.07184E-02	26.93		
M	27	847.87	6.00398E-03	29.80		
m	29	866.08	8.92254E-03	31.05		
	32	1043.75	1.20038E-02	44.57	Sum	
	33	1112.92	3.51010E-03	47.15	Tol.	EU-152
	35	1167.75	4.13194E-03	61.20	Sum	
	36	1175.18	5.08547E-03	45.86		
M	37	1209.13	5.08549E-03	40.23		
m	38	1215.08	5.19759E-03	48.69		
M	39	1235.14	3.03944E-03	35.98	Tol.	CS-136
m	40	1239.10	9.69315E-03	34.61		
m	41	1244.90	4.55069E-03	62.55		
	42	1269.56	3.66255E-03	52.13		
	43	1377.65	4.76287E-03	57.35		
	44	1401.33	3.61111E-03	56.66		
	45	1408.71	2.75794E-03	45.88	Tol.	EU-152
	47	1509.43	3.15217E-03	60.41		
	48	1563.91	1.81944E-03	62.48		
M	49	1589.16	3.64397E-03	35.96	Sum	
m	50	1592.64	4.63188E-03	36.48	D-Esc	
	51	1621.69	3.88889E-03	26.73		
	52	1745.04	2.41453E-03	58.09		
	54	1938.87	1.94444E-03	37.80		
	55	1946.51	1.25000E-03	63.83		
	56	1968.17	1.94444E-03	37.80		

Analysis Report for 1606041-08
 CP-5029 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
57	1976.96	1.85764E-03	47.87		
58	2169.83	1.66667E-03	40.82		
60	2292.53	1.66667E-03	40.82	Sum	
61	2465.94	1.52778E-03	55.30		
62	2479.68	1.25000E-03	66.90		
63	2559.07	1.29630E-03	61.55		

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	8.25E-02	7.28E-01	7.28E-01
+	NA-22	1274.54	99.94	1.13E-03	1.02E-01	1.02E-01
+	NA-24	1368.53	99.99	-1.99E+03	1.95E+03	3.84E+03
		2754.09	99.86	8.85E+01		1.95E+03
+	AL-26	1808.65	99.76	-4.50E-03	7.15E-02	7.15E-02
+	K-40	1460.81	* 10.67	1.18E+01	1.52E+00	1.52E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	2.61E-02	6.48E-02	6.48E-02
		78.34	96.00	1.71E-01		8.35E-02
+	SC-46	889.25	99.98	1.83E-02	9.07E-02	9.07E-02
		1120.51	99.99	2.39E-01		1.60E-01
+	V-48	983.52	99.98	3.24E-02	1.14E-01	1.14E-01
		1312.10	97.50	1.10E-02		1.53E-01
+	CR-51	320.08	9.83	2.05E-01	8.17E-01	8.17E-01
+	MN-54	834.83	99.97	-1.29E-02	7.05E-02	7.05E-02
+	CO-56	846.75	99.96	-3.15E-02	7.94E-02	7.94E-02
		1037.75	14.03	2.39E-01		7.40E-01
		1238.25	67.00	1.94E-01		2.23E-01
		1771.40	15.51	4.66E-02		6.44E-01
		2598.48	16.90	0.00E+00		3.36E-01
+	CO-57	122.06	85.51	-6.99E-03	5.32E-02	5.32E-02
		136.48	10.60	-1.11E-01		4.46E-01
+	CO-58	810.76	99.40	-1.84E-02	8.73E-02	8.73E-02

Analysis Report for 1606041-08
CP-5029 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	FE-59	1099.22	56.50	2.76E-02	1.89E-01	1.89E-01
		1291.56	43.20	2.81E-02		2.68E-01
+	CO-60	1173.22	100.00	5.72E-02	1.07E-01	1.11E-01
		1332.49	100.00	2.76E-02		1.07E-01
+	ZN-65	1115.52	50.75	-2.78E-01	1.73E-01	1.73E-01
+	GA-67	93.31	* 35.70	2.80E+00	2.67E+00	2.67E+00
		208.95	* 2.24	1.40E+01		2.56E+01
		300.22	16.00	-1.18E+01		3.67E+00
+	SE-75	121.11	16.70	-1.27E-01	8.14E-02	2.75E-01
		136.00	59.20	-1.30E-02		8.14E-02
		264.65	59.80	-6.67E-02		1.10E-01
		279.53	25.20	-1.42E-02		2.72E-01
		400.65	11.40	3.29E-02		6.12E-01
+	RB-82	776.52	13.00	-2.55E-02	7.28E-01	7.28E-01
+	RB-83	520.41	46.00	-4.83E-02	1.38E-01	1.38E-01
		529.64	30.30	6.07E-03		2.46E-01
		552.65	16.40	-2.22E-02		4.34E-01
+	KR-85	513.99	0.43	3.80E+01	2.29E+01	2.29E+01
+	SR-85	513.99	99.27	1.84E-01	1.11E-01	1.11E-01
+	Y-88	898.02	93.40	-7.49E-03	7.72E-02	8.74E-02
		1836.01	99.38	1.42E-02		7.72E-02
+	NB-93M	16.57	9.43	1.30E+01	7.75E+01	7.75E+01
+	NB-94	702.63	100.00	2.03E-02	7.93E-02	7.93E-02
		871.10	100.00	-1.64E-02		8.57E-02
+	NB-95	765.79	99.81	6.48E-02	1.19E-01	1.19E-01
+	NB-95M	235.69	* 25.00	1.40E+00	3.22E+00	3.22E+00
+	ZR-95	724.18	43.70	3.80E-02	1.67E-01	2.33E-01
		756.72	55.30	1.56E-02		1.67E-01
+	MO-99	181.06	6.20	7.51E-01	6.67E+00	1.01E+01
		739.58	12.80	-2.44E+00		6.67E+00
		778.00	4.50	-6.51E-01		1.65E+01
+	RU-103	497.08	89.00	1.22E-02	9.03E-02	9.03E-02
+	RU-106	621.84	9.80	1.36E-01	8.30E-01	8.30E-01
+	AG-108M	433.93	89.90	-9.64E-03	6.70E-02	6.70E-02
		614.37	90.40	-7.77E-02		9.73E-02
		722.95	90.50	1.27E-02		9.40E-02
+	CD-109	88.03	* 3.72	4.52E+00	3.35E+00	3.35E+00
+	AG-110M	657.75	93.14	-1.30E-02	7.64E-02	7.64E-02
		677.61	10.53	4.87E-02		7.00E-01
		706.67	16.46	-2.10E-02		4.60E-01
		763.93	21.98	-3.29E-01		3.95E-01
		884.67	71.63	3.03E-04		1.11E-01
		1384.27	23.94	2.28E-02		3.87E-01
+	CD-113M	263.70	0.02	-1.50E+01	2.75E+02	2.75E+02
+	SN-113	255.12	1.93	-6.48E-02	1.19E-01	3.45E+00
		391.69	64.90	4.29E-02		1.19E-01
+	TE123M	159.00	84.10	-4.73E-03	6.28E-02	6.28E-02

Analysis Report for 1606041-08
CP-5029 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-124	602.71	97.87	2.27E-02	8.88E-02	8.88E-02
		645.85	7.26	-4.00E-02		1.08E+00
		722.78	11.10	1.15E-01		8.57E-01
		1691.02	49.00	-7.44E-03		1.47E-01
+	I-125	35.49	6.49	-4.04E-01	2.07E+00	2.07E+00
+	SB-125	176.33	6.89	-2.92E-02	2.19E-01	7.57E-01
		427.89	29.33	-1.19E-02		2.19E-01
		463.38	10.35	4.73E-01		7.73E-01
		600.56	17.80	2.04E-01		4.54E-01
		635.90	11.32	2.87E-02		6.36E-01
+	SB-126	414.70	83.30	6.12E-03	1.31E-01	1.43E-01
		666.33	99.60	3.76E-02		1.44E-01
		695.00	99.60	1.51E-02		1.31E-01
		720.50	53.80	-1.21E-01		2.46E-01
+	SN-126	87.57	* 37.00	4.48E-01	3.32E-01	3.32E-01
+	SB-127	473.00	25.00	-3.53E-01	1.14E+00	1.47E+00
		685.20	35.70	-4.53E-01		1.14E+00
		783.80	14.70	3.25E+00		3.65E+00
+	I-129	29.78	57.00	-1.17E-01	3.65E-01	3.65E-01
		33.60	13.20	3.12E-01		1.10E+00
		39.58	7.52	3.03E-01		1.22E+00
+	I-131	284.30	6.05	-7.76E-01	1.78E-01	2.40E+00
		364.48	81.20	1.34E-02		1.78E-01
		636.97	7.26	6.58E-01		2.31E+00
		722.89	1.80	1.47E+00		1.09E+01
+	TE-132	49.72	13.10	2.99E-02	5.27E-01	4.06E+00
		228.16	88.00	-3.24E-02		5.27E-01
+	BA-133	81.00	33.00	-6.86E-01	1.73E-01	1.74E-01
		302.84	17.80	3.09E-01		4.09E-01
		356.01	60.00	2.27E-02		1.73E-01
+	I-133	529.87	86.30	4.54E+00	1.84E+02	1.84E+02
+	XE-133	81.00	38.00	-2.14E+00	5.41E-01	5.41E-01
+	CS-134	563.23	8.38	-1.21E-01	7.80E-02	8.59E-01
		569.32	15.43	-1.64E-02		4.77E-01
		604.70	97.60	7.81E-03		7.80E-02
		795.84	85.40	1.68E-02		9.74E-02
		801.93	8.73	-4.95E-01		8.45E-01
+	CS-135	268.24	16.00	1.33E-01	4.27E-01	4.27E-01
+	I-135	1131.51	22.50	-3.25E+08	1.11E+10	1.57E+10
		1260.41	28.60	-4.33E+09		1.11E+10
		1678.03	9.54	-6.68E+09		2.82E+10
+	CS-136	153.22	7.46	7.08E-02	1.10E-01	1.08E+00
		163.89	4.61	2.86E-01		1.82E+00
		176.55	13.56	1.19E-01		6.48E-01
		273.65	12.66	-6.55E-02		9.04E-01
		340.57	48.50	4.13E-01		2.85E-01
		818.50	99.70	-6.13E-02		1.10E-01
		1048.07	79.60	5.85E-02		1.67E-01
		1235.34	19.70	-6.52E-02		9.90E-01

Analysis Report for 1606041-08
CP-5029 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CS-137	661.65	85.12	-4.42E-02	9.05E-02	9.05E-02
+	LA-138	788.74	34.00	-6.76E-03	1.49E-01	2.36E-01
		1435.80	66.00	2.51E-02		1.49E-01
+	CE-139	165.85	80.35	-1.09E-03	6.51E-02	6.51E-02
+	BA-140	162.64	6.70	6.63E-02	5.07E-01	1.26E+00
		304.84	4.50	2.68E-01		2.56E+00
		423.70	3.20	-3.86E-01		3.33E+00
		437.55	2.00	-2.26E+00		4.97E+00
		537.32	25.00	1.18E-01		5.07E-01
+	LA-140	328.77	20.50	1.80E-02	1.63E-01	5.35E-01
		487.03	45.50	2.10E-02		2.50E-01
		815.85	23.50	1.92E-01		5.27E-01
		1596.49	95.49	1.45E-02		1.63E-01
+	CE-141	145.44	48.40	-1.06E-02	1.26E-01	1.26E-01
+	CE-143	57.36	11.80	2.61E+01	2.88E+01	6.95E+01
		293.26	42.00	-3.68E+00		2.88E+01
		664.55	5.20	7.62E+01		2.13E+02
+	CE-144	133.54	10.80	-6.28E-02	4.37E-01	4.37E-01
+	PM-144	476.78	42.00	-4.52E-02	8.12E-02	1.55E-01
		618.01	98.60	1.41E-02		8.21E-02
		696.49	99.49	1.92E-02		8.12E-02
+	PM-145	36.85	21.70	-6.54E-02	2.64E-01	5.00E-01
		37.36	39.70	-2.11E-01		2.64E-01
		42.30	15.10	-7.57E-02		5.37E-01
		72.40	2.31	-4.35E+00		3.08E+00
+	PM-146	453.90	39.94	3.43E-02	1.71E-01	1.71E-01
		735.90	14.01	-7.06E-02		5.20E-01
		747.13	13.10	-2.69E-02		6.40E-01
+	ND-147	91.11	28.90	-2.31E-01	4.02E-01	4.02E-01
		531.02	13.10	-3.22E-01		9.08E-01
+	PM-149	285.90	3.10	9.19E+00	4.28E+01	4.28E+01
+	EU-152	121.78	20.50	-2.84E-02	2.17E-01	2.17E-01
		244.69	5.40	-3.53E-01		1.41E+00
		344.27	19.13	-2.44E-02		3.22E-01
		778.89	9.20	-2.78E-02		7.38E-01
		964.01	10.40	-1.20E-01		8.91E-01
		1085.78	7.22	-3.82E-01		1.14E+00
		1112.02	9.60	-1.92E-01		7.87E-01
		1407.95	14.94	-1.55E-01		5.46E-01
+	GD-153	97.43	31.30	-3.92E-02	1.47E-01	1.47E-01
		103.18	22.20	2.49E-02		2.21E-01
+	EU-154	123.07	40.50	1.12E-02	1.12E-01	1.12E-01
		723.30	19.70	5.83E-02		4.33E-01
		873.19	11.50	2.68E-01		7.49E-01
		996.32	10.30	-4.89E-01		7.81E-01
		1004.76	17.90	-2.52E-02		5.47E-01
		1274.45	35.50	3.15E-03		2.86E-01
+	EU-155	86.50	30.90	1.94E-01	2.02E-01	2.02E-01
		105.30	20.70	3.23E-02		2.32E-01

Analysis Report for 1606041-08
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	EU-156	811.77	10.40	-1.93E-01	1.18E+00	1.18E+00
		1153.47	7.20	9.37E-02		2.15E+00
		1230.71	8.90	6.20E-01		1.90E+00
+	HO-166M	184.41	72.60	1.61E-01	9.70E-02	9.70E-02
		280.45	29.60	7.37E-02		2.23E-01
		410.94	11.10	2.70E-01		6.38E-01
		711.69	54.10	-1.72E-02		1.38E-01
+	TM-171	66.72	0.14	-6.96E+01	4.41E+01	4.41E+01
+	HF-172	81.75	4.52	-4.52E+00	4.21E-01	1.22E+00
		125.81	11.30	5.40E-02		4.21E-01
+	LU-172	181.53	20.60	-5.01E-02	4.20E-01	7.16E-01
		810.06	16.63	5.61E-01		1.42E+00
		912.12	15.25	3.59E+00		2.59E+00
		1093.66	62.50	5.86E-02		4.20E-01
+	LU-173	100.72	5.24	1.87E-01	3.36E-01	9.07E-01
		272.11	21.20	2.45E-01		3.36E-01
+	HF-175	343.40	84.00	-2.03E-03	8.57E-02	8.57E-02
+	LU-176	88.34	13.30	-2.76E-01	6.83E-02	4.70E-01
		201.83	86.00	-3.52E-03		7.16E-02
		306.78	94.00	7.80E-03		6.83E-02
+	TA-182	67.75	41.20	6.34E-02	1.58E-01	1.58E-01
		1121.30	34.90	6.21E-01		4.50E-01
		1189.05	16.23	-3.27E-03		5.61E-01
		1221.41	26.98	7.40E-02		3.84E-01
		1231.02	11.44	2.60E-01		1.01E+00
+	IR-192	308.46	29.68	6.66E-02	1.59E-01	2.35E-01
		468.07	48.10	3.23E-02		1.59E-01
+	HG-203	279.19	77.30	3.74E-03	9.85E-02	9.85E-02
+	BI-207	569.67	97.72	2.02E-02	7.53E-02	7.53E-02
		1063.62	74.90	-2.20E-02		1.10E-01
+	TL-208	583.14	* 30.22	1.05E+00	2.22E-01	3.17E-01
		860.37	* 4.48	1.83E+00		4.33E+00
		2614.66	* 35.85	6.55E-01		2.22E-01
+	BI-210M	262.00	45.00	-2.58E-02	1.42E-01	1.42E-01
		300.00	23.00	-1.04E+00		3.26E-01
+	PB-210	46.50	* 4.25	1.62E+00	2.08E+00	2.08E+00
+	PB-211	404.84	2.90	-1.62E+00	2.21E+00	2.21E+00
		831.96	2.90	-1.66E-01		2.57E+00
+	BI-212	727.17	* 11.80	8.08E-01	7.98E-01	7.98E-01
		1620.62	2.75	1.33E+00		3.03E+00
+	PB-212	238.63	* 44.60	1.08E+00	2.90E-01	2.90E-01
		300.09	3.41	-7.05E+00		2.20E+00
+	BI-214	609.31	* 46.30	1.12E+00	1.85E-01	1.85E-01
		1120.29	* 15.10	1.47E+00		7.20E-01
		1764.49	* 15.80	1.78E+00		5.46E-01
		2204.22	* 4.98	1.29E+00		1.85E+00
+	PB-214	295.21	* 19.19	1.01E+00	2.38E-01	5.58E-01
		351.92	* 37.19	1.35E+00		2.38E-01

Analysis Report for 1606041-08
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RN-219	401.80	6.50	-4.79E-02	9.95E-01	9.95E-01
+	RA-223	323.87	3.88	-1.14E+00	1.56E+00	1.56E+00
+	RA-224	240.98	3.95	1.52E+01	3.06E+00	3.06E+00
+	RA-225	40.00	31.00	1.13E-01	4.56E-01	4.56E-01
+	RA-226	186.21	* 3.28	4.80E+00	2.39E+00	2.39E+00
+	TH-227	50.10	8.40	5.89E-03	7.98E-01	7.98E-01
		236.00	11.50	1.31E+00		8.54E-01
		256.20	6.30	-7.60E-02		9.98E-01
+	AC-228	338.32	* 11.40	1.07E+00	4.60E-01	8.04E-01
		911.07	* 27.70	7.59E-01		4.60E-01
		969.11	* 16.60	9.60E-01		8.82E-01
+	TH-230	48.44	16.90	-9.32E-02	4.57E-01	4.57E-01
		62.85	4.60	1.26E+00		1.46E+00
		67.67	0.37	6.66E+00		1.66E+01
+	PA-231	283.67	1.60	-1.27E+00	3.16E+00	3.94E+00
		302.67	2.30	2.38E+00		3.16E+00
+	TH-231	25.64	14.70	-7.12E-01	8.72E-01	2.66E+00
		84.21	6.40	-1.18E+00		8.72E-01
+	PA-233	311.98	38.60	-6.52E-02	2.01E-01	2.01E-01
+	PA-234	131.20	* 20.40	2.24E-01	3.80E-01	3.80E-01
		733.99	8.80	-1.24E-01		7.88E-01
		946.00	12.00	-2.03E-01		6.94E-01
+	PA-234M	1001.03	0.92	4.48E+00	1.09E+01	1.09E+01
+	TH-234	63.29	3.80	1.41E+00	1.77E+00	1.77E+00
+	U-235	143.76	10.50	-3.37E-02	4.74E-01	4.74E-01
		163.35	4.70	1.68E-01		1.07E+00
		205.31	4.70	1.72E-02		1.27E+00
+	NP-237	86.50	* 12.60	1.32E+00	9.75E-01	9.75E-01
+	NP-239	106.10	22.70	4.59E-01	3.63E+00	3.63E+00
		228.18	10.70	-5.86E-01		9.55E+00
		277.60	14.10	6.30E+00		8.25E+00
+	AM-241	59.54	35.90	-4.29E-02	1.77E-01	1.77E-01
+	AM-243	74.67	* 66.00	3.29E-01	1.70E-01	1.70E-01
+	CM-243	209.75	3.29	5.83E-01	4.82E-01	2.07E+00
		228.14	10.60	-3.43E-02		5.58E-01
		277.60	14.00	3.68E-01		4.82E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1606041-08
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NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	7.28E-01	7.28E-01	8.25E-02	3.42E-01
NA-22	1274.54	99.94	1.02E-01	1.02E-01	1.13E-03	4.63E-02
NA-24	1368.53	99.99	3.84E+03	1.95E+03	-1.99E+03	1.70E+03
	2754.09	99.86	1.95E+03		8.85E+01	6.18E+02
AL-26	1808.65	99.76	7.15E-02	7.15E-02	-4.50E-03	2.96E-02
+ K-40	1460.81	* 10.67	1.52E+00	1.52E+00	1.18E+01	7.10E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	6.48E-02	6.48E-02	2.61E-02	3.16E-02
	78.34	96.00	8.35E-02		1.71E-01	4.10E-02
SC-46	889.25	99.98	9.07E-02	9.07E-02	1.83E-02	4.16E-02
	1120.51	99.99	1.60E-01		2.39E-01	7.56E-02
V-48	983.52	99.98	1.14E-01	1.14E-01	3.24E-02	5.11E-02
	1312.10	97.50	1.53E-01		1.10E-02	6.89E-02
CR-51	320.08	9.83	8.17E-01	8.17E-01	2.05E-01	3.90E-01
MN-54	834.83	99.97	7.05E-02	7.05E-02	-1.29E-02	3.19E-02
CO-56	846.75	99.96	7.94E-02	7.94E-02	-3.15E-02	3.61E-02
	1037.75	14.03	7.40E-01		2.39E-01	3.40E-01
	1238.25	67.00	2.23E-01		1.94E-01	1.04E-01
	1771.40	15.51	6.44E-01		4.66E-02	2.80E-01
	2598.48	16.90	3.36E-01		0.00E+00	1.19E-01
CO-57	122.06	85.51	5.32E-02	5.32E-02	-6.99E-03	2.57E-02
	136.48	10.60	4.46E-01		-1.11E-01	2.15E-01
CO-58	810.76	99.40	8.73E-02	8.73E-02	-1.84E-02	4.02E-02
FE-59	1099.22	56.50	1.89E-01	1.89E-01	2.76E-02	8.62E-02
	1291.56	43.20	2.68E-01		2.81E-02	1.21E-01
CO-60	1173.22	100.00	1.11E-01	1.07E-01	5.72E-02	5.09E-02
	1332.49	100.00	1.07E-01		2.76E-02	4.85E-02
ZN-65	1115.52	50.75	1.73E-01	1.73E-01	-2.78E-01	7.82E-02
+ GA-67	93.31	* 35.70	2.67E+00	2.67E+00	2.80E+00	1.32E+00
	208.95	* 2.24	2.56E+01		1.40E+01	1.24E+01
	300.22	16.00	3.67E+00		-1.18E+01	1.77E+00
SE-75	121.11	16.70	2.75E-01	8.14E-02	-1.27E-01	1.33E-01
	136.00	59.20	8.14E-02		-1.30E-02	3.93E-02
	264.65	59.80	1.10E-01		-6.67E-02	5.30E-02
	279.53	25.20	2.72E-01		-1.42E-02	1.31E-01
	400.65	11.40	6.12E-01		3.29E-02	2.90E-01
RB-82	776.52	13.00	7.28E-01	7.28E-01	-2.55E-02	3.34E-01
RB-83	520.41	46.00	1.38E-01	1.38E-01	-4.83E-02	6.37E-02
	529.64	30.30	2.46E-01		6.07E-03	1.15E-01
	552.65	16.40	4.34E-01		-2.22E-02	2.02E-01

Analysis Report for 1606041-08
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
KR-85	513.99	0.43	2.29E+01	2.29E+01	3.80E+01	1.09E+01
SR-85	513.99	99.27	1.11E-01	1.11E-01	1.84E-01	5.30E-02
Y-88	898.02	93.40	8.74E-02	7.72E-02	-7.49E-03	3.97E-02
	1836.01	99.38	7.72E-02		1.42E-02	3.20E-02
NB-93M	16.57	9.43	7.75E+01	7.75E+01	1.30E+01	3.77E+01
NB-94	702.63	100.00	7.93E-02	7.93E-02	2.03E-02	3.68E-02
	871.10	100.00	8.57E-02		-1.64E-02	3.95E-02
NB-95	765.79	99.81	1.19E-01	1.19E-01	6.48E-02	5.58E-02
+ NB-95M	235.69	* 25.00	3.22E+00	3.22E+00	1.40E+00	1.58E+00
ZR-95	724.18	43.70	2.33E-01	1.67E-01	3.80E-02	1.09E-01
	756.72	55.30	1.67E-01		1.56E-02	7.75E-02
MO-99	181.06	6.20	1.01E+01	6.67E+00	7.51E-01	4.87E+00
	739.58	12.80	6.67E+00		-2.44E+00	3.07E+00
	778.00	4.50	1.65E+01		-6.51E-01	7.49E+00
RU-103	497.08	89.00	9.03E-02	9.03E-02	1.22E-02	4.24E-02
RU-106	621.84	9.80	8.30E-01	8.30E-01	1.36E-01	3.89E-01
AG-108M	433.93	89.90	6.70E-02	6.70E-02	-9.64E-03	3.14E-02
	614.37	90.40	9.73E-02		-7.77E-02	4.59E-02
	722.95	90.50	9.40E-02		1.27E-02	4.38E-02
+ CD-109	88.03	* 3.72	3.35E+00	3.35E+00	4.52E+00	1.66E+00
AG-110M	657.75	93.14	7.64E-02	7.64E-02	-1.30E-02	3.52E-02
	677.61	10.53	7.00E-01		4.87E-02	3.23E-01
	706.67	16.46	4.60E-01		-2.10E-02	2.12E-01
	763.93	21.98	3.95E-01		-3.29E-01	1.83E-01
	884.67	71.63	1.11E-01		3.03E-04	5.08E-02
	1384.27	23.94	3.87E-01		2.28E-02	1.72E-01
CD-113M	263.70	0.02	2.75E+02	2.75E+02	-1.50E+01	1.32E+02
SN-113	255.12	1.93	3.45E+00	1.19E-01	-6.48E-02	1.66E+00
	391.69	64.90	1.19E-01		4.29E-02	5.66E-02
TE123M	159.00	84.10	6.28E-02	6.28E-02	-4.73E-03	3.03E-02
SB-124	602.71	97.87	8.88E-02	8.88E-02	2.27E-02	4.16E-02
	645.85	7.26	1.08E+00		-4.00E-02	4.99E-01
	722.78	11.10	8.57E-01		1.15E-01	3.99E-01
	1691.02	49.00	1.47E-01		-7.44E-03	6.01E-02
I-125	35.49	6.49	2.07E+00	2.07E+00	-4.04E-01	9.98E-01
SB-125	176.33	6.89	7.57E-01	2.19E-01	-2.92E-02	3.66E-01
	427.89	29.33	2.19E-01		-1.19E-02	1.03E-01
	463.38	10.35	7.73E-01		4.73E-01	3.67E-01
	600.56	17.80	4.54E-01		2.04E-01	2.13E-01
	635.90	11.32	6.36E-01		2.87E-02	2.95E-01
SB-126	414.70	83.30	1.43E-01	1.31E-01	6.12E-03	6.79E-02
	666.33	99.60	1.44E-01		3.76E-02	6.76E-02
	695.00	99.60	1.31E-01		1.51E-02	6.07E-02
	720.50	53.80	2.46E-01		-1.21E-01	1.14E-01
+ SN-126	87.57	* 37.00	3.32E-01	3.32E-01	4.48E-01	1.64E-01
SB-127	473.00	25.00	1.47E+00	1.14E+00	-3.53E-01	6.91E-01
	685.20	35.70	1.14E+00		-4.53E-01	5.24E-01
	783.80	14.70	3.65E+00		3.25E+00	1.70E+00
I-129	29.78	57.00	3.65E-01	3.65E-01	-1.17E-01	1.76E-01
	33.60	13.20	1.10E+00		3.12E-01	5.31E-01
	39.58	7.52	1.22E+00		3.03E-01	5.90E-01
I-131	284.30	6.05	2.40E+00	1.78E-01	-7.76E-01	1.15E+00
	364.48	81.20	1.78E-01		1.34E-02	8.43E-02

Analysis Report for 1606041-08
CP-5029 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	636.97	7.26	2.31E+00	1.78E-01	6.58E-01	1.07E+00
	722.89	1.80	1.09E+01		1.47E+00	5.07E+00
TE-132	49.72	13.10	4.06E+00	5.27E-01	2.99E-02	1.97E+00
	228.16	88.00	5.27E-01		-3.24E-02	2.54E-01
BA-133	81.00	33.00	1.74E-01	1.73E-01	-6.86E-01	8.47E-02
	302.84	17.80	4.09E-01		3.09E-01	1.97E-01
	356.01	60.00	1.73E-01		2.27E-02	8.38E-02
I-133	529.87	86.30	1.84E+02	1.84E+02	4.54E+00	8.62E+01
XE-133	81.00	38.00	5.41E-01	5.41E-01	-2.14E+00	2.64E-01
CS-134	563.23	8.38	8.59E-01	7.80E-02	-1.21E-01	4.02E-01
	569.32	15.43	4.77E-01		-1.64E-02	2.23E-01
	604.70	97.60	7.80E-02		7.81E-03	3.64E-02
	795.84	85.40	9.74E-02		1.68E-02	4.50E-02
	801.93	8.73	8.45E-01		-4.95E-01	3.86E-01
CS-135	268.24	16.00	4.27E-01	4.27E-01	1.33E-01	2.06E-01
I-135	1131.51	22.50	1.57E+10	1.11E+10	-3.25E+08	7.14E+09
	1260.41	28.60	1.11E+10		-4.33E+09	4.94E+09
	1678.03	9.54	2.82E+10		-6.68E+09	1.18E+10
CS-136	153.22	7.46	1.08E+00	1.10E-01	7.08E-02	5.20E-01
	163.89	4.61	1.82E+00		2.86E-01	8.80E-01
	176.55	13.56	6.48E-01		1.19E-01	3.13E-01
	273.65	12.66	9.04E-01		-6.55E-02	4.35E-01
	340.57	48.50	2.85E-01		4.13E-01	1.38E-01
	818.50	99.70	1.10E-01		-6.13E-02	4.96E-02
	1048.07	79.60	1.67E-01		5.85E-02	7.54E-02
	1235.34	19.70	9.90E-01		-6.52E-02	4.57E-01
CS-137	661.65	85.12	9.05E-02	9.05E-02	-4.42E-02	4.21E-02
LA-138	788.74	34.00	2.36E-01	1.49E-01	-6.76E-03	1.09E-01
	1435.80	66.00	1.49E-01		2.51E-02	6.66E-02
CE-139	165.85	80.35	6.51E-02	6.51E-02	-1.09E-03	3.14E-02
BA-140	162.64	6.70	1.26E+00	5.07E-01	6.63E-02	6.07E-01
	304.84	4.50	2.56E+00		2.68E-01	1.23E+00
	423.70	3.20	3.33E+00		-3.86E-01	1.57E+00
	437.55	2.00	4.97E+00		-2.26E+00	2.33E+00
	537.32	25.00	5.07E-01		1.18E-01	2.39E-01
LA-140	328.77	20.50	5.35E-01	1.63E-01	1.80E-02	2.55E-01
	487.03	45.50	2.50E-01		2.10E-02	1.17E-01
	815.85	23.50	5.27E-01		1.92E-01	2.41E-01
	1596.49	95.49	1.63E-01		1.45E-02	7.16E-02
CE-141	145.44	48.40	1.26E-01	1.26E-01	-1.06E-02	6.08E-02
CE-143	57.36	11.80	6.95E+01	2.88E+01	2.61E+01	3.38E+01
	293.26	42.00	2.88E+01		-3.68E+00	1.40E+01
	664.55	5.20	2.13E+02		7.62E+01	9.96E+01
CE-144	133.54	10.80	4.37E-01	4.37E-01	-6.28E-02	2.11E-01
PM-144	476.78	42.00	1.55E-01	8.12E-02	-4.52E-02	7.24E-02
	618.01	98.60	8.21E-02		1.41E-02	3.84E-02
	696.49	99.49	8.12E-02		1.92E-02	3.77E-02
PM-145	36.85	21.70	5.00E-01	2.64E-01	-6.54E-02	2.41E-01
	37.36	39.70	2.64E-01		-2.11E-01	1.27E-01
	42.30	15.10	5.37E-01		-7.57E-02	2.60E-01
	72.40	2.31	3.08E+00		-4.35E+00	1.51E+00
PM-146	453.90	39.94	1.71E-01	1.71E-01	3.43E-02	8.09E-02
	735.90	14.01	5.20E-01		-7.06E-02	2.39E-01

Analysis Report for 1606041-08

CP-5029 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-146	747.13	13.10	6.40E-01	1.71E-01	-2.69E-02	2.97E-01
ND-147	91.11	28.90	4.02E-01	4.02E-01	-2.31E-01	1.97E-01
	531.02	13.10	9.08E-01		-3.22E-01	4.23E-01
PM-149	285.90	3.10	4.28E+01	4.28E+01	9.19E+00	2.05E+01
EU-152	121.78	20.50	2.17E-01	2.17E-01	-2.84E-02	1.05E-01
	244.69	5.40	1.41E+00		-3.53E-01	6.85E-01
	344.27	19.13	3.22E-01		-2.44E-02	1.53E-01
	778.89	9.20	7.38E-01		-2.78E-02	3.36E-01
	964.01	10.40	8.91E-01		-1.20E-01	4.10E-01
	1085.78	7.22	1.14E+00		-3.82E-01	5.15E-01
	1112.02	9.60	7.87E-01		-1.92E-01	3.50E-01
	1407.95	14.94	5.46E-01		-1.55E-01	2.39E-01
GD-153	97.43	31.30	1.47E-01	1.47E-01	-3.92E-02	7.13E-02
	103.18	22.20	2.21E-01		2.49E-02	1.07E-01
EU-154	123.07	40.50	1.12E-01	1.12E-01	1.12E-02	5.41E-02
	723.30	19.70	4.33E-01		5.83E-02	2.02E-01
	873.19	11.50	7.49E-01		2.68E-01	3.45E-01
	996.32	10.30	7.81E-01		-4.89E-01	3.53E-01
	1004.76	17.90	5.47E-01		-2.52E-02	2.52E-01
	1274.45	35.50	2.86E-01		3.15E-03	1.30E-01
EU-155	86.50	30.90	2.02E-01	2.02E-01	1.94E-01	9.89E-02
	105.30	20.70	2.32E-01		3.23E-02	1.13E-01
EU-156	811.77	10.40	1.18E+00	1.18E+00	-1.93E-01	5.43E-01
	1153.47	7.20	2.15E+00		9.37E-02	9.82E-01
	1230.71	8.90	1.90E+00		6.20E-01	8.70E-01
HO-166M	184.41	72.60	9.70E-02	9.70E-02	1.61E-01	4.72E-02
	280.45	29.60	2.23E-01		7.37E-02	1.07E-01
	410.94	11.10	6.38E-01		2.70E-01	3.03E-01
	711.69	54.10	1.38E-01		-1.72E-02	6.39E-02
TM-171	66.72	0.14	4.41E+01	4.41E+01	-6.96E+01	2.15E+01
HF-172	81.75	4.52	1.22E+00	4.21E-01	-4.52E+00	5.93E-01
	125.81	11.30	4.21E-01		5.40E-02	2.04E-01
LU-172	181.53	20.60	7.16E-01	4.20E-01	-5.01E-02	3.46E-01
	810.06	16.63	1.42E+00		5.61E-01	6.58E-01
	912.12	15.25	2.59E+00		3.59E+00	1.23E+00
	1093.66	62.50	4.20E-01		5.86E-02	1.92E-01
LU-173	100.72	5.24	9.07E-01	3.36E-01	1.87E-01	4.40E-01
	272.11	21.20	3.36E-01		2.45E-01	1.62E-01
HF-175	343.40	84.00	8.57E-02	8.57E-02	-2.03E-03	4.09E-02
LU-176	88.34	13.30	4.70E-01	6.83E-02	-2.76E-01	2.30E-01
	201.83	86.00	7.16E-02		-3.52E-03	3.46E-02
	306.78	94.00	6.83E-02		7.80E-03	3.27E-02
TA-182	67.75	41.20	1.58E-01	1.58E-01	6.34E-02	7.68E-02
	1121.30	34.90	4.50E-01		6.21E-01	2.12E-01
	1189.05	16.23	5.61E-01		-3.27E-03	2.52E-01
	1221.41	26.98	3.84E-01		7.40E-02	1.75E-01
	1231.02	11.44	1.01E+00		2.60E-01	4.62E-01
IR-192	308.46	29.68	2.35E-01	1.59E-01	6.66E-02	1.12E-01
	468.07	48.10	1.59E-01		3.23E-02	7.49E-02
HG-203	279.19	77.30	9.85E-02	9.85E-02	3.74E-03	4.73E-02
BI-207	569.67	97.72	7.53E-02	7.53E-02	2.02E-02	3.52E-02
	1063.62	74.90	1.10E-01		-2.20E-02	4.96E-02
+ TL-208	583.14 *	30.22	3.17E-01	2.22E-01	1.05E+00	1.51E-01

Analysis Report for 1606041-08

CP-5029 00-02

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TL-208	860.37	*	4.48	4.33E+00	2.22E-01	1.83E+00	2.09E+00
	2614.66	*	35.85	2.22E-01		6.55E-01	8.98E-02
BI-210M	262.00		45.00	1.42E-01	1.42E-01	-2.58E-02	6.81E-02
	300.00		23.00	3.26E-01		-1.04E+00	1.57E-01
+ PB-210	46.50	*	4.25	2.08E+00	2.08E+00	1.62E+00	1.01E+00
PB-211	404.84		2.90	2.21E+00	2.21E+00	-1.62E+00	1.05E+00
	831.96		2.90	2.57E+00		-1.66E-01	1.17E+00
+ BI-212	727.17	*	11.80	7.98E-01	7.98E-01	8.08E-01	3.74E-01
	1620.62		2.75	3.03E+00		1.33E+00	1.31E+00
+ PB-212	238.63	*	44.60	2.90E-01	2.90E-01	1.08E+00	1.42E-01
	300.09		3.41	2.20E+00		-7.05E+00	1.06E+00
+ BI-214	609.31	*	46.30	1.85E-01	1.85E-01	1.12E+00	8.69E-02
	1120.29	*	15.10	7.20E-01		1.47E+00	3.32E-01
	1764.49	*	15.80	5.46E-01		1.78E+00	2.35E-01
	2204.22	*	4.98	1.85E+00		1.29E+00	7.87E-01
+ PB-214	295.21	*	19.19	5.58E-01	2.38E-01	1.01E+00	2.72E-01
	351.92	*	37.19	2.38E-01		1.35E+00	1.15E-01
RN-219	401.80		6.50	9.95E-01	9.95E-01	-4.79E-02	4.71E-01
RA-223	323.87		3.88	1.56E+00	1.56E+00	-1.14E+00	7.43E-01
RA-224	240.98		3.95	3.06E+00	3.06E+00	1.52E+01	1.50E+00
RA-225	40.00		31.00	4.56E-01	4.56E-01	1.13E-01	2.20E-01
+ RA-226	186.21	*	3.28	2.39E+00	2.39E+00	4.80E+00	1.17E+00
TH-227	50.10		8.40	7.98E-01	7.98E-01	5.89E-03	3.87E-01
	236.00		11.50	8.54E-01		1.31E+00	4.18E-01
	256.20		6.30	9.98E-01		-7.60E-02	4.80E-01
+ AC-228	338.32	*	11.40	8.04E-01	4.60E-01	1.07E+00	3.89E-01
	911.07	*	27.70	4.60E-01		7.59E-01	2.17E-01
	969.11	*	16.60	8.82E-01		9.60E-01	4.19E-01
TH-230	48.44		16.90	4.57E-01	4.57E-01	-9.32E-02	2.22E-01
	62.85		4.60	1.46E+00		1.26E+00	7.13E-01
	67.67		0.37	1.66E+01		6.66E+00	8.08E+00
PA-231	283.67		1.60	3.94E+00	3.16E+00	-1.27E+00	1.89E+00
	302.67		2.30	3.16E+00		2.38E+00	1.52E+00
TH-231	25.64		14.70	2.66E+00	8.72E-01	-7.12E-01	1.28E+00
	84.21		6.40	8.72E-01		-1.18E+00	4.25E-01
PA-233	311.98		38.60	2.01E-01	2.01E-01	-6.52E-02	9.59E-02
+ PA-234	131.20	*	20.40	3.80E-01	3.80E-01	2.24E-01	1.86E-01
	733.99		8.80	7.88E-01		-1.24E-01	3.61E-01
	946.00		12.00	6.94E-01		-2.03E-01	3.17E-01
PA-234M	1001.03		0.92	1.09E+01	1.09E+01	4.48E+00	5.04E+00
TH-234	63.29		3.80	1.77E+00	1.77E+00	1.41E+00	8.62E-01
U-235	143.76		10.50	4.74E-01	4.74E-01	-3.37E-02	2.30E-01
	163.35		4.70	1.07E+00		1.68E-01	5.18E-01
	205.31		4.70	1.27E+00		1.72E-02	6.15E-01
+ NP-237	86.50	*	12.60	9.75E-01	9.75E-01	1.32E+00	4.82E-01
NP-239	106.10		22.70	3.63E+00	3.63E+00	4.59E-01	1.76E+00
	228.18		10.70	9.55E+00		-5.86E-01	4.60E+00
	277.60		14.10	8.25E+00		6.30E+00	3.97E+00
AM-241	59.54		35.90	1.77E-01	1.77E-01	-4.29E-02	8.60E-02
+ AM-243	74.67	*	66.00	1.70E-01	1.70E-01	3.29E-01	8.40E-02
CM-243	209.75		3.29	2.07E+00	4.82E-01	5.83E-01	1.00E+00
	228.14		10.60	5.58E-01		-3.43E-02	2.69E-01
	277.60		14.00	4.82E-01		3.68E-01	2.32E-01

Analysis Report for 1606041-08
CP-5029 00-02

-
- + = Nuclide identified during the nuclide identification
 - * = Energy line found in the spectrum
 - > = MDA value not calculated
 - @ = Half-life too short to be able to perform the decay correction
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No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP-5029 00-02

Elapsed Live time: 3600

Elapsed Real Time: 3614

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	2	134	132	101	104	84	86	109	
17:	76	81	72	80	60	76	72	54	
25:	53	64	49	45	48	60	51	54	
33:	62	53	57	58	53	46	53	57	
41:	72	45	49	60	57	89	152	72	
49:	64	66	66	80	74	80	71	71	
57:	55	90	94	109	81	93	127	186	
65:	89	85	108	114	120	100	102	112	
73:	111	121	321	253	300	392	144	103	
81:	94	102	84	96	119	107	125	183	
89:	106	103	128	106	217	178	100	70	
97:	63	59	61	71	82	66	73	63	
105:	79	69	78	70	64	75	59	77	
113:	75	78	63	62	62	55	46	61	
121:	53	56	56	58	70	59	60	66	
129:	68	88	72	71	55	55	47	55	
137:	55	60	61	57	69	67	67	65	
145:	54	56	66	60	61	55	50	52	
153:	53	52	62	52	46	62	60	54	
161:	54	57	55	45	57	58	42	59	
169:	54	46	40	47	49	49	64	45	
177:	44	59	58	54	51	59	57	54	
185:	49	134	168	55	69	31	37	45	
193:	46	42	36	53	54	52	45	37	
201:	58	35	43	40	49	41	35	39	
209:	58	77	50	55	42	53	45	43	
217:	56	44	39	41	37	45	39	40	
225:	33	44	40	28	33	25	31	29	
233:	32	28	58	37	45	85	346	196	
241:	67	94	104	41	26	25	36	27	
249:	23	22	29	32	33	33	24	33	
257:	33	33	31	42	25	28	33	32	
265:	27	34	32	19	33	40	57	37	
273:	23	27	34	31	28	35	32	29	
281:	33	22	24	34	21	28	24	29	
289:	29	21	25	31	27	25	98	157	
297:	48	18	26	38	44	32	37	29	
305:	19	25	29	22	24	21	21	23	
313:	14	24	18	22	22	23	19	29	
321:	16	17	25	21	17	17	23	26	
329:	27	19	18	23	25	22	24	16	
337:	29	45	87	35	17	21	18	18	
345:	20	15	17	18	18	18	38	222	
353:	222	41	15	10	25	20	18	17	
361:	21	20	21	15	16	18	12	16	

369: 17 12 19 18 18 15 15 16

Sample Title: CP-5029 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	18	15	16	15	13	16	17	20
385:	19	18	16	18	21	18	16	25
393:	24	19	19	19	16	19	17	20
401:	7	13	16	19	14	14	14	13
409:	22	27	12	15	11	23	15	14
417:	14	24	9	18	13	9	18	15
425:	8	11	17	17	11	14	14	11
433:	11	14	15	7	7	11	13	7
441:	14	11	17	12	13	13	14	8
449:	9	8	18	15	13	9	20	13
457:	7	16	13	9	11	17	25	34
465:	14	16	7	17	12	14	14	12
473:	12	6	10	10	11	12	10	16
481:	14	12	14	10	15	7	10	15
489:	14	10	14	5	11	8	9	13
497:	12	16	7	14	13	12	13	16
505:	9	13	17	16	13	29	63	42
513:	24	12	9	7	9	8	3	5
521:	11	13	4	8	13	12	18	3
529:	9	15	9	10	9	8	12	15
537:	12	19	8	11	16	7	15	11
545:	10	6	12	8	10	8	6	11
553:	9	8	12	7	13	5	15	10
561:	7	8	12	16	9	8	15	8
569:	9	12	11	9	9	9	9	13
577:	15	5	9	13	13	12	65	80
585:	29	12	16	4	9	11	9	9
593:	5	8	11	11	5	13	11	10
601:	15	11	7	13	11	7	8	12
609:	104	169	44	5	12	6	7	8
617:	11	10	12	17	9	9	11	5
625:	11	10	8	5	6	8	8	9
633:	5	4	4	13	10	13	7	7
641:	7	6	11	9	4	5	5	11
649:	7	14	9	3	3	7	9	3
657:	5	12	6	10	4	14	6	11
665:	10	16	12	10	7	5	12	3
673:	6	10	12	4	7	8	4	10
681:	5	10	2	6	5	8	8	9
689:	16	4	5	3	8	8	9	9
697:	8	9	8	11	8	11	9	11
705:	4	4	7	5	8	10	6	4
713:	8	7	7	12	6	6	3	5
721:	10	12	10	5	16	6	16	22
729:	11	3	10	1	6	9	5	5
737:	4	9	6	10	6	6	8	11
745:	9	11	5	3	12	7	8	11
753:	4	6	12	7	12	7	5	7
761:	10	5	10	6	9	3	14	18
769:	18	8	8	8	10	9	5	5
777:	3	1	7	3	7	8	10	8
785:	8	15	12	2	6	3	6	4
793:	5	7	16	8	7	4	3	8

801: 6 5 4 8 4 6 14 8

Sample Title: CP-5029 00-02

Channel	1	2	3	4	5	6	7	8
809:	8	4	7	3	10	4	8	3
817:	5	4	3	1	5	9	3	8
825:	0	6	6	3	7	8	4	8
833:	4	2	4	9	2	2	6	7
841:	11	8	8	1	1	5	11	5
849:	7	4	3	7	5	8	3	4
857:	10	11	8	10	17	6	3	5
865:	5	17	5	3	6	9	6	10
873:	5	7	6	3	3	7	6	6
881:	6	5	4	8	1	7	5	6
889:	3	4	12	5	6	5	6	5
897:	2	5	6	2	8	5	5	4
905:	5	5	5	7	2	16	41	46
913:	12	9	4	13	4	6	2	7
921:	5	3	3	9	5	4	7	4
929:	9	8	7	6	8	14	11	7
937:	4	6	6	4	4	7	4	4
945:	7	5	6	4	7	9	6	5
953:	8	4	5	4	2	4	8	4
961:	5	4	5	9	10	8	4	11
969:	31	27	10	5	2	12	6	2
977:	4	2	3	3	2	4	5	2
985:	9	2	5	1	8	5	4	4
993:	3	4	5	6	3	5	5	9
1001:	10	8	6	7	5	6	7	8
1009:	4	6	8	4	5	1	4	8
1017:	7	3	2	4	7	5	5	5
1025:	5	4	6	4	5	4	4	4
1033:	4	3	5	3	5	5	8	7
1041:	9	8	3	5	4	5	1	3
1049:	7	3	5	3	0	6	5	2
1057:	0	3	5	3	7	4	5	4
1065:	6	0	5	6	7	4	5	9
1073:	6	5	3	4	5	2	4	5
1081:	6	4	7	3	2	5	4	3
1089:	4	7	4	6	5	7	3	7
1097:	7	5	2	6	4	4	3	5
1105:	3	8	4	4	0	2	2	5
1113:	7	5	1	3	5	3	15	16
1121:	34	16	5	5	4	4	4	6
1129:	7	6	4	2	5	4	5	6
1137:	6	1	7	3	7	3	3	4
1145:	5	6	5	8	7	5	5	1
1153:	5	8	6	8	3	3	3	3
1161:	5	9	6	3	3	7	10	7
1169:	3	5	5	3	3	12	9	9
1177:	3	3	5	6	11	4	6	5
1185:	5	2	3	4	4	4	3	6
1193:	3	2	5	4	6	5	5	9
1201:	4	4	4	4	2	3	6	2
1209:	13	8	2	3	9	8	10	3
1217:	9	3	5	3	4	7	7	4
1225:	1	3	3	12	3	7	6	4

1233: 6 3 9 2 7 17 16 8

Sample Title: CP-5029 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	8	5	4	4	10	4	6	7
1249:	5	5	5	6	4	4	5	1
1257:	4	3	3	3	5	1	3	7
1265:	4	0	4	3	7	7	4	2
1273:	3	2	4	3	6	2	3	4
1281:	4	9	3	3	4	5	4	1
1289:	6	2	3	6	3	3	3	2
1297:	2	3	3	6	2	4	1	3
1305:	5	5	1	2	3	6	4	4
1313:	4	2	2	2	1	5	4	3
1321:	0	5	4	5	0	5	3	4
1329:	2	3	2	8	4	5	3	3
1337:	2	2	0	1	3	2	2	3
1345:	2	2	1	0	4	2	2	1
1353:	2	2	3	3	2	1	4	6
1361:	2	4	2	1	1	1	3	1
1369:	2	4	1	5	2	6	2	1
1377:	12	12	3	3	0	4	0	1
1385:	4	3	2	5	1	6	0	2
1393:	1	1	1	2	2	1	2	2
1401:	4	5	3	2	0	2	1	6
1409:	3	2	0	1	3	0	3	3
1417:	0	2	0	2	1	3	2	2
1425:	0	3	0	2	3	1	4	0
1433:	3	3	6	3	4	0	2	3
1441:	2	2	3	3	2	1	3	1
1449:	0	2	4	1	3	2	1	2
1457:	1	5	18	80	146	84	16	3
1465:	5	1	3	4	0	1	1	3
1473:	1	0	2	0	2	0	1	0
1481:	1	0	2	2	2	3	4	2
1489:	2	4	3	2	0	3	0	1
1497:	1	1	0	2	4	0	3	2
1505:	3	2	1	4	4	7	0	1
1513:	0	3	3	2	2	3	2	0
1521:	3	3	2	0	2	1	3	2
1529:	2	1	5	1	2	2	1	1
1537:	2	1	2	3	1	3	1	4
1545:	2	1	2	1	2	1	2	1
1553:	1	2	1	1	0	2	0	3
1561:	0	4	1	3	2	0	0	2
1569:	2	0	2	2	0	2	2	1
1577:	1	0	1	0	1	0	1	2
1585:	0	0	1	2	10	3	4	7
1593:	4	2	1	0	1	1	1	1
1601:	0	1	0	2	2	0	3	0
1609:	0	0	2	0	1	1	1	0
1617:	0	0	2	4	3	1	2	2
1625:	0	0	1	1	1	1	4	2
1633:	1	1	2	3	1	4	2	2
1641:	0	3	0	2	1	0	1	1
1649:	1	0	0	1	1	0	2	2
1657:	2	2	2	5	3	1	2	2

1665: 1 2 1 1 2 0 1 1

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Channel	1	2	3	4	5	6	7	8
1673:	0	1	1	0	0	2	0	2
1681:	2	1	4	1	2	2	0	1
1689:	3	0	1	0	0	2	0	0
1697:	1	0	0	0	1	2	3	2
1705:	2	3	2	0	1	1	0	0
1713:	1	1	0	0	0	2	0	2
1721:	1	0	1	2	1	2	0	3
1729:	1	3	1	2	0	1	1	0
1737:	2	0	2	0	0	2	3	3
1745:	2	1	1	1	0	0	1	0
1753:	0	0	2	1	0	2	2	0
1761:	1	2	4	24	21	12	4	3
1769:	0	1	1	3	1	2	0	1
1777:	0	0	1	1	0	2	1	0
1785:	1	1	1	1	1	0	2	0
1793:	0	0	0	2	2	1	1	0
1801:	2	0	1	0	0	2	1	0
1809:	1	0	1	3	0	1	2	1
1817:	1	1	1	0	1	1	2	0
1825:	0	1	2	1	1	0	0	0
1833:	0	1	2	0	0	1	4	0
1841:	1	0	3	1	1	1	4	0
1849:	1	1	0	0	1	1	0	0
1857:	0	0	2	1	1	0	0	2
1865:	2	0	0	1	0	0	1	0
1873:	0	1	0	0	0	0	2	0
1881:	0	1	0	1	2	0	2	1
1889:	1	2	0	0	2	0	1	1
1897:	1	0	2	0	2	2	0	0
1905:	2	1	0	0	1	3	0	0
1913:	1	1	0	0	2	0	0	1
1921:	1	2	0	0	1	0	0	0
1929:	0	0	0	0	0	0	0	1
1937:	0	2	4	0	0	0	0	0
1945:	1	4	1	0	1	0	2	0
1953:	2	2	0	0	0	1	2	0
1961:	3	1	1	0	0	1	3	1
1969:	2	0	0	0	0	1	0	2
1977:	5	0	1	0	1	0	1	0
1985:	0	0	1	0	1	1	0	3
1993:	0	0	0	0	1	0	2	0
2001:	0	1	1	1	1	1	1	0
2009:	1	1	1	0	0	1	1	1
2017:	1	0	0	1	1	0	0	0
2025:	0	2	1	1	1	0	2	0
2033:	1	1	0	0	0	1	0	0
2041:	1	1	0	0	3	0	1	0
2049:	1	0	1	0	0	2	0	0
2057:	0	2	1	0	0	0	0	0
2065:	0	0	1	0	0	1	0	2
2073:	0	0	0	0	2	0	0	1
2081:	1	0	1	0	1	0	0	1
2089:	1	0	1	1	0	1	1	1

2097: 2 1 2 0 2 1 1 3

Sample Title: CP-5029 00-02

Channel	1	2	3	4	5	6	7	8
2105:	2	0	0	0	1	1	0	0
2113:	0	1	2	1	0	1	2	1
2121:	0	2	1	0	0	0	1	2
2129:	0	0	1	1	0	1	1	0
2137:	0	2	0	1	0	2	0	0
2145:	0	0	0	1	1	0	0	0
2153:	1	0	1	2	0	2	1	1
2161:	2	0	0	0	0	0	0	2
2169:	1	3	0	0	0	0	0	1
2177:	0	1	0	0	0	0	1	3
2185:	0	1	1	0	0	0	0	2
2193:	1	0	0	0	0	2	1	1
2201:	1	0	5	5	5	1	1	0
2209:	1	0	2	0	1	0	0	0
2217:	1	1	1	0	1	4	0	0
2225:	0	0	0	0	0	1	1	2
2233:	1	2	0	2	1	1	2	2
2241:	0	0	0	0	0	0	0	0
2249:	2	1	0	0	1	0	1	1
2257:	0	0	0	2	0	1	0	1
2265:	1	1	2	1	2	1	1	2
2273:	2	2	0	2	1	3	0	1
2281:	1	0	0	1	0	2	0	0
2289:	0	0	2	3	1	0	0	1
2297:	0	0	1	2	1	1	2	0
2305:	0	0	0	1	1	0	0	0
2313:	1	1	0	1	0	1	0	2
2321:	2	0	3	0	0	1	0	0
2329:	0	2	1	0	1	0	1	0
2337:	1	0	1	1	1	1	2	0
2345:	0	1	2	0	0	1	1	2
2353:	1	2	3	2	2	1	1	1
2361:	1	0	0	4	1	0	0	0
2369:	0	2	1	0	0	0	2	2
2377:	0	1	1	0	0	0	0	1
2385:	0	1	3	1	0	0	1	3
2393:	0	1	0	4	0	0	1	0
2401:	0	1	0	2	1	0	2	0
2409:	0	0	1	0	0	1	0	0
2417:	0	2	0	0	0	0	0	0
2425:	0	0	0	0	2	0	2	0
2433:	0	1	0	0	0	0	0	0
2441:	0	2	0	1	1	2	3	1
2449:	0	0	1	1	0	0	1	0
2457:	1	0	1	0	1	0	1	1
2465:	2	3	0	0	0	2	0	0
2473:	0	0	0	0	0	2	2	2
2481:	0	1	1	1	0	0	0	1
2489:	0	0	0	0	1	2	0	0
2497:	0	1	0	1	0	1	0	0
2505:	0	0	1	0	0	0	1	0
2513:	0	1	0	2	0	0	1	1
2521:	3	0	2	1	2	1	1	0

2529: 1 0 1 0 0 0 0 0 0

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Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	1	0	1	0	0	0	0
2545:	1	0	1	0	0	0	0	0	0
2553:	1	0	0	0	1	2	3	0	0
2561:	1	0	0	0	0	0	0	0	0
2569:	0	1	1	1	0	1	1	0	0
2577:	1	0	0	0	1	0	1	0	0
2585:	2	0	0	0	0	0	0	0	0
2593:	0	0	0	0	0	1	0	0	0
2601:	0	1	0	1	1	0	0	1	0
2609:	0	1	0	1	7	13	14	8	0
2617:	3	0	0	0	4	0	0	0	0
2625:	1	1	0	0	1	1	0	0	0
2633:	0	0	0	0	0	0	0	0	0
2641:	0	0	0	0	0	0	0	0	0
2649:	0	1	0	0	0	0	0	0	0
2657:	0	1	0	0	0	0	1	0	0
2665:	0	0	0	1	0	0	0	0	0
2673:	0	0	0	0	0	0	1	0	0
2681:	0	0	0	0	0	0	0	0	0
2689:	1	0	1	0	0	0	0	0	0
2697:	1	0	1	0	0	0	0	0	0
2705:	0	0	1	0	0	0	0	0	0
2713:	0	0	0	0	0	0	0	0	0
2721:	0	0	2	0	1	0	1	0	0
2729:	0	0	0	0	1	1	0	0	0
2737:	0	1	1	0	0	1	0	0	0
2745:	0	1	0	1	0	1	0	0	0
2753:	0	0	0	0	0	0	0	0	0
2761:	0	0	0	1	0	0	1	1	0
2769:	0	2	2	0	0	0	0	1	0
2777:	0	0	0	0	0	0	0	0	0
2785:	0	0	1	0	0	0	0	1	0
2793:	0	0	0	0	0	0	1	0	0
2801:	0	1	1	0	1	0	0	0	0
2809:	0	0	0	0	0	0	0	1	0
2817:	0	0	1	0	0	0	0	0	0
2825:	1	1	0	0	0	0	0	0	0
2833:	0	0	1	0	0	0	1	0	0
2841:	0	0	0	0	0	0	1	0	0
2849:	0	1	0	0	1	0	1	0	0
2857:	0	0	1	0	0	0	1	0	0
2865:	0	0	0	0	0	1	0	0	0
2873:	0	0	0	0	1	0	0	0	0
2881:	1	0	0	0	0	1	0	0	0
2889:	0	0	0	0	0	0	1	0	0
2897:	0	0	0	0	0	0	0	0	0
2905:	0	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0	0
2921:	1	0	0	0	0	0	1	1	0
2929:	0	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0	0
2945:	0	0	1	0	0	0	0	1	0
2953:	0	1	0	1	0	0	0	0	0

2961: 0 0 0 1 0 0 0 0

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
2969:	0	0	0	0	0	0	0	0
2977:	1	0	0	0	0	0	0	0
2985:	1	0	0	0	0	0	0	1
2993:	0	0	0	0	0	0	0	0
3001:	0	0	0	0	0	1	0	1
3009:	0	0	0	0	0	0	0	0
3017:	1	0	0	0	0	1	0	0
3025:	0	0	1	0	0	0	0	0
3033:	0	0	0	1	0	1	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	1	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	1	0	0	0	0	0	0
3097:	0	1	0	0	0	1	0	0
3105:	0	0	1	0	0	0	0	1
3113:	0	0	0	0	0	1	1	0
3121:	0	0	0	0	0	0	0	0
3129:	0	0	0	1	0	0	1	1
3137:	1	0	0	0	0	0	0	1
3145:	1	0	0	0	0	0	0	1
3153:	0	0	1	0	0	0	1	0
3161:	0	0	0	1	0	0	0	0
3169:	0	1	0	0	0	0	0	0
3177:	1	0	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	1	0	0	1	1	1	0
3201:	0	0	0	0	0	0	0	0
3209:	1	0	0	0	0	0	1	0
3217:	2	0	0	0	0	0	1	0
3225:	0	2	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	1	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	0	2	0	0	1	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	1	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	1	0
3305:	0	0	0	1	0	1	1	0
3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	1	0	0	0	0
3329:	0	1	0	0	0	0	2	0
3337:	0	0	0	0	0	0	1	0
3345:	0	0	0	0	0	0	0	0
3353:	1	0	0	0	0	0	0	1
3361:	0	0	0	0	0	0	0	1
3369:	0	1	0	1	0	1	0	0
3377:	0	0	0	0	0	1	1	1
3385:	0	0	0	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0

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Channel	-----	-----	-----	-----	-----	-----	-----
3401:	1	1	0	0	0	0	0
3409:	0	0	1	1	0	1	0
3417:	0	0	1	1	0	0	0
3425:	0	1	0	0	0	0	0
3433:	0	0	0	0	0	0	0
3441:	0	0	0	1	0	0	0
3449:	0	0	1	1	0	0	0
3457:	0	0	0	0	2	0	1
3465:	0	0	1	0	1	0	0
3473:	0	0	0	0	1	0	0
3481:	0	0	0	0	1	0	0
3489:	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0
3513:	1	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0
3537:	0	0	0	0	2	0	0
3545:	1	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0
3577:	0	1	1	0	0	0	0
3585:	0	0	0	0	0	0	0
3593:	0	0	0	0	1	0	0
3601:	0	1	0	0	0	0	0
3609:	0	0	0	0	0	0	0
3617:	0	0	0	0	1	0	0
3625:	0	0	0	0	0	0	0
3633:	0	1	0	0	0	0	0
3641:	0	1	1	0	0	1	0
3649:	0	0	1	0	0	0	0
3657:	0	1	0	0	0	0	1
3665:	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	1
3681:	0	0	0	0	0	0	0
3689:	0	0	0	1	0	0	0
3697:	0	0	0	0	0	0	0
3705:	1	1	0	0	0	0	1
3713:	0	0	0	0	1	0	1
3721:	0	0	0	0	0	0	0
3729:	0	1	0	0	0	0	0
3737:	0	0	1	0	0	0	0
3745:	0	0	0	0	0	0	0
3753:	0	1	0	1	0	0	0
3761:	0	0	0	0	0	0	0
3769:	0	1	0	0	0	0	0
3777:	0	0	0	0	0	0	0
3785:	0	1	0	0	0	0	1
3793:	0	0	0	0	0	1	0
3801:	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0
3817:	1	0	0	0	0	0	0

3825: 0 0 0 0 0 0 0 0

Sample Title: CP-5029 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	1	0	1	0	0
3849:	0	0	0	1	0	1	0	0
3857:	0	1	0	0	1	0	1	1
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	1	0	0	0	0
3913:	3	0	0	0	0	0	0	1
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	1	0	0	0
3945:	0	1	0	0	0	0	0	0
3953:	1	1	0	0	0	1	0	0
3961:	1	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	1
3977:	0	0	0	0	0	0	0	1
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	1	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	2	0	0
4033:	0	1	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	1	0	0	0	0	0	0
4065:	0	0	0	1	0	0	0	0
4073:	0	1	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	1	0	0	0	0	0

Analysis Report for 1606041-09
CP-5029 02-05

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6/16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-09
Sample Description : CP-5029 02-05
Sample Type : SOIL

Sample Size : 4.735E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 4:35:06PM
Acquisition Started : 6/16/2016 8:23:12AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3602.0 seconds

Dead Time : 0.05 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 15 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 11/8/2014
Efficiency Calibration Description :

Sample Number : 38979

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Ag
6/16/16

Analysis Report for 1606041-09
CP-5029 02-05

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 9:23:23AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096
 Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	63.62	62.88	0.0000	0.00
2	76.17	75.44	0.0000	0.00
3	92.59	91.86	0.0000	0.00
4	239.46	238.80	0.0000	0.00
5	269.70	269.05	0.0000	0.00
6	276.80	276.16	0.0000	0.00
7	294.74	294.10	0.0000	0.00
8	339.12	338.50	0.0000	0.00
9	352.05	351.44	0.0000	0.00
10	361.45	360.84	0.0000	0.00
11	453.79	453.22	0.0000	0.00
12	462.72	462.16	0.0000	0.00
13	532.53	532.00	0.0000	0.00
14	583.50	583.00	0.0000	0.00
15	609.38	608.89	0.0000	0.00
16	726.51	726.08	0.0000	0.00
17	770.71	770.30	0.0000	0.00
18	911.08	910.74	0.0000	0.00
19	968.49	968.19	0.0000	0.00
20	1039.56	1039.29	0.0000	0.00
21	1065.10	1064.84	0.0000	0.00
22	1096.39	1096.15	0.0000	0.00
23	1120.70	1120.47	0.0000	0.00
24	1238.76	1238.60	0.0000	0.00
25	1460.62	1460.59	0.0000	0.00
26	1591.15	1591.20	0.0000	0.00
27	1606.03	1606.09	0.0000	0.00
28	1661.04	1661.13	0.0000	0.00
29	1728.57	1728.72	0.0000	0.00
30	1764.03	1764.20	0.0000	0.00
31	1790.57	1790.75	0.0000	0.00
32	1846.34	1846.56	0.0000	0.00
33	1957.64	1957.93	0.0000	0.00
34	2455.60	2456.25	0.0000	0.00
35	2613.83	2614.60	0.0000	0.00

? = Adjacent peak noted
 Errors quoted at 2.000sigma

Analysis Report for 1606041-09
CP-5029 02-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 9:23:23AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	63.62	59 -	66	62.88	1.26E+02	91.93	1.33E+03	3.08
2	76.17	69 -	80	75.44	7.83E+02	139.56	2.03E+03	3.77
3	92.59	89 -	96	91.86	1.54E+02	89.82	1.19E+03	3.62
4	239.46	232 -	246	238.80	5.85E+02	102.16	8.41E+02	2.81
5	269.70	266 -	272	269.05	4.71E+01	40.08	2.56E+02	2.45
6	276.80	273 -	280	276.16	4.36E+01	41.90	2.63E+02	3.06
7	294.74	289 -	299	294.10	1.11E+02	63.29	4.79E+02	2.99
8	339.12	333 -	344	338.50	1.05E+02	55.03	3.15E+02	2.45
9	352.05	347 -	358	351.44	2.53E+02	56.04	2.73E+02	2.63
10	361.45	358 -	364	360.84	3.01E+01	30.10	1.42E+02	1.33
11	453.79	450 -	456	453.22	2.81E+01	27.21	1.12E+02	3.76
12	462.72	458 -	466	462.16	3.37E+01	32.74	1.45E+02	2.09
13	532.53	529 -	534	532.00	1.53E+01	20.17	6.93E+01	2.88
14	583.50	578 -	587	583.00	1.26E+02	38.37	1.35E+02	2.39
15	609.38	600 -	614	608.89	1.61E+02	56.11	2.69E+02	2.74
16	726.51	722 -	730	726.08	5.15E+01	24.81	6.30E+01	2.68
17	770.71	765 -	776	770.30	3.80E+01	29.46	8.80E+01	7.11
18	911.08	906 -	915	910.74	7.37E+01	28.04	7.06E+01	1.74
19	968.49	962 -	973	968.19	5.88E+01	27.57	6.44E+01	1.84
20	1039.56	1034 -	1046	1039.29	2.13E+01	24.01	5.54E+01	9.93
21	1065.10	1061 -	1068	1064.84	1.17E+01	15.36	3.07E+01	3.23
22	1096.39	1092 -	1099	1096.15	1.33E+01	15.62	3.14E+01	1.41
23	1120.70	1114 -	1127	1120.47	4.24E+01	31.32	8.73E+01	3.00
24	1238.76	1234 -	1244	1238.60	2.20E+01	27.35	8.80E+01	1.65
25	1460.62	1455 -	1468	1460.59	2.57E+02	37.44	3.92E+01	2.73
26	1591.15	1586 -	1596	1591.20	2.40E+01	16.16	2.20E+01	2.00
27	1606.03	1602 -	1609	1606.09	1.10E+01	6.63	0.00E+00	4.50
28	1661.04	1657 -	1665	1661.13	6.50E+00	9.19	9.00E+00	2.12
29	1728.57	1724 -	1732	1728.72	1.08E+01	8.50	4.46E+00	1.75
30	1764.03	1759 -	1767	1764.20	2.65E+01	12.83	9.00E+00	3.09
31	1790.57	1786 -	1793	1790.75	4.79E+00	6.63	4.43E+00	1.89
32	1846.34	1842 -	1849	1846.56	7.36E+00	8.72	7.27E+00	1.50
33	1957.64	1954 -	1961	1957.93	1.50E+01	7.75	0.00E+00	3.97
34	2455.60	2453 -	2458	2456.25	4.42E+00	5.74	3.17E+00	2.57
35	2613.83	2610 -	2618	2614.60	4.25E+01	15.12	9.00E+00	3.65

Analysis Report for 1606041-09
CP-5029 02-05

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 9:23:23AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	63.62	59 -	66	1.26E+02	91.93	1.33E+03	7.33E+01
2	76.17	69 -	80	7.83E+02	139.56	2.03E+03	1.05E+02
3	92.59	89 -	96	1.54E+02	89.82	1.19E+03	7.10E+01
4	239.46	232 -	246	5.85E+02	102.16	8.41E+02	7.40E+01
5	269.70	266 -	272	4.71E+01	40.08	2.56E+02	3.10E+01
6	276.80	273 -	280	4.36E+01	41.90	2.63E+02	3.27E+01
7	294.74	289 -	299	1.11E+02	63.29	4.79E+02	4.90E+01
8	339.12	333 -	344	1.05E+02	55.03	3.15E+02	4.20E+01
9	352.05	347 -	358	2.53E+02	56.04	2.73E+02	3.79E+01
10	361.45	358 -	364	3.01E+01	30.10	1.42E+02	2.30E+01
11	453.79	450 -	456	2.81E+01	27.21	1.12E+02	2.06E+01
12	462.72	458 -	466	3.37E+01	32.74	1.45E+02	2.52E+01
13	532.53	529 -	534	1.53E+01	20.17	6.93E+01	1.53E+01
14	583.50	578 -	587	1.26E+02	38.37	1.35E+02	2.56E+01
15	609.38	600 -	614	1.61E+02	56.11	2.69E+02	4.12E+01
16	726.51	722 -	730	5.15E+01	24.81	6.30E+01	1.66E+01
17	770.71	765 -	776	3.80E+01	29.46	8.80E+01	2.20E+01
18	911.08	906 -	915	7.37E+01	28.04	7.06E+01	1.82E+01
19	968.49	962 -	973	5.88E+01	27.57	6.44E+01	1.88E+01
20	1039.56	1034 -	1046	2.13E+01	24.01	5.54E+01	1.82E+01
21	1065.10	1061 -	1068	1.17E+01	15.36	3.07E+01	1.13E+01
22	1096.39	1092 -	1099	1.33E+01	15.62	3.14E+01	1.14E+01
23	1120.70	1114 -	1127	4.24E+01	31.32	8.73E+01	2.34E+01
24	1238.76	1234 -	1244	2.20E+01	27.35	8.80E+01	2.11E+01
25	1460.62	1455 -	1468	2.57E+02	37.44	3.92E+01	1.59E+01
26	1591.15	1586 -	1596	2.40E+01	16.16	2.20E+01	1.06E+01
27	1606.03	1602 -	1609	1.10E+01	6.63	0.00E+00	0.00E+00
28	1661.04	1657 -	1665	6.50E+00	9.19	9.00E+00	6.29E+00
29	1728.57	1724 -	1732	1.08E+01	8.50	4.46E+00	4.44E+00
30	1764.03	1759 -	1767	2.65E+01	12.83	9.00E+00	6.29E+00
31	1790.57	1786 -	1793	4.79E+00	6.63	4.43E+00	4.10E+00

Analysis Report for 1606041-09
CP-5029 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	1846.34	1842 -	1849	7.36E+00	8.72	7.27E+00	5.61E+00
33	1957.64	1954 -	1961	1.50E+01	7.75	0.00E+00	0.00E+00
34	2455.60	2453 -	2458	4.42E+00	5.74	3.17E+00	3.22E+00
35	2613.83	2610 -	2618	4.25E+01	15.12	9.00E+00	6.29E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 9:23:23AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	63.62	59 -	66	62.88	1.26E+02	91.93	1.33E+03	TH-234 TH-230
2	76.17	69 -	80	75.44	7.83E+02	139.56	2.03E+03	.....
3	92.59	89 -	96	91.86	1.54E+02	89.82	1.19E+03	GA-67
4	239.46	232 -	246	238.80	5.85E+02	102.16	8.41E+02	PB-212
5	269.70	266 -	272	269.05	4.71E+01	40.08	2.56E+02	.....
6	276.80	273 -	280	276.16	4.36E+01	41.90	2.63E+02	CM-243 NP-239
7	294.74	289 -	299	294.10	1.11E+02	63.29	4.79E+02	PB-214
8	339.12	333 -	344	338.50	1.05E+02	55.03	3.15E+02	AC-228
9	352.05	347 -	358	351.44	2.53E+02	56.04	2.73E+02	PB-214
10	361.45	358 -	364	360.84	3.01E+01	30.10	1.42E+02	.....
11	453.79	450 -	456	453.22	2.81E+01	27.21	1.12E+02	PM-146
12	462.72	458 -	466	462.16	3.37E+01	32.74	1.45E+02	SB-125
13	532.53	529 -	534	532.00	1.53E+01	20.17	6.93E+01	.....
14	583.50	578 -	587	583.00	1.26E+02	38.37	1.35E+02	TL-208
15	609.38	600 -	614	608.89	1.61E+02	56.11	2.69E+02	BI-214
16	726.51	722 -	730	726.08	5.15E+01	24.81	6.30E+01	BI-212
17	770.71	765 -	776	770.30	3.80E+01	29.46	8.80E+01	.....
18	911.08	906 -	915	910.74	7.37E+01	28.04	7.06E+01	AC-228
19	968.49	962 -	973	968.19	5.88E+01	27.57	6.44E+01	AC-228
20	1039.56	1034 -	1046	1039.29	2.13E+01	24.01	5.54E+01	.....

Analysis Report for 1606041-09
CP-5029 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
21	1065.10	1061 -	1068	1064.84	1.17E+01	15.36	3.07E+01	.....
22	1096.39	1092 -	1099	1096.15	1.33E+01	15.62	3.14E+01	.....
23	1120.70	1114 -	1127	1120.47	4.24E+01	31.32	8.73E+01	SC-46 BI-214 TA-182
24	1238.76	1234 -	1244	1238.60	2.20E+01	27.35	8.80E+01	CO-56
25	1460.62	1455 -	1468	1460.59	2.57E+02	37.44	3.92E+01	K-40
26	1591.15	1586 -	1596	1591.20	2.40E+01	16.16	2.20E+01	.....
27	1606.03	1602 -	1609	1606.09	1.10E+01	6.63	0.00E+00	.....
28	1661.04	1657 -	1665	1661.13	6.50E+00	9.19	9.00E+00	.....
29	1728.57	1724 -	1732	1728.72	1.08E+01	8.50	4.46E+00	.....
30	1764.03	1759 -	1767	1764.20	2.65E+01	12.83	9.00E+00	BI-214
31	1790.57	1786 -	1793	1790.75	4.79E+00	6.63	4.43E+00	.....
32	1846.34	1842 -	1849	1846.56	7.36E+00	8.72	7.27E+00	.....
33	1957.64	1954 -	1961	1957.93	1.50E+01	7.75	0.00E+00	.....
34	2455.60	2453 -	2458	2456.25	4.42E+00	5.74	3.17E+00	.....
35	2613.83	2610 -	2618	2614.60	4.25E+01	15.12	9.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 9:23:23AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	63.62	1.26E+02	91.93	2.32E-02	1.76E-03
2	76.17	7.83E+02	139.56	2.12E-02	1.69E-03
3	92.59	1.54E+02	89.82	1.90E-02	1.62E-03
4	239.46	5.85E+02	102.16	9.39E-03	9.84E-04
5	269.70	4.71E+01	40.08	8.45E-03	8.90E-04
6	276.80	4.36E+01	41.90	8.25E-03	8.68E-04
7	294.74	1.11E+02	63.29	7.80E-03	8.44E-04
8	339.12	1.05E+02	55.03	6.84E-03	7.94E-04
9	352.05	2.53E+02	56.04	6.61E-03	7.80E-04
10	361.45	3.01E+01	30.10	6.44E-03	7.70E-04
11	453.79	2.81E+01	27.21	5.18E-03	6.45E-04
12	462.72	3.37E+01	32.74	5.08E-03	6.32E-04
13	532.53	1.53E+01	20.17	4.43E-03	5.30E-04

Analysis Report for 1606041-09
CP-5029 02-05

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
14	583.50	1.26E+02	38.37	4.04E-03	4.55E-04
15	609.38	1.61E+02	56.11	3.87E-03	4.17E-04
16	726.51	5.15E+01	24.81	3.26E-03	3.04E-04
17	770.71	3.80E+01	29.46	3.07E-03	2.79E-04
18	911.08	7.37E+01	28.04	2.61E-03	2.06E-04
19	968.49	5.88E+01	27.57	2.46E-03	1.99E-04
20	1039.56	2.13E+01	24.01	2.30E-03	1.90E-04
21	1065.10	1.17E+01	15.36	2.25E-03	1.86E-04
22	1096.39	1.33E+01	15.62	2.19E-03	1.82E-04
23	1120.70	4.24E+01	31.32	2.14E-03	1.79E-04
24	1238.76	2.20E+01	27.35	1.95E-03	1.90E-04
25	1460.62	2.57E+02	37.44	1.68E-03	1.89E-04
26	1591.15	2.40E+01	16.16	1.56E-03	1.62E-04
27	1606.03	1.10E+01	6.63	1.55E-03	1.59E-04
28	1661.04	6.50E+00	9.19	1.51E-03	1.47E-04
29	1728.57	1.08E+01	8.50	1.46E-03	1.33E-04
30	1764.03	2.65E+01	12.83	1.43E-03	1.26E-04
31	1790.57	4.79E+00	6.63	1.42E-03	1.20E-04
32	1846.34	7.36E+00	8.72	1.38E-03	1.11E-04
33	1957.64	1.50E+01	7.75	1.32E-03	1.11E-04
34	2455.60	4.42E+00	5.74	1.12E-03	1.11E-04
35	2613.83	4.25E+01	15.12	1.07E-03	1.11E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 9:23:23AM

Env. Background File : \\OR-GAMMA1\ApexRoof\Countroom\Data\0000038679.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	63.62	1.26E+02	91.93	3.84E+01	6.93E+00	8.79E+01	9.22E+01
2	76.17	7.83E+02	139.56			7.83E+02	1.40E+02
3	92.59	1.54E+02	89.82	5.93E+01	9.62E+00	9.46E+01	9.03E+01
4	239.46	5.85E+02	102.16	7.10E+00	5.46E+00	5.78E+02	1.02E+02
5	269.70	4.71E+01	40.08			4.71E+01	4.01E+01
6	276.80	4.36E+01	41.90			4.36E+01	4.19E+01
7	294.74	1.11E+02	63.29			1.11E+02	6.33E+01
8	339.12	1.05E+02	55.03			1.05E+02	5.50E+01

Analysis Report for 1606041-09

CP-5029 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
9	352.05	2.53E+02	56.04	1.61E+00	4.34E+00	2.51E+02	5.62E+01
10	361.45	3.01E+01	30.10			3.01E+01	3.01E+01
11	453.79	2.81E+01	27.21			2.81E+01	2.72E+01
12	462.72	3.37E+01	32.74			3.37E+01	3.27E+01
13	532.53	1.53E+01	20.17			1.53E+01	2.02E+01
14	583.50	1.26E+02	38.37	2.37E+00	3.72E+00	1.23E+02	3.85E+01
15	609.38	1.61E+02	56.11			1.61E+02	5.61E+01
16	726.51	5.15E+01	24.81			5.15E+01	2.48E+01
17	770.71	3.80E+01	29.46			3.80E+01	2.95E+01
18	911.08	7.37E+01	28.04			7.37E+01	2.80E+01
19	968.49	5.88E+01	27.57			5.88E+01	2.76E+01
20	1039.56	2.13E+01	24.01			2.13E+01	2.40E+01
21	1065.10	1.17E+01	15.36			1.17E+01	1.54E+01
22	1096.39	1.33E+01	15.62			1.33E+01	1.56E+01
23	1120.70	4.24E+01	31.32			4.24E+01	3.13E+01
24	1238.76	2.20E+01	27.35			2.20E+01	2.73E+01
25	1460.62	2.57E+02	37.44	9.79E-01	1.85E+00	2.56E+02	3.75E+01
26	1591.15	2.40E+01	16.16			2.40E+01	1.62E+01
27	1606.03	1.10E+01	6.63			1.10E+01	6.63E+00
28	1661.04	6.50E+00	9.19			6.50E+00	9.19E+00
29	1728.57	1.08E+01	8.50			1.08E+01	8.50E+00
30	1764.03	2.65E+01	12.83			2.65E+01	1.28E+01
31	1790.57	4.79E+00	6.63			4.79E+00	6.63E+00
32	1846.34	7.36E+00	8.72			7.36E+00	8.72E+00
33	1957.64	1.50E+01	7.75			1.50E+01	7.75E+00
34	2455.60	4.42E+00	5.74			4.42E+00	5.74E+00
35	2613.83	4.25E+01	15.12			4.25E+01	1.51E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 9:23:23AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038679.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	63.62	1.26E+02	91.93	3.84E+01	6.93E+00	8.79E+01	9.22E+01

: 00586

Analysis Report for 1606041-09

CP-5029 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
2	76.17	7.83E+02	139.56			7.83E+02	1.40E+02
3	92.59	1.54E+02	89.82	5.93E+01	9.62E+00	9.46E+01	9.03E+01
4	239.46	5.85E+02	102.16	7.10E+00	5.46E+00	5.78E+02	1.02E+02
5	269.70	4.71E+01	40.08			4.71E+01	4.01E+01
6	276.80	4.36E+01	41.90			4.36E+01	4.19E+01
7	294.74	1.11E+02	63.29			1.11E+02	6.33E+01
8	339.12	1.05E+02	55.03			1.05E+02	5.50E+01
9	352.05	2.53E+02	56.04	1.61E+00	4.34E+00	2.51E+02	5.62E+01
10	361.45	3.01E+01	30.10			3.01E+01	3.01E+01
11	453.79	2.81E+01	27.21			2.81E+01	2.72E+01
12	462.72	3.37E+01	32.74			3.37E+01	3.27E+01
13	532.53	1.53E+01	20.17			1.53E+01	2.02E+01
14	583.50	1.26E+02	38.37	2.37E+00	3.72E+00	1.23E+02	3.85E+01
15	609.38	1.61E+02	56.11			1.61E+02	5.61E+01
16	726.51	5.15E+01	24.81			5.15E+01	2.48E+01
17	770.71	3.80E+01	29.46			3.80E+01	2.95E+01
18	911.08	7.37E+01	28.04			7.37E+01	2.80E+01
19	968.49	5.88E+01	27.57			5.88E+01	2.76E+01
20	1039.56	2.13E+01	24.01			2.13E+01	2.40E+01
21	1065.10	1.17E+01	15.36			1.17E+01	1.54E+01
22	1096.39	1.33E+01	15.62			1.33E+01	1.56E+01
23	1120.70	4.24E+01	31.32			4.24E+01	3.13E+01
24	1238.76	2.20E+01	27.35			2.20E+01	2.73E+01
25	1460.62	2.57E+02	37.44	9.79E-01	1.85E+00	2.56E+02	3.75E+01
26	1591.15	2.40E+01	16.16			2.40E+01	1.62E+01
27	1606.03	1.10E+01	6.63			1.10E+01	6.63E+00
28	1661.04	6.50E+00	9.19			6.50E+00	9.19E+00
29	1728.57	1.08E+01	8.50			1.08E+01	8.50E+00
30	1764.03	2.65E+01	12.83			2.65E+01	1.28E+01
31	1790.57	4.79E+00	6.63			4.79E+00	6.63E+00
32	1846.34	7.36E+00	8.72			7.36E+00	8.72E+00
33	1957.64	1.50E+01	7.75			1.50E+01	7.75E+00
34	2455.60	4.42E+00	5.74			4.42E+00	5.74E+00
35	2613.83	4.25E+01	15.12			4.25E+01	1.51E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1606041-09
CP-5029 02-05

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.994	1460.81 *	10.67	2.26E+01	4.20E+00
GA-67	0.524	93.31 *	35.70	1.73E+00	3.35E+00
		208.95	2.24		
		300.22	16.00		
PM-146	0.442	453.90 *	39.94	2.16E-01	2.11E-01
		735.90	14.01		
		747.13	13.10		
TL-208	0.824	583.14 *	30.22	1.60E+00	5.31E-01
		860.37	4.48		
		2614.66 *	35.85	1.75E+00	6.50E-01
BI-212	0.724	727.17 *	11.80	2.12E+00	1.04E+00
		1620.62	2.75		
PB-212	0.798	238.63 *	44.60	2.19E+00	4.50E-01
		300.09	3.41		
BI-214	0.924	609.31 *	46.30	1.42E+00	5.19E-01
		1120.29 *	15.10	2.08E+00	1.54E+00
		1764.49 *	15.80	1.85E+00	9.12E-01
		2204.22	4.98		
PB-214	0.986	295.21 *	19.19	1.18E+00	6.83E-01
		351.92 *	37.19	1.62E+00	4.10E-01
AC-228	0.962	338.32 *	11.40	2.13E+00	1.15E+00
		911.07 *	27.70	1.62E+00	6.28E-01
		969.11 *	16.60	2.28E+00	1.09E+00
TH-234	0.983	63.29 *	3.80	1.58E+00	1.66E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 9:23:23AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	76.17	2.17483E-01	8.91		
5	269.70	1.30937E-02	42.52		
6	276.80	1.21222E-02	48.01	Tol.	NP-239 CM-243
10	361.45	8.36634E-03	49.98		

Analysis Report for 1606041-09
CP-5029 02-05

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
12	462.72	9.35273E-03	48.62	Tol.	SB-125
13	532.53	4.26111E-03	65.76		
17	770.71	1.05573E-02	38.76		
20	1039.56	5.91553E-03	56.36		
21	1065.10	3.24074E-03	65.84	Sum	
22	1096.39	3.69732E-03	58.68		
24	1238.76	6.11111E-03	62.16	Tol.	CO-56
26	1591.15	6.66667E-03	33.66	D-Esc	
27	1606.03	3.05556E-03	30.15		
28	1661.04	1.80556E-03	70.71		
29	1728.57	2.99145E-03	39.46		
31	1790.57	1.32937E-03	69.30		
32	1846.34	2.04545E-03	59.19	Sum	
33	1957.64	4.16667E-03	25.82		
34	2455.60	1.22685E-03	65.03		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	2.26E+01	4.20E+00
GA-67	0.52	93.31 *	35.70	1.73E+00	3.35E+00
		208.95	2.24		
		300.22	16.00		
PM-146	0.44	453.90 *	39.94	2.16E-01	2.11E-01
		735.90	14.01		
		747.13	13.10		
TL-208	0.82	583.14 *	30.22	1.60E+00	5.31E-01
		860.37	4.48		
		2614.66 *	35.85	1.75E+00	6.50E-01
BI-212	0.72	727.17 *	11.80	2.12E+00	1.04E+00
		1620.62	2.75		
PB-212	0.79	238.63 *	44.60	2.19E+00	4.50E-01

Analysis Report for 1606041-09
CP-5029 02-05

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-212	0.79	300.09	3.41		
BI-214	0.92	609.31 *	46.30	1.42E+00	5.19E-01
		1120.29 *	15.10	2.08E+00	1.54E+00
		1764.49 *	15.80	1.85E+00	9.12E-01
		2204.22	4.98		
PB-214	0.98	295.21 *	19.19	1.18E+00	6.83E-01
		351.92 *	37.19	1.62E+00	4.10E-01
AC-228	0.96	338.32 *	11.40	2.13E+00	1.15E+00
		911.07 *	27.70	1.62E+00	6.28E-01
		969.11 *	16.60	2.28E+00	1.09E+00
TH-234	0.98	63.29 *	3.80	1.58E+00	1.66E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.994	2.26E+01	4.20E+00	
GA-67	0.524	1.73E+00	3.35E+00	
PM-146	0.442	2.16E-01	2.11E-01	
TL-208	0.824	1.66E+00	4.11E-01	
BI-212	0.724	2.12E+00	1.04E+00	
PB-212	0.798	2.19E+00	4.50E-01	
BI-214	0.924	1.57E+00	4.33E-01	
PB-214	0.986	1.50E+00	3.51E-01	
AC-228	0.962	1.85E+00	4.91E-01	
TH-234	0.983	1.58E+00	1.66E+00	

Analysis Report for 1606041-09

CP-5029 02-05

- ? = nuclide is part of an undetermined solution
- X = nuclide rejected by the interference analysis
- @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1606041-09
CP-5029 02-05

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 9:23:23AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	76.17	2.17483E-01	8.91		
5	269.70	1.30937E-02	42.52		
6	276.80	1.21222E-02	48.01	Tol.	NP-239 CM-243
10	361.45	8.36634E-03	49.98		
12	462.72	9.35273E-03	48.62	Tol.	SB-125
13	532.53	4.26111E-03	65.76		
17	770.71	1.05573E-02	38.76		
20	1039.56	5.91553E-03	56.36		
21	1065.10	3.24074E-03	65.84	Sum	
22	1096.39	3.69732E-03	58.68		
24	1238.76	6.11111E-03	62.16	Tol.	CO-56
26	1591.15	6.66667E-03	33.66	D-Esc	
27	1606.03	3.05556E-03	30.15		
28	1661.04	1.80556E-03	70.71		
29	1728.57	2.99145E-03	39.46		
31	1790.57	1.32937E-03	69.30		
32	1846.34	2.04545E-03	59.19	Sum	
33	1957.64	4.16667E-03	25.82		
34	2455.60	1.22685E-03	65.03		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

: 00592

Analysis Report for 1606041-09
CP-5029 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	2.31E-01	1.68E+00	1.68E+00
+	NA-22	1274.54	99.94	-2.89E-02	2.14E-01	2.14E-01
+	NA-24	1368.53	99.99	1.89E+03	5.17E+03	1.02E+04
		2754.09	99.86	-2.58E+03		5.17E+03
+	AL-26	1808.65	99.76	-5.28E-03	1.48E-01	1.48E-01
+	K-40	1460.81	* 10.67	2.26E+01	3.07E+00	3.07E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-6.66E-03	1.07E-01	1.07E-01
		78.34	96.00	-2.60E-02		1.39E-01
+	SC-46	889.25	99.98	3.62E-02	2.27E-01	2.27E-01
		1120.51	99.99	3.12E-01		3.34E-01
+	V-48	983.52	99.98	-1.02E-01	2.68E-01	2.68E-01
		1312.10	97.50	-1.92E-02		3.47E-01
+	CR-51	320.08	9.83	-8.36E-01	1.75E+00	1.75E+00
+	MN-54	834.83	99.97	5.90E-02	2.36E-01	2.36E-01
+	CO-56	846.75	99.96	-1.43E-01	1.86E-01	1.86E-01
		1037.75	14.03	2.29E-01		1.68E+00
		1238.25	67.00	2.80E-01		5.11E-01
		1771.40	15.51	-1.71E+00		1.17E+00
		2598.48	16.90	6.33E-02		6.99E-01
+	CO-57	122.06	85.51	-3.48E-02	1.18E-01	1.18E-01
		136.48	10.60	-3.78E-02		1.09E+00
+	CO-58	810.76	99.40	7.23E-02	2.29E-01	2.29E-01
+	FE-59	1099.22	56.50	-6.85E-02	4.40E-01	4.40E-01
		1291.56	43.20	1.11E-01		6.00E-01
+	CO-60	1173.22	100.00	3.77E-02	1.80E-01	2.40E-01
		1332.49	100.00	-7.82E-02		1.80E-01
+	ZN-65	1115.52	50.75	-1.19E-02	4.96E-01	4.96E-01
+	GA-67	93.31	* 35.70	1.73E+00	2.70E+00	2.70E+00
		208.95	2.24	1.51E+01		4.65E+01
		300.22	16.00	2.86E+00		7.30E+00
+	SE-75	121.11	16.70	4.02E-02	2.00E-01	6.25E-01
		136.00	59.20	1.43E-02		2.00E-01
		264.65	59.80	-2.04E-02		2.24E-01
		279.53	25.20	-7.59E-02		5.42E-01
		400.65	11.40	2.58E-01		1.40E+00
+	RB-82	776.52	13.00	-1.96E-01	1.83E+00	1.83E+00
+	RB-83	520.41	46.00	2.91E-02	3.65E-01	3.65E-01
		529.64	30.30	-8.94E-02		5.36E-01
		552.65	16.40	-3.83E-01		9.63E-01
+	KR-85	513.99	0.43	7.52E+01	5.02E+01	5.02E+01
+	SR-85	513.99	99.27	3.64E-01	2.43E-01	2.43E-01
+	Y-88	898.02	93.40	1.15E-01	1.73E-01	2.50E-01
		1836.01	99.38	-8.63E-02		1.73E-01
+	NB-93M	16.57	9.43	1.04E+00	5.15E-01	5.15E-01
+	NB-94	702.63	100.00	-4.69E-03	1.93E-01	1.95E-01
		871.10	100.00	-9.96E-03		1.93E-01

Analysis Report for 1606041-09
CP-5029 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95	765.79	99.81	5.32E-02	2.62E-01	2.62E-01
+	NB-95M	235.69	25.00	1.56E+01	5.51E+00	5.51E+00
+	ZR-95	724.18	43.70	-2.60E-02	3.97E-01	5.62E-01
		756.72	55.30	-1.54E-02		3.97E-01
+	MO-99	181.06	6.20	-4.72E+01	1.85E+01	2.28E+01
		739.58	12.80	9.16E+00		1.85E+01
		778.00	4.50	-2.70E+00		4.45E+01
+	RU-103	497.08	89.00	1.85E-02	2.05E-01	2.05E-01
+	RU-106	621.84	9.80	8.26E-01	1.71E+00	1.71E+00
+	AG-108M	433.93	89.90	2.47E-02	1.70E-01	1.70E-01
		614.37	90.40	-5.45E-02		2.33E-01
		722.95	90.50	-8.92E-03		2.37E-01
+	CD-109	88.03	3.72	1.76E+00	3.25E+00	3.25E+00
+	AG-110M	657.75	93.14	7.38E-02	1.89E-01	1.89E-01
		677.61	10.53	-1.01E+00		1.68E+00
		706.67	16.46	3.24E-01		1.21E+00
		763.93	21.98	2.70E-01		9.95E-01
		884.67	71.63	-1.25E-01		2.59E-01
		1384.27	23.94	-1.65E-01		8.43E-01
+	CD-113M	263.70	0.02	-5.04E+01	5.63E+02	5.63E+02
+	SN-113	255.12	1.93	2.16E+00	2.37E-01	7.13E+00
		391.69	64.90	3.90E-02		2.37E-01
+	TE123M	159.00	84.10	-8.51E-02	1.42E-01	1.42E-01
+	SB-124	602.71	97.87	-2.53E-02	1.98E-01	1.98E-01
		645.85	7.26	3.34E-01		2.63E+00
		722.78	11.10	-3.77E-01		1.95E+00
		1691.02	49.00	-6.49E-02		3.66E-01
+	I-125	35.49	6.49	1.39E-01	1.03E+00	1.03E+00
+	SB-125	176.33	6.89	1.36E-01	5.02E-01	1.74E+00
		427.89	29.33	-6.31E-02		5.02E-01
		463.38	10.35	5.93E-01		1.53E+00
		600.56	17.80	-1.79E-01		9.87E-01
		635.90	11.32	3.80E-02		1.55E+00
+	SB-126	414.70	83.30	-8.56E-02	2.74E-01	2.89E-01
		666.33	99.60	-1.46E-01		2.74E-01
		695.00	99.60	-3.88E-02		3.35E-01
		720.50	53.80	-1.63E-01		5.64E-01
+	SN-126	87.57	37.00	1.74E-01	3.22E-01	3.22E-01
+	SB-127	473.00	25.00	1.09E-01	3.24E+00	3.47E+00
		685.20	35.70	1.62E+00		3.24E+00
		783.80	14.70	1.96E+00		6.98E+00
+	I-129	29.78	57.00	-6.53E-04	1.00E-01	1.00E-01
		33.60	13.20	4.78E-02		4.45E-01
		39.58	7.52	-7.50E-01		8.21E-01
+	I-131	284.30	6.05	-9.53E-01	4.02E-01	4.74E+00
		364.48	81.20	8.69E-02		4.02E-01
		636.97	7.26	-2.25E+00		5.30E+00
		722.89	1.80	-4.79E+00		2.47E+01

Analysis Report for 1606041-09
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE-132	49.72	13.10	1.38E+00	1.14E+00	4.39E+00
		228.16	88.00	-3.01E-01		1.14E+00
+	BA-133	81.00	33.00	-1.62E-01	3.45E-01	3.77E-01
		302.84	17.80	1.70E-01		7.64E-01
		356.01	60.00	5.25E-01		3.45E-01
+	I-133	529.87	86.30	-6.69E+01	4.01E+02	4.01E+02
+	XE-133	81.00	38.00	-5.05E-01	1.17E+00	1.17E+00
+	CS-134	563.23	8.38	-1.47E-01	2.40E-01	2.02E+00
		569.32	15.43	-5.02E-01		1.04E+00
		604.70	97.60	-2.85E-01		2.40E-01
		795.84	85.40	1.47E-01		2.51E-01
		801.93	8.73	-9.39E-01		2.27E+00
+	CS-135	268.24	16.00	-1.25E-01	8.20E-01	8.20E-01
+	I-135	1131.51	22.50	4.20E+07	3.22E+10	3.71E+10
		1260.41	28.60	-5.64E+09		3.22E+10
		1678.03	9.54	-2.09E+10		6.69E+10
+	CS-136	153.22	7.46	1.70E+00	3.10E-01	2.61E+00
		163.89	4.61	-1.63E-01		4.21E+00
		176.55	13.56	1.14E-01		1.46E+00
		273.65	12.66	1.32E+00		1.83E+00
		340.57	48.50	7.53E-01		5.56E-01
		818.50	99.70	-1.76E-01		3.10E-01
		1048.07	79.60	-3.39E-02		4.33E-01
		1235.34	19.70	-2.59E-02		2.63E+00
+	CS-137	661.65	85.12	-4.14E-02	1.82E-01	1.82E-01
+	LA-138	788.74	34.00	-3.00E-01	2.23E-01	5.21E-01
		1435.80	66.00	-7.61E-02		2.23E-01
+	CE-139	165.85	80.35	1.66E-01	1.59E-01	1.59E-01
+	BA-140	162.64	6.70	-1.52E+00	1.08E+00	2.89E+00
		304.84	4.50	-1.60E-01		4.92E+00
		423.70	3.20	6.18E-01		7.55E+00
		437.55	2.00	9.02E+00		1.30E+01
		537.32	25.00	1.52E-02		1.08E+00
+	LA-140	328.77	20.50	4.71E-01	3.39E-01	1.24E+00
		487.03	45.50	-4.74E-02		5.71E-01
		815.85	23.50	-2.28E-01		1.38E+00
		1596.49	95.49	6.00E-03		3.39E-01
+	CE-141	145.44	48.40	-9.84E-02	2.86E-01	2.86E-01
+	CE-143	57.36	11.80	3.16E+00	5.36E+01	9.21E+01
		293.26	42.00	6.99E+01		5.36E+01
		664.55	5.20	-1.46E+02		3.98E+02
+	CE-144	133.54	10.80	-1.00E-01	1.05E+00	1.05E+00
+	PM-144	476.78	42.00	1.12E-01	1.65E-01	3.75E-01
		618.01	98.60	-1.24E-02		1.65E-01
		696.49	99.49	-2.70E-02		1.96E-01
+	PM-145	36.85	21.70	-8.99E-02	1.54E-01	2.76E-01
		37.36	39.70	-3.58E-02		1.54E-01
		42.30	15.10	2.22E-01		4.46E-01
		72.40	2.31	1.07E+01		5.52E+00

Analysis Report for 1606041-09
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-146	453.90	*	39.94	2.16E-01	3.38E-01	3.38E-01
		735.90		14.01	3.47E-01		1.41E+00
		747.13		13.10	-5.26E-01		1.36E+00
+	ND-147	91.11		28.90	2.54E-01	7.90E-01	7.90E-01
		531.02		13.10	-2.14E-01		2.09E+00
+	PM-149	285.90		3.10	-1.69E+01	8.42E+01	8.42E+01
+	EU-152	121.78		20.50	-1.42E-01	4.79E-01	4.79E-01
		244.69		5.40	-3.98E-01		2.86E+00
		344.27		19.13	-6.15E-02		6.58E-01
		778.89		9.20	-1.15E-01		1.90E+00
		964.01		10.40	6.17E-02		2.41E+00
		1085.78		7.22	-4.91E-01		2.68E+00
		1112.02		9.60	1.73E-01		2.22E+00
		1407.95		14.94	-6.11E-02		1.44E+00
+	GD-153	97.43		31.30	5.34E-02	3.34E-01	3.34E-01
		103.18		22.20	7.67E-02		4.64E-01
+	EU-154	123.07		40.50	-1.24E-01	2.43E-01	2.43E-01
		723.30		19.70	-4.11E-02		1.09E+00
		873.19		11.50	1.40E-01		1.69E+00
		996.32		10.30	1.72E-01		2.14E+00
		1004.76		17.90	-3.44E-01		1.20E+00
		1274.45		35.50	-8.10E-02		6.00E-01
+	EU-155	86.50		30.90	1.61E-01	3.78E-01	3.78E-01
		105.30		20.70	7.05E-02		4.91E-01
+	EU-156	811.77		10.40	-9.99E-02	2.94E+00	2.94E+00
		1153.47		7.20	1.14E+00		5.28E+00
		1230.71		8.90	0.00E+00		4.73E+00
+	HO-166M	184.41		72.60	2.22E-01	1.97E-01	1.97E-01
		280.45		29.60	-7.54E-02		4.28E-01
		410.94		11.10	8.76E-01		1.41E+00
		711.69		54.10	1.04E-01		3.39E-01
+	TM-171	66.72		0.14	-4.50E+00	7.23E+01	7.23E+01
+	HF-172	81.75		4.52	-1.93E+00	9.24E-01	2.56E+00
		125.81		11.30	1.73E-01		9.24E-01
+	LU-172	181.53		20.60	-3.35E-01	8.88E-01	1.76E+00
		810.06		16.63	1.07E+00		3.38E+00
		912.12		15.25	8.35E+00		5.47E+00
		1093.66		62.50	-6.30E-02		8.88E-01
+	LU-173	100.72		5.24	-8.37E-02	6.43E-01	1.89E+00
		272.11		21.20	5.19E-02		6.43E-01
+	HF-175	343.40		84.00	-1.54E-02	1.74E-01	1.74E-01
+	LU-176	88.34		13.30	4.05E-01	1.31E-01	9.13E-01
		201.83		86.00	-4.67E-02		1.47E-01
		306.78		94.00	-1.40E-01		1.31E-01
+	TA-182	67.75		41.20	-1.62E-02	2.59E-01	2.59E-01
		1121.30		34.90	1.19E+00		9.55E-01
		1189.05		16.23	2.70E-01		1.84E+00
		1221.41		26.98	4.72E-01		1.10E+00
		1231.02		11.44	0.00E+00		2.51E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	IR-192	308.46	29.68	-4.90E-01	3.35E-01	4.59E-01
		468.07	48.10	1.44E-02		3.35E-01
+	HG-203	279.19	77.30	-2.70E-02	1.93E-01	1.93E-01
+	BI-207	569.67	97.72	-7.87E-02	1.63E-01	1.63E-01
		1063.62	74.90	-1.44E-02		2.73E-01
+	TL-208	583.14	* 30.22	1.60E+00	6.31E-01	7.08E-01
		860.37	4.48	2.00E+00		4.52E+00
		2614.66	* 35.85	1.75E+00		6.31E-01
+	BI-210M	262.00	45.00	-9.61E-02	2.82E-01	2.82E-01
		300.00	23.00	1.36E-01		6.99E-01
+	PB-210	46.50	4.25	2.28E-02	1.65E+00	1.65E+00
+	PB-211	404.84	2.90	1.81E+00	5.48E+00	5.48E+00
		831.96	2.90	-2.54E+00		7.54E+00
+	BI-212	727.17	* 11.80	2.12E+00	1.48E+00	1.48E+00
		1620.62	2.75	-1.11E+00		5.94E+00
+	PB-212	238.63	* 44.60	2.19E+00	5.73E-01	5.73E-01
		300.09	3.41	9.17E-01		4.71E+00
+	BI-214	609.31	* 46.30	1.42E+00	7.52E-01	7.52E-01
		1120.29	* 15.10	2.08E+00		2.43E+00
		1764.49	* 15.80	1.85E+00		1.07E+00
		2204.22	4.98	8.80E-02		3.17E+00
+	PB-214	295.21	* 19.19	1.18E+00	5.10E-01	1.07E+00
		351.92	* 37.19	1.62E+00		5.10E-01
+	RN-219	401.80	6.50	-4.84E-01	2.31E+00	2.31E+00
+	RA-223	323.87	3.88	1.07E+00	3.66E+00	3.66E+00
+	RA-224	240.98	3.95	2.53E+01	5.89E+00	5.89E+00
+	RA-225	40.00	31.00	-2.87E-01	3.14E-01	3.14E-01
+	RA-226	186.21	3.28	3.74E+00	4.41E+00	4.41E+00
+	TH-227	50.10	8.40	2.75E-01	8.76E-01	8.76E-01
		236.00	11.50	5.29E+00		1.87E+00
		256.20	6.30	-4.36E-01		2.04E+00
+	AC-228	338.32	* 11.40	2.13E+00	8.59E-01	1.76E+00
		911.07	* 27.70	1.62E+00		8.59E-01
		969.11	* 16.60	2.28E+00		1.57E+00
+	TH-230	48.44	16.90	1.23E-01	4.25E-01	4.25E-01
		62.85	4.60	1.55E+00		2.08E+00
		67.67	0.37	-1.70E+00		2.72E+01
+	PA-231	283.67	1.60	1.55E+00	5.90E+00	7.80E+00
		302.67	2.30	1.31E+00		5.90E+00
+	TH-231	25.64	14.70	-2.21E-01	3.80E-01	3.80E-01
		84.21	6.40	-3.39E-01		1.72E+00
+	PA-233	311.98	38.60	2.71E-01	4.57E-01	4.57E-01
+	PA-234	131.20	20.40	5.89E-03	5.30E-01	5.30E-01
		733.99	8.80	-1.37E-02		2.10E+00
		946.00	12.00	0.00E+00		1.72E+00
+	PA-234M	1001.03	0.92	1.18E+01	2.60E+01	2.60E+01
+	TH-234	63.29	* 3.80	1.58E+00	2.72E+00	2.72E+00

Analysis Report for 1606041-09
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	U-235	143.76	10.50	2.71E-01	1.09E+00	1.09E+00
		163.35	4.70	-9.57E-02		2.47E+00
		205.31	4.70	1.42E+00		2.85E+00
+	NP-237	86.50	12.60	3.93E-01	9.24E-01	9.24E-01
+	NP-239	106.10	22.70	1.11E+00	7.74E+00	7.74E+00
		228.18	10.70	-5.45E+00		2.04E+01
		277.60	14.10	5.54E-01		1.58E+01
+	AM-241	59.54	35.90	-4.37E-03	2.50E-01	2.50E-01
+	AM-243	74.67	66.00	8.29E-01	2.07E-01	2.07E-01
+	CM-243	209.75	3.29	2.67E+00	9.25E-01	4.09E+00
		228.14	10.60	-3.19E-01		1.21E+00
		277.60	14.00	3.23E-02		9.25E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	1.68E+00	1.68E+00	2.31E-01	7.94E-01
	NA-22	1274.54	99.94	2.14E-01	2.14E-01	-2.89E-02	9.57E-02
	NA-24	1368.53	99.99	1.02E+04	5.17E+03	1.89E+03	4.55E+03
		2754.09	99.86	5.17E+03		-2.58E+03	1.64E+03
	AL-26	1808.65	99.76	1.48E-01	1.48E-01	-5.28E-03	5.88E-02
+	K-40	1460.81	* 10.67	3.07E+00	3.07E+00	2.26E+01	1.41E+00
@	AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88	94.40	1.07E-01	1.07E-01	-6.66E-03	5.24E-02
		78.34	96.00	1.39E-01		-2.60E-02	6.86E-02
	SC-46	889.25	99.98	2.27E-01	2.27E-01	3.62E-02	1.05E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SC-46	1120.51	99.99	3.34E-01	2.27E-01	3.12E-01	1.56E-01
V-48	983.52	99.98	2.68E-01	2.68E-01	-1.02E-01	1.20E-01
	1312.10	97.50	3.47E-01		-1.92E-02	1.55E-01
CR-51	320.08	9.83	1.75E+00	1.75E+00	-8.36E-01	8.34E-01
MN-54	834.83	99.97	2.36E-01	2.36E-01	5.90E-02	1.10E-01
CO-56	846.75	99.96	1.86E-01	1.86E-01	-1.43E-01	8.48E-02
	1037.75	14.03	1.68E+00		2.29E-01	7.66E-01
	1238.25	67.00	5.11E-01		2.80E-01	2.38E-01
	1771.40	15.51	1.17E+00		-1.71E+00	4.79E-01
	2598.48	16.90	6.99E-01		6.33E-02	2.21E-01
CO-57	122.06	85.51	1.18E-01	1.18E-01	-3.48E-02	5.73E-02
	136.48	10.60	1.09E+00		-3.78E-02	5.29E-01
CO-58	810.76	99.40	2.29E-01	2.29E-01	7.23E-02	1.06E-01
FE-59	1099.22	56.50	4.40E-01	4.40E-01	-6.85E-02	2.00E-01
	1291.56	43.20	6.00E-01		1.11E-01	2.69E-01
CO-60	1173.22	100.00	2.40E-01	1.80E-01	3.77E-02	1.10E-01
	1332.49	100.00	1.80E-01		-7.82E-02	7.84E-02
ZN-65	1115.52	50.75	4.96E-01	4.96E-01	-1.19E-02	2.28E-01
+ GA-67	93.31	* 35.70	2.70E+00	2.70E+00	1.73E+00	1.32E+00
	208.95	2.24	4.65E+01		1.51E+01	2.25E+01
	300.22	16.00	7.30E+00		2.86E+00	3.51E+00
SE-75	121.11	16.70	6.25E-01	2.00E-01	4.02E-02	3.04E-01
	136.00	59.20	2.00E-01		1.43E-02	9.76E-02
	264.65	59.80	2.24E-01		-2.04E-02	1.08E-01
	279.53	25.20	5.42E-01		-7.59E-02	2.60E-01
	400.65	11.40	1.40E+00		2.58E-01	6.65E-01
RB-82	776.52	13.00	1.83E+00	1.83E+00	-1.96E-01	8.46E-01
RB-83	520.41	46.00	3.65E-01	3.65E-01	2.91E-02	1.71E-01
	529.64	30.30	5.36E-01		-8.94E-02	2.51E-01
	552.65	16.40	9.63E-01		-3.83E-01	4.49E-01
KR-85	513.99	0.43	5.02E+01	5.02E+01	7.52E+01	2.40E+01
SR-85	513.99	99.27	2.43E-01	2.43E-01	3.64E-01	1.16E-01
Y-88	898.02	93.40	2.50E-01	1.73E-01	1.15E-01	1.16E-01
	1836.01	99.38	1.73E-01		-8.63E-02	6.97E-02
NB-93M	16.57	9.43	5.15E-01	5.15E-01	1.04E+00	2.50E-01
NB-94	702.63	100.00	1.95E-01	1.93E-01	-4.69E-03	9.10E-02
	871.10	100.00	1.93E-01		-9.96E-03	8.87E-02
NB-95	765.79	99.81	2.62E-01	2.62E-01	5.32E-02	1.23E-01
NB-95M	235.69	25.00	5.51E+00	5.51E+00	1.56E+01	2.70E+00
ZR-95	724.18	43.70	5.62E-01	3.97E-01	-2.60E-02	2.64E-01
	756.72	55.30	3.97E-01		-1.54E-02	1.85E-01
MO-99	181.06	6.20	2.28E+01	1.85E+01	-4.72E+01	1.10E+01
	739.58	12.80	1.85E+01		9.16E+00	8.63E+00
	778.00	4.50	4.45E+01		-2.70E+00	2.05E+01
RU-103	497.08	89.00	2.05E-01	2.05E-01	1.85E-02	9.62E-02
RU-106	621.84	9.80	1.71E+00	1.71E+00	8.26E-01	7.95E-01
AG-108M	433.93	89.90	1.70E-01	1.70E-01	2.47E-02	8.07E-02
	614.37	90.40	2.33E-01		-5.45E-02	1.10E-01
	722.95	90.50	2.37E-01		-8.92E-03	1.11E-01
CD-109	88.03	3.72	3.25E+00	3.25E+00	1.76E+00	1.60E+00
AG-110M	657.75	93.14	1.89E-01	1.89E-01	7.38E-02	8.77E-02
	677.61	10.53	1.68E+00		-1.01E+00	7.79E-01
	706.67	16.46	1.21E+00		3.24E-01	5.67E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AG-110M	763.93	21.98	9.95E-01	1.89E-01	2.70E-01	4.65E-01
	884.67	71.63	2.59E-01		-1.25E-01	1.18E-01
	1384.27	23.94	8.43E-01		-1.65E-01	3.69E-01
CD-113M	263.70	0.02	5.63E+02	5.63E+02	-5.04E+01	2.71E+02
	SN-113	255.12	1.93	7.13E+00	2.37E-01	2.16E+00	3.43E+00
TE123M	391.69	64.90	2.37E-01	1.42E-01	3.90E-02	1.12E-01
	159.00	84.10	1.42E-01		-8.51E-02	6.88E-02
SB-124	602.71	97.87	1.98E-01	1.98E-01	-2.53E-02	9.25E-02
	645.85	7.26	2.63E+00	3.34E-01	1.22E+00	
	722.78	11.10	1.95E+00	-3.77E-01	9.08E-01	
	1691.02	49.00	3.66E-01	-6.49E-02	1.50E-01	
I-125	35.49	6.49	1.03E+00	1.03E+00	1.39E-01	5.03E-01
	SB-125	176.33	6.89	1.74E+00	5.02E-01	1.36E-01	8.44E-01
SB-126	427.89	29.33	5.02E-01	2.74E-01	-6.31E-02	2.38E-01
	463.38	10.35	1.53E+00		5.93E-01	7.25E-01
	600.56	17.80	9.87E-01		-1.79E-01	4.63E-01
	635.90	11.32	1.55E+00		3.80E-02	7.23E-01
	414.70	83.30	2.89E-01		-8.56E-02	1.37E-01
	666.33	99.60	2.74E-01		-1.46E-01	1.27E-01
SN-126	695.00	99.60	3.35E-01	3.22E-01	-3.88E-02	1.56E-01
	720.50	53.80	5.64E-01		-1.63E-01	2.61E-01
SB-127	87.57	37.00	3.22E-01	3.22E-01	1.74E-01	1.58E-01
	473.00	25.00	3.47E+00	3.24E+00	1.09E-01	1.63E+00
I-129	685.20	35.70	3.24E+00	1.00E-01	1.62E+00	1.52E+00
	783.80	14.70	6.98E+00		1.96E+00	3.22E+00
	29.78	57.00	1.00E-01		-6.53E-04	4.89E-02
	33.60	13.20	4.45E-01		4.78E-02	2.17E-01
I-131	39.58	7.52	8.21E-01	4.02E-01	-7.50E-01	4.00E-01
	284.30	6.05	4.74E+00		-9.53E-01	2.27E+00
	364.48	81.20	4.02E-01		8.69E-02	1.92E-01
	636.97	7.26	5.30E+00		-2.25E+00	2.46E+00
TE-132	722.89	1.80	2.47E+01	1.14E+00	-4.79E+00	1.15E+01
	49.72	13.10	4.39E+00		1.38E+00	2.15E+00
BA-133	228.16	88.00	1.14E+00	3.45E-01	-3.01E-01	5.49E-01
	81.00	33.00	3.77E-01		-1.62E-01	1.85E-01
	302.84	17.80	7.64E-01		1.70E-01	3.66E-01
I-133	356.01	60.00	3.45E-01	4.01E+02	5.25E-01	1.67E-01
	529.87	86.30	4.01E+02		-6.69E+01	1.88E+02
XE-133	81.00	38.00	1.17E+00	1.17E+00	-5.05E-01	5.77E-01
CS-134	563.23	8.38	2.02E+00	2.40E-01	-1.47E-01	9.48E-01
	569.32	15.43	1.04E+00	-5.02E-01	4.87E-01	
	604.70	97.60	2.40E-01	-2.85E-01	1.14E-01	
	795.84	85.40	2.51E-01	1.47E-01	1.17E-01	
	801.93	8.73	2.27E+00	-9.39E-01	1.05E+00	
CS-135	268.24	16.00	8.20E-01	8.20E-01	-1.25E-01	3.94E-01
I-135	1131.51	22.50	3.71E+10	3.22E+10	4.20E+07	1.68E+10
	1260.41	28.60	3.22E+10	-5.64E+09	1.46E+10	
CS-136	1678.03	9.54	6.69E+10	3.10E-01	-2.09E+10	2.78E+10
	153.22	7.46	2.61E+00		1.70E+00	1.27E+00
	163.89	4.61	4.21E+00		-1.63E-01	2.04E+00
	176.55	13.56	1.46E+00		1.14E-01	7.10E-01
	273.65	12.66	1.83E+00		1.32E+00	8.82E-01
	340.57	48.50	5.56E-01	7.53E-01	2.67E-01	

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-136	818.50	99.70	3.10E-01	3.10E-01	-1.76E-01	1.43E-01
	1048.07	79.60	4.33E-01		-3.39E-02	1.97E-01
	1235.34	19.70	2.63E+00		-2.59E-02	1.22E+00
CS-137	661.65	85.12	1.82E-01	1.82E-01	-4.14E-02	8.41E-02
LA-138	788.74	34.00	5.21E-01	2.23E-01	-3.00E-01	2.39E-01
	1435.80	66.00	2.23E-01		-7.61E-02	9.24E-02
CE-139	165.85	80.35	1.59E-01	1.59E-01	1.66E-01	7.74E-02
BA-140	162.64	6.70	2.89E+00	1.08E+00	-1.52E+00	1.40E+00
	304.84	4.50	4.92E+00		-1.60E-01	2.35E+00
	423.70	3.20	7.55E+00		6.18E-01	3.57E+00
	437.55	2.00	1.30E+01		9.02E+00	6.18E+00
	537.32	25.00	1.08E+00		1.52E-02	5.05E-01
LA-140	328.77	20.50	1.24E+00	3.39E-01	4.71E-01	5.93E-01
	487.03	45.50	5.71E-01		-4.74E-02	2.69E-01
	815.85	23.50	1.38E+00		-2.28E-01	6.39E-01
	1596.49	95.49	3.39E-01		6.00E-03	1.45E-01
CE-141	145.44	48.40	2.86E-01	2.86E-01	-9.84E-02	1.39E-01
CE-143	57.36	11.80	9.21E+01	5.36E+01	3.16E+00	4.50E+01
	293.26	42.00	5.36E+01		6.99E+01	2.59E+01
	664.55	5.20	3.98E+02		-1.46E+02	1.84E+02
CE-144	133.54	10.80	1.05E+00	1.05E+00	-1.00E-01	5.09E-01
PM-144	476.78	42.00	3.75E-01	1.65E-01	1.12E-01	1.77E-01
	618.01	98.60	1.65E-01		-1.24E-02	7.66E-02
	696.49	99.49	1.96E-01		-2.70E-02	9.17E-02
PM-145	36.85	21.70	2.76E-01	1.54E-01	-8.99E-02	1.35E-01
	37.36	39.70	1.54E-01		-3.58E-02	7.48E-02
	42.30	15.10	4.46E-01		2.22E-01	2.18E-01
	72.40	2.31	5.52E+00		1.07E+01	2.72E+00
+ PM-146	453.90	* 39.94	3.38E-01	3.38E-01	2.16E-01	1.59E-01
	735.90	14.01	1.41E+00		3.47E-01	6.57E-01
	747.13	13.10	1.36E+00		-5.26E-01	6.30E-01
ND-147	91.11	28.90	7.90E-01	7.90E-01	2.54E-01	3.88E-01
	531.02	13.10	2.09E+00		-2.14E-01	9.78E-01
PM-149	285.90	3.10	8.42E+01	8.42E+01	-1.69E+01	4.03E+01
EU-152	121.78	20.50	4.79E-01	4.79E-01	-1.42E-01	2.33E-01
	244.69	5.40	2.86E+00		-3.98E-01	1.39E+00
	344.27	19.13	6.58E-01		-6.15E-02	3.12E-01
	778.89	9.20	1.90E+00		-1.15E-01	8.76E-01
	964.01	10.40	2.41E+00		6.17E-02	1.12E+00
	1085.78	7.22	2.68E+00		-4.91E-01	1.20E+00
	1112.02	9.60	2.22E+00		1.73E-01	1.01E+00
	1407.95	14.94	1.44E+00		-6.11E-02	6.36E-01
	97.43	31.30	3.34E-01		3.34E-01	5.34E-02	1.63E-01
GD-153	103.18	22.20	4.64E-01		7.67E-02	2.27E-01
EU-154	123.07	40.50	2.43E-01	2.43E-01	-1.24E-01	1.18E-01
	723.30	19.70	1.09E+00		-4.11E-02	5.13E-01
	873.19	11.50	1.69E+00		1.40E-01	7.75E-01
	996.32	10.30	2.14E+00		1.72E-01	9.82E-01
	1004.76	17.90	1.20E+00		-3.44E-01	5.50E-01
EU-155	1274.45	35.50	6.00E-01	3.78E-01	-8.10E-02	2.68E-01
	86.50	30.90	3.78E-01		1.61E-01	1.86E-01
EU-156	105.30	20.70	4.91E-01	2.94E+00	7.05E-02	2.40E-01
	811.77	10.40	2.94E+00		-9.99E-02	1.36E+00

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-156	1153.47	7.20	5.28E+00	2.94E+00	1.14E+00	2.42E+00
	1230.71	8.90	4.73E+00		0.00E+00	2.18E+00
HO-166M	184.41	72.60	1.97E-01	1.97E-01	2.22E-01	9.59E-02
	280.45	29.60	4.28E-01		-7.54E-02	2.05E-01
	410.94	11.10	1.41E+00		8.76E-01	6.70E-01
	711.69	54.10	3.39E-01		1.04E-01	1.58E-01
TM-171	66.72	0.14	7.23E+01	7.23E+01	-4.50E+00	3.55E+01
HF-172	81.75	4.52	2.56E+00	9.24E-01	-1.93E+00	1.26E+00
	125.81	11.30	9.24E-01		1.73E-01	4.50E-01
LU-172	181.53	20.60	1.76E+00	8.88E-01	-3.35E-01	8.57E-01
	810.06	16.63	3.38E+00		1.07E+00	1.57E+00
	912.12	15.25	5.47E+00		8.35E+00	2.59E+00
	1093.66	62.50	8.88E-01		-6.30E-02	4.01E-01
LU-173	100.72	5.24	1.89E+00	6.43E-01	-8.37E-02	9.20E-01
	272.11	21.20	6.43E-01		5.19E-02	3.09E-01
HF-175	343.40	84.00	1.74E-01	1.74E-01	-1.54E-02	8.30E-02
LU-176	88.34	13.30	9.13E-01	1.31E-01	4.05E-01	4.48E-01
	201.83	86.00	1.47E-01		-4.67E-02	7.11E-02
	306.78	94.00	1.31E-01		-1.40E-01	6.25E-02
TA-182	67.75	41.20	2.59E-01	2.59E-01	-1.62E-02	1.27E-01
	1121.30	34.90	9.55E-01		1.19E+00	4.47E-01
	1189.05	16.23	1.84E+00		2.70E-01	8.49E-01
	1221.41	26.98	1.10E+00		4.72E-01	5.08E-01
	1231.02	11.44	2.51E+00		0.00E+00	1.15E+00
IR-192	308.46	29.68	4.59E-01	3.35E-01	-4.90E-01	2.19E-01
	468.07	48.10	3.35E-01		1.44E-02	1.58E-01
HG-203	279.19	77.30	1.93E-01	1.93E-01	-2.70E-02	9.25E-02
BI-207	569.67	97.72	1.63E-01	1.63E-01	-7.87E-02	7.63E-02
	1063.62	74.90	2.73E-01		-1.44E-02	1.24E-01
+ TL-208	583.14	* 30.22	7.08E-01	6.31E-01	1.60E+00	3.36E-01
	860.37	4.48	4.52E+00		2.00E+00	2.09E+00
	2614.66	* 35.85	6.31E-01		1.75E+00	2.60E-01
BI-210M	262.00	45.00	2.82E-01	2.82E-01	-9.61E-02	1.35E-01
	300.00	23.00	6.99E-01		1.36E-01	3.37E-01
PB-210	46.50	4.25	1.65E+00	1.65E+00	2.28E-02	8.04E-01
PB-211	404.84	2.90	5.48E+00	5.48E+00	1.81E+00	2.61E+00
	831.96	2.90	7.54E+00		-2.54E+00	3.51E+00
+ BI-212	727.17	* 11.80	1.48E+00	1.48E+00	2.12E+00	6.87E-01
	1620.62	2.75	5.94E+00		-1.11E+00	2.46E+00
+ PB-212	238.63	* 44.60	5.73E-01	5.73E-01	2.19E+00	2.81E-01
	300.09	3.41	4.71E+00		9.17E-01	2.27E+00
+ BI-214	609.31	* 46.30	7.52E-01	7.52E-01	1.42E+00	3.64E-01
	1120.29	* 15.10	2.43E+00		2.08E+00	1.15E+00
	1764.49	* 15.80	1.07E+00		1.85E+00	4.40E-01
	2204.22	4.98	3.17E+00		8.80E-02	1.23E+00
+ PB-214	295.21	* 19.19	1.07E+00	5.10E-01	1.18E+00	5.20E-01
	351.92	* 37.19	5.10E-01		1.62E+00	2.46E-01
RN-219	401.80	6.50	2.31E+00	2.31E+00	-4.84E-01	1.10E+00
RA-223	323.87	3.88	3.66E+00	3.66E+00	1.07E+00	1.75E+00
RA-224	240.98	3.95	5.89E+00	5.89E+00	2.53E+01	2.89E+00
RA-225	40.00	31.00	3.14E-01	3.14E-01	-2.87E-01	1.53E-01
RA-226	186.21	3.28	4.41E+00	4.41E+00	3.74E+00	2.15E+00
TH-227	50.10	8.40	8.76E-01	8.76E-01	2.75E-01	4.28E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TH-227	236.00	11.50	1.87E+00	8.76E-01	5.29E+00	9.16E-01
	256.20	6.30	2.04E+00		-4.36E-01	9.82E-01
+ AC-228	338.32 *	11.40	1.76E+00	8.59E-01	2.13E+00	8.54E-01
	911.07 *	27.70	8.59E-01		1.62E+00	4.00E-01
	969.11 *	16.60	1.57E+00		2.28E+00	7.31E-01
TH-230	48.44	16.90	4.25E-01	4.25E-01	1.23E-01	2.08E-01
	62.85	4.60	2.08E+00		1.55E+00	1.02E+00
	67.67	0.37	2.72E+01		-1.70E+00	1.33E+01
PA-231	283.67	1.60	7.80E+00	5.90E+00	1.55E+00	3.73E+00
	302.67	2.30	5.90E+00		1.31E+00	2.83E+00
TH-231	25.64	14.70	3.80E-01	3.80E-01	-2.21E-01	1.85E-01
	84.21	6.40	1.72E+00		-3.39E-01	8.44E-01
PA-233	311.98	38.60	4.57E-01	4.57E-01	2.71E-01	2.19E-01
PA-234	131.20	20.40	5.30E-01	5.30E-01	5.89E-03	2.58E-01
	733.99	8.80	2.10E+00		-1.37E-02	9.73E-01
	946.00	12.00	1.72E+00		0.00E+00	7.91E-01
PA-234M	1001.03	0.92	2.60E+01	2.60E+01	1.18E+01	1.20E+01
+ TH-234	63.29 *	3.80	2.72E+00	2.72E+00	1.58E+00	1.33E+00
U-235	143.76	10.50	1.09E+00	1.09E+00	2.71E-01	5.30E-01
	163.35	4.70	2.47E+00		-9.57E-02	1.20E+00
	205.31	4.70	2.85E+00		1.42E+00	1.38E+00
NP-237	86.50	12.60	9.24E-01	9.24E-01	3.93E-01	4.53E-01
NP-239	106.10	22.70	7.74E+00	7.74E+00	1.11E+00	3.78E+00
	228.18	10.70	2.04E+01		-5.45E+00	9.84E+00
	277.60	14.10	1.58E+01		5.54E-01	7.60E+00
AM-241	59.54	35.90	2.50E-01	2.50E-01	-4.37E-03	1.22E-01
AM-243	74.67	66.00	2.07E-01	2.07E-01	8.29E-01	1.02E-01
CM-243	209.75	3.29	4.09E+00	9.25E-01	2.67E+00	1.98E+00
	228.14	10.60	1.21E+00		-3.19E-01	5.82E-01
	277.60	14.00	9.25E-01		3.23E-02	4.44E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

: 00603

Analysis Report for 1606041-09
CP-5029 02-05

No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP-5029 02-05

Elapsed Live time: 3600
 Elapsed Real Time: 3602

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	22	82
17:	77	67	77	54	58	60	54	61
25:	57	47	61	41	52	62	61	51
33:	63	54	43	60	53	62	59	52
41:	64	55	60	67	69	95	76	54
49:	63	53	60	72	82	57	62	87
57:	76	89	75	92	88	118	125	124
65:	92	75	92	99	94	98	111	118
73:	146	193	245	271	222	133	97	72
81:	76	85	91	109	87	128	122	110
89:	88	121	114	123	126	73	55	49
97:	70	67	63	59	57	67	62	50
105:	74	60	61	55	69	53	62	57
113:	56	49	49	44	53	46	44	43
121:	38	62	55	51	35	47	52	61
129:	53	53	54	48	59	41	56	58
137:	53	44	66	53	52	44	65	38
145:	45	56	40	47	49	41	47	64
153:	50	46	56	33	49	34	34	40
161:	41	48	45	50	39	48	43	46
169:	58	39	28	36	34	39	50	40
177:	35	38	48	41	38	37	37	56
185:	104	88	50	37	36	48	41	55
193:	44	33	37	31	40	39	41	33
201:	35	38	35	32	31	39	37	53
209:	55	36	27	31	37	30	34	25
217:	26	27	42	32	33	35	32	17
225:	23	39	28	34	35	20	40	26
233:	34	33	25	43	145	195	196	66
241:	69	54	36	29	28	27	21	20
249:	27	34	18	18	24	30	26	31
257:	25	20	27	19	22	24	32	21
265:	15	25	26	17	31	33	26	17
273:	17	21	28	24	33	20	17	15
281:	17	18	17	19	25	22	21	15
289:	17	24	30	16	33	58	58	53
297:	20	21	21	33	25	20	9	21
305:	15	15	11	16	21	15	16	15
313:	29	26	26	12	12	16	23	16
321:	16	18	20	13	20	24	24	20
329:	25	17	29	17	19	15	21	14
337:	39	47	31	19	18	14	16	9
345:	10	11	7	15	17	54	97	86
353:	39	15	22	15	14	8	18	13
361:	26	15	13	8	11	22	14	15

369: 10 12 16 17 16 18 11 18

Sample Title: CP-5029 02-05

Channel	11	15	21	18	12	14	12	13
377:	11	15	21	18	12	14	12	13
385:	14	13	12	14	12	15	18	15
393:	13	11	14	13	15	9	15	13
401:	16	17	13	18	11	19	11	23
409:	20	13	9	15	9	13	9	5
417:	12	18	10	10	7	9	14	14
425:	9	14	16	15	10	6	8	11
433:	20	14	12	17	15	6	10	9
441:	10	7	9	10	8	14	7	12
449:	12	8	17	6	14	22	11	6
457:	7	8	6	14	11	18	20	10
465:	9	10	7	14	9	11	10	9
473:	6	10	13	11	11	10	13	12
481:	9	9	6	14	9	13	8	8
489:	13	10	10	12	7	12	11	14
497:	14	5	10	3	10	6	8	10
505:	11	7	10	14	20	45	28	21
513:	10	9	12	8	14	7	5	9
521:	7	10	11	9	7	7	7	6
529:	5	6	12	9	13	5	7	12
537:	6	9	10	6	11	6	12	7
545:	8	9	5	9	3	8	7	6
553:	8	8	7	6	10	10	9	10
561:	6	13	10	12	6	7	7	8
569:	7	14	11	7	3	10	9	7
577:	11	9	7	8	20	36	57	36
585:	10	4	6	2	8	8	4	5
593:	8	6	4	9	7	7	9	17
601:	9	11	4	3	8	6	29	50
609:	71	49	15	8	9	6	3	7
617:	4	7	8	10	8	6	8	6
625:	5	4	4	5	10	7	10	6
633:	7	8	4	9	8	9	6	4
641:	8	10	7	7	3	7	11	7
649:	2	4	11	4	8	10	7	4
657:	6	5	5	8	7	4	5	3
665:	5	8	3	6	11	5	8	13
673:	5	8	7	8	4	7	6	7
681:	5	5	10	12	8	9	11	9
689:	10	7	7	4	12	7	6	10
697:	5	8	11	5	11	8	6	5
705:	7	8	12	6	7	9	4	2
713:	6	5	8	7	4	2	6	10
721:	2	5	7	10	10	12	18	11
729:	7	3	4	9	5	3	9	5
737:	10	8	11	5	3	7	12	4
745:	5	7	5	4	5	0	8	9
753:	7	9	6	11	2	4	7	6
761:	12	5	9	7	2	5	12	12
769:	8	6	5	5	12	5	6	4
777:	2	5	6	4	5	7	4	7
785:	5	1	7	5	6	2	7	4
793:	2	10	13	11	4	3	10	4

801: 6 4 6 6 5 9 4 6

Sample Title: CP-5029 02-05

Channel	1	2	3	4	5	6	7	8	9
809:	8	3	8	8	7	5	3	6	
817:	5	5	2	7	6	6	6	6	
825:	8	5	7	3	8	7	7	7	
833:	6	4	11	9	8	10	12	4	
841:	5	3	3	3	4	7	4	4	
849:	2	5	11	5	2	7	1	6	
857:	5	6	6	7	5	3	4	7	
865:	4	5	3	8	5	2	3	6	
873:	8	3	5	4	7	3	5	3	
881:	4	4	3	0	5	4	6	7	
889:	8	4	7	7	1	9	7	4	
897:	4	6	5	8	6	4	5	3	
905:	2	4	4	3	7	23	41	14	
913:	7	2	4	4	1	3	5	6	
921:	2	1	3	2	6	4	6	2	
929:	5	1	6	4	2	7	6	6	
937:	3	7	8	3	3	1	5	3	
945:	4	6	8	3	10	2	3	6	
953:	5	5	3	6	4	6	5	5	
961:	6	2	5	8	8	6	7	14	
969:	22	7	4	5	3	0	3	2	
977:	1	10	3	1	4	5	3	5	
985:	0	4	2	3	9	0	4	1	
993:	1	7	2	6	6	6	8	6	
1001:	3	5	6	5	6	4	1	4	
1009:	6	4	4	3	6	6	4	5	
1017:	8	1	4	5	2	2	3	2	
1025:	0	7	7	3	2	5	2	6	
1033:	5	1	5	7	7	5	3	2	
1041:	3	2	4	4	4	2	1	6	
1049:	4	3	5	5	5	6	5	4	
1057:	7	3	2	3	2	2	4	7	
1065:	4	5	3	0	3	3	4	2	
1073:	3	2	6	5	3	4	6	8	
1081:	4	3	6	2	4	3	2	3	
1089:	0	4	2	3	1	4	5	3	
1097:	8	4	1	2	3	3	4	5	
1105:	5	2	8	4	5	5	1	4	
1113:	5	4	4	0	2	5	18	16	
1121:	17	4	5	3	3	2	3	1	
1129:	4	1	3	5	6	6	4	8	
1137:	3	4	5	2	3	1	1	1	
1145:	4	2	3	5	1	5	3	4	
1153:	6	8	7	2	4	4	5	3	
1161:	8	4	3	2	7	3	2	2	
1169:	5	4	7	2	7	3	4	4	
1177:	1	5	4	4	6	4	7	3	
1185:	9	7	6	6	6	4	1	8	
1193:	4	5	4	7	4	4	4	2	
1201:	8	6	6	6	10	7	5	6	
1209:	6	2	2	4	3	3	5	3	
1217:	3	2	6	6	9	6	4	3	
1225:	9	3	4	4	3	9	3	7	

1233: 5 3 6 6 5 10 14 4

Sample Title: CP-5029 02-05

Channel	1	2	3	4	5	6	7	8
1241:	4	8	3	3	5	3	6	0
1249:	5	6	5	5	4	4	3	2
1257:	7	4	4	3	1	5	3	4
1265:	5	4	5	1	1	1	1	5
1273:	4	4	3	1	0	5	2	3
1281:	6	5	2	4	2	0	1	2
1289:	4	5	4	0	2	4	4	3
1297:	4	1	1	0	5	1	3	3
1305:	7	4	5	5	3	4	2	2
1313:	4	2	3	0	1	3	1	2
1321:	3	6	5	3	3	1	5	2
1329:	1	1	2	1	2	1	2	3
1337:	3	0	4	2	2	3	3	3
1345:	2	4	4	0	4	1	2	1
1353:	5	2	4	3	4	2	1	2
1361:	2	5	2	5	2	0	3	2
1369:	2	6	1	2	0	1	3	2
1377:	5	1	4	3	3	1	1	2
1385:	1	1	3	2	0	1	4	2
1393:	3	3	2	1	2	1	1	1
1401:	1	3	3	1	1	1	6	5
1409:	1	2	1	2	3	3	1	1
1417:	1	3	0	0	0	0	1	2
1425:	2	1	2	0	1	3	1	1
1433:	0	0	2	2	1	0	1	1
1441:	1	1	2	1	0	1	2	1
1449:	2	1	2	0	2	2	2	1
1457:	1	13	33	83	81	44	12	2
1465:	2	1	1	1	1	1	3	0
1473:	0	2	3	0	3	2	2	3
1481:	1	0	2	0	0	2	0	0
1489:	1	0	0	0	0	1	1	1
1497:	0	2	1	0	3	1	0	3
1505:	0	0	1	0	3	0	2	0
1513:	1	1	1	0	3	0	2	0
1521:	1	0	0	0	1	1	0	2
1529:	3	0	1	0	0	2	1	2
1537:	2	2	2	0	1	0	3	1
1545:	1	1	2	0	2	0	1	1
1553:	3	2	0	1	0	2	0	0
1561:	4	1	1	1	0	3	0	2
1569:	0	1	1	1	0	1	0	2
1577:	0	1	2	1	0	1	2	1
1585:	1	1	1	2	5	4	5	9
1593:	5	2	1	0	2	0	2	0
1601:	0	0	0	2	2	2	3	2
1609:	0	0	2	0	0	0	1	2
1617:	2	0	2	0	1	2	0	1
1625:	0	1	1	2	2	1	2	0
1633:	1	1	2	0	0	2	1	0
1641:	0	2	1	0	0	1	0	3
1649:	1	1	0	2	0	2	0	0
1657:	1	1	0	1	3	3	1	1

1665: 0 1 2 0 0 0 3 0

Sample Title: CP-5029 02-05

Channel	1	2	3	4	5	6	7	8	9
1673:	2	1	1	2	1	1	1	1	1
1681:	0	0	1	1	2	1	2	1	1
1689:	1	2	0	1	0	0	0	0	1
1697:	2	0	2	0	1	0	2	1	1
1705:	0	1	1	0	0	0	0	0	1
1713:	0	0	0	2	0	1	1	1	1
1721:	0	1	1	0	1	2	1	0	0
1729:	4	5	0	0	0	1	0	0	0
1737:	3	0	1	0	0	0	1	1	1
1745:	1	1	0	1	1	0	1	2	0
1753:	1	0	0	2	0	0	1	0	0
1761:	0	3	5	8	9	5	0	1	1
1769:	0	1	0	0	0	1	1	3	0
1777:	0	0	2	0	0	1	1	1	0
1785:	0	1	0	0	0	1	3	2	0
1793:	0	0	1	0	2	1	1	0	0
1801:	0	0	1	1	0	1	0	1	0
1809:	0	0	0	1	2	0	1	1	1
1817:	0	1	1	0	0	0	2	0	0
1825:	2	1	0	1	2	1	1	0	0
1833:	1	0	0	0	0	1	0	2	1
1841:	1	1	1	1	1	2	4	1	1
1849:	0	0	0	1	1	0	0	1	1
1857:	0	1	2	0	1	1	0	3	0
1865:	0	2	0	0	2	0	1	1	1
1873:	0	1	2	1	1	0	1	0	0
1881:	1	1	3	0	0	1	2	1	1
1889:	0	1	0	3	1	1	2	2	0
1897:	0	0	0	0	1	1	0	0	0
1905:	2	0	0	0	0	2	1	1	1
1913:	1	1	2	1	0	1	0	1	1
1921:	2	0	1	1	0	1	0	2	0
1929:	0	0	0	0	0	0	0	0	0
1937:	0	1	1	0	0	1	1	1	1
1945:	0	1	3	1	1	0	1	1	1
1953:	0	0	2	1	3	3	2	4	0
1961:	0	0	0	0	0	0	0	0	0
1969:	0	0	0	1	1	2	0	0	0
1977:	0	0	0	0	0	0	1	1	0
1985:	1	2	0	0	0	2	0	0	0
1993:	1	2	0	1	0	0	1	0	0
2001:	2	1	2	1	1	0	1	1	1
2009:	2	0	0	1	1	0	1	1	1
2017:	0	2	0	2	0	0	2	0	0
2025:	0	0	0	1	0	0	1	0	0
2033:	0	0	0	0	0	0	0	1	1
2041:	0	1	1	1	0	2	1	0	1
2049:	1	1	2	0	0	0	1	0	0
2057:	1	0	0	0	0	0	1	2	0
2065:	1	0	3	1	1	0	1	0	1
2073:	0	1	0	0	0	0	0	1	1
2081:	0	0	0	0	0	1	1	2	0
2089:	0	1	0	1	1	1	0	1	1

2097: 1 0 1 1 0 2 3 2

Sample Title: CP-5029 02-05

Channel	1	2	3	4	5	6	7	8
2105:	0	2	0	0	0	0	1	0
2113:	0	0	1	0	0	0	0	1
2121:	0	0	2	0	1	2	0	0
2129:	1	1	0	2	0	0	1	1
2137:	0	1	0	1	0	0	1	0
2145:	0	1	0	0	2	0	1	1
2153:	0	0	0	0	0	0	1	1
2161:	2	0	0	0	0	0	0	0
2169:	0	0	0	1	1	0	1	0
2177:	1	0	0	0	0	2	1	0
2185:	0	1	2	0	1	0	2	1
2193:	0	1	0	2	1	0	0	0
2201:	1	0	0	1	1	1	0	0
2209:	0	0	0	1	0	0	0	0
2217:	0	0	2	1	0	1	1	0
2225:	0	3	0	1	1	0	1	0
2233:	1	1	0	0	0	0	0	1
2241:	0	2	0	1	0	1	1	0
2249:	1	1	1	1	2	0	0	0
2257:	0	0	0	0	0	0	1	0
2265:	0	3	1	0	0	0	0	5
2273:	0	0	0	0	0	0	0	0
2281:	0	2	2	0	0	0	0	0
2289:	0	2	2	1	1	2	0	0
2297:	1	0	0	1	1	2	0	1
2305:	0	1	0	1	1	0	0	0
2313:	2	1	0	0	0	1	1	1
2321:	0	0	2	0	0	0	1	0
2329:	1	1	0	0	1	0	0	0
2337:	1	1	1	0	1	2	0	3
2345:	0	0	1	1	0	1	1	2
2353:	1	3	1	1	2	2	0	0
2361:	0	0	0	2	0	2	1	0
2369:	1	1	0	1	0	1	1	0
2377:	1	0	1	3	0	0	0	0
2385:	1	0	1	0	0	1	0	0
2393:	0	1	1	0	1	1	0	0
2401:	1	2	0	1	0	0	0	0
2409:	1	0	1	0	0	0	1	1
2417:	1	0	0	0	2	1	1	1
2425:	0	0	0	2	0	0	1	0
2433:	0	0	1	0	0	1	0	1
2441:	0	0	2	1	0	1	0	3
2449:	0	0	0	1	0	0	2	1
2457:	3	0	0	0	1	0	0	1
2465:	1	0	1	0	0	1	2	1
2473:	2	1	0	1	0	0	0	1
2481:	0	0	0	0	0	0	0	1
2489:	1	0	1	1	0	0	1	1
2497:	1	1	0	1	0	1	0	0
2505:	0	0	1	0	0	1	0	0
2513:	0	0	0	0	0	0	0	3
2521:	0	0	0	0	0	0	0	0

2529: 0 0 0 0 0 0 0 1 0

Sample Title: CP-5029 02-05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	1	1	0	0	1	0
2545:	0	0	0	1	0	0	1	0
2553:	0	0	1	1	0	0	0	0
2561:	0	0	0	0	0	0	1	0
2569:	0	0	0	0	0	1	0	0
2577:	1	0	0	0	0	0	0	0
2585:	1	0	2	1	1	0	0	0
2593:	0	0	0	0	0	0	0	0
2601:	0	0	0	1	1	0	0	1
2609:	1	0	1	2	9	8	14	11
2617:	2	0	1	0	0	0	0	0
2625:	0	0	0	1	0	1	0	0
2633:	0	0	0	0	0	0	0	0
2641:	1	0	1	0	0	1	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	1	0	0	0	0	0	0
2665:	0	0	0	1	1	0	0	0
2673:	0	0	0	0	0	0	0	0
2681:	0	0	0	0	0	0	1	1
2689:	1	0	0	0	0	0	3	0
2697:	0	2	0	0	1	0	1	0
2705:	0	1	0	1	3	0	0	0
2713:	0	1	0	0	0	0	0	0
2721:	0	0	0	0	0	1	1	0
2729:	1	0	0	1	1	0	1	0
2737:	0	0	1	0	0	0	0	0
2745:	0	1	0	0	0	0	0	0
2753:	0	1	0	0	0	0	0	0
2761:	0	2	0	0	1	1	0	1
2769:	0	0	0	0	0	0	0	1
2777:	0	0	0	0	0	0	1	0
2785:	0	1	0	0	0	1	0	0
2793:	0	1	0	0	1	0	0	0
2801:	0	0	0	0	0	1	0	0
2809:	0	0	0	1	1	0	0	0
2817:	0	0	0	0	0	0	0	0
2825:	2	0	0	0	1	0	0	1
2833:	1	0	0	0	0	0	0	1
2841:	1	0	0	0	1	1	0	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	2	0	0	0	1
2873:	0	0	1	0	0	1	2	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	1	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	0	0	0	1
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	1	1	0
2953:	0	0	0	0	0	1	1	0

2961: 0 0 0 0 0 0 0 1 0

Sample Title: CP-5029 02-05

Channel									
2969:	0	0	0	0	0	0	0	0	1
2977:	1	0	0	0	0	0	0	0	0
2985:	0	1	1	1	1	0	0	0	0
2993:	1	0	0	2	0	0	0	0	0
3001:	0	0	0	0	0	0	0	0	0
3009:	0	1	0	0	0	0	1	0	0
3017:	1	0	0	0	0	1	0	0	0
3025:	1	1	0	0	0	0	0	0	0
3033:	1	0	0	1	0	0	0	0	0
3041:	1	0	0	0	0	0	1	1	1
3049:	0	0	0	1	0	0	0	0	0
3057:	0	0	0	0	0	0	1	0	0
3065:	0	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	0	0	0
3081:	0	1	0	0	0	0	0	0	0
3089:	1	0	1	0	0	1	0	0	0
3097:	0	0	1	0	0	0	0	0	0
3105:	0	0	0	0	1	1	0	0	0
3113:	0	0	0	1	0	0	0	0	0
3121:	0	0	0	1	0	0	1	1	1
3129:	0	0	1	0	0	0	0	0	1
3137:	0	0	2	0	0	0	0	0	0
3145:	0	0	0	0	0	0	0	0	1
3153:	0	1	0	0	0	0	0	0	0
3161:	1	0	0	0	0	0	1	0	0
3169:	0	0	0	0	0	1	0	0	0
3177:	2	0	0	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	1	0	0	1
3201:	0	0	0	0	0	0	0	0	0
3209:	1	0	0	0	0	1	0	0	0
3217:	1	0	1	0	0	0	0	0	0
3225:	0	1	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	1	0	0	0
3257:	0	0	0	0	1	0	0	0	0
3265:	0	0	0	0	0	0	1	0	0
3273:	0	0	0	0	0	0	0	0	0
3281:	0	1	0	0	1	0	0	0	0
3289:	0	0	0	0	1	0	0	0	0
3297:	0	0	0	0	0	0	0	0	0
3305:	0	1	0	0	1	0	1	0	0
3313:	0	0	0	0	0	0	0	0	0
3321:	0	0	1	0	0	0	0	0	0
3329:	0	0	0	0	2	1	0	0	0
3337:	0	0	0	0	0	0	0	0	1
3345:	0	0	0	0	0	0	0	0	0
3353:	0	0	0	1	0	2	0	0	0
3361:	0	0	0	0	0	0	0	0	0
3369:	0	1	0	0	1	0	0	0	0
3377:	0	0	1	1	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5029 02-05

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	0	1	0	0	0
3409:	0	1	0	0	0	0	1	0	0
3417:	0	0	0	0	1	0	0	0	0
3425:	0	0	0	0	0	0	0	0	0
3433:	0	0	1	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0	1
3449:	2	0	0	0	0	0	0	0	0
3457:	0	1	0	0	0	0	0	0	0
3465:	1	0	0	1	0	0	0	0	1
3473:	0	0	0	0	0	0	0	0	0
3481:	1	0	0	0	0	0	0	0	0
3489:	0	0	1	1	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0	1
3513:	0	1	0	0	0	0	0	0	0
3521:	0	0	0	0	1	0	0	0	0
3529:	1	1	0	0	0	0	0	0	0
3537:	1	0	1	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	1	0	0	0
3561:	0	0	0	0	1	0	1	0	0
3569:	0	0	0	0	0	0	0	0	0
3577:	0	0	1	0	0	1	0	0	0
3585:	0	0	0	0	0	1	0	0	0
3593:	0	0	0	0	0	0	0	0	0
3601:	0	0	1	0	0	0	0	0	0
3609:	0	0	0	0	0	1	0	0	0
3617:	0	0	0	0	1	0	0	0	0
3625:	0	0	1	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0	0
3649:	1	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0	0
3665:	0	1	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	1	0	0	0
3697:	0	0	0	0	1	0	0	0	1
3705:	1	0	0	0	0	2	0	0	0
3713:	0	0	0	0	1	0	0	0	0
3721:	0	0	0	0	0	1	0	0	0
3729:	0	0	0	1	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0	0
3745:	0	0	1	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0	1
3761:	0	0	0	0	0	0	1	0	0
3769:	1	1	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0	0
3801:	1	0	0	0	0	0	0	0	0
3809:	0	0	1	0	1	0	0	0	0
3817:	0	0	0	0	0	0	0	0	0

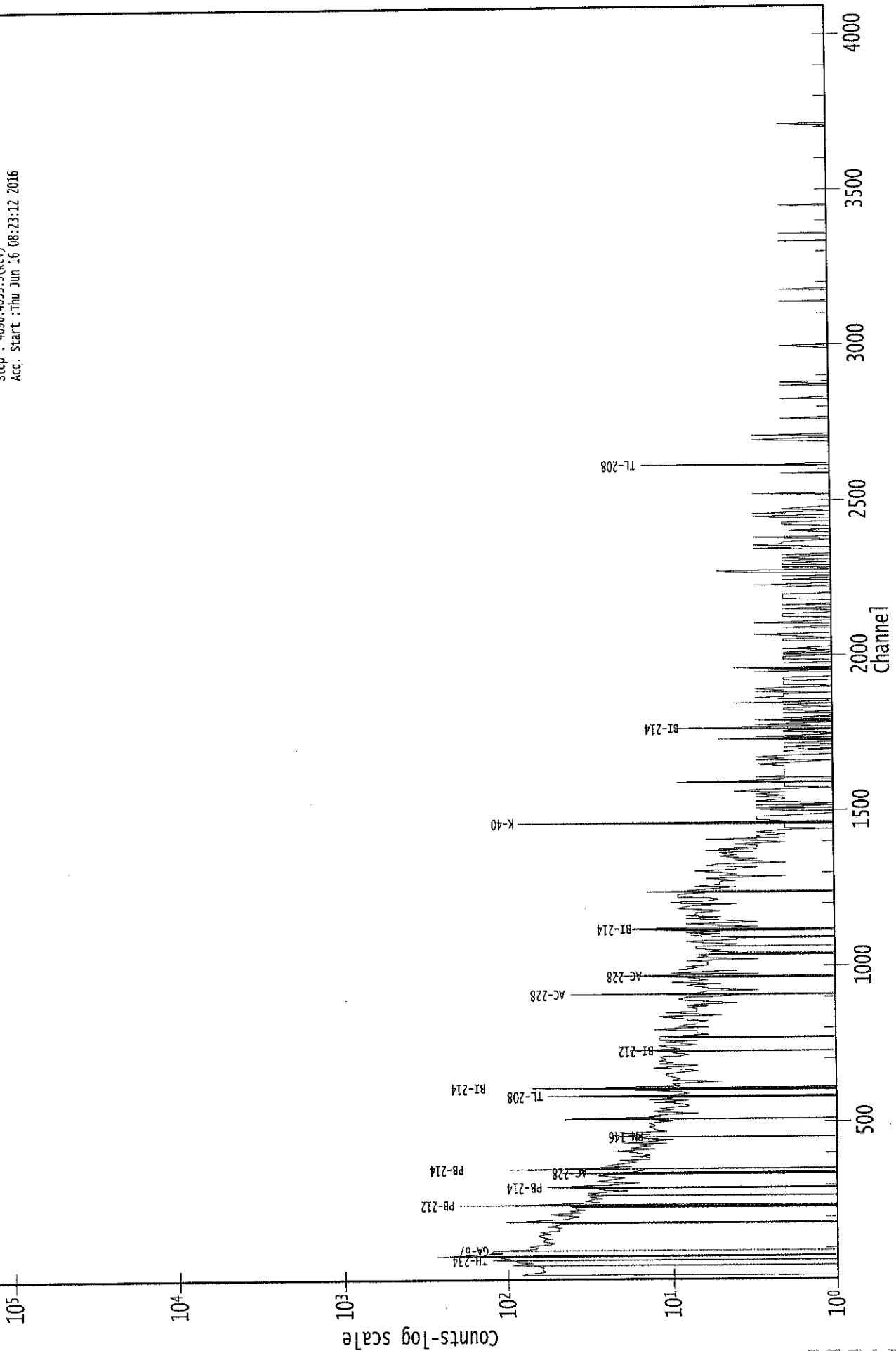
3825: 0 0 0 0 0 0 1 1

Sample Title: CP-5029 02-05

Channel								
3833:	0	0	0	0	0	1	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	1	0	1	0
3857:	0	0	0	1	0	0	0	0
3865:	0	0	0	0	0	1	0	0
3873:	0	0	0	0	1	0	0	0
3881:	0	0	0	0	0	1	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	1	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	1	0	0	0	0	0
3945:	0	0	0	1	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	1	0	0
3985:	0	0	0	0	0	0	0	0
3993:	1	0	0	0	0	0	1	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	1	0	0
4049:	0	0	0	0	1	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	1	0	1	0
4073:	0	1	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000038979.CNF

Live Time :3600.000 sec
Real Time :3601.950 sec
Start : 1: 1.8(kev)
Stop : 4096.4093.9(kev)
Acq. Start :Thu Jun 16 08:23:12 2016



ROI Type: 1

Analysis Report for 1606041-10
CP-5029 05-10

Handwritten signature

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-10
Sample Description : CP-5029 05-10
Sample Type : SOIL

Sample Size : 3.500E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 4:35:34PM
Acquisition Started : 6/16/2016 8:29:46AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.2 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 19 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 38980

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606041-10
CP-5029 05-10

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 9:29:50AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	63.74	64.08	0.0000	0.00
2	76.66	77.00	0.0000	0.00
3	87.66	88.00	0.0000	0.00
4	93.28	93.62	0.0000	0.00
5	110.50	110.83	0.0000	0.00
6	129.71	130.03	0.0000	0.00
7	137.91	138.23	0.0000	0.00
8	154.54	154.85	0.0000	0.00
9	186.42	186.72	0.0000	0.00
10	209.77	210.07	0.0000	0.00
11	239.03	239.32	0.0000	0.00
12	242.39	242.68	0.0000	0.00
13	258.74	259.02	0.0000	0.00
14	295.82	296.09	0.0000	0.00
15	300.61	300.87	0.0000	0.00
16	339.01	339.26	0.0000	0.00
17	352.54	352.79	0.0000	0.00
18	372.18	372.42	0.0000	0.00
19	395.28	395.51	0.0000	0.00
20	463.30	463.52	0.0000	0.00
21	511.47	511.67	0.0000	0.00
22	583.81	583.98	0.0000	0.00
23	609.88	610.04	0.0000	0.00
24	639.15	639.30	0.0000	0.00
25	727.64	727.76	0.0000	0.00
26	768.73	768.84	0.0000	0.00
27	786.49	786.58	0.0000	0.00
28	861.15	861.23	0.0000	0.00
29	912.00	912.05	0.0000	0.00
30	933.77	933.82	0.0000	0.00
31	965.38	965.42	0.0000	0.00
32	969.99	970.02	0.0000	0.00
33	977.17	977.20	0.0000	0.00
34	1054.07	1054.07	0.0000	0.00
35	1120.99	1120.97	0.0000	0.00
36	1153.29	1153.26	0.0000	0.00
37	1201.45	1201.40	0.0000	0.00
38	1239.88	1239.82	0.0000	0.00
39	1247.61	1247.54	0.0000	0.00
40	1288.18	1288.10	0.0000	0.00
41	1371.11	1371.00	0.0000	0.00
42	1378.42	1378.31	0.0000	0.00

Analysis Report for 1606041-10
CP-5029 05-10

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1415.96	1415.84	0.0000	0.00
44	1461.79	1461.65	0.0000	0.00
45	1544.32	1544.15	0.0000	0.00
46	1621.61	1621.41	0.0000	0.00
47	1631.07	1630.86	0.0000	0.00
48	1661.43	1661.21	0.0000	0.00
49	1704.03	1703.80	0.0000	0.00
50	1730.45	1730.20	0.0000	0.00
51	1765.71	1765.45	0.0000	0.00
52	1849.01	1848.72	0.0000	0.00
53	2000.18	1999.84	0.0000	0.00
54	2109.51	2109.12	0.0000	0.00
55	2183.25	2182.83	0.0000	0.00
56	2192.75	2192.33	0.0000	0.00
57	2208.14	2207.72	0.0000	0.00
58	2362.42	2361.94	0.0000	0.00
59	2615.15	2614.57	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606041-10
CP-5029 05-10

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 9:29:50AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	63.74	61 -	67	64.08	2.11E+02	96.93	1.56E+03	1.15
2	76.66	72 -	81	77.00	1.11E+03	140.12	2.17E+03	2.89
3	87.66	86 -	90	88.00	6.87E+01	79.20	1.34E+03	0.93
4	93.28	91 -	99	93.62	2.72E+02	115.25	1.77E+03	2.06
5	110.50	109 -	113	110.83	6.08E+01	54.56	6.10E+02	2.24
6	129.71	126 -	134	130.03	1.60E+02	83.58	9.77E+02	4.49
7	137.91	136 -	141	138.23	5.05E+01	58.69	6.49E+02	3.08
8	154.54	152 -	158	154.85	7.35E+01	66.46	7.57E+02	1.52
9	186.42	183 -	190	186.72	2.45E+02	76.29	8.04E+02	1.44
10	209.77	207 -	212	210.07	6.94E+01	52.53	4.89E+02	1.36
M 11	239.03	235 -	247	239.32	7.71E+02	68.28	3.69E+02	1.70
m 12	242.39	235 -	247	242.68	2.33E+02	66.63	3.89E+02	1.85
13	258.74	255 -	262	259.02	5.44E+01	52.92	4.27E+02	3.01
M 14	295.82	292 -	304	296.09	3.35E+02	47.29	2.32E+02	1.73
m 15	300.61	292 -	304	300.87	7.18E+01	36.73	2.20E+02	1.74
16	339.01	335 -	342	339.26	1.15E+02	55.21	4.31E+02	1.38
17	352.54	349 -	357	352.79	5.51E+02	68.33	3.82E+02	1.65
18	372.18	370 -	375	372.42	3.93E+01	29.10	1.33E+02	3.29
19	395.28	393 -	399	395.51	3.84E+01	35.42	1.89E+02	2.03
20	463.30	460 -	466	463.52	4.77E+01	31.02	1.41E+02	2.45
21	511.47	506 -	519	511.67	1.78E+02	61.22	3.42E+02	2.66
22	583.81	579 -	588	583.98	2.50E+02	50.40	2.20E+02	1.42
23	609.88	605 -	613	610.04	3.95E+02	52.75	1.86E+02	1.44
24	639.15	637 -	642	639.30	1.98E+01	22.83	9.03E+01	3.46
25	727.64	723 -	731	727.76	4.73E+01	31.73	1.25E+02	2.16
26	768.73	766 -	771	768.84	2.81E+01	24.86	9.98E+01	1.86
27	786.49	783 -	791	786.58	2.87E+01	27.30	9.26E+01	3.09
28	861.15	857 -	866	861.23	3.06E+01	32.98	1.33E+02	2.21
29	912.00	907 -	916	912.05	1.70E+02	42.43	1.59E+02	1.67
30	933.77	929 -	939	933.82	4.05E+01	30.07	9.90E+01	3.62
M 31	965.38	962 -	981	965.42	5.18E+01	23.40	5.47E+01	2.40
m 32	969.99	962 -	981	970.02	8.12E+01	27.42	5.24E+01	2.41
m 33	977.17	962 -	981	977.20	1.35E+01	19.07	4.97E+01	2.19
34	1054.07	1051 -	1059	1054.07	2.23E+01	27.16	1.01E+02	1.16
35	1120.99	1117 -	1124	1120.97	9.00E+01	27.28	6.40E+01	1.56
36	1153.29	1146 -	1160	1153.26	4.81E+01	40.01	1.42E+02	10.71
37	1201.45	1199 -	1204	1201.40	1.78E+01	19.62	6.24E+01	3.32
38	1239.88	1236 -	1243	1239.82	3.46E+01	23.75	6.88E+01	1.60
39	1247.61	1245 -	1251	1247.54	1.69E+01	15.56	3.22E+01	2.20
40	1288.18	1283 -	1293	1288.10	2.27E+01	24.76	6.46E+01	6.77

Analysis Report for 1606041-10
CP-5029 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1371.11	1368 -	1374	1371.00	8.63E+00	10.44	1.27E+01	1.45
42	1378.42	1375 -	1382	1378.31	2.85E+01	16.12	2.51E+01	2.04
43	1415.96	1413 -	1419	1415.84	1.71E+01	11.17	9.82E+00	4.25
44	1461.79	1456 -	1467	1461.65	6.16E+02	54.26	6.00E+01	2.19
45	1544.32	1540 -	1550	1544.15	1.94E+01	14.10	1.52E+01	2.55
46	1621.61	1615 -	1627	1621.41	1.95E+01	15.58	1.89E+01	3.27
47	1631.07	1628 -	1635	1630.86	9.33E+00	11.66	1.73E+01	1.69
48	1661.43	1657 -	1665	1661.21	1.51E+01	12.20	1.37E+01	1.07
49	1704.03	1701 -	1706	1703.80	6.90E+00	7.62	6.20E+00	1.21
50	1730.45	1727 -	1734	1730.20	1.44E+01	11.49	1.31E+01	1.74
51	1765.71	1761 -	1771	1765.45	8.16E+01	21.93	1.68E+01	2.98
52	1849.01	1843 -	1853	1848.72	1.38E+01	14.73	2.03E+01	4.94
53	2000.18	1995 -	2003	1999.84	7.70E+00	7.76	4.60E+00	6.35
54	2109.51	2106 -	2114	2109.12	1.11E+01	12.21	1.18E+01	2.81
55	2183.25	2179 -	2185	2182.83	6.00E+00	4.90	0.00E+00	1.98
56	2192.75	2188 -	2194	2192.33	6.00E+00	4.90	0.00E+00	1.92
57	2208.14	2198 -	2216	2207.72	2.89E+01	20.95	2.63E+01	7.96
58	2362.42	2359 -	2364	2361.94	5.50E+00	6.08	3.00E+00	2.37
59	2615.15	2611 -	2618	2614.57	8.60E+01	18.55	0.00E+00	2.58

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 9:29:50AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	63.74	61 -	67	2.11E+02	96.93	1.56E+03	7.60E+01
2	76.66	72 -	81	1.11E+03	140.12	2.17E+03	1.01E+02
3	87.66	86 -	90	6.87E+01	79.20	1.34E+03	6.37E+01
4	93.28	91 -	99	2.72E+02	115.25	1.77E+03	9.08E+01
5	110.50	109 -	113	6.08E+01	54.56	6.10E+02	4.30E+01
6	129.71	126 -	134	1.60E+02	83.58	9.77E+02	6.55E+01
7	137.91	136 -	141	5.05E+01	58.69	6.49E+02	4.68E+01
8	154.54	152 -	158	7.35E+01	66.46	7.57E+02	5.28E+01
9	186.42	183 -	190	2.45E+02	76.29	8.04E+02	5.72E+01

Analysis Report for 1606041-10

CP-5029 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	10	209.77	207 - 212	6.94E+01	52.53	4.89E+02	4.09E+01
M	11	239.03	235 - 247	7.71E+02	68.28	3.69E+02	3.16E+01
m	12	242.39	235 - 247	2.33E+02	66.63	3.89E+02	3.24E+01
	13	258.74	255 - 262	5.44E+01	52.92	4.27E+02	4.18E+01
M	14	295.82	292 - 304	3.35E+02	47.29	2.32E+02	2.50E+01
m	15	300.61	292 - 304	7.18E+01	36.73	2.20E+02	2.44E+01
	16	339.01	335 - 342	1.15E+02	55.21	4.31E+02	4.18E+01
	17	352.54	349 - 357	5.51E+02	68.33	3.82E+02	4.08E+01
	18	372.18	370 - 375	3.93E+01	29.10	1.33E+02	2.16E+01
	19	395.28	393 - 399	3.84E+01	35.42	1.89E+02	2.73E+01
	20	463.30	460 - 466	4.77E+01	31.02	1.41E+02	2.28E+01
	21	511.47	506 - 519	1.78E+02	61.22	3.42E+02	4.53E+01
	22	583.81	579 - 588	2.50E+02	50.40	2.20E+02	3.23E+01
	23	609.88	605 - 613	3.95E+02	52.75	1.86E+02	2.85E+01
	24	639.15	637 - 642	1.98E+01	22.83	9.03E+01	1.73E+01
	25	727.64	723 - 731	4.73E+01	31.73	1.25E+02	2.35E+01
	26	768.73	766 - 771	2.81E+01	24.86	9.98E+01	1.85E+01
	27	786.49	783 - 791	2.87E+01	27.30	9.26E+01	2.06E+01
	28	861.15	857 - 866	3.06E+01	32.98	1.33E+02	2.55E+01
	29	912.00	907 - 916	1.70E+02	42.43	1.59E+02	2.75E+01
	30	933.77	929 - 939	4.05E+01	30.07	9.90E+01	2.24E+01
M	31	965.38	962 - 981	5.18E+01	23.40	5.47E+01	1.22E+01
m	32	969.99	962 - 981	8.12E+01	27.42	5.24E+01	1.19E+01
m	33	977.17	962 - 981	1.35E+01	19.07	4.97E+01	1.16E+01
	34	1054.07	1051 - 1059	2.23E+01	27.16	1.01E+02	2.09E+01
	35	1120.99	1117 - 1124	9.00E+01	27.28	6.40E+01	1.61E+01
	36	1153.29	1146 - 1160	4.81E+01	40.01	1.42E+02	3.09E+01
	37	1201.45	1199 - 1204	1.78E+01	19.62	6.24E+01	1.46E+01
	38	1239.88	1236 - 1243	3.46E+01	23.75	6.88E+01	1.70E+01
	39	1247.61	1245 - 1251	1.69E+01	15.56	3.22E+01	1.09E+01
	40	1288.18	1283 - 1293	2.27E+01	24.76	6.46E+01	1.88E+01
	41	1371.11	1368 - 1374	8.63E+00	10.44	1.27E+01	7.09E+00
	42	1378.42	1375 - 1382	2.85E+01	16.12	2.51E+01	9.94E+00
	43	1415.96	1413 - 1419	1.71E+01	11.17	9.82E+00	6.17E+00
	44	1461.79	1456 - 1467	6.16E+02	54.26	6.00E+01	1.80E+01
	45	1544.32	1540 - 1550	1.94E+01	14.10	1.52E+01	9.05E+00
	46	1621.61	1615 - 1627	1.95E+01	15.58	1.89E+01	1.05E+01
	47	1631.07	1628 - 1635	9.33E+00	11.66	1.73E+01	8.17E+00
	48	1661.43	1657 - 1665	1.51E+01	12.20	1.37E+01	7.72E+00
	49	1704.03	1701 - 1706	6.90E+00	7.62	6.20E+00	4.53E+00
	50	1730.45	1727 - 1734	1.44E+01	11.49	1.31E+01	7.08E+00
	51	1765.71	1761 - 1771	8.16E+01	21.93	1.68E+01	1.02E+01
	52	1849.01	1843 - 1853	1.38E+01	14.73	2.03E+01	1.05E+01
	53	2000.18	1995 - 2003	7.70E+00	7.76	4.60E+00	4.46E+00
	54	2109.51	2106 - 2114	1.11E+01	12.21	1.18E+01	8.40E+00
	55	2183.25	2179 - 2185	6.00E+00	4.90	0.00E+00	0.00E+00
	56	2192.75	2188 - 2194	6.00E+00	4.90	0.00E+00	0.00E+00
	57	2208.14	2198 - 2216	2.89E+01	20.95	2.63E+01	1.48E+01
	58	2362.42	2359 - 2364	5.50E+00	6.08	3.00E+00	3.18E+00
	59	2615.15	2611 - 2618	8.60E+01	18.55	0.00E+00	0.00E+00

Analysis Report for 1606041-10
CP-5029 05-10

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 9:29:50AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	63.74	61 -	67	64.08	2.11E+02	96.93	1.56E+03	TH-234 TH-230
2	76.66	72 -	81	77.00	1.11E+03	140.12	2.17E+03	.....
3	87.66	86 -	90	88.00	6.87E+01	79.20	1.34E+03	SN-126 CD-109 LU-176
4	93.28	91 -	99	93.62	2.72E+02	115.25	1.77E+03	GA-67
5	110.50	109 -	113	110.83	6.08E+01	54.56	6.10E+02	.....
6	129.71	126 -	134	130.03	1.60E+02	83.58	9.77E+02	.....
7	137.91	136 -	141	138.23	5.05E+01	58.69	6.49E+02	.....
8	154.54	152 -	158	154.85	7.35E+01	66.46	7.57E+02	.....
9	186.42	183 -	190	186.72	2.45E+02	76.29	8.04E+02	RA-226
10	209.77	207 -	212	210.07	6.94E+01	52.53	4.89E+02	CM-243 GA-67
M 11	239.03	235 -	247	239.32	7.71E+02	68.28	3.69E+02	PB-212
m 12	242.39	235 -	247	242.68	2.33E+02	66.63	3.89E+02	.....
13	258.74	255 -	262	259.02	5.44E+01	52.92	4.27E+02	.....
M 14	295.82	292 -	304	296.09	3.35E+02	47.29	2.32E+02	PB-214
m 15	300.61	292 -	304	300.87	7.18E+01	36.73	2.20E+02	GA-67 PB-212 BI-210M
16	339.01	335 -	342	339.26	1.15E+02	55.21	4.31E+02	AC-228
17	352.54	349 -	357	352.79	5.51E+02	68.33	3.82E+02	PB-214
18	372.18	370 -	375	372.42	3.93E+01	29.10	1.33E+02	.....
19	395.28	393 -	399	395.51	3.84E+01	35.42	1.89E+02	.....
20	463.30	460 -	466	463.52	4.77E+01	31.02	1.41E+02	SB-125
21	511.47	506 -	519	511.67	1.78E+02	61.22	3.42E+02	.....
22	583.81	579 -	588	583.98	2.50E+02	50.40	2.20E+02	TL-208
23	609.88	605 -	613	610.04	3.95E+02	52.75	1.86E+02	BI-214
24	639.15	637 -	642	639.30	1.98E+01	22.83	9.03E+01	.....

Analysis Report for 1606041-10
CP-5029 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
25	727.64	723 -	731	727.76	4.73E+01	31.73	1.25E+02	BI-212
26	768.73	766 -	771	768.84	2.81E+01	24.86	9.98E+01	.....
27	786.49	783 -	791	786.58	2.87E+01	27.30	9.26E+01	.....
28	861.15	857 -	866	861.23	3.06E+01	32.98	1.33E+02	TL-208
29	912.00	907 -	916	912.05	1.70E+02	42.43	1.59E+02	LU-172 AC-228
M	30	929 -	939	933.82	4.05E+01	30.07	9.90E+01	.....
m	31	962 -	981	965.42	5.18E+01	23.40	5.47E+01	.....
m	32	962 -	981	970.02	8.12E+01	27.42	5.24E+01	AC-228
	33	962 -	981	977.20	1.35E+01	19.07	4.97E+01	.....
	34	1051 -	1059	1054.07	2.23E+01	27.16	1.01E+02	.....
	35	1117 -	1124	1120.97	9.00E+01	27.28	6.40E+01	TA-182 SC-46 BI-214 EU-156
	36	1146 -	1160	1153.26	4.81E+01	40.01	1.42E+02	.....
	37	1199 -	1204	1201.40	1.78E+01	19.62	6.24E+01	.....
	38	1236 -	1243	1239.82	3.46E+01	23.75	6.88E+01	.....
	39	1245 -	1251	1247.54	1.69E+01	15.56	3.22E+01	.....
	40	1283 -	1293	1288.10	2.27E+01	24.76	6.46E+01	.....
	41	1368 -	1374	1371.00	8.63E+00	10.44	1.27E+01	.....
	42	1375 -	1382	1378.31	2.85E+01	16.12	2.51E+01	.....
	43	1413 -	1419	1415.84	1.71E+01	11.17	9.82E+00	.....
	44	1456 -	1467	1461.65	6.16E+02	54.26	6.00E+01	K-40
	45	1540 -	1550	1544.15	1.94E+01	14.10	1.52E+01	.....
	46	1615 -	1627	1621.41	1.95E+01	15.58	1.89E+01	BI-212
	47	1628 -	1635	1630.86	9.33E+00	11.66	1.73E+01	.....
	48	1657 -	1665	1661.21	1.51E+01	12.20	1.37E+01	.....
	49	1701 -	1706	1703.80	6.90E+00	7.62	6.20E+00	.....
	50	1727 -	1734	1730.20	1.44E+01	11.49	1.31E+01	.....
	51	1761 -	1771	1765.45	8.16E+01	21.93	1.68E+01	.....
	52	1843 -	1853	1848.72	1.38E+01	14.73	2.03E+01	.....
	53	1995 -	2003	1999.84	7.70E+00	7.76	4.60E+00	.....
	54	2106 -	2114	2109.12	1.11E+01	12.21	1.18E+01	.....
	55	2179 -	2185	2182.83	6.00E+00	4.90	0.00E+00	.....
	56	2188 -	2194	2192.33	6.00E+00	4.90	0.00E+00	.....
	57	2198 -	2216	2207.72	2.89E+01	20.95	2.63E+01	.....
	58	2359 -	2364	2361.94	5.50E+00	6.08	3.00E+00	.....
	59	2611 -	2618	2614.57	8.60E+01	18.55	0.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.00sigma

Analysis Report for 1606041-10
CP-5029 05-10

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 9:29:50AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
1	63.74	2.11E+02	96.93	2.51E-02	1.92E-03	
2	76.66	1.11E+03	140.12	2.77E-02	2.36E-03	
3	87.66	6.87E+01	79.20	2.85E-02	2.73E-03	
4	93.28	2.72E+02	115.25	2.86E-02	2.64E-03	
5	110.50	6.08E+01	54.56	2.80E-02	2.30E-03	
6	129.71	1.60E+02	83.58	2.67E-02	2.09E-03	
7	137.91	5.05E+01	58.69	2.60E-02	2.11E-03	
8	154.54	7.35E+01	66.46	2.47E-02	2.15E-03	
9	186.42	2.45E+02	76.29	2.24E-02	2.02E-03	
10	209.77	6.94E+01	52.53	2.08E-02	1.85E-03	
M	11	239.03	7.71E+02	1.92E-02	1.64E-03	
m	12	242.39	2.33E+02	1.90E-02	1.61E-03	
13	258.74	5.44E+01	52.92	1.82E-02	1.49E-03	
M	14	295.82	3.35E+02	1.67E-02	1.31E-03	
m	15	300.61	7.18E+01	1.65E-02	1.30E-03	
16	339.01	1.15E+02	55.21	1.52E-02	1.22E-03	
17	352.54	5.51E+02	68.33	1.47E-02	1.19E-03	
18	372.18	3.93E+01	29.10	1.42E-02	1.15E-03	
19	395.28	3.84E+01	35.42	1.36E-02	1.11E-03	
20	463.30	4.77E+01	31.02	1.21E-02	1.04E-03	
21	511.47	1.78E+02	61.22	1.12E-02	9.90E-04	
22	583.81	2.50E+02	50.40	1.02E-02	9.15E-04	
23	609.88	3.95E+02	52.75	9.82E-03	8.88E-04	
24	639.15	1.98E+01	22.83	9.47E-03	8.58E-04	
25	727.64	4.73E+01	31.73	8.55E-03	7.75E-04	
26	768.73	2.81E+01	24.86	8.19E-03	7.38E-04	
27	786.49	2.87E+01	27.30	8.04E-03	7.22E-04	
28	861.15	3.06E+01	32.98	7.48E-03	6.55E-04	
29	912.00	1.70E+02	42.43	7.14E-03	6.15E-04	
30	933.77	4.05E+01	30.07	7.01E-03	6.04E-04	
M	31	965.38	5.18E+01	6.83E-03	5.87E-04	
m	32	969.99	8.12E+01	27.42	6.80E-03	5.85E-04
m	33	977.17	1.35E+01	19.07	6.76E-03	5.81E-04
34	1054.07	2.23E+01	27.16	6.36E-03	5.41E-04	
35	1120.99	9.00E+01	27.28	6.06E-03	5.06E-04	
36	1153.29	4.81E+01	40.01	5.93E-03	4.90E-04	
37	1201.45	1.78E+01	19.62	5.75E-03	4.74E-04	
38	1239.88	3.46E+01	23.75	5.61E-03	4.67E-04	
39	1247.61	1.69E+01	15.56	5.58E-03	4.66E-04	
40	1288.18	2.27E+01	24.76	5.45E-03	4.59E-04	
41	1371.11	8.63E+00	10.44	5.20E-03	4.42E-04	
42	1378.42	2.85E+01	16.12	5.18E-03	4.40E-04	
43	1415.96	1.71E+01	11.17	5.08E-03	4.30E-04	
44	1461.79	6.16E+02	54.26	4.97E-03	4.19E-04	
45	1544.32	1.94E+01	14.10	4.78E-03	3.98E-04	

Analysis Report for 1606041-10
CP-5029 05-10

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
46	1621.61	1.95E+01	15.58	4.63E-03	3.79E-04
47	1631.07	9.33E+00	11.66	4.61E-03	3.77E-04
48	1661.43	1.51E+01	12.20	4.56E-03	3.69E-04
49	1704.03	6.90E+00	7.62	4.49E-03	3.59E-04
50	1730.45	1.44E+01	11.49	4.45E-03	3.52E-04
51	1765.71	8.16E+01	21.93	4.39E-03	3.43E-04
52	1849.01	1.38E+01	14.73	4.28E-03	3.26E-04
53	2000.18	7.70E+00	7.76	4.11E-03	3.26E-04
54	2109.51	1.11E+01	12.21	4.02E-03	3.26E-04
55	2183.25	6.00E+00	4.90	3.96E-03	3.26E-04
56	2192.75	6.00E+00	4.90	3.96E-03	3.26E-04
57	2208.14	2.89E+01	20.95	3.95E-03	3.26E-04
58	2362.42	5.50E+00	6.08	3.86E-03	3.26E-04
59	2615.15	8.60E+01	18.55	3.79E-03	3.26E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 9:29:50AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038676.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	63.74	2.11E+02	96.93	1.14E+02	2.81E+01	9.71E+01	1.01E+02
2	76.66	1.11E+03	140.12	1.08E+01	8.92E+00	1.10E+03	1.40E+02
3	87.66	6.87E+01	79.20			6.87E+01	7.92E+01
4	93.28	2.72E+02	115.25	1.29E+02	7.14E+00	1.43E+02	1.15E+02
5	110.50	6.08E+01	54.56			6.08E+01	5.46E+01
6	129.71	1.60E+02	83.58			1.60E+02	8.36E+01
7	137.91	5.05E+01	58.69			5.05E+01	5.87E+01
8	154.54	7.35E+01	66.46			7.35E+01	6.65E+01
9	186.42	2.45E+02	76.29	5.81E+01	8.50E+00	1.87E+02	7.68E+01
10	209.77	6.94E+01	52.53			6.94E+01	5.25E+01
M 11	239.03	7.71E+02	68.28	1.81E+01	5.76E+00	7.53E+02	6.85E+01
m 12	242.39	2.33E+02	66.63			2.33E+02	6.66E+01
13	258.74	5.44E+01	52.92			5.44E+01	5.29E+01
M 14	295.82	3.35E+02	47.29	1.02E+00	5.38E+00	3.34E+02	4.76E+01
m 15	300.61	7.18E+01	36.73			7.18E+01	3.67E+01
16	339.01	1.15E+02	55.21	3.86E+00	4.98E+00	1.11E+02	5.54E+01

Analysis Report for 1606041-10

CP-5029 05-10

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
17	352.54	5.51E+02	68.33	7.25E+00	4.86E+00	5.44E+02	6.85E+01
18	372.18	3.93E+01	29.10			3.93E+01	2.91E+01
19	395.28	3.84E+01	35.42			3.84E+01	3.54E+01
20	463.30	4.77E+01	31.02			4.77E+01	3.10E+01
21	511.47	1.78E+02	61.22	7.58E+01	5.38E+00	1.02E+02	6.15E+01
22	583.81	2.50E+02	50.40	6.11E+00	3.78E+00	2.44E+02	5.05E+01
23	609.88	3.95E+02	52.75	6.74E+00	3.64E+00	3.88E+02	5.29E+01
24	639.15	1.98E+01	22.83			1.98E+01	2.28E+01
25	727.64	4.73E+01	31.73			4.73E+01	3.17E+01
26	768.73	2.81E+01	24.86			2.81E+01	2.49E+01
27	786.49	2.87E+01	27.30			2.87E+01	2.73E+01
28	861.15	3.06E+01	32.98			3.06E+01	3.30E+01
29	912.00	1.70E+02	42.43	4.21E+00	2.98E+00	1.66E+02	4.25E+01
30	933.77	4.05E+01	30.07			4.05E+01	3.01E+01
M 31	965.38	5.18E+01	23.40			5.18E+01	2.34E+01
m 32	969.99	8.12E+01	27.42			8.12E+01	2.74E+01
m 33	977.17	1.35E+01	19.07			1.35E+01	1.91E+01
34	1054.07	2.23E+01	27.16			2.23E+01	2.72E+01
35	1120.99	9.00E+01	27.28			9.00E+01	2.73E+01
36	1153.29	4.81E+01	40.01			4.81E+01	4.00E+01
37	1201.45	1.78E+01	19.62			1.78E+01	1.96E+01
38	1239.88	3.46E+01	23.75			3.46E+01	2.37E+01
39	1247.61	1.69E+01	15.56			1.69E+01	1.56E+01
40	1288.18	2.27E+01	24.76			2.27E+01	2.48E+01
41	1371.11	8.63E+00	10.44			8.63E+00	1.04E+01
42	1378.42	2.85E+01	16.12			2.85E+01	1.61E+01
43	1415.96	1.71E+01	11.17			1.71E+01	1.12E+01
44	1461.79	6.16E+02	54.26	6.83E+00	2.10E+00	6.09E+02	5.43E+01
45	1544.32	1.94E+01	14.10			1.94E+01	1.41E+01
46	1621.61	1.95E+01	15.58			1.95E+01	1.56E+01
47	1631.07	9.33E+00	11.66			9.33E+00	1.17E+01
48	1661.43	1.51E+01	12.20			1.51E+01	1.22E+01
49	1704.03	6.90E+00	7.62			6.90E+00	7.62E+00
50	1730.45	1.44E+01	11.49			1.44E+01	1.15E+01
51	1765.71	8.16E+01	21.93	1.66E+00	1.65E+00	7.99E+01	2.20E+01
52	1849.01	1.38E+01	14.73			1.38E+01	1.47E+01
53	2000.18	7.70E+00	7.76			7.70E+00	7.76E+00
54	2109.51	1.11E+01	12.21			1.11E+01	1.22E+01
55	2183.25	6.00E+00	4.90			6.00E+00	4.90E+00
56	2192.75	6.00E+00	4.90			6.00E+00	4.90E+00
57	2208.14	2.89E+01	20.95			2.89E+01	2.09E+01
58	2362.42	5.50E+00	6.08			5.50E+00	6.08E+00
59	2615.15	8.60E+01	18.55	4.95E+00	1.35E+00	8.10E+01	1.86E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1606041-10
CP-5029 05-10

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 9:29:50AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038676.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
1	63.74	2.11E+02	96.93	1.14E+02	2.81E+01	9.71E+01	1.01E+02	
2	76.66	1.11E+03	140.12	1.08E+01	8.92E+00	1.10E+03	1.40E+02	
3	87.66	6.87E+01	79.20			6.87E+01	7.92E+01	
4	93.28	2.72E+02	115.25	1.29E+02	7.14E+00	1.43E+02	1.15E+02	
5	110.50	6.08E+01	54.56			6.08E+01	5.46E+01	
6	129.71	1.60E+02	83.58			1.60E+02	8.36E+01	
7	137.91	5.05E+01	58.69			5.05E+01	5.87E+01	
8	154.54	7.35E+01	66.46			7.35E+01	6.65E+01	
9	186.42	2.45E+02	76.29	5.81E+01	8.50E+00	1.87E+02	7.68E+01	
10	209.77	6.94E+01	52.53			6.94E+01	5.25E+01	
M	11	239.03	7.71E+02	68.28	1.81E+01	5.76E+00	7.53E+02	6.85E+01
m	12	242.39	2.33E+02	66.63			2.33E+02	6.66E+01
	13	258.74	5.44E+01	52.92			5.44E+01	5.29E+01
M	14	295.82	3.35E+02	47.29	1.02E+00	5.38E+00	3.34E+02	4.76E+01
m	15	300.61	7.18E+01	36.73			7.18E+01	3.67E+01
	16	339.01	1.15E+02	55.21	3.86E+00	4.98E+00	1.11E+02	5.54E+01
	17	352.54	5.51E+02	68.33	7.25E+00	4.86E+00	5.44E+02	6.85E+01
	18	372.18	3.93E+01	29.10			3.93E+01	2.91E+01
	19	395.28	3.84E+01	35.42			3.84E+01	3.54E+01
	20	463.30	4.77E+01	31.02			4.77E+01	3.10E+01
	21	511.47	1.78E+02	61.22	7.58E+01	5.38E+00	1.02E+02	6.15E+01
	22	583.81	2.50E+02	50.40	6.11E+00	3.78E+00	2.44E+02	5.05E+01
	23	609.88	3.95E+02	52.75	6.74E+00	3.64E+00	3.88E+02	5.29E+01
	24	639.15	1.98E+01	22.83			1.98E+01	2.28E+01
	25	727.64	4.73E+01	31.73			4.73E+01	3.17E+01
	26	768.73	2.81E+01	24.86			2.81E+01	2.49E+01
	27	786.49	2.87E+01	27.30			2.87E+01	2.73E+01
	28	861.15	3.06E+01	32.98			3.06E+01	3.30E+01
	29	912.00	1.70E+02	42.43	4.21E+00	2.98E+00	1.66E+02	4.25E+01
	30	933.77	4.05E+01	30.07			4.05E+01	3.01E+01
M	31	965.38	5.18E+01	23.40			5.18E+01	2.34E+01
m	32	969.99	8.12E+01	27.42			8.12E+01	2.74E+01
m	33	977.17	1.35E+01	19.07			1.35E+01	1.91E+01
	34	1054.07	2.23E+01	27.16			2.23E+01	2.72E+01
	35	1120.99	9.00E+01	27.28			9.00E+01	2.73E+01
	36	1153.29	4.81E+01	40.01			4.81E+01	4.00E+01
	37	1201.45	1.78E+01	19.62			1.78E+01	1.96E+01
	38	1239.88	3.46E+01	23.75			3.46E+01	2.37E+01
	39	1247.61	1.69E+01	15.56			1.69E+01	1.56E+01
	40	1288.18	2.27E+01	24.76			2.27E+01	2.48E+01
	41	1371.11	8.63E+00	10.44			8.63E+00	1.04E+01

Analysis Report for 1606041-10
CP-5029 05-10

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1378.42	2.85E+01	16.12			2.85E+01	1.61E+01
43	1415.96	1.71E+01	11.17			1.71E+01	1.12E+01
44	1461.79	6.16E+02	54.26	6.83E+00	2.10E+00	6.09E+02	5.43E+01
45	1544.32	1.94E+01	14.10			1.94E+01	1.41E+01
46	1621.61	1.95E+01	15.58			1.95E+01	1.56E+01
47	1631.07	9.33E+00	11.66			9.33E+00	1.17E+01
48	1661.43	1.51E+01	12.20			1.51E+01	1.22E+01
49	1704.03	6.90E+00	7.62			6.90E+00	7.62E+00
50	1730.45	1.44E+01	11.49			1.44E+01	1.15E+01
51	1765.71	8.16E+01	21.93	1.66E+00	1.65E+00	7.99E+01	2.20E+01
52	1849.01	1.38E+01	14.73			1.38E+01	1.47E+01
53	2000.18	7.70E+00	7.76			7.70E+00	7.76E+00
54	2109.51	1.11E+01	12.21			1.11E+01	1.22E+01
55	2183.25	6.00E+00	4.90			6.00E+00	4.90E+00
56	2192.75	6.00E+00	4.90			6.00E+00	4.90E+00
57	2208.14	2.89E+01	20.95			2.89E+01	2.09E+01
58	2362.42	5.50E+00	6.08			5.50E+00	6.08E+00
59	2615.15	8.60E+01	18.55	4.95E+00	1.35E+00	8.10E+01	1.86E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.858	1460.81	* 10.67	2.46E+01	3.07E+00
GA-67	0.946	93.31	* 35.70	2.36E+00	4.42E+00
		208.95	* 2.24	2.50E+01	3.68E+01
		300.22	* 16.00	4.57E+00	8.08E+00
CD-109	0.978	88.03	* 3.72	1.41E+00	1.63E+00
SN-126	0.999	87.57	* 37.00	1.40E-01	1.62E-01
TL-208	0.945	583.14	* 30.22	1.70E+00	3.85E-01
		860.37	* 4.48	1.96E+00	2.12E+00
		2614.66	* 35.85	1.28E+00	3.13E-01
BI-212	0.943	727.17	* 11.80	1.00E+00	6.81E-01
		1620.62	* 2.75	3.29E+00	2.64E+00
PB-212	0.973	238.63	* 44.60	1.89E+00	2.35E-01
		300.09	* 3.41	2.74E+00	1.42E+00

Analysis Report for 1606041-10
 CP-5029 05-10

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.652	609.31 *	46.30	1.83E+00	2.99E-01
		1120.29 *	15.10	2.11E+00	6.63E-01
		1764.49	15.80		
		2204.22	4.98		
PB-214	0.942	295.21 *	19.19	2.24E+00	3.64E-01
		351.92 *	37.19	2.13E+00	3.18E-01
RA-226	0.993	186.21 *	3.28	5.47E+00	1.03E+01
AC-228	0.886	338.32 *	11.40	1.38E+00	6.97E-01
		911.07 *	27.70	1.80E+00	4.87E-01
		969.11 *	16.60	1.54E+00	5.38E-01
TH-234	0.969	63.29 *	3.80	2.19E+00	2.28E+00

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 9:29:50AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	76.66	3.05832E-01	6.38		
5	110.50	1.68951E-02	44.85		
6	129.71	4.43075E-02	26.20		
7	137.91	1.40200E-02	58.14		
8	154.54	2.04099E-02	45.23		
m 12	242.39	6.47290E-02	14.30		
13	258.74	1.51026E-02	48.66		
18	372.18	1.09133E-02	37.04	Sum	
19	395.28	1.06694E-02	46.11	Sum	
20	463.30	1.32392E-02	32.54	Tol.	SB-125
21	511.47	2.84395E-02	30.01		
24	639.15	5.50855E-03	57.55	Sum	
26	768.73	7.80627E-03	44.23		
27	786.49	7.97778E-03	47.53		
30	933.77	1.12500E-02	37.13		
M 31	965.38	1.43759E-02	22.61		
m 33	977.17	3.74164E-03	70.80		
34	1054.07	6.19673E-03	60.87		

Analysis Report for 1606041-10
CP-5029 05-10

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
36	1153.29	1.33660E-02	41.58	Tol.	EU-156
37	1201.45	4.93764E-03	55.19		
38	1239.88	9.61353E-03	34.31		
39	1247.61	4.69697E-03	46.02		
40	1288.18	6.31061E-03	54.50		
41	1371.11	2.39815E-03	60.47		
42	1378.42	7.90650E-03	28.32		
43	1415.96	4.74747E-03	32.68	Sum	
45	1544.32	5.39095E-03	36.32		
47	1631.07	2.59259E-03	62.47		
48	1661.43	4.20455E-03	40.29		
49	1704.03	1.91667E-03	55.19	Sum	
50	1730.45	4.00794E-03	39.81	Sum	
51	1765.71	2.21982E-02	13.76		
52	1849.01	3.84259E-03	53.24	Sum	
53	2000.18	2.13889E-03	50.40		
54	2109.51	3.08824E-03	54.90		
55	2183.25	1.66667E-03	40.82		
56	2192.75	1.66667E-03	40.82		
57	2208.14	8.01587E-03	36.29		
58	2362.42	1.52778E-03	55.30		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.85	1460.81 *	10.67	2.46E+01	3.07E+00
GA-67	0.94	93.31 *	35.70	2.36E+00	4.42E+00
		208.95 *	2.24	2.50E+01	3.68E+01
		300.22 *	16.00	4.57E+00	8.08E+00
CD-109	0.97	88.03 *	3.72	1.41E+00	1.63E+00
SN-126	0.99	87.57 *	37.00	1.40E-01	1.62E-01
TL-208	0.94	583.14 *	30.22	1.70E+00	3.85E-01

Analysis Report for 1606041-10
CP-5029 05-10

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TL-208	0.94	860.37 *		4.48	1.96E+00	2.12E+00
		2614.66 *		35.85	1.28E+00	3.13E-01
BI-212	0.94	727.17 *		11.80	1.00E+00	6.81E-01
		1620.62 *		2.75	3.29E+00	2.64E+00
PB-212	0.97	238.63 *		44.60	1.89E+00	2.35E-01
		300.09 *		3.41	2.74E+00	1.42E+00
BI-214	0.65	609.31 *		46.30	1.83E+00	2.99E-01
		1120.29 *		15.10	2.11E+00	6.63E-01
		1764.49		15.80		
		2204.22		4.98		
PB-214	0.94	295.21 *		19.19	2.24E+00	3.64E-01
		351.92 *		37.19	2.13E+00	3.18E-01
RA-226	0.99	186.21 *		3.28	5.47E+00	1.03E+01
AC-228	0.88	338.32 *		11.40	1.38E+00	6.97E-01
		911.07 *		27.70	1.80E+00	4.87E-01
		969.11 *		16.60	1.54E+00	5.38E-01
TH-234	0.96	63.29 *		3.80	2.19E+00	2.28E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.858	2.46E+01	3.07E+00	
GA-67	0.946	2.14E+00	3.08E+00	
? CD-109	0.978	1.41E+00	1.63E+00	
? SN-126	0.999	1.40E-01	1.62E-01	
TL-208	0.945	1.45E+00	2.41E-01	
BI-212	0.943	1.15E+00	6.59E-01	
PB-212	0.973	1.87E+00	2.33E-01	
BI-214	0.652	1.88E+00	2.73E-01	
PB-214	0.942	2.18E+00	2.40E-01	
RA-226	0.993	5.47E+00	1.03E+01	

Analysis Report for 1606041-10
CP-5029 05-10

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
AC-228	0.886	1.62E+00	3.20E-01	
TH-234	0.969	2.19E+00	2.28E+00	

- ? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1606041-10
CP-5029 05-10

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 9:29:50AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	76.66	3.05832E-01	6.38		
5	110.50	1.68951E-02	44.85		
6	129.71	4.43075E-02	26.20		
7	137.91	1.40200E-02	58.14		
8	154.54	2.04099E-02	45.23		
m 12	242.39	6.47290E-02	14.30		
13	258.74	1.51026E-02	48.66		
18	372.18	1.09133E-02	37.04	Sum	
19	395.28	1.06694E-02	46.11	Sum	
20	463.30	1.32392E-02	32.54	Tol.	SB-125
21	511.47	2.84395E-02	30.01		
24	639.15	5.50855E-03	57.55	Sum	
26	768.73	7.80627E-03	44.23		
27	786.49	7.97778E-03	47.53		
30	933.77	1.12500E-02	37.13		
M 31	965.38	1.43759E-02	22.61		
m 33	977.17	3.74164E-03	70.80		
34	1054.07	6.19673E-03	60.87		
36	1153.29	1.33660E-02	41.58	Tol.	EU-156
37	1201.45	4.93764E-03	55.19		
38	1239.88	9.61353E-03	34.31		
39	1247.61	4.69697E-03	46.02		
40	1288.18	6.31061E-03	54.50		
41	1371.11	2.39815E-03	60.47		
42	1378.42	7.90650E-03	28.32		
43	1415.96	4.74747E-03	32.68	Sum	
45	1544.32	5.39095E-03	36.32		
47	1631.07	2.59259E-03	62.47		
48	1661.43	4.20455E-03	40.29		
49	1704.03	1.91667E-03	55.19	Sum	
50	1730.45	4.00794E-03	39.81	Sum	
51	1765.71	2.21982E-02	13.76		
52	1849.01	3.84259E-03	53.24	Sum	
53	2000.18	2.13889E-03	50.40		
54	2109.51	3.08824E-03	54.90		

Analysis Report for 1606041-10
CP-5029 05-10

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
55	2183.25	1.66667E-03	40.82		
56	2192.75	1.66667E-03	40.82		
57	2208.14	8.01587E-03	36.29		
58	2362.42	1.52778E-03	55.30		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-1.76E-01	9.62E-01	9.62E-01
+	NA-22	1274.54	99.94	-3.94E-03	1.06E-01	1.06E-01
+	NA-24	1368.53	99.99	-2.85E+02	3.14E+03	3.82E+03
		2754.09	99.86	1.05E+03		3.14E+03
+	AL-26	1808.65	99.76	9.92E-03	8.27E-02	8.27E-02
+	K-40	1460.81	* 10.67	2.46E+01	1.62E+00	1.62E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	4.60E-02	1.02E-01	1.02E-01
		78.34	96.00	2.08E-01		1.32E-01
+	SC-46	889.25	99.98	2.11E-02	1.18E-01	1.18E-01
		1120.51	99.99	3.06E-01		2.06E-01
+	V-48	983.52	99.98	-5.74E-02	1.51E-01	1.51E-01
		1312.10	97.50	-2.12E-02		1.65E-01
+	CR-51	320.08	9.83	-3.34E-01	9.30E-01	9.30E-01
+	MN-54	834.83	99.97	4.30E-02	1.16E-01	1.16E-01
+	CO-56	846.75	99.96	-1.52E-02	1.07E-01	1.07E-01
		1037.75	14.03	1.34E-01		8.67E-01
		1238.25	67.00	1.12E-03		2.42E-01
		1771.40	15.51	-5.15E-02		5.16E-01
		2598.48	16.90	1.21E-02		3.92E-01
+	CO-57	122.06	85.51	2.73E-02	7.95E-02	7.95E-02
		136.48	10.60	1.79E-01		6.70E-01
+	CO-58	810.76	99.40	-4.39E-02	1.01E-01	1.01E-01
+	FE-59	1099.22	56.50	-6.64E-02	2.14E-01	2.14E-01
		1291.56	43.20	-1.46E-01		2.81E-01

Analysis Report for 1606041-10
CP-5029 05-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-60	1173.22	100.00	5.81E-02	1.03E-01	1.38E-01
		1332.49	100.00	-3.75E-02		1.03E-01
+	ZN-65	1115.52	50.75	-1.17E-02	2.29E-01	2.29E-01
+	GA-67	93.31	* 35.70	2.36E+00	3.11E+00	3.11E+00
		208.95	* 2.24	2.50E+01		3.05E+01
		300.22	* 16.00	4.57E+00		7.03E+00
+	SE-75	121.11	16.70	-2.00E-01	1.22E-01	4.14E-01
		136.00	59.20	-4.36E-02		1.22E-01
		264.65	59.80	-1.79E-02		1.23E-01
		279.53	25.20	1.55E-01		3.29E-01
		400.65	11.40	1.91E-01		6.48E-01
+	RB-82	776.52	13.00	1.68E-01	1.03E+00	1.03E+00
+	RB-83	520.41	46.00	9.56E-02	1.94E-01	1.94E-01
		529.64	30.30	9.76E-02		3.26E-01
		552.65	16.40	2.00E-01		6.15E-01
+	KR-85	513.99	0.43	7.55E+01	3.41E+01	3.41E+01
+	SR-85	513.99	99.27	3.65E-01	1.65E-01	1.65E-01
+	Y-88	898.02	93.40	4.79E-02	1.04E-01	1.30E-01
		1836.01	99.38	4.34E-02		1.04E-01
+	NB-93M	16.57	9.43	-1.32E+02	8.36E+01	8.36E+01
+	NB-94	702.63	100.00	2.99E-02	1.02E-01	1.08E-01
		871.10	100.00	2.03E-02		1.02E-01
+	NB-95	765.79	99.81	1.09E-02	1.51E-01	1.51E-01
+	NB-95M	235.69	25.00	-2.51E+01	2.09E+00	2.09E+00
+	ZR-95	724.18	43.70	3.18E-03	2.13E-01	2.59E-01
		756.72	55.30	-3.37E-02		2.13E-01
+	MO-99	181.06	6.20	-5.17E+00	9.16E+00	1.38E+01
		739.58	12.80	2.76E+00		9.16E+00
		778.00	4.50	7.13E+00		2.63E+01
+	RU-103	497.08	89.00	-2.99E-02	1.09E-01	1.09E-01
+	RU-106	621.84	9.80	-8.22E-02	9.46E-01	9.46E-01
+	AG-108M	433.93	89.90	4.80E-02	1.04E-01	1.04E-01
		614.37	90.40	1.08E-02		1.08E-01
		722.95	90.50	-2.04E-03		1.08E-01
+	CD-109	88.03	* 3.72	1.41E+00	2.67E+00	2.67E+00
+	AG-110M	657.75	93.14	-2.67E-02	1.08E-01	1.08E-01
		677.61	10.53	1.84E-01		9.03E-01
		706.67	16.46	-8.60E-03		6.45E-01
		763.93	21.98	4.40E-02		5.21E-01
		884.67	71.63	1.57E-02		1.44E-01
		1384.27	23.94	1.10E-01		4.63E-01
+	CD-113M	263.70	0.02	-5.55E+01	2.96E+02	2.96E+02
+	SN-113	255.12	1.93	6.00E-01	1.30E-01	3.96E+00
		391.69	64.90	-1.21E-02		1.30E-01
+	TE123M	159.00	84.10	3.58E-02	9.38E-02	9.38E-02
+	SB-124	602.71	97.87	8.30E-03	1.08E-01	1.08E-01
		645.85	7.26	6.79E-01		1.48E+00
		722.78	11.10	-1.86E-02		9.81E-01

Analysis Report for 1606041-10
CP-5029 05-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	1691.02	49.00	4.34E-02	1.08E-01	1.97E-01
+	I-125	35.49	6.49	8.54E-01	3.62E+00	3.62E+00
+	SB-125	176.33	6.89	-1.56E-01	2.88E-01	1.03E+00
		427.89	29.33	-2.27E-01		2.88E-01
		463.38	10.35	5.54E-01		9.55E-01
		600.56	17.80	3.35E-01		5.69E-01
		635.90	11.32	-1.31E-01		8.07E-01
+	SB-126	414.70	83.30	-9.46E-02	1.64E-01	1.84E-01
		666.33	99.60	-2.50E-04		1.88E-01
		695.00	99.60	-7.52E-02		1.64E-01
		720.50	53.80	1.25E-01		3.15E-01
+	SN-126	87.57	* 37.00	1.40E-01	2.65E-01	2.65E-01
+	SB-127	473.00	25.00	-5.43E-01	1.64E+00	1.94E+00
		685.20	35.70	1.09E+00		1.64E+00
		783.80	14.70	-5.95E-01		4.04E+00
+	I-129	29.78	57.00	2.37E-01	7.30E-01	7.30E-01
		33.60	13.20	-9.93E-01		1.88E+00
		39.58	7.52	5.65E-02		2.09E+00
+	I-131	284.30	6.05	-1.84E-01	2.19E-01	2.78E+00
		364.48	81.20	1.18E-01		2.19E-01
		636.97	7.26	-2.87E-01		3.01E+00
		722.89	1.80	-2.36E-01		1.25E+01
+	TE-132	49.72	13.10	-3.59E+00	6.67E-01	6.67E+00
		228.16	88.00	3.78E-02		6.67E-01
+	BA-133	81.00	33.00	-5.36E-02	1.54E-01	2.80E-01
		302.84	17.80	2.98E-01		4.59E-01
		356.01	60.00	-6.70E-01		1.54E-01
+	I-133	529.87	86.30	7.32E+01	2.45E+02	2.45E+02
+	XE-133	81.00	38.00	-1.67E-01	8.72E-01	8.72E-01
+	CS-134	563.23	8.38	9.86E-03	1.02E-01	1.09E+00
		569.32	15.43	-4.90E-01		5.82E-01
		604.70	97.60	1.64E-02		1.02E-01
		795.84	85.40	4.11E-02		1.20E-01
		801.93	8.73	2.69E-01		1.26E+00
+	CS-135	268.24	16.00	4.48E-01	5.12E-01	5.12E-01
+	I-135	1131.51	22.50	5.47E+08	1.61E+10	1.95E+10
		1260.41	28.60	-5.76E+08		1.61E+10
		1678.03	9.54	3.91E+09		3.17E+10
+	CS-136	153.22	7.46	6.92E-01	1.71E-01	1.66E+00
		163.89	4.61	-2.24E-01		2.63E+00
		176.55	13.56	-1.31E-01		8.70E-01
		273.65	12.66	-9.25E-01		9.89E-01
		340.57	48.50	5.67E-01		3.70E-01
		818.50	99.70	2.15E-02		1.71E-01
		1048.07	79.60	-3.17E-02		2.20E-01
		1235.34	19.70	3.46E-01		1.18E+00
+	CS-137	661.65	85.12	-3.46E-02	1.19E-01	1.19E-01
+	LA-138	788.74	34.00	1.25E-01	1.30E-01	2.98E-01
		1435.80	66.00	-3.44E-02		1.30E-01

Analysis Report for 1606041-10
CP-5029 05-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CE-139	165.85	80.35	2.53E-02	9.66E-02	9.66E-02
+	BA-140	162.64	6.70	6.33E-01	6.28E-01	1.86E+00
		304.84	4.50	-4.65E-02		2.56E+00
		423.70	3.20	-8.08E-03		4.59E+00
		437.55	2.00	2.08E+00		7.68E+00
		537.32	25.00	3.95E-02		6.28E-01
+	LA-140	328.77	20.50	4.96E-01	1.73E-01	6.99E-01
		487.03	45.50	-6.88E-02		3.27E-01
		815.85	23.50	-3.93E-02		6.84E-01
		1596.49	95.49	6.75E-02		1.73E-01
+	CE-141	145.44	48.40	4.37E-02	1.88E-01	1.88E-01
+	CE-143	57.36	11.80	-2.14E+01	3.70E+01	1.04E+02
		293.26	42.00	7.88E+01		3.70E+01
		664.55	5.20	5.22E+01		2.74E+02
+	CE-144	133.54	10.80	-4.48E-01	6.46E-01	6.46E-01
+	PM-144	476.78	42.00	-4.47E-02	9.62E-02	2.09E-01
		618.01	98.60	2.49E-02		9.62E-02
		696.49	99.49	-1.35E-03		1.01E-01
+	PM-145	36.85	21.70	-4.14E-01	4.73E-01	8.63E-01
		37.36	39.70	1.53E-01		4.73E-01
		42.30	15.10	-7.18E-01		8.49E-01
		72.40	2.31	-1.85E+01		4.35E+00
+	PM-146	453.90	39.94	8.85E-02	2.32E-01	2.32E-01
		735.90	14.01	2.98E-01		7.02E-01
		747.13	13.10	-5.25E-01		7.18E-01
+	ND-147	91.11	28.90	-2.49E+00	6.13E-01	6.13E-01
		531.02	13.10	-1.71E-01		1.29E+00
+	PM-149	285.90	3.10	1.05E+01	4.96E+01	4.96E+01
+	EU-152	121.78	20.50	1.11E-01	3.24E-01	3.24E-01
		244.69	5.40	1.94E+00		1.76E+00
		344.27	19.13	-9.54E-03		3.87E-01
		778.89	9.20	3.53E-02		1.10E+00
		964.01	10.40	-1.85E-01		1.36E+00
		1085.78	7.22	-3.94E-01		1.50E+00
		1112.02	9.60	8.62E-02		1.14E+00
		1407.95	14.94	1.66E-01		6.32E-01
+	GD-153	97.43	31.30	-3.60E-01	2.31E-01	2.31E-01
		103.18	22.20	-2.09E-01		3.16E-01
+	EU-154	123.07	40.50	8.80E-02	1.65E-01	1.65E-01
		723.30	19.70	-9.40E-03		4.96E-01
		873.19	11.50	1.32E-01		9.08E-01
		996.32	10.30	-6.37E-02		1.08E+00
		1004.76	17.90	1.15E-01		5.97E-01
		1274.45	35.50	-1.10E-02		2.96E-01
+	EU-155	86.50	30.90	4.07E-01	3.22E-01	3.22E-01
		105.30	20.70	1.22E-01		3.36E-01
+	EU-156	811.77	10.40	-6.09E-01	1.30E+00	1.30E+00
		1153.47	7.20	-7.30E-01		2.91E+00
		1230.71	8.90	6.85E-01		2.45E+00

Analysis Report for 1606041-10
CP-5029 05-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HO-166M	184.41	72.60	2.46E-01	1.37E-01	1.37E-01
		280.45	29.60	-1.12E-02		2.53E-01
		410.94	11.10	1.24E-01		8.53E-01
		711.69	54.10	3.04E-02		1.87E-01
+	TM-171	66.72	0.14	6.86E+00	7.16E+01	7.16E+01
		81.75	4.52	-7.07E-01	6.01E-01	1.92E+00
+	LU-172	125.81	11.30	5.15E-03		6.01E-01
		181.53	20.60	-3.19E-01	5.90E-01	9.69E-01
		810.06	16.63	-2.76E-01		1.55E+00
+	LU-173	912.12	15.25	8.89E+00		3.88E+00
		1093.66	62.50	6.22E-01		5.90E-01
		100.72	5.24	3.70E-01	3.97E-01	1.34E+00
+	HF-175	272.11	21.20	2.15E-01		3.97E-01
		343.40	84.00	-1.26E-02	9.88E-02	9.88E-02
+	LU-176	88.34	13.30	1.42E+00	7.54E-02	7.51E-01
		201.83	86.00	-3.33E-02		8.46E-02
		306.78	94.00	2.11E-02		7.54E-02
+	TA-182	67.75	41.20	1.12E-01	2.47E-01	2.47E-01
		1121.30	34.90	8.68E-01		5.75E-01
		1189.05	16.23	5.41E-02		8.54E-01
		1221.41	26.98	1.79E-01		5.53E-01
		1231.02	11.44	3.63E-01		1.30E+00
+	IR-192	308.46	29.68	-6.27E-04	2.08E-01	2.59E-01
		468.07	48.10	9.89E-02		2.08E-01
+	HG-203	279.19	77.30	4.95E-02	1.18E-01	1.18E-01
+	BI-207	569.67	97.72	-8.39E-03	9.73E-02	9.73E-02
+	TL-208	1063.62	74.90	-9.09E-02		1.42E-01
		583.14	* 30.22	1.70E+00	1.63E-01	4.76E-01
		860.37	* 4.48	1.96E+00		3.45E+00
+	BI-210M	2614.66	* 35.85	1.28E+00		1.63E-01
		262.00	45.00	4.16E-03	1.59E-01	1.59E-01
+	PB-210	300.00	23.00	-1.00E+00		3.82E-01
+	PB-211	46.50	4.25	1.08E+00	2.95E+00	2.95E+00
		404.84	2.90	-5.56E-01	2.58E+00	2.58E+00
+	BI-212	831.96	2.90	-1.22E+00		3.58E+00
		727.17	* 11.80	1.00E+00	1.06E+00	1.06E+00
+	PB-212	1620.62	* 2.75	3.29E+00		4.01E+00
		238.63	* 44.60	1.89E+00	3.49E-01	3.49E-01
+	BI-214	300.09	* 3.41	2.74E+00		4.21E+00
		609.31	* 46.30	1.83E+00	2.86E-01	2.86E-01
		1120.29	* 15.10	2.11E+00		8.19E-01
+	PB-214	1764.49	15.80	2.12E+00		1.40E+00
		2204.22	4.98	1.03E+00		2.83E+00
		295.21	* 19.19	2.24E+00	3.33E-01	7.45E-01
+	RN-219	351.92	* 37.19	2.13E+00		3.33E-01
		401.80	6.50	7.65E-01	1.19E+00	1.19E+00
+	RA-223	323.87	3.88	5.12E-01	2.00E+00	2.00E+00
+	RA-224	240.98	3.95	2.39E+01	4.44E+00	4.44E+00

Analysis Report for 1606041-10
CP-5029 05-10

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-225	40.00		31.00	2.10E-02	7.78E-01	7.78E-01
+	RA-226	186.21	*	3.28	5.47E+00	3.53E+00	3.53E+00
+	TH-227	50.10		8.40	-7.05E-01	7.07E-01	1.31E+00
		236.00		11.50	-8.50E+00		7.07E-01
		256.20		6.30	-5.29E-01		1.14E+00
+	AC-228	338.32	*	11.40	1.38E+00	6.33E-01	1.08E+00
		911.07	*	27.70	1.80E+00		6.33E-01
		969.11	*	16.60	1.54E+00		1.30E+00
+	TH-230	48.44		16.90	6.34E-01	7.23E-01	7.23E-01
		62.85		4.60	3.70E+00		2.46E+00
		67.67		0.37	1.18E+01		2.59E+01
+	PA-231	283.67		1.60	-7.58E-01	3.54E+00	4.55E+00
		302.67		2.30	2.30E+00		3.54E+00
+	TH-231	25.64		14.70	-6.05E+01	1.38E+00	6.95E+00
		84.21		6.40	3.15E-01		1.38E+00
+	PA-233	311.98		38.60	-3.55E-02	2.35E-01	2.35E-01
+	PA-234	131.20		20.40	2.71E-01	3.68E-01	3.68E-01
		733.99		8.80	9.82E-02		1.05E+00
		946.00		12.00	8.50E-02		8.74E-01
+	PA-234M	1001.03		0.92	6.92E+00	1.33E+01	1.33E+01
+	TH-234	63.29	*	3.80	2.19E+00	3.73E+00	3.73E+00
+	U-235	143.76		10.50	1.40E-01	6.96E-01	6.96E-01
		163.35		4.70	-1.32E-01		1.55E+00
		205.31		4.70	-3.76E-01		1.56E+00
+	NP-237	86.50		12.60	9.94E-01	7.87E-01	7.87E-01
+	NP-239	106.10		22.70	1.92E+00	5.28E+00	5.28E+00
		228.18		10.70	6.86E-01		1.21E+01
		277.60		14.10	3.99E+00		9.85E+00
+	AM-241	59.54		35.90	-4.23E-02	2.64E-01	2.64E-01
+	AM-243	74.67		66.00	-8.06E-01	1.84E-01	1.84E-01
+	CM-243	209.75		3.29	1.39E+00	5.74E-01	2.46E+00
		228.14		10.60	4.01E-02		7.06E-01
		277.60		14.00	2.33E-01		5.74E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1606041-10
CP-5029 05-10

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	9.62E-01	9.62E-01	-1.76E-01	4.55E-01
NA-22	1274.54	99.94	1.06E-01	1.06E-01	-3.94E-03	4.76E-02
NA-24	1368.53	99.99	3.82E+03	3.14E+03	-2.85E+02	1.65E+03
	2754.09	99.86	3.14E+03		1.05E+03	1.22E+03
AL-26	1808.65	99.76	8.27E-02	8.27E-02	9.92E-03	3.46E-02
+ K-40	1460.81	*	1.62E+00	1.62E+00	2.46E+01	7.53E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	1.02E-01	1.02E-01	4.60E-02	4.96E-02
	78.34	96.00	1.32E-01		2.08E-01	6.48E-02
SC-46	889.25	99.98	1.18E-01	1.18E-01	2.11E-02	5.45E-02
	1120.51	99.99	2.06E-01		3.06E-01	9.81E-02
V-48	983.52	99.98	1.51E-01	1.51E-01	-5.74E-02	6.87E-02
	1312.10	97.50	1.65E-01		-2.12E-02	7.39E-02
CR-51	320.08	9.83	9.30E-01	9.30E-01	-3.34E-01	4.41E-01
MN-54	834.83	99.97	1.16E-01	1.16E-01	4.30E-02	5.40E-02
CO-56	846.75	99.96	1.07E-01	1.07E-01	-1.52E-02	4.92E-02
	1037.75	14.03	8.67E-01		1.34E-01	3.99E-01
	1238.25	67.00	2.42E-01		1.12E-03	1.13E-01
	1771.40	15.51	5.16E-01		-5.15E-02	2.11E-01
	2598.48	16.90	3.92E-01		1.21E-02	1.47E-01
CO-57	122.06	85.51	7.95E-02	7.95E-02	2.73E-02	3.85E-02
	136.48	10.60	6.70E-01		1.79E-01	3.24E-01
CO-58	810.76	99.40	1.01E-01	1.01E-01	-4.39E-02	4.67E-02
FE-59	1099.22	56.50	2.14E-01	2.14E-01	-6.64E-02	9.72E-02
	1291.56	43.20	2.81E-01		-1.46E-01	1.26E-01
CO-60	1173.22	100.00	1.38E-01	1.03E-01	5.81E-02	6.40E-02
	1332.49	100.00	1.03E-01		-3.75E-02	4.62E-02
ZN-65	1115.52	50.75	2.29E-01	2.29E-01	-1.17E-02	1.05E-01
+ GA-67	93.31	*	3.11E+00	3.11E+00	2.36E+00	1.53E+00
	208.95	*	3.05E+01		2.50E+01	1.47E+01
	300.22	*	7.03E+00		4.57E+00	3.43E+00
SE-75	121.11	16.70	4.14E-01	1.22E-01	-2.00E-01	2.00E-01
	136.00	59.20	1.22E-01		-4.36E-02	5.91E-02
	264.65	59.80	1.23E-01		-1.79E-02	5.88E-02
	279.53	25.20	3.29E-01		1.55E-01	1.58E-01
	400.65	11.40	6.48E-01		1.91E-01	3.04E-01
RB-82	776.52	13.00	1.03E+00	1.03E+00	1.68E-01	4.80E-01
RB-83	520.41	46.00	1.94E-01	1.94E-01	9.56E-02	9.10E-02
	529.64	30.30	3.26E-01		9.76E-02	1.54E-01
	552.65	16.40	6.15E-01		2.00E-01	2.90E-01
KR-85	513.99	0.43	3.41E+01	3.41E+01	7.55E+01	1.64E+01
SR-85	513.99	99.27	1.65E-01	1.65E-01	3.65E-01	7.95E-02
Y-88	898.02	93.40	1.30E-01	1.04E-01	4.79E-02	6.04E-02
	1836.01	99.38	1.04E-01		4.34E-02	4.49E-02
NB-93M	16.57	9.43	8.36E+01	8.36E+01	-1.32E+02	3.80E+01

Analysis Report for 1606041-10
CP-5029 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94	702.63	100.00	1.08E-01	1.02E-01	2.99E-02	5.05E-02
	871.10	100.00	1.02E-01		2.03E-02	4.71E-02
NB-95	765.79	99.81	1.51E-01	1.51E-01	1.09E-02	7.11E-02
NB-95M	235.69	25.00	2.09E+00	2.09E+00	-2.51E+01	1.01E+00
ZR-95	724.18	43.70	2.59E-01	2.13E-01	3.18E-03	1.21E-01
	756.72	55.30	2.13E-01		-3.37E-02	9.97E-02
MO-99	181.06	6.20	1.38E+01	9.16E+00	-5.17E+00	6.66E+00
	739.58	12.80	9.16E+00		2.76E+00	4.27E+00
	778.00	4.50	2.63E+01		7.13E+00	1.23E+01
RU-103	497.08	89.00	1.09E-01	1.09E-01	-2.99E-02	5.12E-02
RU-106	621.84	9.80	9.46E-01	9.46E-01	-8.22E-02	4.42E-01
AG-108M	433.93	89.90	1.04E-01	1.04E-01	4.80E-02	4.95E-02
	614.37	90.40	1.08E-01		1.08E-02	5.09E-02
	722.95	90.50	1.08E-01		-2.04E-03	5.01E-02
+ CD-109	88.03	*	3.72	2.67E+00	2.67E+00	1.41E+00
AG-110M	657.75	93.14	1.08E-01	1.08E-01	-2.67E-02	5.04E-02
	677.61	10.53	9.03E-01		1.84E-01	4.20E-01
	706.67	16.46	6.45E-01		-8.60E-03	3.02E-01
	763.93	21.98	5.21E-01		4.40E-02	2.44E-01
	884.67	71.63	1.44E-01		1.57E-02	6.63E-02
	1384.27	23.94	4.63E-01		1.10E-01	2.07E-01
CD-113M	263.70	0.02	2.96E+02	2.96E+02	-5.55E+01	1.41E+02
SN-113	255.12	1.93	3.96E+00	1.30E-01	6.00E-01	1.90E+00
	391.69	64.90	1.30E-01		-1.21E-02	6.16E-02
TE123M	159.00	84.10	9.38E-02	9.38E-02	3.58E-02	4.54E-02
SB-124	602.71	97.87	1.08E-01	1.08E-01	8.30E-03	5.08E-02
	645.85	7.26	1.48E+00		6.79E-01	6.94E-01
	722.78	11.10	9.81E-01		-1.86E-02	4.57E-01
	1691.02	49.00	1.97E-01		4.34E-02	8.37E-02
		35.49	6.49	3.62E+00	3.62E+00	8.54E-01	1.75E+00
SB-125	176.33	6.89	1.03E+00	2.88E-01	-1.56E-01	4.99E-01
	427.89	29.33	2.88E-01		-2.27E-01	1.36E-01
	463.38	10.35	9.55E-01		5.54E-01	4.54E-01
	600.56	17.80	5.69E-01		3.35E-01	2.68E-01
	635.90	11.32	8.07E-01		-1.31E-01	3.76E-01
SB-126	414.70	83.30	1.84E-01	1.64E-01	-9.46E-02	8.73E-02
	666.33	99.60	1.88E-01		-2.50E-04	8.86E-02
	695.00	99.60	1.64E-01		-7.52E-02	7.64E-02
	720.50	53.80	3.15E-01		1.25E-01	1.47E-01
+ SN-126	87.57	*	37.00	2.65E-01	2.65E-01	1.40E-01
SB-127	473.00	25.00	1.94E+00	1.64E+00	-5.43E-01	9.14E-01
	685.20	35.70	1.64E+00		1.09E+00	7.67E-01
	783.80	14.70	4.04E+00		-5.95E-01	1.88E+00
I-129	29.78	57.00	7.30E-01	7.30E-01	2.37E-01	3.54E-01
	33.60	13.20	1.88E+00		-9.93E-01	9.10E-01
	39.58	7.52	2.09E+00		5.65E-02	1.01E+00
I-131	284.30	6.05	2.78E+00	2.19E-01	-1.84E-01	1.33E+00
	364.48	81.20	2.19E-01		1.18E-01	1.04E-01
	636.97	7.26	3.01E+00		-2.87E-01	1.41E+00
	722.89	1.80	1.25E+01		-2.36E-01	5.80E+00
TE-132	49.72	13.10	6.67E+00	6.67E-01	-3.59E+00	3.24E+00
	228.16	88.00	6.67E-01		3.78E-02	3.20E-01
BA-133	81.00	33.00	2.80E-01	1.54E-01	-5.36E-02	1.37E-01

Analysis Report for 1606041-10
CP-5029 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
BA-133	302.84	17.80	4.59E-01	1.54E-01	2.98E-01	2.19E-01	
	356.01	60.00	1.54E-01		-6.70E-01	7.35E-02	
I-133	529.87	86.30	2.45E+02	2.45E+02	7.32E+01	1.15E+02	
XE-133	81.00	38.00	8.72E-01	8.72E-01	-1.67E-01	4.26E-01	
CS-134	563.23	8.38	1.09E+00	1.02E-01	9.86E-03	5.11E-01	
	569.32	15.43	5.82E-01		-4.90E-01	2.73E-01	
	604.70	97.60	1.02E-01		1.64E-02	4.81E-02	
	795.84	85.40	1.20E-01		4.11E-02	5.59E-02	
	801.93	8.73	1.26E+00		2.69E-01	5.87E-01	
CS-135	268.24	16.00	5.12E-01	5.12E-01	4.48E-01	2.46E-01	
I-135	1131.51	22.50	1.95E+10	1.61E+10	5.47E+08	8.94E+09	
	1260.41	28.60	1.61E+10		-5.76E+08	7.35E+09	
	1678.03	9.54	3.17E+10		3.91E+09	1.33E+10	
CS-136	153.22	7.46	1.66E+00	1.71E-01	6.92E-01	8.05E-01	
	163.89	4.61	2.63E+00		-2.24E-01	1.27E+00	
	176.55	13.56	8.70E-01		-1.31E-01	4.19E-01	
	273.65	12.66	9.89E-01		-9.25E-01	4.73E-01	
	340.57	48.50	3.70E-01		5.67E-01	1.79E-01	
	818.50	99.70	1.71E-01		2.15E-02	7.94E-02	
	1048.07	79.60	2.20E-01		-3.17E-02	1.01E-01	
	1235.34	19.70	1.18E+00		3.46E-01	5.46E-01	
CS-137	661.65	85.12	1.19E-01	1.19E-01	-3.46E-02	5.59E-02	
LA-138	788.74	34.00	2.98E-01	1.30E-01	1.25E-01	1.38E-01	
	1435.80	66.00	1.30E-01		-3.44E-02	5.62E-02	
CE-139	165.85	80.35	9.66E-02	9.66E-02	2.53E-02	4.67E-02	
BA-140	162.64	6.70	1.86E+00	6.28E-01	6.33E-01	8.99E-01	
	304.84	4.50	2.56E+00		-4.65E-02	1.22E+00	
	423.70	3.20	4.59E+00		-8.08E-03	2.18E+00	
	437.55	2.00	7.68E+00		2.08E+00	3.65E+00	
	537.32	25.00	6.28E-01		3.95E-02	2.96E-01	
LA-140	328.77	20.50	6.99E-01	1.73E-01	4.96E-01	3.34E-01	
	487.03	45.50	3.27E-01		-6.88E-02	1.54E-01	
	815.85	23.50	6.84E-01		-3.93E-02	3.15E-01	
	1596.49	95.49	1.73E-01		6.75E-02	7.55E-02	
CE-141	145.44	48.40	1.88E-01	1.88E-01	4.37E-02	9.12E-02	
CE-143	57.36	11.80	1.04E+02	3.70E+01	-2.14E+01	5.07E+01	
	293.26	42.00	3.70E+01		7.88E+01	1.79E+01	
	664.55	5.20	2.74E+02		5.22E+01	1.29E+02	
CE-144	133.54	10.80	6.46E-01	6.46E-01	-4.48E-01	3.13E-01	
PM-144	476.78	42.00	2.09E-01	9.62E-02	-4.47E-02	9.86E-02	
	618.01	98.60	9.62E-02		2.49E-02	4.50E-02	
	696.49	99.49	1.01E-01		-1.35E-03	4.72E-02	
PM-145	36.85	21.70	8.63E-01	4.73E-01	-4.14E-01	4.18E-01	
	37.36	39.70	4.73E-01		1.53E-01	2.29E-01	
	42.30	15.10	8.49E-01		-7.18E-01	4.11E-01	
	72.40	2.31	4.35E+00		-1.85E+01	2.13E+00	
PM-146	453.90	39.94	2.32E-01	2.32E-01	8.85E-02	1.10E-01	
	735.90	14.01	7.02E-01		2.98E-01	3.27E-01	
	747.13	13.10	7.18E-01		-5.25E-01	3.32E-01	
ND-147	91.11	28.90	6.13E-01	6.13E-01	-2.49E+00	3.00E-01	
	531.02	13.10	1.29E+00		-1.71E-01	6.06E-01	
PM-149	285.90	3.10	4.96E+01	4.96E+01	1.05E+01	2.36E+01	
EU-152	121.78	20.50	3.24E-01	3.24E-01	1.11E-01	1.57E-01	

Analysis Report for 1606041-10
CP-5029 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	244.69	5.40	1.76E+00	3.24E-01	1.94E+00	8.53E-01
	344.27	19.13	3.87E-01		-9.54E-03	1.83E-01
	778.89	9.20	1.10E+00		3.53E-02	5.11E-01
	964.01	10.40	1.36E+00		-1.85E-01	6.37E-01
	1085.78	7.22	1.50E+00		-3.94E-01	6.86E-01
	1112.02	9.60	1.14E+00		8.62E-02	5.19E-01
	1407.95	14.94	6.32E-01		1.66E-01	2.78E-01
GD-153	97.43	31.30	2.31E-01	2.31E-01	-3.60E-01	1.12E-01
	103.18	22.20	3.16E-01		-2.09E-01	1.53E-01
EU-154	123.07	40.50	1.65E-01	1.65E-01	8.80E-02	8.00E-02
	723.30	19.70	4.96E-01		-9.40E-03	2.31E-01
	873.19	11.50	9.08E-01		1.32E-01	4.20E-01
	996.32	10.30	1.08E+00		-6.37E-02	5.00E-01
	1004.76	17.90	5.97E-01		1.15E-01	2.74E-01
EU-155	1274.45	35.50	2.96E-01	3.22E-01	-1.10E-02	1.33E-01
	86.50	30.90	3.22E-01		4.07E-01	1.58E-01
	105.30	20.70	3.36E-01		1.22E-01	1.63E-01
EU-156	811.77	10.40	1.30E+00	1.30E+00	-6.09E-01	5.95E-01
	1153.47	7.20	2.91E+00		-7.30E-01	1.35E+00
	1230.71	8.90	2.45E+00		6.85E-01	1.14E+00
HO-166M	184.41	72.60	1.37E-01	1.37E-01	2.46E-01	6.66E-02
	280.45	29.60	2.53E-01		-1.12E-02	1.21E-01
	410.94	11.10	8.53E-01		1.24E-01	4.07E-01
	711.69	54.10	1.87E-01		3.04E-02	8.74E-02
TM-171	66.72	0.14	7.16E+01	7.16E+01	6.86E+00	3.50E+01
HF-172	81.75	4.52	1.92E+00	6.01E-01	-7.07E-01	9.39E-01
	125.81	11.30	6.01E-01		5.15E-03	2.91E-01
LU-172	181.53	20.60	9.69E-01	5.90E-01	-3.19E-01	4.68E-01
	810.06	16.63	1.55E+00		-2.76E-01	7.13E-01
	912.12	15.25	3.88E+00		8.89E+00	1.87E+00
	1093.66	62.50	5.90E-01		6.22E-01	2.75E-01
LU-173	100.72	5.24	1.34E+00	3.97E-01	3.70E-01	6.49E-01
	272.11	21.20	3.97E-01		2.15E-01	1.91E-01
HF-175	343.40	84.00	9.88E-02	9.88E-02	-1.26E-02	4.69E-02
LU-176	88.34	13.30	7.51E-01	7.54E-02	1.42E+00	3.68E-01
	201.83	86.00	8.46E-02		-3.33E-02	4.07E-02
	306.78	94.00	7.54E-02		2.11E-02	3.58E-02
TA-182	67.75	41.20	2.47E-01	2.47E-01	1.12E-01	1.21E-01
	1121.30	34.90	5.75E-01		8.68E-01	2.73E-01
	1189.05	16.23	8.54E-01		5.41E-02	3.94E-01
	1221.41	26.98	5.53E-01		1.79E-01	2.56E-01
	1231.02	11.44	1.30E+00		3.63E-01	6.03E-01
	308.46	29.68	2.59E-01		2.08E-01	-6.27E-04	1.23E-01
IR-192	468.07	48.10	2.08E-01	2.08E-01	9.89E-02	9.83E-02
	279.19	77.30	1.18E-01		1.18E-01	4.95E-02	5.66E-02
HG-203	569.67	97.72	9.73E-02	9.73E-02	-8.39E-03	4.58E-02
	1063.62	74.90	1.42E-01		-9.09E-02	6.50E-02
+ TL-208	583.14	*	30.22	1.63E-01	1.70E+00	2.28E-01
	860.37	*	4.48		1.96E+00	1.64E+00
	2614.66	*	35.85		1.28E+00	6.03E-02
BI-210M	262.00	45.00	1.59E-01	1.59E-01	4.16E-03	7.59E-02
	300.00	23.00	3.82E-01		-1.00E+00	1.84E-01
PB-210	46.50	4.25	2.95E+00	2.95E+00	1.08E+00	1.43E+00

Analysis Report for 1606041-10
CP-5029 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PB-211	404.84	2.90	2.58E+00	2.58E+00	-5.56E-01	1.22E+00
	831.96	2.90	3.58E+00		-1.22E+00	1.66E+00
+ BI-212	727.17 *	11.80	1.06E+00	1.06E+00	1.00E+00	5.00E-01
	1620.62 *	2.75	4.01E+00		3.29E+00	1.78E+00
+ PB-212	238.63 *	44.60	3.49E-01	3.49E-01	1.89E+00	1.71E-01
	300.09 *	3.41	4.21E+00		2.74E+00	2.05E+00
+ BI-214	609.31 *	46.30	2.86E-01	2.86E-01	1.83E+00	1.37E-01
	1120.29 *	15.10	8.19E-01		2.11E+00	3.78E-01
	1764.49	15.80	1.40E+00		2.12E+00	6.59E-01
	2204.22	4.98	2.83E+00		1.03E+00	1.27E+00
+ PB-214	295.21 *	19.19	7.45E-01	3.33E-01	2.24E+00	3.64E-01
	351.92 *	37.19	3.33E-01		2.13E+00	1.61E-01
RN-219	401.80	6.50	1.19E+00	1.19E+00	7.65E-01	5.63E-01
RA-223	323.87	3.88	2.00E+00	2.00E+00	5.12E-01	9.51E-01
RA-224	240.98	3.95	4.44E+00	4.44E+00	2.39E+01	2.18E+00
RA-225	40.00	31.00	7.78E-01	7.78E-01	2.10E-02	3.77E-01
+ RA-226	186.21 *	3.28	3.53E+00	3.53E+00	5.47E+00	1.73E+00
TH-227	50.10	8.40	1.31E+00	7.07E-01	-7.05E-01	6.37E-01
	236.00	11.50	7.07E-01		-8.50E+00	3.41E-01
	256.20	6.30	1.14E+00		-5.29E-01	5.46E-01
+ AC-228	338.32 *	11.40	1.08E+00	6.33E-01	1.38E+00	5.23E-01
	911.07 *	27.70	6.33E-01		1.80E+00	3.02E-01
	969.11 *	16.60	1.30E+00		1.54E+00	6.26E-01
TH-230	48.44	16.90	7.23E-01	7.23E-01	6.34E-01	3.52E-01
	62.85	4.60	2.46E+00		3.70E+00	1.20E+00
	67.67	0.37	2.59E+01		1.18E+01	1.27E+01
PA-231	283.67	1.60	4.55E+00	3.54E+00	-7.58E-01	2.17E+00
	302.67	2.30	3.54E+00		2.30E+00	1.69E+00
TH-231	25.64	14.70	6.95E+00	1.38E+00	-6.05E+01	3.38E+00
	84.21	6.40	1.38E+00		3.15E-01	6.74E-01
PA-233	311.98	38.60	2.35E-01	2.35E-01	-3.55E-02	1.12E-01
PA-234	131.20	20.40	3.68E-01	3.68E-01	2.71E-01	1.79E-01
	733.99	8.80	1.05E+00		9.82E-02	4.86E-01
	946.00	12.00	8.74E-01		8.50E-02	4.02E-01
PA-234M	1001.03	0.92	1.33E+01	1.33E+01	6.92E+00	6.18E+00
+ TH-234	63.29 *	3.80	3.73E+00	3.73E+00	2.19E+00	1.83E+00
U-235	143.76	10.50	6.96E-01	6.96E-01	1.40E-01	3.37E-01
	163.35	4.70	1.55E+00		-1.32E-01	7.47E-01
	205.31	4.70	1.56E+00		-3.76E-01	7.51E-01
NP-237	86.50	12.60	7.87E-01	7.87E-01	9.94E-01	3.86E-01
NP-239	106.10	22.70	5.28E+00	5.28E+00	1.92E+00	2.56E+00
	228.18	10.70	1.21E+01		6.86E-01	5.81E+00
	277.60	14.10	9.85E+00		3.99E+00	4.72E+00
AM-241	59.54	35.90	2.64E-01	2.64E-01	-4.23E-02	1.29E-01
AM-243	74.67	66.00	1.84E-01	1.84E-01	-8.06E-01	9.06E-02
CM-243	209.75	3.29	2.46E+00	5.74E-01	1.39E+00	1.19E+00
	228.14	10.60	7.06E-01		4.01E-02	3.39E-01
	277.60	14.00	5.74E-01		2.33E-01	2.75E-01

Analysis Report for 1606041-10
CP-5029 05-10

- + = Nuclide identified during the nuclide identification
 - * = Energy line found in the spectrum
 - > = MDA value not calculated
 - @ = Half-life too short to be able to perform the decay correction
-

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP-5029 05-10

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	34	81	83	135	790	203
25:	60	70	63	71	64	67	58	68
33:	58	57	50	65	75	60	57	78
41:	69	60	57	62	47	70	123	115
49:	64	88	73	77	77	116	74	83
57:	81	63	94	106	101	115	114	276
65:	150	117	119	117	131	118	97	123
73:	117	145	229	372	219	564	207	123
81:	97	117	100	127	145	114	115	260
89:	133	115	158	101	217	240	146	74
97:	69	84	70	84	77	61	73	66
105:	69	85	87	55	61	81	91	76
113:	57	69	72	80	63	69	59	50
121:	57	57	76	67	53	55	77	57
129:	83	99	80	73	65	59	50	57
137:	68	67	67	56	60	49	61	76
145:	81	62	64	52	64	63	39	53
153:	55	66	86	62	71	59	62	61
161:	58	45	56	72	65	48	59	48
169:	53	44	48	67	46	48	50	44
177:	47	54	54	55	54	44	62	44
185:	49	115	205	74	51	47	49	59
193:	44	49	51	51	55	47	60	53
201:	31	39	58	43	44	48	47	41
209:	51	91	55	29	43	52	54	42
217:	50	33	45	61	30	42	26	40
225:	39	42	53	36	42	30	46	34
233:	39	44	38	32	50	67	392	358
241:	75	119	144	57	35	32	36	25
249:	25	35	33	32	37	32	27	31
257:	35	35	45	35	36	24	25	33
265:	25	30	30	33	28	30	76	29
273:	26	38	30	37	30	43	33	37
281:	30	27	26	24	32	33	28	28
289:	32	21	26	22	24	27	75	221
297:	70	39	27	31	63	35	23	19
305:	24	21	25	27	23	17	25	27
313:	21	27	25	25	21	25	32	13
321:	18	28	28	31	25	22	28	30
329:	38	28	34	25	20	30	28	20
337:	21	37	110	59	29	26	24	26
345:	25	15	21	24	15	23	40	188
353:	327	60	31	31	27	18	14	21
361:	21	17	22	24	21	18	26	16

369: 14 15 24 17 24 15 11 7

Sample Title: CP-5029 05-10

Channel	14	15	24	17	24	15	11	7
377:	15	25	23	19	24	18	21	27
385:	16	23	20	24	14	26	20	15
393:	23	23	20	27	20	14	6	15
401:	24	18	15	25	10	21	18	27
409:	11	23	24	13	24	21	15	23
417:	17	11	21	20	12	13	20	27
425:	9	17	16	15	11	21	15	17
433:	19	20	15	19	23	13	14	13
441:	22	14	9	13	9	13	16	14
449:	14	15	11	15	18	17	21	17
457:	17	13	13	5	10	16	30	31
465:	19	7	15	17	17	13	20	8
473:	13	16	13	8	11	16	17	12
481:	21	15	17	12	12	7	22	22
489:	9	10	13	15	13	9	11	12
497:	14	12	11	9	8	16	9	11
505:	11	10	9	13	16	28	79	69
513:	49	15	19	14	10	8	10	17
521:	13	9	6	11	5	7	11	12
529:	9	18	14	13	12	11	18	16
537:	8	14	15	11	8	11	15	7
545:	15	16	15	9	11	13	9	18
553:	12	7	19	9	10	11	16	10
561:	8	12	16	13	13	7	10	9
569:	13	9	15	12	18	19	12	17
577:	6	14	8	13	10	16	54	164
585:	59	13	12	11	11	10	10	12
593:	6	9	10	8	9	17	12	10
601:	13	12	10	15	8	10	14	16
609:	79	249	87	22	3	15	6	14
617:	13	8	5	13	13	6	11	8
625:	12	8	12	9	3	14	9	12
633:	8	6	13	6	5	14	13	14
641:	13	6	12	6	14	6	15	6
649:	13	7	5	13	16	12	10	7
657:	15	9	10	6	15	11	9	11
665:	15	18	9	15	12	12	13	3
673:	4	8	9	14	8	11	6	8
681:	5	9	8	11	10	12	11	13
689:	4	9	17	7	8	5	9	11
697:	14	8	8	12	18	5	14	15
705:	7	8	11	10	9	12	6	16
713:	6	10	9	8	7	13	12	9
721:	6	10	5	8	9	14	15	27
729:	23	6	3	10	8	9	5	9
737:	9	12	8	7	5	10	14	8
745:	8	10	7	7	10	3	6	16
753:	8	8	8	7	14	13	7	11
761:	9	10	12	12	10	9	12	15
769:	23	15	4	11	9	6	9	11
777:	8	7	10	10	6	6	8	9
785:	7	16	9	14	6	4	2	6
793:	6	4	13	15	7	5	7	7

801: 9 7 11 13 11 12 8 11

Sample Title: CP-5029 05-10

Channel	9	7	11	13	11	12	8	11
809:	8	3	10	3	4	5	6	9
817:	4	9	10	7	8	8	10	7
825:	3	8	6	7	8	7	7	10
833:	11	4	8	13	11	9	7	8
841:	11	6	7	4	13	4	9	9
849:	4	4	6	10	6	7	6	10
857:	8	4	10	14	22	16	9	6
865:	5	3	7	4	8	2	8	8
873:	10	9	9	5	8	6	10	4
881:	6	6	5	6	7	2	11	9
889:	7	7	10	8	7	7	12	6
897:	8	10	7	8	8	6	6	7
905:	15	8	10	10	11	8	36	99
913:	51	12	7	6	8	8	9	8
921:	8	5	4	5	4	9	5	4
929:	5	9	5	9	12	10	15	9
937:	5	7	4	5	7	8	7	3
945:	6	7	4	7	11	5	4	7
953:	4	5	5	6	6	7	7	10
961:	3	5	4	9	29	21	11	12
969:	24	43	21	10	6	7	3	2
977:	10	8	7	8	2	5	5	3
985:	7	4	11	12	9	4	9	4
993:	8	1	8	2	11	6	11	6
1001:	9	13	8	4	3	6	5	3
1009:	3	5	3	3	8	3	7	8
1017:	4	5	7	7	6	3	10	4
1025:	4	9	2	10	5	5	4	8
1033:	2	7	3	8	3	10	5	7
1041:	8	8	5	4	7	10	4	6
1049:	2	2	7	6	15	7	7	8
1057:	8	8	7	6	8	4	7	2
1065:	7	5	5	11	8	6	7	5
1073:	4	5	8	5	7	9	10	7
1081:	6	6	4	8	4	8	6	7
1089:	1	7	7	14	8	4	11	9
1097:	8	3	1	5	4	4	5	6
1105:	6	11	7	5	4	4	6	7
1113:	4	2	10	5	3	7	9	16
1121:	53	26	7	1	7	6	4	6
1129:	8	6	3	4	7	6	5	7
1137:	8	5	8	4	13	5	11	9
1145:	6	8	7	9	13	7	14	6
1153:	8	5	7	8	5	11	8	3
1161:	3	8	6	1	8	6	7	5
1169:	2	5	9	8	14	6	3	11
1177:	10	5	6	4	10	6	7	10
1185:	7	7	11	7	5	7	5	7
1193:	3	8	2	3	10	7	4	10
1201:	12	10	9	4	6	5	7	5
1209:	10	6	8	6	8	3	11	6
1217:	5	11	10	7	7	8	9	3
1225:	5	8	5	3	11	7	6	6

1233: 10 11 6 6 4 10 19 10

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Channel	1	2	3	4	5	6	7	8	9
1241:	6	10	4	2	2	6	9	6	
1249:	2	5	3	2	2	5	5	7	
1257:	5	5	6	4	5	6	6	3	
1265:	7	7	9	6	5	3	2	4	
1273:	5	3	4	2	7	3	5	5	
1281:	4	5	5	2	7	12	5	2	
1289:	6	6	3	6	1	2	2	6	
1297:	3	5	10	2	10	2	7	4	
1305:	5	4	4	5	5	3	3	7	
1313:	1	3	4	4	4	5	4	4	
1321:	1	4	4	5	7	2	7	7	
1329:	4	5	3	2	7	3	0	4	
1337:	3	3	4	1	2	3	2	6	
1345:	5	1	5	5	2	2	5	3	
1353:	0	4	4	1	3	7	1	7	
1361:	2	2	3	2	1	1	1	2	
1369:	0	3	6	2	1	1	0	3	
1377:	4	13	12	2	4	3	2	6	
1385:	3	1	6	0	3	3	3	4	
1393:	3	1	1	1	2	1	2	3	
1401:	7	8	3	3	2	4	3	4	
1409:	2	2	1	2	0	5	4	7	
1417:	2	4	0	1	3	5	2	1	
1425:	1	2	4	2	3	1	4	2	
1433:	0	3	1	2	2	4	2	2	
1441:	3	4	3	3	3	0	1	3	
1449:	1	3	0	4	2	2	1	4	
1457:	4	2	6	53	214	255	80	17	
1465:	4	5	2	3	3	0	2	3	
1473:	1	3	0	1	2	0	2	2	
1481:	4	2	0	1	1	1	0	3	
1489:	3	3	4	3	4	2	0	1	
1497:	3	4	1	1	3	4	1	4	
1505:	1	5	1	1	5	6	3	2	
1513:	3	4	2	2	0	4	1	2	
1521:	2	3	1	2	1	1	1	1	
1529:	1	2	2	1	0	0	2	2	
1537:	1	3	1	1	3	3	6	4	
1545:	3	1	2	2	1	1	0	1	
1553:	1	1	2	0	0	2	2	2	
1561:	2	0	1	2	0	1	2	1	
1569:	3	0	0	1	0	1	1	3	
1577:	0	2	0	2	4	3	2	1	
1585:	2	2	1	2	1	2	0	0	
1593:	5	2	3	4	0	2	0	2	
1601:	1	2	2	2	2	1	2	1	
1609:	4	3	0	2	3	0	2	1	
1617:	2	1	3	0	5	7	2	4	
1625:	1	1	0	1	1	3	6	3	
1633:	2	1	1	2	2	0	0	3	
1641:	0	0	1	2	0	2	2	0	
1649:	1	1	0	0	0	0	0	1	
1657:	0	1	3	3	1	11	2	1	

1665: 0 2 1 1 0 3 1 0

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Channel	1	2	3	4	5	6	7	8	9
1673:	2	1	1	0	1	3	1	2	
1681:	1	1	0	1	4	1	1	0	
1689:	2	1	1	0	4	3	2	0	
1697:	1	0	3	0	0	1	1	6	
1705:	2	0	2	0	0	1	2	0	
1713:	2	2	1	0	1	2	2	0	
1721:	1	0	3	2	1	0	0	2	
1729:	1	6	9	1	1	1	2	3	
1737:	0	3	1	1	1	2	5	2	
1745:	3	3	2	2	1	0	0	0	
1753:	0	2	0	0	1	1	2	2	
1761:	2	2	2	21	26	25	6	4	
1769:	1	1	0	0	1	0	1	1	
1777:	0	0	0	1	1	1	1	0	
1785:	0	0	0	2	0	1	0	0	
1793:	0	1	1	2	1	3	0	2	
1801:	1	1	0	2	3	1	0	1	
1809:	0	2	2	2	0	2	0	1	
1817:	0	0	1	2	0	1	1	1	
1825:	0	0	2	1	0	2	1	1	
1833:	4	1	1	2	1	1	3	1	
1841:	0	4	0	1	3	1	5	5	
1849:	2	2	4	1	0	0	1	0	
1857:	0	1	0	0	0	1	0	1	
1865:	0	1	0	0	1	1	0	0	
1873:	0	1	2	2	2	2	0	1	
1881:	2	2	1	2	2	1	2	2	
1889:	0	2	2	1	2	0	1	1	
1897:	1	0	0	2	1	2	0	0	
1905:	0	1	2	2	1	0	0	1	
1913:	0	1	4	1	1	1	3	1	
1921:	3	2	1	0	1	2	1	0	
1929:	2	2	0	1	0	0	0	1	
1937:	1	2	2	1	3	0	4	1	
1945:	3	2	3	1	0	0	0	1	
1953:	0	1	0	0	1	1	2	0	
1961:	0	2	1	2	1	2	1	3	
1969:	0	1	3	1	1	1	0	0	
1977:	2	1	1	2	2	0	0	1	
1985:	0	1	1	2	1	3	2	1	
1993:	0	1	0	2	1	0	0	2	
2001:	3	2	0	0	1	3	1	0	
2009:	1	0	0	5	0	0	4	0	
2017:	0	1	2	2	1	0	1	0	
2025:	0	0	0	0	1	0	2	1	
2033:	0	1	0	3	1	3	0	1	
2041:	0	0	0	1	1	1	0	1	
2049:	0	1	0	0	3	1	0	1	
2057:	2	2	0	0	1	0	0	0	
2065:	3	0	1	0	1	1	1	0	
2073:	0	0	0	0	1	0	1	2	
2081:	1	1	2	0	1	0	1	1	
2089:	0	0	3	2	1	1	0	1	

2097: 1 1 0 0 0 1 3 2

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Channel	1	2	3	4	5	6	7	8
2105:	4	0	5	3	4	1	2	1
2113:	1	0	0	1	2	1	2	1
2121:	0	3	0	1	0	1	0	1
2129:	2	1	1	3	3	1	1	1
2137:	2	0	1	0	0	0	0	1
2145:	1	1	1	1	1	0	0	0
2153:	0	0	0	1	0	1	0	0
2161:	0	0	2	1	1	0	1	0
2169:	0	0	1	0	0	0	1	0
2177:	0	0	0	0	0	2	3	1
2185:	0	0	0	0	0	0	1	2
2193:	3	0	0	0	2	1	1	0
2201:	1	1	4	8	3	5	1	2
2209:	2	3	4	2	1	2	1	0
2217:	0	1	0	3	1	0	0	1
2225:	1	0	0	0	0	1	1	0
2233:	1	1	1	2	0	0	2	0
2241:	2	1	0	0	1	1	1	0
2249:	1	2	1	1	2	1	1	0
2257:	1	0	0	2	0	0	1	0
2265:	0	0	2	1	2	2	2	2
2273:	2	1	0	2	1	0	2	1
2281:	0	0	1	1	1	0	0	1
2289:	0	1	1	3	1	3	1	0
2297:	2	1	4	3	3	1	1	1
2305:	0	1	0	0	0	0	1	1
2313:	2	0	0	2	2	2	0	1
2321:	1	1	0	1	1	1	1	0
2329:	2	0	1	2	1	1	2	0
2337:	2	1	1	1	0	2	3	0
2345:	1	1	1	1	3	1	0	0
2353:	0	3	1	0	1	0	0	0
2361:	2	3	2	0	1	1	0	4
2369:	1	0	3	2	0	1	1	3
2377:	1	0	1	1	1	1	0	2
2385:	0	2	0	0	1	1	2	1
2393:	1	1	1	1	0	0	2	0
2401:	1	0	1	0	0	0	1	0
2409:	1	0	0	0	2	2	0	1
2417:	0	0	1	0	1	0	0	1
2425:	0	1	2	1	0	0	1	0
2433:	0	1	2	0	1	1	0	0
2441:	2	0	0	0	0	2	2	3
2449:	1	2	1	0	2	2	0	0
2457:	1	4	1	1	1	0	0	1
2465:	0	2	2	1	0	0	1	0
2473:	0	1	1	0	0	0	0	0
2481:	0	0	0	0	1	0	1	0
2489:	0	0	0	1	1	0	0	0
2497:	0	1	0	0	1	0	1	0
2505:	2	1	1	0	0	0	0	0
2513:	1	0	0	0	1	1	1	0
2521:	0	1	0	0	0	0	0	0

2529: 1 1 0 1 1 0 1 0

Sample Title: CP-5029 05-10

Channel	1	2	3	4	5	6	7	8	9
2537:	0	1	1	0	0	0	1	0	
2545:	0	1	1	0	0	0	0	1	
2553:	2	1	0	0	0	0	0	2	
2561:	1	0	1	2	1	0	0	0	
2569:	1	0	1	2	1	0	1	0	
2577:	0	0	0	1	0	1	0	0	
2585:	0	1	0	0	0	0	1	0	
2593:	2	0	1	1	0	0	1	0	
2601:	0	0	0	0	0	1	0	0	
2609:	0	0	0	2	11	33	20	16	
2617:	4	0	0	1	0	0	1	0	
2625:	2	0	0	0	0	0	1	1	
2633:	0	0	1	0	1	0	0	0	
2641:	0	0	0	0	1	1	0	1	
2649:	0	1	0	0	0	0	1	0	
2657:	0	0	1	0	0	0	0	0	
2665:	0	0	0	1	0	0	0	0	
2673:	0	0	1	0	0	0	0	0	
2681:	0	1	0	0	0	1	0	1	
2689:	0	0	0	0	0	0	1	1	
2697:	0	1	0	0	1	0	0	0	
2705:	0	0	0	1	0	0	0	0	
2713:	0	0	1	0	3	1	0	0	
2721:	0	0	0	0	0	1	0	1	
2729:	0	0	1	0	0	0	0	1	
2737:	0	0	0	0	1	0	0	0	
2745:	0	0	0	0	0	2	1	0	
2753:	0	0	1	0	0	0	0	0	
2761:	1	0	0	1	1	0	1	1	
2769:	1	0	0	0	0	1	0	0	
2777:	1	0	0	0	0	1	0	1	
2785:	0	1	2	1	0	0	1	0	
2793:	0	0	0	0	0	0	1	1	
2801:	0	0	1	0	0	0	0	0	
2809:	1	0	0	0	0	0	0	0	
2817:	0	0	0	0	0	1	0	0	
2825:	1	0	0	0	1	0	0	1	
2833:	0	1	0	1	0	0	0	1	
2841:	0	1	0	0	0	0	0	0	
2849:	0	1	0	0	0	0	1	1	
2857:	0	0	0	0	0	0	1	0	
2865:	0	0	1	1	0	0	0	0	
2873:	0	0	0	0	0	1	0	0	
2881:	1	0	0	0	0	0	0	0	
2889:	2	0	1	3	0	0	0	0	
2897:	0	0	1	0	0	0	1	0	
2905:	0	1	0	0	0	1	1	0	
2913:	0	0	1	1	1	0	0	1	
2921:	0	0	0	1	0	0	1	0	
2929:	0	1	1	0	0	0	1	0	
2937:	0	1	0	0	0	0	0	0	
2945:	0	2	0	0	0	0	0	2	
2953:	0	0	1	0	0	1	0	0	

2961: 0 1 0 0 0 0 0 0 0

Sample Title: CP-5029 05-10

Channel	1	2	3	4	5	6	7	8	9
2969:	1	0	0	0	0	0	0	1	0
2977:	0	1	0	0	0	0	0	0	0
2985:	0	0	0	0	0	0	2	0	1
2993:	1	0	0	0	0	1	1	0	1
3001:	0	0	0	0	1	1	0	0	0
3009:	0	0	1	0	0	0	0	0	1
3017:	0	1	0	1	0	0	0	2	2
3025:	0	0	0	1	0	0	2	0	1
3033:	1	0	0	0	0	0	0	0	0
3041:	0	1	0	2	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0	1
3057:	0	0	1	0	0	0	0	0	0
3065:	0	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	0	1	0
3081:	0	0	0	0	1	0	0	0	0
3089:	0	1	0	0	0	0	0	0	0
3097:	0	0	1	1	0	0	0	0	0
3105:	0	0	0	0	0	0	0	0	0
3113:	0	0	0	0	0	0	0	0	0
3121:	0	0	1	0	0	0	0	1	0
3129:	0	0	0	0	1	1	1	1	0
3137:	0	0	0	0	0	0	0	1	1
3145:	0	0	0	0	0	0	0	1	0
3153:	0	0	0	1	0	0	0	0	0
3161:	0	0	0	0	0	0	0	0	1
3169:	1	0	0	0	0	1	0	0	0
3177:	0	0	0	1	0	0	0	1	0
3185:	0	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	0	0	1	0
3201:	0	0	0	1	0	0	0	0	0
3209:	0	0	0	1	0	0	0	0	1
3217:	0	0	1	0	0	0	0	0	0
3225:	0	0	0	1	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	0	0	1
3257:	0	0	0	0	0	0	0	1	0
3265:	0	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	1	0
3281:	0	1	1	1	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0	0
3297:	1	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0	0
3313:	1	0	0	0	0	1	0	0	1
3321:	0	0	0	0	1	0	0	0	0
3329:	0	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0	1
3345:	0	0	0	0	0	0	0	1	1
3353:	0	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0	1
3369:	1	0	0	0	0	0	0	0	1
3377:	2	0	1	0	0	0	0	0	0
3385:	0	0	0	0	1	0	0	0	0

3393: 0 0 0 2 0 1 1 0

Sample Title: CP-5029 05-10

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	0	0	0	1	
3409:	0	0	0	0	0	0	0	0	
3417:	2	0	0	0	0	0	0	0	
3425:	0	1	0	0	0	0	0	1	
3433:	0	0	1	0	0	0	0	0	
3441:	0	0	0	0	0	0	0	0	
3449:	0	0	0	0	0	0	0	0	
3457:	0	0	0	0	0	0	0	0	1
3465:	0	0	0	1	0	1	1	1	1
3473:	0	0	0	0	0	0	0	1	0
3481:	0	0	0	1	0	0	0	0	0
3489:	0	1	0	0	0	0	0	0	0
3497:	1	0	0	0	0	1	0	0	0
3505:	0	0	0	0	0	0	0	1	0
3513:	0	0	0	0	0	0	0	1	0
3521:	0	0	0	0	0	0	0	0	0
3529:	0	1	0	1	0	0	0	0	0
3537:	0	1	0	0	0	0	1	0	0
3545:	0	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	1	0
3561:	0	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	1	0	0
3577:	1	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0	0
3593:	0	0	1	0	0	1	0	0	0
3601:	1	0	0	0	0	0	1	2	1
3609:	0	0	0	0	0	1	1	0	1
3617:	0	0	0	0	0	1	0	0	0
3625:	0	0	0	0	0	0	0	0	0
3633:	0	0	1	0	0	0	0	1	0
3641:	0	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	1	0	0	1
3665:	0	0	0	0	0	0	0	1	0
3673:	0	0	0	0	0	0	0	2	0
3681:	0	1	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	1	0
3697:	0	0	1	0	0	1	0	0	0
3705:	0	0	0	0	0	0	1	0	0
3713:	1	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	1	0
3729:	0	1	0	0	0	0	2	0	2
3737:	0	0	1	1	0	0	0	0	0
3745:	0	0	0	0	0	0	1	0	0
3753:	0	0	1	0	0	0	0	0	1
3761:	0	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	2	0	0
3777:	0	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0	0
3793:	0	1	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0	0
3809:	0	1	1	0	0	0	0	0	0
3817:	0	0	0	1	0	0	0	0	0

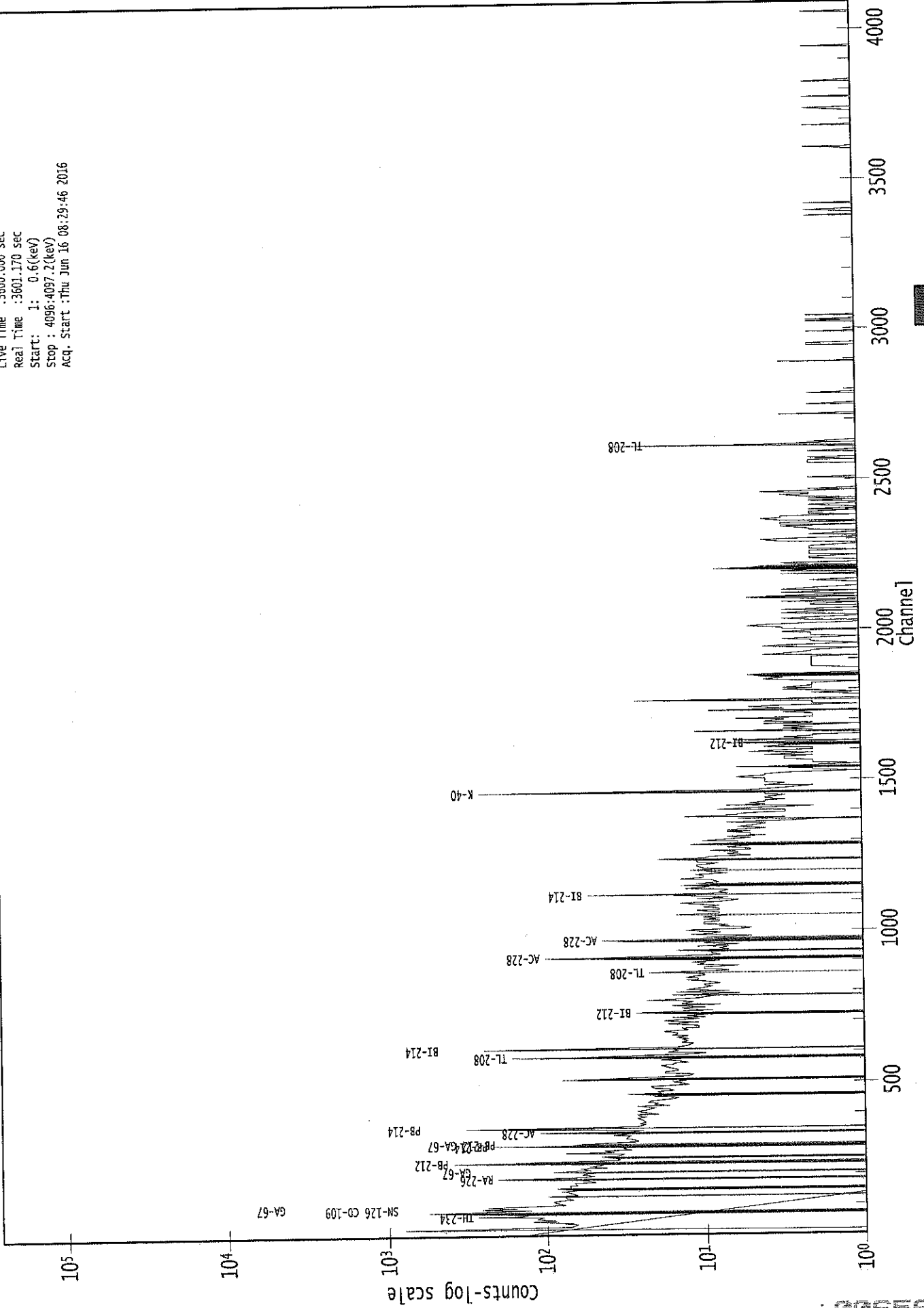
3825: 2 0 1 0 0 0 0 1

Sample Title: CP-5029 05-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	1	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	1	0	0	0	0	0	1	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	1	0	0	0	0
3897:	0	1	0	0	0	0	0	0
3905:	0	0	1	1	0	0	0	1
3913:	0	0	0	0	0	0	0	1
3921:	0	0	0	0	0	0	1	0
3929:	0	0	1	0	0	0	0	0
3937:	1	0	0	1	0	0	2	0
3945:	0	0	0	0	0	0	0	0
3953:	0	1	1	0	0	0	0	0
3961:	0	0	0	0	0	0	1	0
3969:	0	0	0	0	0	0	0	0
3977:	1	0	0	0	1	0	0	0
3985:	0	1	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	1	0	0	0	0
4009:	0	0	0	0	0	0	1	1
4017:	0	0	0	0	0	1	0	0
4025:	1	0	0	0	0	0	0	1
4033:	0	0	0	0	0	0	1	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	1	0
4057:	2	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	1	0	0
4089:	0	0	0	0	0	0	1	0

0000038980.CNF

Live Time : 3600.000 sec
Real Time : 3601.170 sec
Start : 1: 0.6(keV)
Stop : 4096: 4097.2(keV)
Acq. Start : Thu Jun 16 08:29:46 2016



Analysis Report for 1606041-11
CP-5029 10-15

✓
6/16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-11
Sample Description : CP-5029 10-15
Sample Type : SOIL

Sample Size : 2.503E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 4:36:00PM
Acquisition Started : 6/16/2016 9:24:26AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.2 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 7 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 4/6/2016
Efficiency Calibration Description :

Sample Number : 38981

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606041-11
CP-5029 10-15

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 10:24:31AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	12.89	13.01	0.0000	0.00
2	46.58	46.69	0.0000	0.00
3	76.41	76.50	0.0000	0.00
4	84.13	84.21	0.0000	0.00
5	87.00	87.08	0.0000	0.00
6	89.71	89.79	0.0000	0.00
7	93.04	93.12	0.0000	0.00
8	105.67	105.74	0.0000	0.00
9	147.83	147.88	0.0000	0.00
10	161.84	161.88	0.0000	0.00
11	186.00	186.03	0.0000	0.00
12	210.34	210.35	0.0000	0.00
13	239.15	239.15	0.0000	0.00
14	273.21	273.19	0.0000	0.00
15	295.12	295.08	0.0000	0.00
16	300.17	300.14	0.0000	0.00
17	338.81	338.76	0.0000	0.00
18	351.97	351.90	0.0000	0.00
19	463.10	462.98	0.0000	0.00
20	510.97	510.82	0.0000	0.00
21	573.67	573.49	0.0000	0.00
22	583.15	582.97	0.0000	0.00
23	605.40	605.21	0.0000	0.00
24	609.44	609.24	0.0000	0.00
25	649.74	649.53	0.0000	0.00
26	727.19	726.94	0.0000	0.00
27	768.45	768.18	0.0000	0.00
28	772.08	771.82	0.0000	0.00
29	791.93	791.66	0.0000	0.00
30	827.62	827.33	0.0000	0.00
31	861.34	861.03	0.0000	0.00
32	911.38	911.06	0.0000	0.00
33	961.35	961.00	0.0000	0.00
34	969.47	969.12	0.0000	0.00
35	977.34	976.99	0.0000	0.00
36	985.71	985.36	0.0000	0.00
37	1018.07	1017.70	0.0000	0.00
38	1120.47	1120.06	0.0000	0.00
39	1223.98	1223.53	0.0000	0.00
40	1234.49	1234.04	0.0000	0.00
41	1238.23	1237.78	0.0000	0.00
42	1268.62	1268.16	0.0000	0.00

Analysis Report for 1606041-11
CP-5029 10-15

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1297.27	1296.80	0.0000	0.00
44	1305.96	1305.48	0.0000	0.00
45	1378.83	1378.34	0.0000	0.00
46	1384.02	1383.52	0.0000	0.00
47	1424.89	1424.38	0.0000	0.00
48	1440.63	1440.12	0.0000	0.00
49	1460.96	1460.43	0.0000	0.00
50	1681.77	1681.19	0.0000	0.00
51	1723.07	1722.48	0.0000	0.00
52	1730.19	1729.59	0.0000	0.00
53	1764.79	1764.18	0.0000	0.00
54	1796.51	1795.90	0.0000	0.00
55	2018.96	2018.29	0.0000	0.00
56	2089.47	2088.80	0.0000	0.00
57	2103.56	2102.88	0.0000	0.00
58	2204.68	2203.99	0.0000	0.00
59	2217.66	2216.96	0.0000	0.00
60	2435.22	2434.50	0.0000	0.00
61	2614.63	2613.89	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606041-11
CP-5029 10-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 10:24:31AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	12.89	12 -	15	13.01	1.96E+03	118.24	1.35E+03	0.99
2	46.58	44 -	48	46.69	6.91E+01	50.08	4.94E+02	1.09
3	76.41	72 -	81	76.50	8.04E+02	114.43	1.40E+03	3.15
M 4	84.13	82 -	97	84.21	4.02E+01	45.69	5.06E+02	1.21
m 5	87.00	82 -	97	87.08	1.37E+02	51.42	4.81E+02	1.22
m 6	89.71	82 -	97	89.79	1.01E+02	49.11	4.54E+02	1.23
m 7	93.04	82 -	97	93.12	1.90E+02	52.15	4.27E+02	1.23
8	105.67	103 -	109	105.74	6.73E+01	58.49	5.77E+02	1.62
9	147.83	146 -	150	147.88	4.17E+01	41.95	3.53E+02	2.90
10	161.84	158 -	165	161.88	8.14E+01	56.18	4.71E+02	5.10
11	186.00	182 -	189	186.03	1.78E+02	62.19	5.23E+02	1.19
12	210.34	206 -	214	210.35	6.21E+01	62.35	5.44E+02	1.65
13	239.15	235 -	243	239.15	6.41E+02	81.43	6.25E+02	1.44
14	273.21	266 -	280	273.19	8.29E+01	77.15	5.88E+02	8.83
M 15	295.12	290 -	304	295.08	1.95E+02	36.55	1.71E+02	1.50
m 16	300.17	290 -	304	300.14	4.72E+01	32.00	1.62E+02	1.50
17	338.81	334 -	343	338.76	1.09E+02	50.93	3.03E+02	1.80
18	351.97	348 -	355	351.90	3.18E+02	52.65	2.47E+02	1.26
19	463.10	460 -	465	462.98	2.37E+01	30.10	1.63E+02	0.97
20	510.97	506 -	515	510.82	1.12E+02	42.07	1.86E+02	2.07
21	573.67	570 -	576	573.49	2.14E+01	22.93	7.91E+01	3.58
22	583.15	579 -	586	582.97	2.18E+02	38.37	9.91E+01	1.30
M 23	605.40	603 -	613	605.21	1.20E+01	11.73	3.30E+01	2.49
m 24	609.44	603 -	613	609.24	2.69E+02	35.69	5.50E+01	1.74
25	649.74	646 -	653	649.53	1.93E+01	24.98	8.94E+01	5.07
26	727.19	724 -	730	726.94	2.55E+01	27.06	1.07E+02	1.15
M 27	768.45	764 -	774	768.18	3.12E+01	20.66	6.06E+01	2.02
m 28	772.08	764 -	774	771.82	2.18E+01	19.77	4.73E+01	2.03
29	791.93	783 -	799	791.66	4.53E+01	42.29	1.53E+02	11.31
30	827.62	825 -	830	827.33	2.36E+01	16.64	3.29E+01	1.63
31	861.34	857 -	865	861.03	3.50E+01	23.40	6.20E+01	2.33
32	911.38	907 -	914	911.06	1.12E+02	31.24	8.80E+01	1.35
M 33	961.35	958 -	982	961.00	9.47E+00	14.21	3.00E+01	1.99
m 34	969.47	958 -	982	969.12	8.82E+01	21.95	3.00E+01	2.03
m 35	977.34	958 -	982	976.99	1.78E+01	16.45	3.50E+01	2.20
36	985.71	983 -	989	985.36	1.28E+01	14.91	3.05E+01	2.99
37	1018.07	1015 -	1021	1017.70	1.35E+01	15.17	3.29E+01	3.12
38	1120.47	1115 -	1125	1120.06	5.13E+01	30.04	9.15E+01	2.16
39	1223.98	1219 -	1227	1223.53	1.67E+01	21.81	6.27E+01	3.97
M 40	1234.49	1232 -	1244	1234.04	2.55E+01	15.35	2.66E+01	2.18

Analysis Report for 1606041-11
CP-5029 10-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
m	41	1238.23	1232 -	1244	1237.78	2.72E+01	20.38	5.01E+01	2.39
	42	1268.62	1263 -	1272	1268.16	2.03E+01	18.87	3.73E+01	7.83
M	43	1297.27	1290 -	1312	1296.80	1.93E+01	18.97	3.21E+01	3.92
m	44	1305.96	1290 -	1312	1305.48	1.72E+01	18.33	2.65E+01	3.93
M	45	1378.83	1375 -	1386	1378.34	2.28E+01	9.22	4.18E+00	2.74
m	46	1384.02	1375 -	1386	1383.52	1.17E+01	9.59	1.74E+00	2.74
	47	1424.89	1422 -	1426	1424.38	7.50E+00	7.25	5.00E+00	1.52
	48	1440.63	1437 -	1444	1440.12	1.04E+01	9.59	9.20E+00	1.27
	49	1460.96	1456 -	1465	1460.43	4.34E+02	43.74	2.66E+01	2.04
	50	1681.77	1677 -	1686	1681.19	7.00E+00	9.90	1.00E+01	1.28
	51	1723.07	1718 -	1725	1722.48	8.92E+00	9.17	8.15E+00	3.55
	52	1730.19	1726 -	1735	1729.59	1.60E+01	11.75	1.19E+01	3.08
	53	1764.79	1760 -	1768	1764.18	5.59E+01	15.88	4.16E+00	1.54
	54	1796.51	1793 -	1799	1795.90	1.00E+01	6.32	0.00E+00	3.98
	55	2018.96	2014 -	2022	2018.29	6.50E+00	9.19	9.00E+00	3.95
	56	2089.47	2085 -	2091	2088.80	5.00E+00	4.47	0.00E+00	2.75
	57	2103.56	2099 -	2107	2102.88	1.70E+01	8.25	0.00E+00	5.88
	58	2204.68	2201 -	2206	2203.99	7.50E+00	7.62	5.00E+00	1.84
	59	2217.66	2214 -	2219	2216.96	6.50E+00	6.40	3.00E+00	2.05
	60	2435.22	2430 -	2437	2434.50	8.00E+00	5.66	0.00E+00	3.88
	61	2614.63	2609 -	2617	2613.89	4.80E+01	14.84	4.08E+00	2.41

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 10:24:31AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	12.89	12 -	15	1.96E+03	118.24	1.35E+03	6.44E+01
	2	46.58	44 -	48	6.91E+01	50.08	4.94E+02	3.88E+01
	3	76.41	72 -	81	8.04E+02	114.43	1.40E+03	8.17E+01
M	4	84.13	82 -	97	4.02E+01	45.69	5.06E+02	3.70E+01
m	5	87.00	82 -	97	1.37E+02	51.42	4.81E+02	3.61E+01
m	6	89.71	82 -	97	1.01E+02	49.11	4.54E+02	3.50E+01
m	7	93.04	82 -	97	1.90E+02	52.15	4.27E+02	3.40E+01

Analysis Report for 1606041-11

CP-5029 10-15

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
8	105.67	103 -	109	6.73E+01	58.49	5.77E+02	4.61E+01
9	147.83	146 -	150	4.17E+01	41.95	3.53E+02	3.28E+01
10	161.84	158 -	165	8.14E+01	56.18	4.71E+02	4.37E+01
11	186.00	182 -	189	1.78E+02	62.19	5.23E+02	4.62E+01
12	210.34	206 -	214	6.21E+01	62.35	5.44E+02	4.96E+01
13	239.15	235 -	243	6.41E+02	81.43	6.25E+02	5.24E+01
14	273.21	266 -	280	8.29E+01	77.15	5.88E+02	6.16E+01
M	15	290 -	304	1.95E+02	36.55	1.71E+02	2.15E+01
m	16	290 -	304	4.72E+01	32.00	1.62E+02	2.09E+01
17	338.81	334 -	343	1.09E+02	50.93	3.03E+02	3.82E+01
18	351.97	348 -	355	3.18E+02	52.65	2.47E+02	3.19E+01
19	463.10	460 -	465	2.37E+01	30.10	1.63E+02	2.34E+01
20	510.97	506 -	515	1.12E+02	42.07	1.86E+02	2.99E+01
21	573.67	570 -	576	2.14E+01	22.93	7.91E+01	1.72E+01
22	583.15	579 -	586	2.18E+02	38.37	9.91E+01	2.01E+01
M	23	603 -	613	1.20E+01	11.73	3.30E+01	9.44E+00
m	24	603 -	613	2.69E+02	35.69	5.50E+01	1.22E+01
25	649.74	646 -	653	1.93E+01	24.98	8.94E+01	1.92E+01
26	727.19	724 -	730	2.55E+01	27.06	1.07E+02	2.06E+01
M	27	764 -	774	3.12E+01	20.66	6.06E+01	1.28E+01
m	28	764 -	774	2.18E+01	19.77	4.73E+01	1.13E+01
29	791.93	783 -	799	4.53E+01	42.29	1.53E+02	3.30E+01
30	827.62	825 -	830	2.36E+01	16.64	3.29E+01	1.11E+01
31	861.34	857 -	865	3.50E+01	23.40	6.20E+01	1.66E+01
32	911.38	907 -	914	1.12E+02	31.24	8.80E+01	1.89E+01
M	33	958 -	982	9.47E+00	14.21	3.00E+01	9.00E+00
m	34	958 -	982	8.82E+01	21.95	3.00E+01	9.00E+00
m	35	958 -	982	1.78E+01	16.45	3.50E+01	9.73E+00
36	985.71	983 -	989	1.28E+01	14.91	3.05E+01	1.08E+01
37	1018.07	1015 -	1021	1.35E+01	15.17	3.29E+01	1.09E+01
38	1120.47	1115 -	1125	5.13E+01	30.04	9.15E+01	2.17E+01
39	1223.98	1219 -	1227	1.67E+01	21.81	6.27E+01	1.66E+01
M	40	1232 -	1244	2.55E+01	15.35	2.66E+01	8.48E+00
m	41	1232 -	1244	2.72E+01	20.38	5.01E+01	1.16E+01
42	1268.62	1263 -	1272	2.03E+01	18.87	3.73E+01	1.36E+01
M	43	1290 -	1312	1.93E+01	18.97	3.21E+01	9.32E+00
m	44	1290 -	1312	1.72E+01	18.33	2.65E+01	8.47E+00
M	45	1375 -	1386	2.28E+01	9.22	4.18E+00	3.36E+00
m	46	1375 -	1386	1.17E+01	9.59	1.74E+00	2.17E+00
47	1424.89	1422 -	1426	7.50E+00	7.25	5.00E+00	3.90E+00
48	1440.63	1437 -	1444	1.04E+01	9.59	9.20E+00	5.84E+00
49	1460.96	1456 -	1465	4.34E+02	43.74	2.66E+01	1.10E+01
50	1681.77	1677 -	1686	7.00E+00	9.90	1.00E+01	6.88E+00
51	1723.07	1718 -	1725	8.92E+00	9.17	8.15E+00	5.71E+00
52	1730.19	1726 -	1735	1.60E+01	11.75	1.19E+01	7.06E+00
53	1764.79	1760 -	1768	5.59E+01	15.88	4.16E+00	4.39E+00
54	1796.51	1793 -	1799	1.00E+01	6.32	0.00E+00	0.00E+00
55	2018.96	2014 -	2022	6.50E+00	9.19	9.00E+00	6.29E+00
56	2089.47	2085 -	2091	5.00E+00	4.47	0.00E+00	0.00E+00
57	2103.56	2099 -	2107	1.70E+01	8.25	0.00E+00	0.00E+00
58	2204.68	2201 -	2206	7.50E+00	7.62	5.00E+00	4.35E+00

Analysis Report for 1606041-11

CP-5029 10-15

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
59	2217.66	2214 -	2219	6.50E+00	6.40	3.00E+00	3.18E+00
60	2435.22	2430 -	2437	8.00E+00	5.66	0.00E+00	0.00E+00
61	2614.63	2609 -	2617	4.80E+01	14.84	4.08E+00	4.38E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 10:24:31AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	12.89	12 -	15	13.01	1.96E+03	118.24	1.35E+03	.....
2	46.58	44 -	48	46.69	6.91E+01	50.08	4.94E+02	PB-210
3	76.41	72 -	81	76.50	8.04E+02	114.43	1.40E+03	.....
M 4	84.13	82 -	97	84.21	4.02E+01	45.69	5.06E+02	TH-231
m 5	87.00	82 -	97	87.08	1.37E+02	51.42	4.81E+02	NP-237 EU-155 SN-126
m 6	89.71	82 -	97	89.79	1.01E+02	49.11	4.54E+02	.....
m 7	93.04	82 -	97	93.12	1.90E+02	52.15	4.27E+02	GA-67
8	105.67	103 -	109	105.74	6.73E+01	58.49	5.77E+02	EU-155 NP-239
9	147.83	146 -	150	147.88	4.17E+01	41.95	3.53E+02	.....
10	161.84	158 -	165	161.88	8.14E+01	56.18	4.71E+02	BA-140
11	186.00	182 -	189	186.03	1.78E+02	62.19	5.23E+02	RA-226
12	210.34	206 -	214	210.35	6.21E+01	62.35	5.44E+02	CM-243
13	239.15	235 -	243	239.15	6.41E+02	81.43	6.25E+02	PB-212
14	273.21	266 -	280	273.19	8.29E+01	77.15	5.88E+02	CS-136
M 15	295.12	290 -	304	295.08	1.95E+02	36.55	1.71E+02	PB-214
m 16	300.17	290 -	304	300.14	4.72E+01	32.00	1.62E+02	GA-67 PB-212 BI-210M
17	338.81	334 -	343	338.76	1.09E+02	50.93	3.03E+02	AC-228
18	351.97	348 -	355	351.90	3.18E+02	52.65	2.47E+02	PB-214

Analysis Report for 1606041-11

CP-5029 10-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
19	463.10	460 -	465	462.98	2.37E+01	30.10	1.63E+02	SB-125
20	510.97	506 -	515	510.82	1.12E+02	42.07	1.86E+02	.....
21	573.67	570 -	576	573.49	2.14E+01	22.93	7.91E+01	.....
22	583.15	579 -	586	582.97	2.18E+02	38.37	9.91E+01	TL-208
M 23	605.40	603 -	613	605.21	1.20E+01	11.73	3.30E+01	CS-134
m 24	609.44	603 -	613	609.24	2.69E+02	35.69	5.50E+01	BI-214
25	649.74	646 -	653	649.53	1.93E+01	24.98	8.94E+01	.....
26	727.19	724 -	730	726.94	2.55E+01	27.06	1.07E+02	BI-212
M 27	768.45	764 -	774	768.18	3.12E+01	20.66	6.06E+01	.....
m 28	772.08	764 -	774	771.82	2.18E+01	19.77	4.73E+01	.....
29	791.93	783 -	799	791.66	4.53E+01	42.29	1.53E+02	.....
30	827.62	825 -	830	827.33	2.36E+01	16.64	3.29E+01	.....
31	861.34	857 -	865	861.03	3.50E+01	23.40	6.20E+01	TL-208
32	911.38	907 -	914	911.06	1.12E+02	31.24	8.80E+01	AC-228 LU-172
M 33	961.35	958 -	982	961.00	9.47E+00	14.21	3.00E+01	.....
m 34	969.47	958 -	982	969.12	8.82E+01	21.95	3.00E+01	AC-228
m 35	977.34	958 -	982	976.99	1.78E+01	16.45	3.50E+01	.....
36	985.71	983 -	989	985.36	1.28E+01	14.91	3.05E+01	.....
37	1018.07	1015 -	1021	1017.70	1.35E+01	15.17	3.29E+01	.....
38	1120.47	1115 -	1125	1120.06	5.13E+01	30.04	9.15E+01	SC-46 BI-214 TA-182
39	1223.98	1219 -	1227	1223.53	1.67E+01	21.81	6.27E+01	.....
M 40	1234.49	1232 -	1244	1234.04	2.55E+01	15.35	2.66E+01	CS-136
m 41	1238.23	1232 -	1244	1237.78	2.72E+01	20.38	5.01E+01	CO-56
42	1268.62	1263 -	1272	1268.16	2.03E+01	18.87	3.73E+01	.....
M 43	1297.27	1290 -	1312	1296.80	1.93E+01	18.97	3.21E+01	.....
m 44	1305.96	1290 -	1312	1305.48	1.72E+01	18.33	2.65E+01	.....
M 45	1378.83	1375 -	1386	1378.34	2.28E+01	9.22	4.18E+00	.....
m 46	1384.02	1375 -	1386	1383.52	1.17E+01	9.59	1.74E+00	AG-110M
47	1424.89	1422 -	1426	1424.38	7.50E+00	7.25	5.00E+00	.....
48	1440.63	1437 -	1444	1440.12	1.04E+01	9.59	9.20E+00	.....
49	1460.96	1456 -	1465	1460.43	4.34E+02	43.74	2.66E+01	K-40
50	1681.77	1677 -	1686	1681.19	7.00E+00	9.90	1.00E+01	.....
51	1723.07	1718 -	1725	1722.48	8.92E+00	9.17	8.15E+00	.....
52	1730.19	1726 -	1735	1729.59	1.60E+01	11.75	1.19E+01	.....
53	1764.79	1760 -	1768	1764.18	5.59E+01	15.88	4.16E+00	BI-214
54	1796.51	1793 -	1799	1795.90	1.00E+01	6.32	0.00E+00	.....
55	2018.96	2014 -	2022	2018.29	6.50E+00	9.19	9.00E+00	.....
56	2089.47	2085 -	2091	2088.80	5.00E+00	4.47	0.00E+00	.....
57	2103.56	2099 -	2107	2102.88	1.70E+01	8.25	0.00E+00	.....
58	2204.68	2201 -	2206	2203.99	7.50E+00	7.62	5.00E+00	BI-214
59	2217.66	2214 -	2219	2216.96	6.50E+00	6.40	3.00E+00	.....
60	2435.22	2430 -	2437	2434.50	8.00E+00	5.66	0.00E+00	.....
61	2614.63	2609 -	2617	2613.89	4.80E+01	14.84	4.08E+00	TL-208

Analysis Report for 1606041-11
CP-5029 10-15

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 10:24:31AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	12.89	1.96E+03	118.24	1.13E-05	1.66E-03
	2	46.58	6.91E+01	50.08	1.71E-02	1.66E-03
	3	76.41	8.04E+02	114.43	2.56E-02	2.02E-03
M	4	84.13	4.02E+01	45.69	2.60E-02	2.19E-03
m	5	87.00	1.37E+02	51.42	2.60E-02	2.25E-03
m	6	89.71	1.01E+02	49.11	2.60E-02	2.27E-03
m	7	93.04	1.90E+02	52.15	2.60E-02	2.27E-03
	8	105.67	6.73E+01	58.49	2.55E-02	2.27E-03
	9	147.83	4.17E+01	41.95	2.25E-02	2.36E-03
	10	161.84	8.14E+01	56.18	2.15E-02	2.42E-03
	11	186.00	1.78E+02	62.19	1.99E-02	2.40E-03
	12	210.34	6.21E+01	62.35	1.85E-02	2.36E-03
	13	239.15	6.41E+02	81.43	1.70E-02	2.31E-03
	14	273.21	8.29E+01	77.15	1.55E-02	2.25E-03
M	15	295.12	1.95E+02	36.55	1.47E-02	2.21E-03
m	16	300.17	4.72E+01	32.00	1.45E-02	2.21E-03
	17	338.81	1.09E+02	50.93	1.33E-02	2.14E-03
	18	351.97	3.18E+02	52.65	1.30E-02	2.12E-03
	19	463.10	2.37E+01	30.10	1.05E-02	1.68E-03
	20	510.97	1.12E+02	42.07	9.77E-03	1.43E-03
	21	573.67	2.14E+01	22.93	8.91E-03	1.11E-03
	22	583.15	2.18E+02	38.37	8.79E-03	1.06E-03
M	23	605.40	1.20E+01	11.73	8.53E-03	9.43E-04
m	24	609.44	2.69E+02	35.69	8.48E-03	9.22E-04
	25	649.74	1.93E+01	24.98	8.05E-03	7.13E-04
	26	727.19	2.55E+01	27.06	7.34E-03	7.36E-04
M	27	768.45	3.12E+01	20.66	7.02E-03	7.89E-04
m	28	772.08	2.18E+01	19.77	6.99E-03	7.94E-04
	29	791.93	4.53E+01	42.29	6.84E-03	8.19E-04
	30	827.62	2.36E+01	16.64	6.60E-03	8.65E-04
	31	861.34	3.50E+01	23.40	6.38E-03	9.08E-04
	32	911.38	1.12E+02	31.24	6.09E-03	9.28E-04
M	33	961.35	9.47E+00	14.21	5.83E-03	8.27E-04
m	34	969.47	8.82E+01	21.95	5.79E-03	8.11E-04

Analysis Report for 1606041-11
CP-5029 10-15

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	35	977.34	1.78E+01	16.45	5.75E-03	7.95E-04
	36	985.71	1.28E+01	14.91	5.71E-03	7.78E-04
	37	1018.07	1.35E+01	15.17	5.57E-03	7.13E-04
	38	1120.47	5.13E+01	30.04	5.15E-03	5.05E-04
	39	1223.98	1.67E+01	21.81	4.81E-03	3.87E-04
M	40	1234.49	2.55E+01	15.35	4.78E-03	3.85E-04
m	41	1238.23	2.72E+01	20.38	4.77E-03	3.84E-04
	42	1268.62	2.03E+01	18.87	4.68E-03	3.77E-04
M	43	1297.27	1.93E+01	18.97	4.60E-03	3.71E-04
m	44	1305.96	1.72E+01	18.33	4.58E-03	3.69E-04
M	45	1378.83	2.28E+01	9.22	4.41E-03	3.66E-04
m	46	1384.02	1.17E+01	9.59	4.39E-03	3.67E-04
	47	1424.89	7.50E+00	7.25	4.30E-03	3.70E-04
	48	1440.63	1.04E+01	9.59	4.27E-03	3.71E-04
	49	1460.96	4.34E+02	43.74	4.23E-03	3.72E-04
	50	1681.77	7.00E+00	9.90	3.87E-03	3.89E-04
	51	1723.07	8.92E+00	9.17	3.82E-03	3.92E-04
	52	1730.19	1.60E+01	11.75	3.81E-03	3.93E-04
	53	1764.79	5.59E+01	15.88	3.77E-03	3.96E-04
	54	1796.51	1.00E+01	6.32	3.74E-03	3.98E-04
	55	2018.96	6.50E+00	9.19	3.55E-03	4.01E-04
	56	2089.47	5.00E+00	4.47	3.51E-03	4.01E-04
	57	2103.56	1.70E+01	8.25	3.50E-03	4.01E-04
	58	2204.68	7.50E+00	7.62	3.45E-03	4.01E-04
	59	2217.66	6.50E+00	6.40	3.45E-03	4.01E-04
	60	2435.22	8.00E+00	5.66	3.40E-03	4.01E-04
	61	2614.63	4.80E+01	14.84	3.40E-03	4.01E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 10:24:31AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038677.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	12.89	1.96E+03	118.24			1.96E+03	1.18E+02
2	46.58	6.91E+01	50.08	2.17E+01	5.74E+00	4.74E+01	5.04E+01
3	76.41	8.04E+02	114.43			8.04E+02	1.14E+02

Analysis Report for 1606041-11

CP-5029 10-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	4	84.13	4.02E+01	45.69			4.02E+01	4.57E+01
m	5	87.00	1.37E+02	51.42			1.37E+02	5.14E+01
m	6	89.71	1.01E+02	49.11			1.01E+02	4.91E+01
m	7	93.04	1.90E+02	52.15	4.47E+01	7.30E+00	1.45E+02	5.27E+01
	8	105.67	6.73E+01	58.49			6.73E+01	5.85E+01
	9	147.83	4.17E+01	41.95			4.17E+01	4.19E+01
	10	161.84	8.14E+01	56.18			8.14E+01	5.62E+01
	11	186.00	1.78E+02	62.19	3.13E+01	6.95E+00	1.46E+02	6.26E+01
	12	210.34	6.21E+01	62.35			6.21E+01	6.23E+01
	13	239.15	6.41E+02	81.43	1.19E+01	7.10E+00	6.30E+02	8.17E+01
	14	273.21	8.29E+01	77.15			8.29E+01	7.71E+01
M	15	295.12	1.95E+02	36.55			1.95E+02	3.66E+01
m	16	300.17	4.72E+01	32.00			4.72E+01	3.20E+01
	17	338.81	1.09E+02	50.93			1.09E+02	5.09E+01
	18	351.97	3.18E+02	52.65	9.12E+00	4.79E+00	3.08E+02	5.29E+01
	19	463.10	2.37E+01	30.10			2.37E+01	3.01E+01
	20	510.97	1.12E+02	42.07	6.97E+01	5.00E+00	4.24E+01	4.24E+01
	21	573.67	2.14E+01	22.93			2.14E+01	2.29E+01
	22	583.15	2.18E+02	38.37	3.98E+00	3.57E+00	2.14E+02	3.85E+01
M	23	605.40	1.20E+01	11.73			1.20E+01	1.17E+01
m	24	609.44	2.69E+02	35.69	8.66E+00	3.90E+00	2.61E+02	3.59E+01
	25	649.74	1.93E+01	24.98			1.93E+01	2.50E+01
	26	727.19	2.55E+01	27.06			2.55E+01	2.71E+01
M	27	768.45	3.12E+01	20.66			3.12E+01	2.07E+01
m	28	772.08	2.18E+01	19.77			2.18E+01	1.98E+01
	29	791.93	4.53E+01	42.29			4.53E+01	4.23E+01
	30	827.62	2.36E+01	16.64			2.36E+01	1.66E+01
	31	861.34	3.50E+01	23.40			3.50E+01	2.34E+01
	32	911.38	1.12E+02	31.24	2.01E+00	2.72E+00	1.10E+02	3.14E+01
M	33	961.35	9.47E+00	14.21			9.47E+00	1.42E+01
m	34	969.47	8.82E+01	21.95			8.82E+01	2.20E+01
m	35	977.34	1.78E+01	16.45			1.78E+01	1.64E+01
	36	985.71	1.28E+01	14.91			1.28E+01	1.49E+01
	37	1018.07	1.35E+01	15.17			1.35E+01	1.52E+01
	38	1120.47	5.13E+01	30.04			5.13E+01	3.00E+01
	39	1223.98	1.67E+01	21.81			1.67E+01	2.18E+01
M	40	1234.49	2.55E+01	15.35			2.55E+01	1.53E+01
m	41	1238.23	2.72E+01	20.38			2.72E+01	2.04E+01
	42	1268.62	2.03E+01	18.87			2.03E+01	1.89E+01
M	43	1297.27	1.93E+01	18.97			1.93E+01	1.90E+01
m	44	1305.96	1.72E+01	18.33			1.72E+01	1.83E+01
M	45	1378.83	2.28E+01	9.22			2.28E+01	9.22E+00
m	46	1384.02	1.17E+01	9.59			1.17E+01	9.59E+00
	47	1424.89	7.50E+00	7.25			7.50E+00	7.25E+00
	48	1440.63	1.04E+01	9.59			1.04E+01	9.59E+00
	49	1460.96	4.34E+02	43.74	3.09E+00	1.97E+00	4.31E+02	4.38E+01
	50	1681.77	7.00E+00	9.90			7.00E+00	9.90E+00
	51	1723.07	8.92E+00	9.17			8.92E+00	9.17E+00
	52	1730.19	1.60E+01	11.75			1.60E+01	1.17E+01
	53	1764.79	5.59E+01	15.88			5.59E+01	1.59E+01
	54	1796.51	1.00E+01	6.32			1.00E+01	6.32E+00
	55	2018.96	6.50E+00	9.19			6.50E+00	9.19E+00
	56	2089.47	5.00E+00	4.47			5.00E+00	4.47E+00
	57	2103.56	1.70E+01	8.25			1.70E+01	8.25E+00

Analysis Report for 1606041-11

CP-5029 10-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
58	2204.68	7.50E+00	7.62			7.50E+00	7.62E+00
59	2217.66	6.50E+00	6.40			6.50E+00	6.40E+00
60	2435.22	8.00E+00	5.66			8.00E+00	5.66E+00
61	2614.63	4.80E+01	14.84	3.07E+00	1.34E+00	4.49E+01	1.49E+01

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 10:24:31AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038677.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	12.89	1.96E+03	118.24			1.96E+03	1.18E+02
2	46.58	6.91E+01	50.08	2.17E+01	5.74E+00	4.74E+01	5.04E+01
3	76.41	8.04E+02	114.43			8.04E+02	1.14E+02
M 4	84.13	4.02E+01	45.69			4.02E+01	4.57E+01
m 5	87.00	1.37E+02	51.42			1.37E+02	5.14E+01
m 6	89.71	1.01E+02	49.11			1.01E+02	4.91E+01
m 7	93.04	1.90E+02	52.15	4.47E+01	7.30E+00	1.45E+02	5.27E+01
8	105.67	6.73E+01	58.49			6.73E+01	5.85E+01
9	147.83	4.17E+01	41.95			4.17E+01	4.19E+01
10	161.84	8.14E+01	56.18			8.14E+01	5.62E+01
11	186.00	1.78E+02	62.19	3.13E+01	6.95E+00	1.46E+02	6.26E+01
12	210.34	6.21E+01	62.35			6.21E+01	6.23E+01
13	239.15	6.41E+02	81.43	1.19E+01	7.10E+00	6.30E+02	8.17E+01
14	273.21	8.29E+01	77.15			8.29E+01	7.71E+01
M 15	295.12	1.95E+02	36.55			1.95E+02	3.66E+01
m 16	300.17	4.72E+01	32.00			4.72E+01	3.20E+01
17	338.81	1.09E+02	50.93			1.09E+02	5.09E+01
18	351.97	3.18E+02	52.65	9.12E+00	4.79E+00	3.08E+02	5.29E+01
19	463.10	2.37E+01	30.10			2.37E+01	3.01E+01
20	510.97	1.12E+02	42.07	6.97E+01	5.00E+00	4.24E+01	4.24E+01
21	573.67	2.14E+01	22.93			2.14E+01	2.29E+01
22	583.15	2.18E+02	38.37	3.98E+00	3.57E+00	2.14E+02	3.85E+01
M 23	605.40	1.20E+01	11.73			1.20E+01	1.17E+01
m 24	609.44	2.69E+02	35.69	8.66E+00	3.90E+00	2.61E+02	3.59E+01

Analysis Report for 1606041-11

CP-5029 10-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	25	649.74	1.93E+01	24.98			1.93E+01	2.50E+01
	26	727.19	2.55E+01	27.06			2.55E+01	2.71E+01
M	27	768.45	3.12E+01	20.66			3.12E+01	2.07E+01
m	28	772.08	2.18E+01	19.77			2.18E+01	1.98E+01
	29	791.93	4.53E+01	42.29			4.53E+01	4.23E+01
	30	827.62	2.36E+01	16.64			2.36E+01	1.66E+01
	31	861.34	3.50E+01	23.40			3.50E+01	2.34E+01
	32	911.38	1.12E+02	31.24	2.01E+00	2.72E+00	1.10E+02	3.14E+01
M	33	961.35	9.47E+00	14.21			9.47E+00	1.42E+01
m	34	969.47	8.82E+01	21.95			8.82E+01	2.20E+01
m	35	977.34	1.78E+01	16.45			1.78E+01	1.64E+01
	36	985.71	1.28E+01	14.91			1.28E+01	1.49E+01
	37	1018.07	1.35E+01	15.17			1.35E+01	1.52E+01
	38	1120.47	5.13E+01	30.04			5.13E+01	3.00E+01
	39	1223.98	1.67E+01	21.81			1.67E+01	2.18E+01
M	40	1234.49	2.55E+01	15.35			2.55E+01	1.53E+01
m	41	1238.23	2.72E+01	20.38			2.72E+01	2.04E+01
	42	1268.62	2.03E+01	18.87			2.03E+01	1.89E+01
M	43	1297.27	1.93E+01	18.97			1.93E+01	1.90E+01
m	44	1305.96	1.72E+01	18.33			1.72E+01	1.83E+01
M	45	1378.83	2.28E+01	9.22			2.28E+01	9.22E+00
m	46	1384.02	1.17E+01	9.59			1.17E+01	9.59E+00
	47	1424.89	7.50E+00	7.25			7.50E+00	7.25E+00
	48	1440.63	1.04E+01	9.59			1.04E+01	9.59E+00
	49	1460.96	4.34E+02	43.74	3.09E+00	1.97E+00	4.31E+02	4.38E+01
	50	1681.77	7.00E+00	9.90			7.00E+00	9.90E+00
	51	1723.07	8.92E+00	9.17			8.92E+00	9.17E+00
	52	1730.19	1.60E+01	11.75			1.60E+01	1.17E+01
	53	1764.79	5.59E+01	15.88			5.59E+01	1.59E+01
	54	1796.51	1.00E+01	6.32			1.00E+01	6.32E+00
	55	2018.96	6.50E+00	9.19			6.50E+00	9.19E+00
	56	2089.47	5.00E+00	4.47			5.00E+00	4.47E+00
	57	2103.56	1.70E+01	8.25			1.70E+01	8.25E+00
	58	2204.68	7.50E+00	7.62			7.50E+00	7.62E+00
	59	2217.66	6.50E+00	6.40			6.50E+00	6.40E+00
	60	2435.22	8.00E+00	5.66			8.00E+00	5.66E+00
	61	2614.63	4.80E+01	14.84	3.07E+00	1.34E+00	4.49E+01	1.49E+01

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1606041-11
CP-5029 10-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.997	1460.81 *	10.67	2.86E+01	3.89E+00
GA-67	0.891	93.31 *	35.70	3.71E+00	6.42E+00
		208.95	2.24		
		300.22 *	16.00	4.80E+00	8.79E+00
EU-155	0.968	86.50 *	30.90	5.12E-01	1.97E-01
		105.30 *	20.70	3.84E-01	3.35E-01
TL-208	0.990	583.14 *	30.22	2.42E+00	5.24E-01
		860.37 *	4.48	3.67E+00	2.51E+00
		2614.66 *	35.85	1.11E+00	3.89E-01
PB-210	0.999	46.50 *	4.25	1.96E+00	2.09E+00
BI-212	0.766	727.17 *	11.80	8.82E-01	9.41E-01
		1620.62	2.75		
PB-212	0.960	238.63 *	44.60	2.49E+00	4.68E-01
		300.09 *	3.41	2.85E+00	1.98E+00
BI-214	0.993	609.31 *	46.30	1.99E+00	3.49E-01
		1120.29 *	15.10	1.98E+00	1.17E+00
		1764.49 *	15.80	2.81E+00	8.52E-01
		2204.22 *	4.98	1.31E+00	1.34E+00
PB-214	0.999	295.21 *	19.19	2.07E+00	4.97E-01
		351.92 *	37.19	1.92E+00	4.54E-01
RA-226	0.993	186.21 *	3.28	6.73E+00	1.27E+01
AC-228	0.978	338.32 *	11.40	2.16E+00	1.06E+00
		911.07 *	27.70	1.96E+00	6.32E-01
		969.11 *	16.60	2.75E+00	7.86E-01
TH-231	0.308	25.64	14.70		
		84.21 *	6.40	7.25E-01	8.26E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 10:24:31AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
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Analysis Report for 1606041-11
CP-5029 10-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	12.89	5.44466E-01	3.02		
3	76.41	2.23340E-01	7.12		
m 6	89.71	2.79534E-02	24.40		
9	147.83	1.15915E-02	50.26		
10	161.84	2.26165E-02	34.50		
12	210.34	1.72513E-02	50.20	Tol.	CM-243
14	273.21	2.30301E-02	46.53	Sum	
19	463.10	6.58201E-03	63.51	Tol.	SB-125
20	510.97	1.17709E-02	49.99		
21	573.67	5.95173E-03	53.51		
M 23	605.40	3.33371E-03	48.85	Tol.	CS-134
25	649.74	5.36458E-03	64.67		
M 27	768.45	8.65582E-03	33.16	Sum	
m 28	772.08	6.06460E-03	45.28		
29	791.93	1.25934E-02	46.64		
30	827.62	6.54514E-03	35.32		
M 33	961.35	2.63085E-03	75.03	Sum	
m 35	977.34	4.94847E-03	46.16		
36	985.71	3.54167E-03	58.46		
37	1018.07	3.76389E-03	55.99		
39	1223.98	4.62963E-03	65.42		
M 40	1234.49	7.07317E-03	30.13	Tol.	CS-136
m 41	1238.23	7.56815E-03	37.41	Tol.	CO-56
42	1268.62	5.64815E-03	46.40		
M 43	1297.27	5.35570E-03	49.20		
m 44	1305.96	4.78859E-03	53.17	Sum	
M 45	1378.83	6.34618E-03	20.18		
m 46	1384.02	3.25995E-03	40.86	Tol.	AG-110M
47	1424.89	2.08333E-03	48.30		
48	1440.63	2.88889E-03	46.11		
50	1681.77	1.94444E-03	70.71		
51	1723.07	2.47863E-03	51.36	Sum	
52	1730.19	4.45707E-03	36.61	Sum	
54	1796.51	2.77778E-03	31.62		
55	2018.96	1.80556E-03	70.71		
56	2089.47	1.38889E-03	44.72	Sum	
57	2103.56	4.72222E-03	24.25	S-Esc	
59	2217.66	1.80556E-03	49.25		
60	2435.22	2.22222E-03	35.36		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1606041-11
CP-5029 10-15

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	2.86E+01	3.89E+00
GA-67	0.89	93.31	*	35.70	3.71E+00	6.42E+00
		208.95		2.24		
		300.22	*	16.00	4.80E+00	8.79E+00
EU-155	0.96	86.50	*	30.90	5.12E-01	1.97E-01
		105.30	*	20.70	3.84E-01	3.35E-01
TL-208	0.99	583.14	*	30.22	2.42E+00	5.24E-01
		860.37	*	4.48	3.67E+00	2.51E+00
		2614.66	*	35.85	1.11E+00	3.89E-01
PB-210	0.99	46.50	*	4.25	1.96E+00	2.09E+00
BI-212	0.76	727.17	*	11.80	8.82E-01	9.41E-01
		1620.62		2.75		
PB-212	0.96	238.63	*	44.60	2.49E+00	4.68E-01
		300.09	*	3.41	2.85E+00	1.98E+00
BI-214	0.99	609.31	*	46.30	1.99E+00	3.49E-01
		1120.29	*	15.10	1.98E+00	1.17E+00
		1764.49	*	15.80	2.81E+00	8.52E-01
		2204.22	*	4.98	1.31E+00	1.34E+00
PB-214	0.99	295.21	*	19.19	2.07E+00	4.97E-01
		351.92	*	37.19	1.92E+00	4.54E-01
RA-226	0.99	186.21	*	3.28	6.73E+00	1.27E+01
AC-228	0.97	338.32	*	11.40	2.16E+00	1.06E+00
		911.07	*	27.70	1.96E+00	6.32E-01
		969.11	*	16.60	2.75E+00	7.86E-01
TH-231	0.30	25.64		14.70		
		84.21	*	6.40	7.25E-01	8.26E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

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INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.997	2.86E+01	3.89E+00	
	GA-67	0.891	3.28E+00	4.34E+00	
X	SN-126	0.949			
	EU-155	0.968	4.79E-01	1.70E-01	
	TL-208	0.990	1.61E+00	3.10E-01	
	PB-210	0.999	1.96E+00	2.09E+00	
	BI-212	0.766	8.82E-01	9.41E-01	
	PB-212	0.960	2.41E+00	4.58E-01	
	BI-214	0.993	2.06E+00	3.03E-01	
	PB-214	0.999	1.99E+00	3.35E-01	
	RA-226	0.993	6.73E+00	1.27E+01	
	AC-228	0.978	2.25E+00	4.47E-01	
	TH-231	0.308	7.25E-01	8.26E-01	
X	NP-237	0.961			

- ? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 10:24:31AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	12.89	5.44466E-01	3.02		
3	76.41	2.23340E-01	7.12		
m 6	89.71	2.79534E-02	24.40		
9	147.83	1.15915E-02	50.26		
10	161.84	2.26165E-02	34.50		
12	210.34	1.72513E-02	50.20	Tol.	CM-243
14	273.21	2.30301E-02	46.53	Sum	
19	463.10	6.58201E-03	63.51	Tol.	SB-125
20	510.97	1.17709E-02	49.99		
21	573.67	5.95173E-03	53.51		
M 23	605.40	3.33371E-03	48.85	Tol.	CS-134
25	649.74	5.36458E-03	64.67		
M 27	768.45	8.65582E-03	33.16	Sum	
m 28	772.08	6.06460E-03	45.28		
29	791.93	1.25934E-02	46.64		
30	827.62	6.54514E-03	35.32		
M 33	961.35	2.63085E-03	75.03	Sum	
m 35	977.34	4.94847E-03	46.16		
36	985.71	3.54167E-03	58.46		
37	1018.07	3.76389E-03	55.99		
39	1223.98	4.62963E-03	65.42		
M 40	1234.49	7.07317E-03	30.13	Tol.	CS-136
m 41	1238.23	7.56815E-03	37.41	Tol.	CO-56
42	1268.62	5.64815E-03	46.40		
M 43	1297.27	5.35570E-03	49.20		
m 44	1305.96	4.78859E-03	53.17	Sum	
M 45	1378.83	6.34618E-03	20.18		
m 46	1384.02	3.25995E-03	40.86	Tol.	AG-110M
47	1424.89	2.08333E-03	48.30		
48	1440.63	2.88889E-03	46.11		
50	1681.77	1.94444E-03	70.71		
51	1723.07	2.47863E-03	51.36	Sum	
52	1730.19	4.45707E-03	36.61	Sum	
54	1796.51	2.77778E-03	31.62		
55	2018.96	1.80556E-03	70.71		

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
56	2089.47	1.38889E-03	44.72	Sum	
57	2103.56	4.72222E-03	24.25	S-Esc	
59	2217.66	1.80556E-03	49.25		
60	2435.22	2.22222E-03	35.36		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	2.22E-01	1.18E+00	1.18E+00
+	NA-22	1274.54	99.94	1.94E-02	1.65E-01	1.65E-01
+	NA-24	1368.53	99.99	2.40E+02	5.07E+03	7.49E+03
		2754.09	99.86	1.69E+03		5.07E+03
+	AL-26	1808.65	99.76	-2.12E-02	1.28E-01	1.28E-01
+	K-40	1460.81	* 10.67	2.86E+01	1.70E+00	1.70E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-3.83E-03	1.02E-01	1.02E-01
		78.34	96.00	5.62E-01		1.52E-01
+	SC-46	889.25	99.98	-1.20E-01	1.62E-01	1.62E-01
		1120.51	99.99	2.18E-01		2.70E-01
+	V-48	983.52	99.98	5.22E-02	1.86E-01	2.38E-01
		1312.10	97.50	2.57E-02		1.86E-01
+	CR-51	320.08	9.83	2.82E-01	1.33E+00	1.33E+00
+	MN-54	834.83	99.97	2.09E-02	1.60E-01	1.60E-01
+	CO-56	846.75	99.96	-2.54E-02	1.51E-01	1.51E-01
		1037.75	14.03	9.56E-01		1.46E+00
		1238.25	67.00	1.33E-01		3.90E-01
		1771.40	15.51	5.13E-02		8.40E-01
		2598.48	16.90	0.00E+00		1.54E-01
+	CO-57	122.06	85.51	-1.45E-02	1.05E-01	1.05E-01
		136.48	10.60	-3.80E-01		8.27E-01
+	CO-58	810.76	99.40	4.20E-02	1.61E-01	1.61E-01
+	FE-59	1099.22	56.50	4.17E-02	3.38E-01	3.38E-01
		1291.56	43.20	-3.50E-02		3.73E-01

Analysis Report for 1606041-11
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-60	1173.22	100.00	-1.47E-02	1.64E-01	1.90E-01
		1332.49	100.00	5.05E-02		1.64E-01
+	ZN-65	1115.52	50.75	-1.15E-01	3.46E-01	3.46E-01
+	GA-67	93.31	* 35.70	3.71E+00	5.34E+00	5.34E+00
		208.95	2.24	3.93E+00		3.90E+01
		300.22	* 16.00	4.80E+00		1.19E+01
+	SE-75	121.11	16.70	1.83E-01	1.53E-01	5.64E-01
		136.00	59.20	-5.54E-02		1.53E-01
		264.65	59.80	-1.74E-02		1.63E-01
		279.53	25.20	5.08E-02		4.33E-01
		400.65	11.40	-4.68E-01		9.70E-01
+	RB-82	776.52	13.00	-4.65E-01	1.31E+00	1.31E+00
+	RB-83	520.41	46.00	-1.72E-01	1.90E-01	1.90E-01
		529.64	30.30	-6.65E-02		3.62E-01
		552.65	16.40	-1.83E-01		6.84E-01
+	KR-85	513.99	0.43	-2.23E+01	2.84E+01	2.84E+01
+	SR-85	513.99	99.27	-1.08E-01	1.38E-01	1.38E-01
+	Y-88	898.02	93.40	-8.89E-02	1.31E-01	1.65E-01
		1836.01	99.38	-1.74E-02		1.31E-01
+	NB-93M	16.57	9.43	1.12E+02	1.86E+02	1.86E+02
+	NB-94	702.63	100.00	-1.21E-02	1.33E-01	1.33E-01
		871.10	100.00	2.57E-02		1.51E-01
+	NB-95	765.79	99.81	7.73E-02	2.10E-01	2.10E-01
+	NB-95M	235.69	25.00	-2.45E+01	4.06E+00	4.06E+00
+	ZR-95	724.18	43.70	6.56E-02	3.02E-01	4.85E-01
		756.72	55.30	1.74E-01		3.02E-01
+	MO-99	181.06	6.20	1.89E+00	1.36E+01	1.83E+01
		739.58	12.80	4.00E+00		1.36E+01
		778.00	4.50	2.11E+01		3.85E+01
+	RU-103	497.08	89.00	-3.18E-02	1.44E-01	1.44E-01
+	RU-106	621.84	9.80	1.48E-01	1.34E+00	1.34E+00
+	AG-108M	433.93	89.90	2.38E-02	1.18E-01	1.18E-01
		614.37	90.40	2.22E-02		1.45E-01
		722.95	90.50	1.94E-02		1.81E-01
+	CD-109	88.03	3.72	6.93E+00	3.51E+00	3.51E+00
+	AG-110M	657.75	93.14	2.14E-02	1.48E-01	1.48E-01
		677.61	10.53	6.67E-01		1.42E+00
		706.67	16.46	8.14E-02		8.45E-01
		763.93	21.98	-4.72E-02		6.61E-01
		884.67	71.63	5.76E-02		2.31E-01
		1384.27	23.94	-1.21E-01		6.07E-01
+	CD-113M	263.70	0.02	9.25E+01	4.17E+02	4.17E+02
+	SN-113	255.12	1.93	-1.93E-01	1.83E-01	5.05E+00
		391.69	64.90	7.36E-02		1.83E-01
+	TE123M	159.00	84.10	-6.47E-02	1.13E-01	1.13E-01
+	SB-124	602.71	97.87	1.20E-02	1.53E-01	1.53E-01
		645.85	7.26	3.14E-01		2.28E+00
		722.78	11.10	1.77E-01		1.65E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	1691.02	49.00	-5.32E-02	1.53E-01	2.32E-01
+	I-125	35.49	6.49	9.14E-01	3.08E+00	3.08E+00
+	SB-125	176.33	6.89	-3.34E-01	3.59E-01	1.34E+00
		427.89	29.33	1.40E-01		3.59E-01
		463.38	10.35	8.44E-01		1.32E+00
		600.56	17.80	1.16E-01		7.35E-01
		635.90	11.32	-4.68E-02		1.23E+00
+	SB-126	414.70	83.30	-2.73E-02	1.91E-01	1.91E-01
		666.33	99.60	-7.01E-02		2.53E-01
		695.00	99.60	7.85E-02		2.47E-01
		720.50	53.80	-1.33E-02		4.83E-01
+	SN-126	87.57	* 37.00	4.26E-01	6.48E-01	6.48E-01
+	SB-127	473.00	25.00	-8.13E-01	2.28E+00	2.28E+00
		685.20	35.70	3.89E-01		2.31E+00
		783.80	14.70	3.80E-01		6.06E+00
+	I-129	29.78	57.00	-2.88E-01	5.59E-01	5.59E-01
		33.60	13.20	-1.09E-01		1.49E+00
		39.58	7.52	7.28E-01		1.88E+00
+	I-131	284.30	6.05	-3.01E-01	2.92E-01	3.89E+00
		364.48	81.20	9.74E-02		2.92E-01
		636.97	7.26	-1.56E+00		4.34E+00
		722.89	1.80	2.26E+00		2.10E+01
+	TE-132	49.72	13.10	1.35E+00	8.58E-01	6.10E+00
		228.16	88.00	-2.34E-01		8.58E-01
+	BA-133	81.00	33.00	1.23E-01	1.54E-01	2.43E-01
		302.84	17.80	-4.09E-01		5.75E-01
		356.01	60.00	6.21E-03		1.54E-01
+	I-133	529.87	86.30	-3.79E+01	2.80E+02	2.80E+02
+	XE-133	81.00	38.00	3.86E-01	7.62E-01	7.62E-01
+	CS-134	563.23	8.38	-6.85E-02	1.57E-01	1.31E+00
		569.32	15.43	7.89E-02		6.70E-01
		604.70	97.60	-1.11E+00		1.57E-01
		795.84	85.40	1.47E-01		2.01E-01
		801.93	8.73	7.31E-02		1.61E+00
+	CS-135	268.24	16.00	-3.10E-01	6.69E-01	6.69E-01
+	I-135	1131.51	22.50	8.40E+09	2.53E+10	3.32E+10
		1260.41	28.60	-4.70E+09		2.53E+10
		1678.03	9.54	-7.69E+09		6.20E+10
+	CS-136	153.22	7.46	1.10E+00	2.16E-01	2.09E+00
		163.89	4.61	1.79E-01		3.46E+00
		176.55	13.56	-7.20E-01		1.11E+00
		273.65	12.66	-2.14E+00		1.26E+00
		340.57	48.50	-1.65E-01		4.23E-01
		818.50	99.70	-1.14E-01		2.16E-01
		1048.07	79.60	-5.78E-03		3.50E-01
		1235.34	19.70	1.38E+00		2.04E+00
+	CS-137	661.65	85.12	4.10E-02	1.63E-01	1.63E-01
+	LA-138	788.74	34.00	2.66E-01	1.77E-01	4.53E-01
		1435.80	66.00	3.05E-02		1.77E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CE-139	165.85	80.35	2.51E-02	1.22E-01	1.22E-01
+	BA-140	162.64	6.70	1.15E+00	7.34E-01	2.46E+00
		304.84	4.50	3.66E-01		3.71E+00
		423.70	3.20	1.69E+00		5.89E+00
		437.55	2.00	-6.27E-01		9.00E+00
		537.32	25.00	-4.98E-02		7.34E-01
+	LA-140	328.77	20.50	4.76E-01	2.32E-01	9.20E-01
		487.03	45.50	1.02E-01		4.10E-01
		815.85	23.50	2.75E-02		9.53E-01
		1596.49	95.49	-5.59E-02		2.32E-01
+	CE-141	145.44	48.40	1.01E-01	2.49E-01	2.49E-01
+	CE-143	57.36	11.80	-4.08E+01	4.81E+01	1.00E+02
		293.26	42.00	2.97E+01		4.81E+01
		664.55	5.20	-1.04E+00		3.83E+02
+	CE-144	133.54	10.80	6.21E-01	8.49E-01	8.49E-01
+	PM-144	476.78	42.00	4.93E-02	1.40E-01	2.63E-01
		618.01	98.60	6.09E-02		1.40E-01
		696.49	99.49	3.04E-02		1.45E-01
+	PM-145	36.85	21.70	1.99E-01	3.98E-01	7.55E-01
		37.36	39.70	1.05E-01		3.98E-01
		42.30	15.10	-2.48E-01		8.01E-01
		72.40	2.31	-1.60E+00		3.84E+00
+	PM-146	453.90	39.94	-7.36E-02	2.29E-01	2.29E-01
		735.90	14.01	1.50E-01		1.03E+00
		747.13	13.10	3.41E-01		1.11E+00
+	ND-147	91.11	28.90	3.23E-02	8.26E-01	8.26E-01
		531.02	13.10	-3.08E-01		1.42E+00
+	PM-149	285.90	3.10	-3.29E+01	6.85E+01	6.85E+01
+	EU-152	121.78	20.50	-5.91E-02	4.27E-01	4.27E-01
		244.69	5.40	-2.63E-01		1.80E+00
		344.27	19.13	-9.74E-02		4.99E-01
		778.89	9.20	7.83E-01		1.63E+00
		964.01	10.40	-5.44E+00		1.75E+00
		1085.78	7.22	-3.08E-01		2.15E+00
		1112.02	9.60	-9.20E-01		1.62E+00
		1407.95	14.94	5.99E-02		1.01E+00
+	GD-153	97.43	31.30	1.42E-01	3.01E-01	3.01E-01
		103.18	22.20	-4.34E-02		4.04E-01
+	EU-154	123.07	40.50	5.10E-02	2.17E-01	2.17E-01
		723.30	19.70	8.94E-02		8.32E-01
		873.19	11.50	-1.97E-01		1.32E+00
		996.32	10.30	-5.67E-01		1.31E+00
		1004.76	17.90	-1.67E-01		7.75E-01
		1274.45	35.50	5.44E-02		4.63E-01
+	EU-155	86.50	* 30.90	5.12E-01	5.42E-01	7.79E-01
		105.30	* 20.70	3.84E-01		5.42E-01
+	EU-156	811.77	10.40	2.78E-01	2.13E+00	2.13E+00
		1153.47	7.20	-6.44E-02		3.69E+00
		1230.71	8.90	-1.07E-01		3.14E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HO-166M	184.41	72.60	1.83E-01	1.77E-01	1.77E-01
		280.45	29.60	4.10E-02		3.49E-01
		410.94	11.10	6.64E-01		1.02E+00
		711.69	54.10	-3.71E-03		2.52E-01
+	TM-171	66.72	0.14	3.01E+01	6.99E+01	6.99E+01
+	HF-172	81.75	4.52	-2.28E+00	7.43E-01	1.69E+00
		125.81	11.30	-8.93E-01		7.43E-01
+	LU-172	181.53	20.60	2.17E-01	6.60E-01	1.33E+00
		810.06	16.63	6.23E-01		2.39E+00
		912.12	15.25	1.17E+01		5.35E+00
		1093.66	62.50	-2.72E-01		6.60E-01
+	LU-173	100.72	5.24	8.76E-01	5.41E-01	1.69E+00
		272.11	21.20	2.55E-01		5.41E-01
+	HF-175	343.40	84.00	2.75E-03	1.27E-01	1.27E-01
+	LU-176	88.34	13.30	1.91E+00	1.02E-01	9.68E-01
		201.83	86.00	-4.98E-02		1.18E-01
		306.78	94.00	7.13E-02		1.02E-01
+	TA-182	67.75	41.20	-9.32E-03	2.47E-01	2.47E-01
		1121.30	34.90	8.21E-01		7.66E-01
		1189.05	16.23	-4.23E-01		1.17E+00
		1221.41	26.98	6.69E-02		7.30E-01
		1231.02	11.44	-5.65E-02		1.82E+00
+	IR-192	308.46	29.68	-4.53E-02	2.39E-01	3.42E-01
		468.07	48.10	-5.08E-02		2.39E-01
+	HG-203	279.19	77.30	3.67E-02	1.61E-01	1.61E-01
+	BI-207	569.67	97.72	1.24E-02	1.05E-01	1.05E-01
		1063.62	74.90	2.09E-02		2.16E-01
+	TL-208	583.14	* 30.22	2.42E+00	3.31E-01	4.96E-01
		860.37	* 4.48	3.67E+00		3.77E+00
		2614.66	* 35.85	1.11E+00		3.31E-01
+	BI-210M	262.00	45.00	-1.13E-01	2.03E-01	2.03E-01
		300.00	23.00	1.79E-01		5.01E-01
+	PB-210	46.50	* 4.25	1.96E+00	3.41E+00	3.41E+00
+	PB-211	404.84	2.90	2.11E+00	3.85E+00	3.85E+00
		831.96	2.90	1.97E-01		4.44E+00
+	BI-212	727.17	* 11.80	8.82E-01	1.52E+00	1.52E+00
		1620.62	2.75	1.24E+00		6.18E+00
+	PB-212	238.63	* 44.60	2.49E+00	4.31E-01	4.31E-01
		300.09	* 3.41	2.85E+00		7.07E+00
+	BI-214	609.31	* 46.30	1.99E+00	3.82E-01	3.82E-01
		1120.29	* 15.10	1.98E+00		1.78E+00
		1764.49	* 15.80	2.81E+00		5.79E-01
		2204.22	* 4.98	1.31E+00		1.99E+00
+	PB-214	295.21	* 19.19	2.07E+00	4.21E-01	1.24E+00
		351.92	* 37.19	1.92E+00		4.21E-01
+	RN-219	401.80	6.50	5.60E-01	1.71E+00	1.71E+00
+	RA-223	323.87	3.88	9.68E-01	2.71E+00	2.71E+00
+	RA-224	240.98	3.95	1.41E+01	5.41E+00	5.41E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-225	40.00		31.00	2.72E-01	7.01E-01	7.01E-01
+	RA-226	186.21	*	3.28	6.73E+00	4.49E+00	4.49E+00
+	TH-227	50.10		8.40	2.64E-01	1.19E+00	1.19E+00
		236.00		11.50	-8.25E+00		1.37E+00
		256.20		6.30	-6.61E-01		1.46E+00
+	AC-228	338.32	*	11.40	2.16E+00	7.30E-01	1.56E+00
		911.07	*	27.70	1.96E+00		7.30E-01
		969.11	*	16.60	2.75E+00		2.15E+00
+	TH-230	48.44		16.90	1.36E-01	5.96E-01	5.96E-01
		62.85		4.60	3.32E+00		2.40E+00
		67.67		0.37	-9.79E-01		2.60E+01
+	PA-231	283.67		1.60	-4.92E-01	4.44E+00	6.35E+00
		302.67		2.30	-3.16E+00		4.44E+00
+	TH-231	25.64		14.70	1.15E+00	3.76E+00	4.51E+00
		84.21	*	6.40	7.25E-01		3.76E+00
+	PA-233	311.98		38.60	2.41E-03	3.16E-01	3.16E-01
+	PA-234	131.20		20.40	2.59E-01	4.67E-01	4.67E-01
		733.99		8.80	5.61E-01		1.62E+00
		946.00		12.00	1.69E-01		1.34E+00
+	PA-234M	1001.03		0.92	8.77E-01	1.60E+01	1.60E+01
+	TH-234	63.29		3.80	4.00E+00	2.90E+00	2.90E+00
+	U-235	143.76		10.50	-1.76E-01	8.79E-01	8.79E-01
		163.35		4.70	9.69E-01		2.08E+00
		205.31		4.70	1.51E-01		2.25E+00
+	NP-237	86.50	*	12.60	1.25E+00	1.90E+00	1.90E+00
+	NP-239	106.10		22.70	8.79E+00	7.33E+00	7.33E+00
		228.18		10.70	-4.25E+00		1.56E+01
		277.60		14.10	3.39E+00		1.32E+01
+	AM-241	59.54		35.90	-3.35E-02	2.59E-01	2.59E-01
+	AM-243	74.67		66.00	-7.30E-01	1.91E-01	1.91E-01
+	CM-243	209.75		3.29	1.63E+00	7.61E-01	3.40E+00
		228.14		10.60	-2.46E-01		9.01E-01
		277.60		14.00	1.95E-01		7.61E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1606041-11

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NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	1.18E+00	1.18E+00	2.22E-01	5.47E-01
NA-22	1274.54	99.94	1.65E-01	1.65E-01	1.94E-02	7.38E-02
NA-24	1368.53	99.99	7.49E+03	5.07E+03	2.40E+02	3.30E+03
	2754.09	99.86	5.07E+03		1.69E+03	1.97E+03
AL-26	1808.65	99.76	1.28E-01	1.28E-01	-2.12E-02	5.31E-02
+ K-40	1460.81	* 10.67	1.70E+00	1.70E+00	2.86E+01	7.62E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	1.02E-01	1.02E-01	-3.83E-03	4.91E-02
	78.34	96.00	1.52E-01		5.62E-01	7.45E-02
SC-46	889.25	99.98	1.62E-01	1.62E-01	-1.20E-01	7.40E-02
	1120.51	99.99	2.70E-01		2.18E-01	1.26E-01
V-48	983.52	99.98	2.38E-01	1.86E-01	5.22E-02	1.08E-01
	1312.10	97.50	1.86E-01		2.57E-02	7.93E-02
CR-51	320.08	9.83	1.33E+00	1.33E+00	2.82E-01	6.28E-01
MN-54	834.83	99.97	1.60E-01	1.60E-01	2.09E-02	7.38E-02
CO-56	846.75	99.96	1.51E-01	1.51E-01	-2.54E-02	6.85E-02
	1037.75	14.03	1.46E+00		9.56E-01	6.71E-01
	1238.25	67.00	3.90E-01		1.33E-01	1.81E-01
	1771.40	15.51	8.40E-01		5.13E-02	3.44E-01
	2598.48	16.90	1.54E-01		0.00E+00	0.00E+00
CO-57	122.06	85.51	1.05E-01	1.05E-01	-1.45E-02	5.04E-02
	136.48	10.60	8.27E-01		-3.80E-01	3.97E-01
CO-58	810.76	99.40	1.61E-01	1.61E-01	4.20E-02	7.37E-02
FE-59	1099.22	56.50	3.38E-01	3.38E-01	4.17E-02	1.53E-01
	1291.56	43.20	3.73E-01		-3.50E-02	1.63E-01
CO-60	1173.22	100.00	1.90E-01	1.64E-01	-1.47E-02	8.68E-02
	1332.49	100.00	1.64E-01		5.05E-02	7.27E-02
ZN-65	1115.52	50.75	3.46E-01	3.46E-01	-1.15E-01	1.57E-01
+ GA-67	93.31	* 35.70	5.34E+00	5.34E+00	3.71E+00	2.63E+00
	208.95	2.24	3.90E+01		3.93E+00	1.87E+01
	300.22	* 16.00	1.19E+01		4.80E+00	5.81E+00
SE-75	121.11	16.70	5.64E-01	1.53E-01	1.83E-01	2.72E-01
	136.00	59.20	1.53E-01		-5.54E-02	7.36E-02
	264.65	59.80	1.63E-01		-1.74E-02	7.70E-02
	279.53	25.20	4.33E-01		5.08E-02	2.05E-01
	400.65	11.40	9.70E-01		-4.68E-01	4.53E-01
RB-82	776.52	13.00	1.31E+00	1.31E+00	-4.65E-01	5.94E-01
RB-83	520.41	46.00	1.90E-01	1.90E-01	-1.72E-01	8.52E-02
	529.64	30.30	3.62E-01		-6.65E-02	1.66E-01
	552.65	16.40	6.84E-01		-1.83E-01	3.13E-01
KR-85	513.99	0.43	2.84E+01	2.84E+01	-2.23E+01	1.33E+01
SR-85	513.99	99.27	1.38E-01	1.38E-01	-1.08E-01	6.42E-02
Y-88	898.02	93.40	1.65E-01	1.31E-01	-8.89E-02	7.52E-02
	1836.01	99.38	1.31E-01		-1.74E-02	5.35E-02
NB-93M	16.57	9.43	1.86E+02	1.86E+02	1.12E+02	9.04E+01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94	702.63	100.00	1.33E-01	1.33E-01	-1.21E-02	6.13E-02
	871.10	100.00	1.51E-01		2.57E-02	6.89E-02
NB-95	765.79	99.81	2.10E-01	2.10E-01	7.73E-02	9.78E-02
NB-95M	235.69	25.00	4.06E+00	4.06E+00	-2.45E+01	1.97E+00
ZR-95	724.18	43.70	4.85E-01	3.02E-01	6.56E-02	2.28E-01
	756.72	55.30	3.02E-01		1.74E-01	1.40E-01
MO-99	181.06	6.20	1.83E+01	1.36E+01	1.89E+00	8.80E+00
	739.58	12.80	1.36E+01		4.00E+00	6.29E+00
	778.00	4.50	3.85E+01		2.11E+01	1.77E+01
RU-103	497.08	89.00	1.44E-01	1.44E-01	-3.18E-02	6.66E-02
RU-106	621.84	9.80	1.34E+00	1.34E+00	1.48E-01	6.21E-01
AG-108M	433.93	89.90	1.18E-01	1.18E-01	2.38E-02	5.47E-02
	614.37	90.40	1.45E-01		2.22E-02	6.73E-02
	722.95	90.50	1.81E-01		1.94E-02	8.43E-02
CD-109	88.03	3.72	3.51E+00	3.51E+00	6.93E+00	1.71E+00
AG-110M	657.75	93.14	1.48E-01	1.48E-01	2.14E-02	6.83E-02
	677.61	10.53	1.42E+00		6.67E-01	6.61E-01
	706.67	16.46	8.45E-01		8.14E-02	3.89E-01
	763.93	21.98	6.61E-01		-4.72E-02	3.03E-01
	884.67	71.63	2.31E-01		5.76E-02	1.06E-01
	1384.27	23.94	6.07E-01		-1.21E-01	2.64E-01
CD-113M	263.70	0.02	4.17E+02	4.17E+02	9.25E+01	1.97E+02
SN-113	255.12	1.93	5.05E+00	1.83E-01	-1.93E-01	2.39E+00
	391.69	64.90	1.83E-01		7.36E-02	8.62E-02
TE123M	159.00	84.10	1.13E-01	1.13E-01	-6.47E-02	5.44E-02
SB-124	602.71	97.87	1.53E-01	1.53E-01	1.20E-02	7.09E-02
	645.85	7.26	2.28E+00		3.14E-01	1.06E+00
	722.78	11.10	1.65E+00		1.77E-01	7.68E-01
	1691.02	49.00	2.32E-01		-5.32E-02	9.22E-02
	35.49	6.49	3.08E+00	3.08E+00	9.14E-01	1.47E+00
SB-125	176.33	6.89	1.34E+00	3.59E-01	-3.34E-01	6.40E-01
	427.89	29.33	3.59E-01		1.40E-01	1.67E-01
	463.38	10.35	1.32E+00		8.44E-01	6.24E-01
	600.56	17.80	7.35E-01		1.16E-01	3.41E-01
	635.90	11.32	1.23E+00		-4.68E-02	5.72E-01
	414.70	83.30	1.91E-01	1.91E-01	-2.73E-02	8.80E-02
SB-126	666.33	99.60	2.53E-01		-7.01E-02	1.17E-01
	695.00	99.60	2.47E-01		7.85E-02	1.14E-01
	720.50	53.80	4.83E-01		-1.33E-02	2.24E-01
SN-126	87.57	*	6.48E-01	6.48E-01	4.26E-01	3.20E-01
SB-127	473.00	25.00	2.28E+00	2.28E+00	-8.13E-01	1.05E+00
	685.20	35.70	2.31E+00		3.89E-01	1.07E+00
	783.80	14.70	6.06E+00		3.80E-01	2.80E+00
I-129	29.78	57.00	5.59E-01	5.59E-01	-2.88E-01	2.66E-01
	33.60	13.20	1.49E+00		-1.09E-01	7.09E-01
	39.58	7.52	1.88E+00		7.28E-01	8.95E-01
I-131	284.30	6.05	3.89E+00	2.92E-01	-3.01E-01	1.84E+00
	364.48	81.20	2.92E-01		9.74E-02	1.37E-01
	636.97	7.26	4.34E+00		-1.56E+00	2.01E+00
	722.89	1.80	2.10E+01		2.26E+00	9.79E+00
TE-132	49.72	13.10	6.10E+00	8.58E-01	1.35E+00	2.92E+00
	228.16	88.00	8.58E-01		-2.34E-01	4.08E-01
BA-133	81.00	33.00	2.43E-01	1.54E-01	1.23E-01	1.17E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	302.84	17.80	5.75E-01	1.54E-01	-4.09E-01	2.72E-01
	356.01	60.00	1.54E-01		6.21E-03	7.19E-02
I-133	529.87	86.30	2.80E+02	2.80E+02	-3.79E+01	1.28E+02
XE-133	81.00	38.00	7.62E-01	7.62E-01	3.86E-01	3.66E-01
CS-134	563.23	8.38	1.31E+00	1.57E-01	-6.85E-02	6.02E-01
	569.32	15.43	6.70E-01		7.89E-02	3.05E-01
	604.70	97.60	1.57E-01		-1.11E+00	7.37E-02
	795.84	85.40	2.01E-01		1.47E-01	9.37E-02
	801.93	8.73	1.61E+00		7.31E-02	7.34E-01
	268.24	16.00	6.69E-01	6.69E-01	-3.10E-01	3.19E-01
	1131.51	22.50	3.32E+10	2.53E+10	8.40E+09	1.51E+10
I-135	1260.41	28.60	2.53E+10		-4.70E+09	1.14E+10
	1678.03	9.54	6.20E+10		-7.69E+09	2.64E+10
	153.22	7.46	2.09E+00	2.16E-01	1.10E+00	1.00E+00
CS-136	163.89	4.61	3.46E+00		1.79E-01	1.66E+00
	176.55	13.56	1.11E+00		-7.20E-01	5.30E-01
	273.65	12.66	1.26E+00		-2.14E+00	5.96E-01
	340.57	48.50	4.23E-01		-1.65E-01	2.01E-01
	818.50	99.70	2.16E-01		-1.14E-01	9.77E-02
	1048.07	79.60	3.50E-01		-5.78E-03	1.59E-01
	1235.34	19.70	2.04E+00		1.38E+00	9.50E-01
CS-137	661.65	85.12	1.63E-01	1.63E-01	4.10E-02	7.53E-02
LA-138	788.74	34.00	4.53E-01	1.77E-01	2.66E-01	2.09E-01
	1435.80	66.00	1.77E-01		3.05E-02	7.41E-02
CE-139	165.85	80.35	1.22E-01	1.22E-01	2.51E-02	5.84E-02
BA-140	162.64	6.70	2.46E+00	7.34E-01	1.15E+00	1.18E+00
	304.84	4.50	3.71E+00		3.66E-01	1.75E+00
	423.70	3.20	5.89E+00		1.69E+00	2.76E+00
	437.55	2.00	9.00E+00		-6.27E-01	4.19E+00
	537.32	25.00	7.34E-01		-4.98E-02	3.38E-01
	328.77	20.50	9.20E-01	2.32E-01	4.76E-01	4.35E-01
	487.03	45.50	4.10E-01		1.02E-01	1.90E-01
LA-140	815.85	23.50	9.53E-01		2.75E-02	4.33E-01
	1596.49	95.49	2.32E-01		-5.59E-02	9.80E-02
CE-141	145.44	48.40	2.49E-01	2.49E-01	1.01E-01	1.20E-01
CE-143	57.36	11.80	1.00E+02	4.81E+01	-4.08E+01	4.80E+01
	293.26	42.00	4.81E+01		2.97E+01	2.32E+01
	664.55	5.20	3.83E+02		-1.04E+00	1.78E+02
CE-144	133.54	10.80	8.49E-01	8.49E-01	6.21E-01	4.08E-01
PM-144	476.78	42.00	2.63E-01	1.40E-01	4.93E-02	1.22E-01
	618.01	98.60	1.40E-01		6.09E-02	6.49E-02
	696.49	99.49	1.45E-01		3.04E-02	6.71E-02
PM-145	36.85	21.70	7.55E-01	3.98E-01	1.99E-01	3.60E-01
	37.36	39.70	3.98E-01		1.05E-01	1.90E-01
	42.30	15.10	8.01E-01		-2.48E-01	3.82E-01
	72.40	2.31	3.84E+00		-1.60E+00	1.85E+00
PM-146	453.90	39.94	2.29E-01	2.29E-01	-7.36E-02	1.05E-01
	735.90	14.01	1.03E+00		1.50E-01	4.76E-01
	747.13	13.10	1.11E+00		3.41E-01	5.10E-01
ND-147	91.11	28.90	8.26E-01	8.26E-01	3.23E-02	4.03E-01
	531.02	13.10	1.42E+00		-3.08E-01	6.49E-01
PM-149	285.90	3.10	6.85E+01	6.85E+01	-3.29E+01	3.24E+01
EU-152	121.78	20.50	4.27E-01	4.27E-01	-5.91E-02	2.05E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	244.69	5.40	1.80E+00	4.27E-01	-2.63E-01	8.54E-01
	344.27	19.13	4.99E-01		-9.74E-02	2.33E-01
	778.89	9.20	1.63E+00		7.83E-01	7.51E-01
	964.01	10.40	1.75E+00		-5.44E+00	8.08E-01
	1085.78	7.22	2.15E+00		-3.08E-01	9.69E-01
	1112.02	9.60	1.62E+00		-9.20E-01	7.29E-01
	1407.95	14.94	1.01E+00		5.99E-02	4.44E-01
GD-153	97.43	31.30	3.01E-01	3.01E-01	1.42E-01	1.45E-01
	103.18	22.20	4.04E-01		-4.34E-02	1.95E-01
EU-154	123.07	40.50	2.17E-01	2.17E-01	5.10E-02	1.04E-01
	723.30	19.70	8.32E-01		8.94E-02	3.88E-01
	873.19	11.50	1.32E+00		-1.97E-01	6.02E-01
	996.32	10.30	1.31E+00		-5.67E-01	5.87E-01
	1004.76	17.90	7.75E-01		-1.67E-01	3.47E-01
+ EU-155	1274.45	35.50	4.63E-01	5.42E-01	5.44E-02	2.07E-01
	86.50	* 30.90	7.79E-01		5.12E-01	3.85E-01
EU-156	105.30	* 20.70	5.42E-01	2.13E+00	3.84E-01	2.63E-01
	811.77	10.40	2.13E+00		2.78E-01	9.74E-01
HO-166M	1153.47	7.20	3.69E+00	1.77E-01	-6.44E-02	1.67E+00
	1230.71	8.90	3.14E+00		-1.07E-01	1.42E+00
	184.41	72.60	1.77E-01		1.83E-01	8.56E-02
	280.45	29.60	3.49E-01		4.10E-02	1.66E-01
TM-171	410.94	11.10	1.02E+00	6.99E+01	6.64E-01	4.80E-01
	711.69	54.10	2.52E-01		-3.71E-03	1.16E-01
HF-172	66.72	0.14	6.99E+01	7.43E-01	3.01E+01	3.38E+01
	81.75	4.52	1.69E+00		-2.28E+00	8.11E-01
LU-172	125.81	11.30	7.43E-01	6.60E-01	-8.93E-01	3.57E-01
	181.53	20.60	1.33E+00		2.17E-01	6.39E-01
	810.06	16.63	2.39E+00		6.23E-01	1.09E+00
	912.12	15.25	5.35E+00		1.17E+01	2.56E+00
LU-173	1093.66	62.50	6.60E-01	5.41E-01	-2.72E-01	2.96E-01
	100.72	5.24	1.69E+00		8.76E-01	8.14E-01
	272.11	21.20	5.41E-01		2.55E-01	2.58E-01
HF-175	343.40	84.00	1.27E-01	1.27E-01	2.75E-03	5.96E-02
LU-176	88.34	13.30	9.68E-01	1.02E-01	1.91E+00	4.72E-01
	201.83	86.00	1.18E-01		-4.98E-02	5.65E-02
	306.78	94.00	1.02E-01		7.13E-02	4.78E-02
TA-182	67.75	41.20	2.47E-01	2.47E-01	-9.32E-03	1.19E-01
	1121.30	34.90	7.66E-01		8.21E-01	3.59E-01
	1189.05	16.23	1.17E+00		-4.23E-01	5.33E-01
	1221.41	26.98	7.30E-01		6.69E-02	3.32E-01
	1231.02	11.44	1.82E+00		-5.65E-02	8.33E-01
	308.46	29.68	3.42E-01		2.39E-01	-4.53E-02	1.60E-01
IR-192	468.07	48.10	2.39E-01	1.61E-01	-5.08E-02	1.11E-01
	279.19	77.30	1.61E-01		3.67E-02	7.65E-02
HG-203	569.67	97.72	1.05E-01	1.05E-01	1.24E-02	4.79E-02
	1063.62	74.90	2.16E-01		2.09E-02	9.82E-02
+ TL-208	583.14	* 30.22	4.96E-01	3.31E-01	2.42E+00	2.33E-01
	860.37	* 4.48	3.77E+00		3.67E+00	1.74E+00
	2614.66	* 35.85	3.31E-01		1.11E+00	1.32E-01
BI-210M	262.00	45.00	2.03E-01	2.03E-01	-1.13E-01	9.60E-02
	300.00	23.00	5.01E-01		1.79E-01	2.39E-01
+ PB-210	46.50	* 4.25	3.41E+00	3.41E+00	1.96E+00	1.65E+00

Analysis Report for 1606041-11

CP-5029 10-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PB-211	404.84	2.90	3.85E+00	3.85E+00	2.11E+00	1.81E+00
	831.96	2.90	4.44E+00		1.97E-01	2.01E+00
+ BI-212	727.17 *	11.80	1.52E+00	1.52E+00	8.82E-01	7.15E-01
	1620.62	2.75	6.18E+00		1.24E+00	2.72E+00
+ PB-212	238.63 *	44.60	4.31E-01	4.31E-01	2.49E+00	2.10E-01
	300.09 *	3.41	7.07E+00		2.85E+00	3.45E+00
+ BI-214	609.31 *	46.30	3.82E-01	3.82E-01	1.99E+00	1.80E-01
	1120.29 *	15.10	1.78E+00		1.98E+00	8.37E-01
	1764.49 *	15.80	5.79E-01		2.81E+00	2.21E-01
	2204.22 *	4.98	1.99E+00		1.31E+00	7.59E-01
+ PB-214	295.21 *	19.19	1.24E+00	4.21E-01	2.07E+00	6.08E-01
	351.92 *	37.19	4.21E-01		1.92E+00	2.02E-01
RN-219	401.80	6.50	1.71E+00	1.71E+00	5.60E-01	8.01E-01
RA-223	323.87	3.88	2.71E+00	2.71E+00	9.68E-01	1.28E+00
RA-224	240.98	3.95	5.41E+00	5.41E+00	1.41E+01	2.64E+00
RA-225	40.00	31.00	7.01E-01	7.01E-01	2.72E-01	3.34E-01
+ RA-226	186.21 *	3.28	4.49E+00	4.49E+00	6.73E+00	2.18E+00
TH-227	50.10	8.40	1.19E+00	1.19E+00	2.64E-01	5.69E-01
	236.00	11.50	1.37E+00		-8.25E+00	6.63E-01
	256.20	6.30	1.46E+00		-6.61E-01	6.89E-01
+ AC-228	338.32 *	11.40	1.56E+00	7.30E-01	2.16E+00	7.54E-01
	911.07 *	27.70	7.30E-01		1.96E+00	3.41E-01
	969.11 *	16.60	2.15E+00		2.75E+00	1.03E+00
TH-230	48.44	16.90	5.96E-01	5.96E-01	1.36E-01	2.85E-01
	62.85	4.60	2.40E+00		3.32E+00	1.16E+00
	67.67	0.37	2.60E+01		-9.79E-01	1.25E+01
PA-231	283.67	1.60	6.35E+00	4.44E+00	-4.92E-01	3.01E+00
	302.67	2.30	4.44E+00		-3.16E+00	2.10E+00
+ TH-231	25.64	14.70	4.51E+00	3.76E+00	1.15E+00	2.16E+00
	84.21 *	6.40	3.76E+00		7.25E-01	1.86E+00
PA-233	311.98	38.60	3.16E-01	3.16E-01	2.41E-03	1.48E-01
PA-234	131.20	20.40	4.67E-01	4.67E-01	2.59E-01	2.25E-01
	733.99	8.80	1.62E+00		5.61E-01	7.46E-01
	946.00	12.00	1.34E+00		1.69E-01	6.15E-01
PA-234M	1001.03	0.92	1.60E+01	1.60E+01	8.77E-01	7.24E+00
TH-234	63.29	3.80	2.90E+00	2.90E+00	4.00E+00	1.40E+00
U-235	143.76	10.50	8.79E-01	8.79E-01	-1.76E-01	4.23E-01
	163.35	4.70	2.08E+00		9.69E-01	9.98E-01
	205.31	4.70	2.25E+00		1.51E-01	1.08E+00
NP-237	86.50 *	12.60	1.90E+00	1.90E+00	1.25E+00	9.39E-01
NP-239	106.10	22.70	7.33E+00	7.33E+00	8.79E+00	3.54E+00
	228.18	10.70	1.56E+01		-4.25E+00	7.42E+00
	277.60	14.10	1.32E+01		3.39E+00	6.27E+00
AM-241	59.54	35.90	2.59E-01	2.59E-01	-3.35E-02	1.25E-01
AM-243	74.67	66.00	1.91E-01	1.91E-01	-7.30E-01	9.32E-02
CM-243	209.75	3.29	3.40E+00	7.61E-01	1.63E+00	1.63E+00
	228.14	10.60	9.01E-01		-2.46E-01	4.28E-01
	277.60	14.00	7.61E-01		1.95E-01	3.61E-01

Analysis Report for 1606041-11
CP-5029 10-15

- + = Nuclide identified during the nuclide identification
 - * = Energy line found in the spectrum
 - > = MDA value not calculated
 - @ = Half-life too short to be able to perform the decay correction
-

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP-5029 10-15

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193	201	209	217	225	233	241	249	257	265	273	281	289	297	305	313	321	329	337	345	353	361
	0	1082	118	60	44	50	54	46	69	85	71	63	49	72	53	48	65	31	33	38	40	34	28	49	31	27	60	31	37	31	37	81	14	20	23	13	22	29	17	15	23	17	15	42	10	
	0	759	112	59	37	41	61	62	84	88	59	140	50	56	53	48	48	46	40	48	48	46	38	153	24	31	53	31	37	93	20	19	20	21	24	23	11	16	10	22	18	13	11	13		
	0	393	96	50	39	51	54	70	82	319	52	52	54	53	48	38	34	39	54	45	43	34	34	54	34	35	29	29	33	40	17	28	22	22	24	20	22	18	17	22	14	18	15	13		
	0	230	92	50	33	53	57	72	102	98	96	96	69	53	51	36	49	46	42	38	48	33	40	41	27	37	38	30	30	29	24	17	17	22	20	19	17	18	23	21	20	8	22			
	0	2144	85	52	65	53	64	69	83	418	85	202	43	37	33	45	49	56	55	31	28	40	39	27	46	41	34	23	19	28	15	20	17	27	35	19	18	14	16	21	13	18	9			
	0	152	61	45	42	53	57	79	93	213	62	101	38	51	48	37	41	30	27	29	30	40	34	32	34	39	24	32	22	22	23	26	46	34	27	31	9	16	14	16	11	11	19			
	48	110	42	42	43	106	62	128	80	66	166	64	37	46	46	33	37	47	42	38	38	34	39	37	39	34	22	27	24	399	16	19	21	40	21	23	143	26	18	22	15	16	80	10	14	
	644	126	53	59	54	41	68	120	73	74	119	47	48	45	45	40	36	61	30	43	41	26	42	38	44	23	38	25	32	27	14	21	17	25	14	20	62	13	22	44	13	14	21	22		

369: 18 11 10 13 11 12 19 19

Sample Title: CP-5029 10-15

Channel	12	15	16	20	11	17	18	12
377:	12	15	16	20	11	17	18	12
385:	15	22	14	15	17	19	13	16
393:	17	17	10	9	9	13	12	11
401:	15	15	15	21	13	14	14	8
409:	28	19	9	16	6	13	6	14
417:	10	12	7	13	10	16	13	14
425:	11	17	15	9	12	8	6	9
433:	15	15	12	10	7	19	13	11
441:	11	10	7	14	9	16	8	10
449:	15	9	9	5	8	5	11	12
457:	14	9	15	11	10	14	47	11
465:	12	16	9	10	10	8	12	13
473:	5	9	7	12	14	12	10	10
481:	13	7	7	10	16	10	12	7
489:	10	6	13	16	12	9	14	8
497:	12	9	8	9	16	8	14	5
505:	16	7	9	15	14	50	59	23
513:	19	7	2	13	7	3	6	6
521:	6	4	13	6	10	13	6	10
529:	5	12	7	6	9	8	12	9
537:	8	8	8	13	7	13	15	10
545:	13	5	6	10	9	9	9	7
553:	6	8	13	6	10	7	9	12
561:	8	7	11	6	10	7	8	9
569:	7	6	6	11	13	10	11	4
577:	6	4	11	14	8	30	144	45
585:	10	6	4	9	2	7	13	8
593:	10	7	7	8	11	6	8	10
601:	9	5	6	8	8	12	4	33
609:	159	78	10	7	7	4	12	7
617:	7	7	4	8	12	7	5	7
625:	8	8	5	7	12	10	4	14
633:	10	12	8	9	8	8	2	8
641:	8	9	8	13	8	5	10	13
649:	7	14	3	12	0	10	11	6
657:	6	3	6	6	12	11	4	11
665:	9	4	10	7	14	9	8	4
673:	12	7	4	11	11	5	6	13
681:	6	1	10	10	11	6	7	9
689:	4	5	6	7	9	5	6	11
697:	5	9	6	6	6	4	9	8
705:	5	10	3	7	3	3	10	3
713:	9	10	5	8	7	5	7	5
721:	8	12	11	13	6	10	30	11
729:	5	4	6	4	8	4	4	10
737:	11	6	5	11	3	6	6	8
745:	4	6	7	5	7	10	6	3
753:	6	6	11	10	5	5	7	4
761:	4	6	6	6	7	3	11	21
769:	12	10	10	15	5	3	4	5
777:	8	6	4	11	9	4	4	6
785:	6	14	7	7	4	8	3	3
793:	4	10	15	13	9	6	3	7

801: 4 3 6 8 7 7 6 6

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Channel	1	2	3	4	5	6	7	8
809:	6	6	8	4	5	4	2	6
817:	7	7	2	4	3	7	9	3
825:	7	7	8	12	4	2	1	8
833:	3	4	8	7	5	11	7	13
841:	5	4	2	4	9	3	6	5
849:	5	6	7	2	6	3	6	7
857:	1	5	8	15	14	6	8	7
865:	2	4	5	4	6	10	6	5
873:	1	7	5	5	4	10	5	4
881:	9	4	5	10	4	6	6	5
889:	6	8	4	2	10	9	5	4
897:	7	5	5	3	5	7	4	4
905:	8	6	4	3	7	21	79	28
913:	8	6	6	1	5	4	5	4
921:	6	6	4	4	3	9	5	5
929:	5	10	4	4	6	10	3	4
937:	6	3	8	6	7	3	4	7
945:	6	4	2	6	10	5	5	3
953:	7	5	3	3	4	1	4	4
961:	7	1	11	13	9	6	2	23
969:	48	17	2	2	2	3	5	3
977:	11	6	4	5	6	2	3	6
985:	5	7	3	3	1	3	2	4
993:	2	3	5	3	7	2	2	8
1001:	5	4	3	5	2	4	2	4
1009:	4	1	5	9	2	1	2	4
1017:	6	5	8	2	3	3	5	5
1025:	4	6	3	8	6	5	3	0
1033:	4	9	4	7	4	3	9	10
1041:	6	3	2	3	4	6	6	3
1049:	4	10	2	6	8	6	4	3
1057:	7	7	2	11	2	4	4	4
1065:	3	4	3	5	6	5	8	6
1073:	4	6	2	9	1	8	5	6
1081:	6	5	3	3	7	3	1	6
1089:	4	3	5	1	4	5	4	4
1097:	6	5	2	5	4	5	3	4
1105:	8	3	6	4	2	3	7	2
1113:	3	3	7	6	5	7	13	23
1121:	16	5	5	7	3	4	5	5
1129:	7	6	5	2	2	8	2	5
1137:	6	5	7	6	6	7	6	6
1145:	5	6	5	2	7	8	3	0
1153:	5	2	6	7	3	6	6	4
1161:	6	6	3	2	9	3	3	6
1169:	5	4	6	10	2	2	5	9
1177:	3	9	1	6	8	6	3	7
1185:	6	3	3	5	8	5	4	5
1193:	6	6	4	9	5	4	4	9
1201:	10	5	7	10	8	6	7	7
1209:	4	4	6	2	8	5	5	4
1217:	1	3	2	1	5	6	11	6
1225:	5	9	3	6	5	4	4	0

1233: 9 10 13 5 6 16 5 6

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Channel	9	10	13	5	6	16	5	6
1241:	7	5	4	2	8	3	3	8
1249:	3	7	1	4	4	5	1	7
1257:	4	2	4	5	6	3	3	8
1265:	3	2	2	4	4	7	6	0
1273:	2	4	3	4	5	2	4	2
1281:	9	3	0	5	3	2	3	1
1289:	2	1	4	2	1	5	4	3
1297:	6	10	3	3	2	2	5	4
1305:	5	7	3	4	2	1	1	0
1313:	2	3	2	2	2	2	1	1
1321:	3	6	0	1	2	3	2	0
1329:	6	4	3	4	3	1	1	2
1337:	3	1	3	2	2	5	0	4
1345:	0	1	4	4	2	4	2	1
1353:	4	2	1	0	2	1	3	3
1361:	2	1	0	4	5	3	1	2
1369:	3	1	4	3	3	0	1	3
1377:	1	10	3	1	3	3	3	5
1385:	1	0	0	1	5	1	2	1
1393:	0	4	2	1	1	1	3	3
1401:	3	1	3	2	1	1	3	3
1409:	5	2	3	2	2	4	1	4
1417:	4	1	4	2	0	1	1	3
1425:	5	0	1	1	0	2	1	0
1433:	1	1	6	0	0	1	6	2
1441:	1	2	3	0	2	0	2	2
1449:	2	0	0	4	0	1	1	0
1457:	5	6	32	195	162	40	3	1
1465:	3	1	1	1	1	1	1	1
1473:	1	1	1	0	0	1	1	0
1481:	1	2	1	0	1	0	1	1
1489:	1	0	3	0	0	1	1	1
1497:	1	1	1	1	0	2	3	1
1505:	2	2	3	1	6	3	1	2
1513:	1	3	1	1	1	0	1	2
1521:	0	1	1	1	1	1	3	0
1529:	1	1	2	0	0	3	1	1
1537:	3	0	0	1	0	0	3	2
1545:	1	1	0	2	1	2	0	2
1553:	0	1	2	2	2	2	2	3
1561:	1	2	0	2	1	1	1	0
1569:	0	0	2	0	2	2	3	0
1577:	2	2	2	1	4	0	3	2
1585:	0	1	3	3	1	2	2	0
1593:	1	1	1	1	2	0	0	4
1601:	2	0	1	2	1	2	2	0
1609:	2	0	0	2	1	1	2	2
1617:	2	2	1	4	1	3	2	1
1625:	1	2	1	2	0	2	1	1
1633:	2	4	1	3	0	1	0	0
1641:	0	0	1	2	0	3	0	0
1649:	0	0	2	2	1	1	0	2
1657:	0	1	0	3	1	2	2	2

1665: 1 0 0 5 2 0 2 3

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Channel	1	2	3	4	5	6	7	8	9
1673:	1	0	3	0	1	1	1	0	
1681:	4	2	1	1	1	0	1	0	
1689:	0	0	2	0	2	0	2	1	
1697:	2	1	0	0	1	1	0	1	
1705:	2	1	2	1	0	2	0	2	
1713:	1	0	0	0	1	1	0	0	
1721:	3	4	2	3	0	0	2	4	
1729:	3	6	1	3	1	2	0	2	
1737:	4	0	0	0	1	0	2	3	
1745:	1	1	0	1	1	0	1	1	
1753:	1	0	0	2	0	1	1	0	
1761:	0	1	10	31	12	3	1	0	
1769:	0	0	1	2	1	1	1	1	
1777:	1	0	0	1	1	0	1	0	
1785:	0	1	0	0	2	1	2	0	
1793:	0	2	2	2	3	1	0	0	
1801:	1	1	2	0	1	0	2	1	
1809:	0	1	2	1	1	2	0	0	
1817:	1	0	0	2	0	0	0	0	
1825:	0	0	0	1	2	0	2	1	
1833:	0	0	3	0	0	1	0	1	
1841:	1	1	3	3	1	2	2	2	
1849:	1	0	0	0	1	0	0	3	
1857:	0	0	1	0	0	0	0	1	
1865:	1	0	1	0	0	0	0	1	
1873:	1	2	0	0	1	2	0	1	
1881:	2	1	0	0	0	0	0	1	
1889:	1	0	1	1	1	0	2	1	
1897:	0	1	1	0	0	0	0	1	
1905:	1	3	1	1	0	0	1	1	
1913:	0	0	1	2	1	2	0	0	
1921:	1	0	1	0	2	0	1	1	
1929:	2	0	2	0	0	0	1	2	
1937:	1	0	0	0	0	0	0	0	
1945:	3	1	1	1	0	2	0	0	
1953:	1	2	1	1	0	0	0	2	
1961:	0	1	1	0	1	1	1	0	
1969:	1	0	1	1	3	2	0	1	
1977:	0	2	0	1	1	3	0	1	
1985:	1	1	2	1	0	1	2	1	
1993:	0	1	0	0	3	0	0	0	
2001:	2	0	1	0	2	0	1	0	
2009:	1	1	0	1	1	0	1	3	
2017:	0	0	4	1	2	0	1	0	
2025:	0	0	0	0	1	1	1	1	
2033:	0	1	1	0	0	3	0	1	
2041:	1	2	0	0	0	0	0	3	
2049:	1	1	4	0	2	1	1	1	
2057:	1	0	1	0	1	0	1	0	
2065:	1	1	0	0	1	0	2	1	
2073:	1	1	0	1	0	2	0	1	
2081:	0	1	0	0	0	0	0	3	
2089:	0	2	0	0	0	1	1	0	

2097: 0 0 0 2 3 2 3 3

Sample Title: CP-5029 10-15

Channel	1	2	3	4	5	6	7	8
2105:	3	1	0	0	0	4	0	0
2113:	1	1	0	1	3	1	0	2
2121:	0	0	0	1	0	1	0	0
2129:	0	0	0	1	2	2	0	2
2137:	0	2	1	0	1	0	0	1
2145:	0	1	0	1	1	1	0	2
2153:	1	0	0	2	2	0	1	0
2161:	0	1	0	2	0	1	0	1
2169:	0	0	0	0	0	0	0	1
2177:	2	0	0	0	0	2	0	1
2185:	0	0	1	3	0	0	0	0
2193:	0	4	0	0	0	0	2	1
2201:	1	1	2	4	2	0	0	0
2209:	1	0	1	1	0	0	1	1
2217:	3	3	0	1	0	2	1	0
2225:	0	1	0	1	0	0	3	0
2233:	0	0	0	0	1	0	0	0
2241:	0	1	1	0	2	1	1	0
2249:	0	0	0	0	1	2	0	1
2257:	2	0	0	0	2	1	0	1
2265:	1	1	0	1	1	0	0	1
2273:	2	1	1	0	1	0	0	0
2281:	0	0	1	0	1	1	0	0
2289:	2	0	0	0	1	2	1	0
2297:	1	0	1	0	0	0	1	2
2305:	1	1	1	0	1	0	1	1
2313:	1	0	0	0	0	0	2	1
2321:	0	1	1	1	0	1	0	0
2329:	1	0	0	3	1	2	0	1
2337:	2	1	0	1	2	1	1	0
2345:	0	5	0	1	0	1	0	0
2353:	0	0	0	1	0	1	1	0
2361:	1	3	2	0	0	0	0	1
2369:	0	0	0	0	2	0	0	0
2377:	1	0	1	1	0	0	0	0
2385:	1	0	1	0	3	1	1	0
2393:	1	0	0	0	0	1	0	1
2401:	0	0	0	1	1	1	1	2
2409:	0	2	0	1	0	0	0	0
2417:	1	0	0	3	0	1	0	1
2425:	1	2	1	0	0	0	0	0
2433:	2	2	2	2	0	0	0	1
2441:	0	0	0	0	0	3	0	2
2449:	2	2	0	0	2	0	0	0
2457:	1	0	1	1	0	0	1	0
2465:	1	0	0	1	2	0	0	1
2473:	0	0	0	1	0	0	0	0
2481:	1	0	0	0	1	1	0	0
2489:	0	2	1	1	0	0	0	0
2497:	0	0	0	0	0	0	2	0
2505:	0	1	1	1	0	0	1	0
2513:	0	0	0	0	1	1	0	0
2521:	1	0	0	0	1	1	0	0

2529: 0 0 1 0 0 1 0 0

Sample Title: CP-5029 10-15

Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	0	0	0	0	1	0	
2545:	0	0	0	0	0	1	0	0	
2553:	0	0	0	0	1	1	1	0	
2561:	1	0	1	0	1	0	0	1	
2569:	0	0	1	0	0	0	1	1	
2577:	0	0	1	0	0	0	1	0	
2585:	0	2	1	0	0	0	0	0	
2593:	0	0	0	0	0	0	0	0	
2601:	0	0	0	1	0	0	0	0	
2609:	0	0	2	4	9	18	15	2	
2617:	0	1	0	0	0	0	1	0	
2625:	0	0	0	0	0	1	1	1	
2633:	1	1	0	0	0	0	0	1	
2641:	0	2	0	0	1	0	1	0	
2649:	0	0	0	1	0	0	1	0	
2657:	0	0	0	0	0	0	0	0	
2665:	1	0	0	0	0	0	0	2	
2673:	0	0	0	0	0	1	0	1	
2681:	0	0	0	0	1	0	0	0	
2689:	0	0	0	1	0	0	1	0	
2697:	0	0	0	0	0	0	0	0	
2705:	0	0	0	0	1	0	0	0	
2713:	0	0	0	0	0	0	0	1	
2721:	0	0	0	0	0	0	0	2	
2729:	0	0	1	0	1	0	0	0	
2737:	0	0	0	0	0	1	0	0	
2745:	0	0	0	0	1	0	0	1	
2753:	1	0	0	1	0	0	0	0	
2761:	0	0	0	0	0	1	0	0	
2769:	0	0	0	0	0	0	0	0	
2777:	0	0	0	0	0	0	1	1	
2785:	0	0	0	0	1	1	0	0	
2793:	0	0	1	1	0	0	0	0	
2801:	0	2	0	0	0	0	0	0	
2809:	0	0	2	1	0	0	0	2	
2817:	0	1	0	0	0	1	0	0	
2825:	0	1	0	0	0	0	0	0	
2833:	0	0	0	0	1	0	0	0	
2841:	1	0	0	0	1	0	0	0	
2849:	1	1	0	0	0	0	0	0	
2857:	0	0	0	1	1	0	0	0	
2865:	0	0	0	0	0	1	0	0	
2873:	0	0	0	0	0	1	0	0	
2881:	1	0	0	1	0	0	0	0	
2889:	1	1	0	1	0	0	0	0	
2897:	0	0	0	0	0	0	1	1	
2905:	0	0	1	0	1	0	0	1	
2913:	0	0	0	0	0	0	0	0	
2921:	0	0	0	0	0	0	0	0	
2929:	0	1	0	2	0	0	0	0	
2937:	3	0	0	0	0	0	0	0	
2945:	0	0	0	1	1	1	0	0	
2953:	0	0	0	0	0	0	1	0	

2961: 0 1 0 1 0 0 1 0

Sample Title: CP-5029 10-15

Channel	1	2	3	4	5	6	7	8
2969:	1	0	0	0	0	2	0	0
2977:	0	0	0	1	0	0	0	1
2985:	0	1	0	0	0	0	0	0
2993:	1	0	0	0	0	0	1	1
3001:	0	0	0	0	0	0	0	0
3009:	1	1	0	0	0	0	1	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	1	1	0
3033:	0	0	0	1	0	0	1	0
3041:	1	1	0	0	0	0	0	0
3049:	1	0	1	0	0	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	0	1
3073:	0	1	1	0	1	0	0	0
3081:	0	1	0	0	0	0	1	0
3089:	0	0	0	2	0	1	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	0	0	0	0	1	0
3113:	0	0	0	0	1	1	1	0
3121:	0	0	0	2	0	1	0	0
3129:	0	0	0	0	0	1	0	0
3137:	1	0	0	0	0	0	0	0
3145:	0	0	0	0	0	0	1	0
3153:	0	1	0	1	1	0	0	0
3161:	0	1	2	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	1	0	0	1	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	1	1	0	1	2	0	0
3201:	0	1	0	0	0	0	0	0
3209:	0	0	0	0	0	2	0	0
3217:	0	0	0	1	0	0	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	0	1	0	0
3241:	0	0	0	1	0	0	1	0
3249:	0	1	1	1	0	1	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	1	0	0	0	0	0
3273:	0	0	0	0	0	1	1	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	1	0	0	0	0
3305:	1	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	1	1	0	1	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	1	0	0	1	0	0	0	0
3353:	0	0	1	0	2	0	0	0
3361:	0	0	0	2	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	1	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0

Sample Title: CP-5029 10-15

Channel								
3401:	0	0	1	0	0	0	0	2
3409:	0	0	0	0	0	0	0	1
3417:	1	0	1	0	0	0	0	0
3425:	0	1	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	2	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	1
3457:	0	0	1	0	0	0	0	0
3465:	0	0	1	0	0	1	0	1
3473:	0	0	1	1	0	0	1	1
3481:	0	0	0	0	1	0	0	0
3489:	0	1	0	0	0	0	0	0
3497:	0	0	0	0	0	0	1	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	1	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	1	0	1	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	1	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	1	0	1	0	1	1	0	0
3577:	0	1	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	1	0
3601:	0	0	1	0	0	0	0	0
3609:	0	1	0	0	0	1	0	0
3617:	0	0	0	0	1	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	1	0	1	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	1	0	0
3657:	0	0	0	0	1	0	0	1
3665:	0	2	0	0	1	1	0	0
3673:	0	0	0	0	2	0	0	0
3681:	0	1	0	0	0	1	1	0
3689:	0	2	0	0	1	0	0	0
3697:	1	0	0	1	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	1	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	1	0	0	0	0	1
3737:	1	0	0	1	0	0	0	1
3745:	0	0	1	0	0	0	3	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	1	0	0
3777:	0	0	1	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	1	1	1	0	0
3801:	0	0	0	0	0	0	0	1
3809:	0	0	0	0	0	1	0	0
3817:	0	1	0	1	0	0	0	0

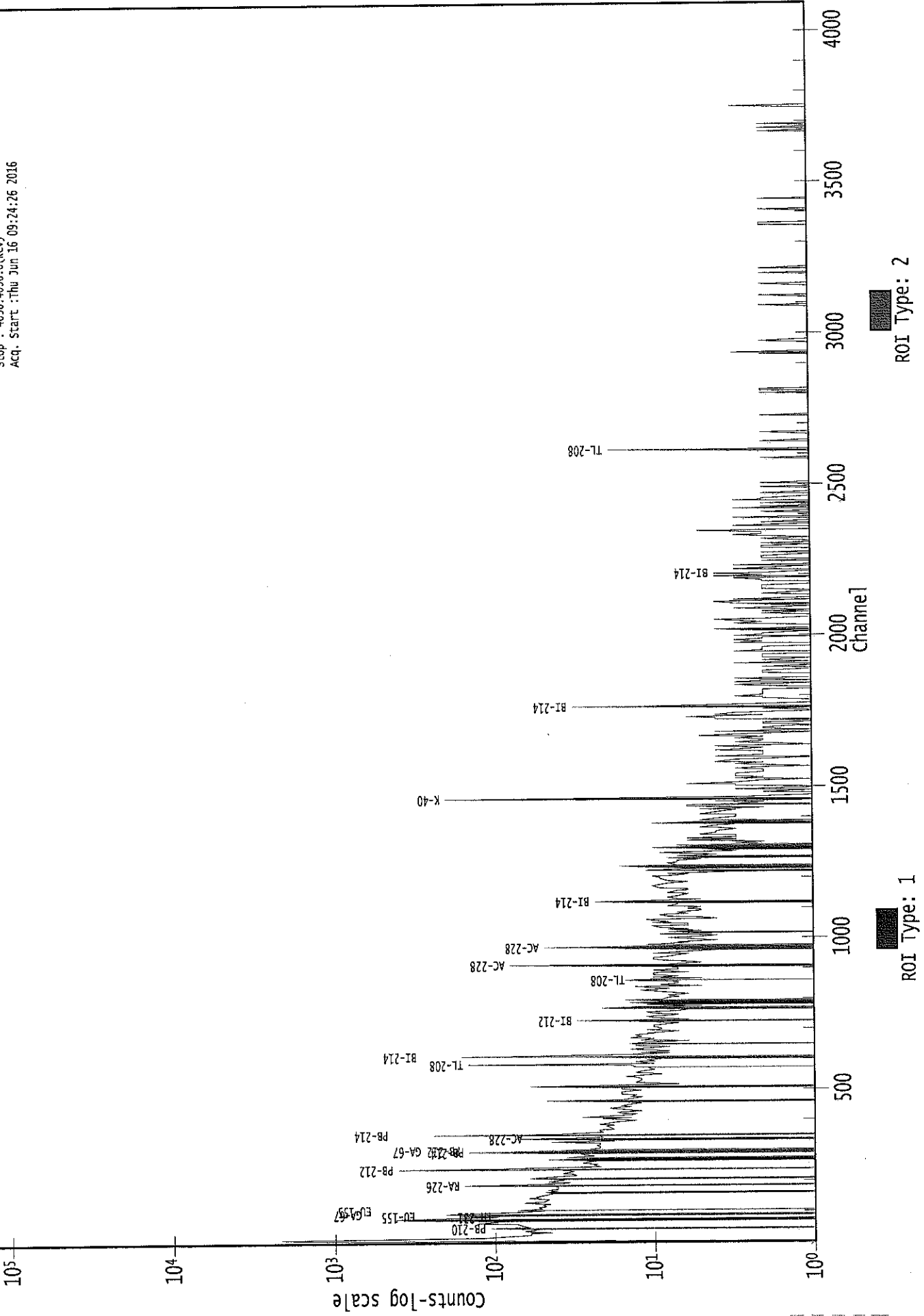
3825: 0 0 0 0 0 0 0 0

Sample Title: CP-5029 10-15

Channel	1	2	3	4	5	6	7	8	9
3833:	1	0	0	1	0	0	0	0	0
3841:	0	0	0	0	0	1	0	0	0
3849:	0	1	0	0	0	0	1	0	0
3857:	0	1	0	1	0	0	1	0	0
3865:	0	0	1	0	1	0	0	0	0
3873:	0	0	0	0	1	0	0	0	0
3881:	0	0	0	0	0	0	0	0	1
3889:	0	0	0	0	0	0	0	0	1
3897:	0	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	1	0	0	0
3913:	0	0	0	0	0	0	0	0	0
3921:	0	0	1	0	0	1	0	0	1
3929:	0	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0	0
3945:	0	1	1	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0	0
3969:	1	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	1	0	0
4001:	0	1	0	0	0	0	0	0	0
4009:	1	0	0	1	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	1	1	0	0
4041:	0	0	0	0	0	0	0	0	0
4049:	0	0	0	0	1	0	0	0	0
4057:	1	1	0	0	0	0	0	0	1
4065:	0	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0	0
4089:	0	0	1	0	0	0	0	0	1

0000038981.CNF

Live Time : 3600.000 sec
Real Time : 3601.230 sec
Start : 1: 0.9(keV)
Stop : 4096.4096.6(keV)
Acq. Start : Thu Jun 16 09:24:26 2016



Analysis Report for 1606041-12
CP-5030 00-02

[Handwritten signature]
6/16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-12
Sample Description : CP-5030 00-02
Sample Type : SOIL

Sample Size : 6.234E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 4:36:23PM
Acquisition Started : 6/16/2016 9:24:35AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3613.8 seconds

Dead Time : 0.38 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 9 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 38982

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606041-12
CP-5030 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 10:25:05AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	63.93	64.15	0.0000	0.00
2	75.10	75.32	0.0000	0.00
3	77.57	77.79	0.0000	0.00
4	87.94	88.15	0.0000	0.00
5	90.95	91.15	0.0000	0.00
6	123.23	123.42	0.0000	0.00
7	128.97	129.16	0.0000	0.00
8	131.66	131.84	0.0000	0.00
9	186.46	186.62	0.0000	0.00
10	239.04	239.17	0.0000	0.00
11	242.70	242.83	0.0000	0.00
12	257.72	257.84	0.0000	0.00
13	270.55	270.66	0.0000	0.00
14	295.74	295.84	0.0000	0.00
15	338.60	338.68	0.0000	0.00
16	352.27	352.34	0.0000	0.00
17	410.02	410.06	0.0000	0.00
18	511.18	511.17	0.0000	0.00
19	583.99	583.94	0.0000	0.00
20	593.12	593.07	0.0000	0.00
21	609.90	609.84	0.0000	0.00
22	623.40	623.34	0.0000	0.00
23	694.35	694.25	0.0000	0.00
24	727.84	727.72	0.0000	0.00
25	753.71	753.59	0.0000	0.00
26	816.33	816.18	0.0000	0.00
27	860.86	860.69	0.0000	0.00
28	900.65	900.45	0.0000	0.00
29	911.44	911.25	0.0000	0.00
30	968.73	968.51	0.0000	0.00
31	1120.90	1120.61	0.0000	0.00
32	1165.44	1165.13	0.0000	0.00
33	1283.32	1282.97	0.0000	0.00
34	1318.84	1318.48	0.0000	0.00
35	1378.59	1378.20	0.0000	0.00
36	1461.35	1460.93	0.0000	0.00
37	1584.03	1583.56	0.0000	0.00
38	1588.76	1588.29	0.0000	0.00
39	1693.51	1693.00	0.0000	0.00
40	1755.69	1755.16	0.0000	0.00
41	1765.08	1764.55	0.0000	0.00
42	1840.18	1839.62	0.0000	0.00

Analysis Report for 1606041-12
CP-5030 00-02

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1847.50	1846.95	0.0000	0.00
44	2033.02	2032.40	0.0000	0.00
45	2204.39	2203.72	0.0000	0.00
46	2370.60	2369.89	0.0000	0.00
47	2382.69	2381.97	0.0000	0.00
48	2615.19	2614.41	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606041-12

CP-5030 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 10:25:05AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	63.93	61 - 67	64.15	1.39E+02	101.62	1.77E+03	1.30
m	2	75.10	71 - 81	75.32	4.28E+02	89.82	1.22E+03	1.83
m	3	77.57	71 - 81	77.79	7.13E+02	97.51	1.18E+03	1.83
m	4	87.94	83 - 97	88.15	2.63E+02	72.61	9.16E+02	1.68
m	5	90.95	83 - 97	91.15	1.83E+02	74.35	8.92E+02	1.69
M	6	123.23	121 - 126	123.42	5.53E+01	63.65	7.67E+02	2.50
m	7	128.97	127 - 134	129.16	6.08E+01	56.34	6.41E+02	1.75
m	8	131.66	127 - 134	131.84	6.03E+01	57.70	6.34E+02	1.76
M	9	186.46	183 - 190	186.62	1.72E+02	80.17	9.51E+02	1.72
m	10	239.04	234 - 250	239.17	7.47E+02	67.90	3.66E+02	1.77
m	11	242.70	234 - 250	242.83	1.59E+02	61.90	3.89E+02	1.89
	12	257.72	255 - 260	257.84	4.25E+01	43.39	3.39E+02	1.34
	13	270.55	268 - 273	270.66	5.33E+01	44.37	3.51E+02	1.82
	14	295.74	292 - 298	295.84	2.53E+02	55.92	3.85E+02	1.64
	15	338.60	334 - 343	338.68	1.62E+02	58.40	3.94E+02	1.42
	16	352.27	348 - 357	352.34	4.46E+02	65.48	3.63E+02	2.00
	17	410.02	407 - 413	410.06	3.07E+01	36.44	2.17E+02	1.13
	18	511.18	507 - 515	511.17	1.11E+02	47.49	2.77E+02	1.70
	19	583.99	578 - 589	583.94	2.09E+02	47.62	1.76E+02	1.91
	20	593.12	590 - 596	593.07	2.53E+01	23.36	8.15E+01	3.73
	21	609.90	605 - 615	609.84	3.06E+02	52.34	1.98E+02	2.04
	22	623.40	621 - 625	623.34	1.99E+01	21.51	8.23E+01	1.24
	23	694.35	691 - 697	694.25	3.38E+01	25.83	9.43E+01	3.72
	24	727.84	723 - 733	727.72	5.40E+01	39.19	1.76E+02	3.58
	25	753.71	748 - 758	753.59	4.05E+01	34.53	1.37E+02	3.44
	26	816.33	813 - 818	816.18	2.01E+01	18.95	5.39E+01	1.14
	27	860.86	855 - 865	860.69	3.61E+01	31.80	1.16E+02	2.71
M	28	900.65	898 - 914	900.45	1.42E+01	19.03	5.62E+01	2.62
m	29	911.44	898 - 914	911.25	1.17E+02	30.75	8.18E+01	2.49
	30	968.73	962 - 975	968.51	8.20E+01	45.74	1.96E+02	2.27
	31	1120.90	1118 - 1125	1120.61	7.86E+01	26.83	6.68E+01	2.32
	32	1165.44	1161 - 1169	1165.13	2.79E+01	23.40	6.62E+01	3.94
	33	1283.32	1279 - 1287	1282.97	3.40E+01	20.75	4.60E+01	5.69
	34	1318.84	1314 - 1324	1318.48	1.84E+01	19.07	3.91E+01	6.64
	35	1378.59	1372 - 1382	1378.20	2.47E+01	19.59	3.67E+01	2.27
	36	1461.35	1455 - 1466	1460.93	4.62E+02	46.22	3.60E+01	1.93
M	37	1584.03	1581 - 1595	1583.56	7.26E+00	9.22	1.26E+01	3.97
m	38	1588.76	1581 - 1595	1588.29	1.45E+01	16.16	2.39E+01	3.28
	39	1693.51	1690 - 1695	1693.00	7.00E+00	5.29	0.00E+00	1.00
	40	1755.69	1750 - 1760	1755.16	1.01E+01	12.76	1.58E+01	4.65

Analysis Report for 1606041-12

CP-5030 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1765.08	1760 - 1768		1764.55	4.85E+01	15.89	9.00E+00	2.82
42	1840.18	1837 - 1842		1839.62	5.36E+00	6.08	3.29E+00	1.24
43	1847.50	1843 - 1851		1846.95	8.17E+00	10.99	1.37E+01	1.25
44	2033.02	2029 - 2034		2032.40	5.00E+00	4.47	0.00E+00	1.24
45	2204.39	2201 - 2206		2203.72	8.00E+00	7.87	6.00E+00	2.76
46	2370.60	2366 - 2372		2369.89	9.00E+00	6.00	0.00E+00	1.00
47	2382.69	2378 - 2385		2381.97	7.27E+00	10.00	1.15E+01	1.11
48	2615.19	2610 - 2617		2614.41	6.07E+01	17.09	8.62E+00	2.49

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 10:25:05AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	63.93	61 -	67	1.39E+02	101.62	1.77E+03	8.13E+01
M	2	75.10	71 -	81	4.28E+02	89.82	1.22E+03	5.75E+01
m	3	77.57	71 -	81	7.13E+02	97.51	1.18E+03	5.65E+01
m	4	87.94	83 -	97	2.63E+02	72.61	9.16E+02	4.98E+01
m	5	90.95	83 -	97	1.83E+02	74.35	8.92E+02	4.91E+01
	6	123.23	121 -	126	5.53E+01	63.65	7.67E+02	5.09E+01
M	7	128.97	127 -	134	6.08E+01	56.34	6.41E+02	4.16E+01
m	8	131.66	127 -	134	6.03E+01	57.70	6.34E+02	4.14E+01
	9	186.46	183 -	190	1.72E+02	80.17	9.51E+02	6.23E+01
M	10	239.04	234 -	250	7.47E+02	67.90	3.66E+02	3.15E+01
m	11	242.70	234 -	250	1.59E+02	61.90	3.89E+02	3.24E+01
	12	257.72	255 -	260	4.25E+01	43.39	3.39E+02	3.40E+01
	13	270.55	268 -	273	5.33E+01	44.37	3.51E+02	3.44E+01
	14	295.74	292 -	298	2.53E+02	55.92	3.85E+02	3.78E+01
	15	338.60	334 -	343	1.62E+02	58.40	3.94E+02	4.32E+01
	16	352.27	348 -	357	4.46E+02	65.48	3.63E+02	4.11E+01
	17	410.02	407 -	413	3.07E+01	36.44	2.17E+02	2.85E+01
	18	511.18	507 -	515	1.11E+02	47.49	2.77E+02	3.50E+01
	19	583.99	578 -	589	2.09E+02	47.62	1.76E+02	3.11E+01

Analysis Report for 1606041-12

CP-5030 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
20	593.12	590 -	596	2.53E+01	23.36	8.15E+01	1.73E+01
21	609.90	605 -	615	3.06E+02	52.34	1.98E+02	3.20E+01
22	623.40	621 -	625	1.99E+01	21.51	8.23E+01	1.61E+01
23	694.35	691 -	697	3.38E+01	25.83	9.43E+01	1.90E+01
24	727.84	723 -	733	5.40E+01	39.19	1.76E+02	2.99E+01
25	753.71	748 -	758	4.05E+01	34.53	1.37E+02	2.64E+01
26	816.33	813 -	818	2.01E+01	18.95	5.39E+01	1.37E+01
27	860.86	855 -	865	3.61E+01	31.80	1.16E+02	2.42E+01
M 28	900.65	898 -	914	1.42E+01	19.03	5.62E+01	1.23E+01
m 29	911.44	898 -	914	1.17E+02	30.75	8.18E+01	1.49E+01
30	968.73	962 -	975	8.20E+01	45.74	1.96E+02	3.45E+01
31	1120.90	1118 -	1125	7.86E+01	26.83	6.68E+01	1.66E+01
32	1165.44	1161 -	1169	2.79E+01	23.40	6.62E+01	1.72E+01
33	1283.32	1279 -	1287	3.40E+01	20.75	4.60E+01	1.41E+01
34	1318.84	1314 -	1324	1.84E+01	19.07	3.91E+01	1.40E+01
35	1378.59	1372 -	1382	2.47E+01	19.59	3.67E+01	1.39E+01
36	1461.35	1455 -	1466	4.62E+02	46.22	3.60E+01	1.39E+01
M 37	1584.03	1581 -	1595	7.26E+00	9.22	1.26E+01	5.84E+00
m 38	1588.76	1581 -	1595	1.45E+01	16.16	2.39E+01	8.03E+00
39	1693.51	1690 -	1695	7.00E+00	5.29	0.00E+00	0.00E+00
40	1755.69	1750 -	1760	1.01E+01	12.76	1.58E+01	9.09E+00
41	1765.08	1760 -	1768	4.85E+01	15.89	9.00E+00	6.29E+00
42	1840.18	1837 -	1842	5.36E+00	6.08	3.29E+00	3.24E+00
43	1847.50	1843 -	1851	8.17E+00	10.99	1.37E+01	7.71E+00
44	2033.02	2029 -	2034	5.00E+00	4.47	0.00E+00	0.00E+00
45	2204.39	2201 -	2206	8.00E+00	7.87	6.00E+00	4.50E+00
46	2370.60	2366 -	2372	9.00E+00	6.00	0.00E+00	0.00E+00
47	2382.69	2378 -	2385	7.27E+00	10.00	1.15E+01	6.92E+00
48	2615.19	2610 -	2617	6.07E+01	17.09	8.62E+00	5.77E+00

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 10:25:05AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Peak Match Tolerance : 1.000 keV

Analysis Report for 1606041-12
CP-5030 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	63.93	61 -	67	64.15	1.39E+02	101.62	1.77E+03	TH-234
M	2	75.10	71 -	81	75.32	4.28E+02	89.82	1.22E+03	AM-243
m	3	77.57	71 -	81	77.79	7.13E+02	97.51	1.18E+03	TI-44
m	4	87.94	83 -	97	88.15	2.63E+02	72.61	9.16E+02	CD-109 SN-126 LU-176
	5	90.95	83 -	97	91.15	1.83E+02	74.35	8.92E+02	ND-147
m	6	123.23	121 -	126	123.42	5.53E+01	63.65	7.67E+02	EU-154
M	7	128.97	127 -	134	129.16	6.08E+01	56.34	6.41E+02	.....
m	8	131.66	127 -	134	131.84	6.03E+01	57.70	6.34E+02	PA-234
	9	186.46	183 -	190	186.62	1.72E+02	80.17	9.51E+02	RA-226
M	10	239.04	234 -	250	239.17	7.47E+02	67.90	3.66E+02	PB-212
m	11	242.70	234 -	250	242.83	1.59E+02	61.90	3.89E+02	.....
	12	257.72	255 -	260	257.84	4.25E+01	43.39	3.39E+02	.....
	13	270.55	268 -	273	270.66	5.33E+01	44.37	3.51E+02	.....
	14	295.74	292 -	298	295.84	2.53E+02	55.92	3.85E+02	PB-214
	15	338.60	334 -	343	338.68	1.62E+02	58.40	3.94E+02	AC-228
	16	352.27	348 -	357	352.34	4.46E+02	65.48	3.63E+02	PB-214
	17	410.02	407 -	413	410.06	3.07E+01	36.44	2.17E+02	HO-166M
	18	511.18	507 -	515	511.17	1.11E+02	47.49	2.77E+02	.....
	19	583.99	578 -	589	583.94	2.09E+02	47.62	1.76E+02	TL-208
	20	593.12	590 -	596	593.07	2.53E+01	23.36	8.15E+01	.....
	21	609.90	605 -	615	609.84	3.06E+02	52.34	1.98E+02	BI-214
	22	623.40	621 -	625	623.34	1.99E+01	21.51	8.23E+01	.....
	23	694.35	691 -	697	694.25	3.38E+01	25.83	9.43E+01	SB-126
	24	727.84	723 -	733	727.72	5.40E+01	39.19	1.76E+02	BI-212
	25	753.71	748 -	758	753.59	4.05E+01	34.53	1.37E+02	.....
	26	816.33	813 -	818	816.18	2.01E+01	18.95	5.39E+01	LA-140
	27	860.86	855 -	865	860.69	3.61E+01	31.80	1.16E+02	TL-208
M	28	900.65	898 -	914	900.45	1.42E+01	19.03	5.62E+01	.....
m	29	911.44	898 -	914	911.25	1.17E+02	30.75	8.18E+01	AC-228 LU-172
	30	968.73	962 -	975	968.51	8.20E+01	45.74	1.96E+02	AC-228
	31	1120.90	1118 -	1125	1120.61	7.86E+01	26.83	6.68E+01	SC-46 TA-182 BI-214
	32	1165.44	1161 -	1169	1165.13	2.79E+01	23.40	6.62E+01	.....
	33	1283.32	1279 -	1287	1282.97	3.40E+01	20.75	4.60E+01	.....
	34	1318.84	1314 -	1324	1318.48	1.84E+01	19.07	3.91E+01	.....
	35	1378.59	1372 -	1382	1378.20	2.47E+01	19.59	3.67E+01	.....
	36	1461.35	1455 -	1466	1460.93	4.62E+02	46.22	3.60E+01	K-40
M	37	1584.03	1581 -	1595	1583.56	7.26E+00	9.22	1.26E+01	.....
m	38	1588.76	1581 -	1595	1588.29	1.45E+01	16.16	2.39E+01	.....
	39	1693.51	1690 -	1695	1693.00	7.00E+00	5.29	0.00E+00	.....
	40	1755.69	1750 -	1760	1755.16	1.01E+01	12.76	1.58E+01	.....
	41	1765.08	1760 -	1768	1764.55	4.85E+01	15.89	9.00E+00	BI-214
	42	1840.18	1837 -	1842	1839.62	5.36E+00	6.08	3.29E+00	.....
	43	1847.50	1843 -	1851	1846.95	8.17E+00	10.99	1.37E+01	.....
	44	2033.02	2029 -	2034	2032.40	5.00E+00	4.47	0.00E+00	.....
	45	2204.39	2201 -	2206	2203.72	8.00E+00	7.87	6.00E+00	BI-214
	46	2370.60	2366 -	2372	2369.89	9.00E+00	6.00	0.00E+00	.....

Analysis Report for 1606041-12
CP-5030 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
47	2382.69	2378 -	2385	2381.97	7.27E+00	10.00	1.15E+01	.....
48	2615.19	2610 -	2617	2614.41	6.07E+01	17.09	8.62E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 10:25:05AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	63.93	1.39E+02	101.62	2.17E-02	1.73E-03
M	2	75.10	4.28E+02	89.82	2.37E-02	2.10E-03
m	3	77.57	7.13E+02	97.51	2.39E-02	2.18E-03
m	4	87.94	2.63E+02	72.61	2.44E-02	2.52E-03
m	5	90.95	1.83E+02	74.35	2.44E-02	2.46E-03
	6	123.23	5.53E+01	63.65	2.30E-02	1.73E-03
M	7	128.97	6.08E+01	56.34	2.25E-02	1.70E-03
m	8	131.66	6.03E+01	57.70	2.23E-02	1.68E-03
	9	186.46	1.72E+02	80.17	1.83E-02	1.42E-03
M	10	239.04	7.47E+02	67.90	1.52E-02	1.18E-03
m	11	242.70	1.59E+02	61.90	1.50E-02	1.16E-03
	12	257.72	4.25E+01	43.39	1.43E-02	1.09E-03
	13	270.55	5.33E+01	44.37	1.38E-02	1.04E-03
	14	295.74	2.53E+02	55.92	1.28E-02	9.73E-04
	15	338.60	1.62E+02	58.40	1.14E-02	9.13E-04
	16	352.27	4.46E+02	65.48	1.11E-02	8.93E-04
	17	410.02	3.07E+01	36.44	9.70E-03	8.19E-04
	18	511.18	1.11E+02	47.49	8.01E-03	7.18E-04
	19	583.99	2.09E+02	47.62	7.13E-03	6.45E-04
	20	593.12	2.53E+01	23.36	7.03E-03	6.36E-04
	21	609.90	3.06E+02	52.34	6.87E-03	6.19E-04
	22	623.40	1.99E+01	21.51	6.74E-03	6.06E-04
	23	694.35	3.38E+01	25.83	6.13E-03	5.41E-04
	24	727.84	5.40E+01	39.19	5.89E-03	5.14E-04
	25	753.71	4.05E+01	34.53	5.71E-03	4.93E-04
	26	816.33	2.01E+01	18.95	5.33E-03	4.41E-04
	27	860.86	3.61E+01	31.80	5.09E-03	4.05E-04
M	28	900.65	1.42E+01	19.03	4.90E-03	3.74E-04

Analysis Report for 1606041-12
CP-5030 00-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	29	911.44	1.17E+02	30.75	4.85E-03	3.72E-04
	30	968.73	8.20E+01	45.74	4.61E-03	3.62E-04
	31	1120.90	7.86E+01	26.83	4.08E-03	3.33E-04
	32	1165.44	2.79E+01	23.40	3.95E-03	3.25E-04
	33	1283.32	3.40E+01	20.75	3.65E-03	2.99E-04
	34	1318.84	1.84E+01	19.07	3.57E-03	2.92E-04
	35	1378.59	2.47E+01	19.59	3.45E-03	2.82E-04
	36	1461.35	4.62E+02	46.22	3.29E-03	2.69E-04
M	37	1584.03	7.26E+00	9.22	3.09E-03	2.51E-04
m	38	1588.76	1.45E+01	16.16	3.09E-03	2.50E-04
	39	1693.51	7.00E+00	5.29	2.94E-03	2.34E-04
	40	1755.69	1.01E+01	12.76	2.87E-03	2.25E-04
	41	1765.08	4.85E+01	15.89	2.86E-03	2.24E-04
	42	1840.18	5.36E+00	6.08	2.77E-03	2.13E-04
	43	1847.50	8.17E+00	10.99	2.77E-03	2.13E-04
	44	2033.02	5.00E+00	4.47	2.59E-03	2.13E-04
	45	2204.39	8.00E+00	7.87	2.46E-03	2.13E-04
	46	2370.60	9.00E+00	6.00	2.36E-03	2.13E-04
	47	2382.69	7.27E+00	10.00	2.35E-03	2.13E-04
	48	2615.19	6.07E+01	17.09	2.24E-03	2.13E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 10:25:05AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038678.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	63.93	1.39E+02	101.62	4.47E+01	1.66E+01	9.38E+01	1.03E+02
M	2	75.10	4.28E+02	89.82			4.28E+02	8.98E+01
m	3	77.57	7.13E+02	97.51	6.70E+00	3.28E+00	7.06E+02	9.76E+01
m	4	87.94	2.63E+02	72.61	1.07E+01	3.99E+00	2.52E+02	7.27E+01
m	5	90.95	1.83E+02	74.35			1.83E+02	7.44E+01
	6	123.23	5.53E+01	63.65			5.53E+01	6.36E+01
M	7	128.97	6.08E+01	56.34			6.08E+01	5.63E+01
m	8	131.66	6.03E+01	57.70			6.03E+01	5.77E+01
	9	186.46	1.72E+02	80.17	3.45E+01	5.92E+00	1.37E+02	8.04E+01
M	10	239.04	7.47E+02	67.90	1.33E+01	5.09E+00	7.33E+02	6.81E+01

Analysis Report for 1606041-12

CP-5030 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	11	242.70	1.59E+02	61.90			1.59E+02	6.19E+01
	12	257.72	4.25E+01	43.39			4.25E+01	4.34E+01
	13	270.55	5.33E+01	44.37			5.33E+01	4.44E+01
	14	295.74	2.53E+02	55.92	1.94E+00	4.39E+00	2.51E+02	5.61E+01
	15	338.60	1.62E+02	58.40			1.62E+02	5.84E+01
	16	352.27	4.46E+02	65.48	4.00E+00	3.58E+00	4.42E+02	6.56E+01
	17	410.02	3.07E+01	36.44			3.07E+01	3.64E+01
	18	511.18	1.11E+02	47.49	6.05E+01	4.93E+00	5.09E+01	4.77E+01
	19	583.99	2.09E+02	47.62	5.50E+00	3.61E+00	2.03E+02	4.78E+01
	20	593.12	2.53E+01	23.36			2.53E+01	2.34E+01
	21	609.90	3.06E+02	52.34	5.07E+00	3.83E+00	3.01E+02	5.25E+01
	22	623.40	1.99E+01	21.51			1.99E+01	2.15E+01
	23	694.35	3.38E+01	25.83			3.38E+01	2.58E+01
	24	727.84	5.40E+01	39.19			5.40E+01	3.92E+01
	25	753.71	4.05E+01	34.53			4.05E+01	3.45E+01
	26	816.33	2.01E+01	18.95			2.01E+01	1.89E+01
	27	860.86	3.61E+01	31.80			3.61E+01	3.18E+01
M	28	900.65	1.42E+01	19.03			1.42E+01	1.90E+01
m	29	911.44	1.17E+02	30.75			1.17E+02	3.07E+01
	30	968.73	8.20E+01	45.74			8.20E+01	4.57E+01
	31	1120.90	7.86E+01	26.83	1.09E+00	2.08E+00	7.75E+01	2.69E+01
	32	1165.44	2.79E+01	23.40			2.79E+01	2.34E+01
	33	1283.32	3.40E+01	20.75			3.40E+01	2.07E+01
	34	1318.84	1.84E+01	19.07			1.84E+01	1.91E+01
	35	1378.59	2.47E+01	19.59			2.47E+01	1.96E+01
	36	1461.35	4.62E+02	46.22	4.33E+00	2.02E+00	4.58E+02	4.63E+01
M	37	1584.03	7.26E+00	9.22			7.26E+00	9.22E+00
m	38	1588.76	1.45E+01	16.16			1.45E+01	1.62E+01
	39	1693.51	7.00E+00	5.29			7.00E+00	5.29E+00
	40	1755.69	1.01E+01	12.76			1.01E+01	1.28E+01
	41	1765.08	4.85E+01	15.89			4.85E+01	1.59E+01
	42	1840.18	5.36E+00	6.08			5.36E+00	6.08E+00
	43	1847.50	8.17E+00	10.99			8.17E+00	1.10E+01
	44	2033.02	5.00E+00	4.47			5.00E+00	4.47E+00
	45	2204.39	8.00E+00	7.87			8.00E+00	7.87E+00
	46	2370.60	9.00E+00	6.00			9.00E+00	6.00E+00
	47	2382.69	7.27E+00	10.00			7.27E+00	1.00E+01
	48	2615.19	6.07E+01	17.09	2.52E+00	1.44E+00	5.82E+01	1.71E+01

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1606041-12
CP-5030 00-02

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 10:25:05AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038678.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
	1	63.93	1.39E+02	101.62	4.47E+01	1.66E+01	9.38E+01	1.03E+02
M	2	75.10	4.28E+02	89.82			4.28E+02	8.98E+01
m	3	77.57	7.13E+02	97.51	6.70E+00	3.28E+00	7.06E+02	9.76E+01
m	4	87.94	2.63E+02	72.61	1.07E+01	3.99E+00	2.52E+02	7.27E+01
m	5	90.95	1.83E+02	74.35			1.83E+02	7.44E+01
	6	123.23	5.53E+01	63.65			5.53E+01	6.36E+01
M	7	128.97	6.08E+01	56.34			6.08E+01	5.63E+01
m	8	131.66	6.03E+01	57.70			6.03E+01	5.77E+01
	9	186.46	1.72E+02	80.17	3.45E+01	5.92E+00	1.37E+02	8.04E+01
M	10	239.04	7.47E+02	67.90	1.33E+01	5.09E+00	7.33E+02	6.81E+01
m	11	242.70	1.59E+02	61.90			1.59E+02	6.19E+01
	12	257.72	4.25E+01	43.39			4.25E+01	4.34E+01
	13	270.55	5.33E+01	44.37			5.33E+01	4.44E+01
	14	295.74	2.53E+02	55.92	1.94E+00	4.39E+00	2.51E+02	5.61E+01
	15	338.60	1.62E+02	58.40			1.62E+02	5.84E+01
	16	352.27	4.46E+02	65.48	4.00E+00	3.58E+00	4.42E+02	6.56E+01
	17	410.02	3.07E+01	36.44			3.07E+01	3.64E+01
	18	511.18	1.11E+02	47.49	6.05E+01	4.93E+00	5.09E+01	4.77E+01
	19	583.99	2.09E+02	47.62	5.50E+00	3.61E+00	2.03E+02	4.78E+01
	20	593.12	2.53E+01	23.36			2.53E+01	2.34E+01
	21	609.90	3.06E+02	52.34	5.07E+00	3.83E+00	3.01E+02	5.25E+01
	22	623.40	1.99E+01	21.51			1.99E+01	2.15E+01
	23	694.35	3.38E+01	25.83			3.38E+01	2.58E+01
	24	727.84	5.40E+01	39.19			5.40E+01	3.92E+01
	25	753.71	4.05E+01	34.53			4.05E+01	3.45E+01
	26	816.33	2.01E+01	18.95			2.01E+01	1.89E+01
	27	860.86	3.61E+01	31.80			3.61E+01	3.18E+01
M	28	900.65	1.42E+01	19.03			1.42E+01	1.90E+01
m	29	911.44	1.17E+02	30.75			1.17E+02	3.07E+01
	30	968.73	8.20E+01	45.74			8.20E+01	4.57E+01
	31	1120.90	7.86E+01	26.83	1.09E+00	2.08E+00	7.75E+01	2.69E+01
	32	1165.44	2.79E+01	23.40			2.79E+01	2.34E+01
	33	1283.32	3.40E+01	20.75			3.40E+01	2.07E+01
	34	1318.84	1.84E+01	19.07			1.84E+01	1.91E+01
	35	1378.59	2.47E+01	19.59			2.47E+01	1.96E+01
	36	1461.35	4.62E+02	46.22	4.33E+00	2.02E+00	4.58E+02	4.63E+01
M	37	1584.03	7.26E+00	9.22			7.26E+00	9.22E+00
m	38	1588.76	1.45E+01	16.16			1.45E+01	1.62E+01
	39	1693.51	7.00E+00	5.29			7.00E+00	5.29E+00
	40	1755.69	1.01E+01	12.76			1.01E+01	1.28E+01
	41	1765.08	4.85E+01	15.89			4.85E+01	1.59E+01

Analysis Report for 1606041-12

CP-5030 00-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1840.18	5.36E+00	6.08			5.36E+00	6.08E+00
43	1847.50	8.17E+00	10.99			8.17E+00	1.10E+01
44	2033.02	5.00E+00	4.47			5.00E+00	4.47E+00
45	2204.39	8.00E+00	7.87			8.00E+00	7.87E+00
46	2370.60	9.00E+00	6.00			9.00E+00	6.00E+00
47	2382.69	7.27E+00	10.00			7.27E+00	1.00E+01
48	2615.19	6.07E+01	17.09	2.52E+00	1.44E+00	5.82E+01	1.71E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.954	1460.81 *	10.67	1.57E+01	2.07E+00
CD-109	0.999	88.03 *	3.72	3.39E+00	1.06E+00
SN-126	0.978	87.57 *	37.00	3.36E-01	1.03E-01
ND-147	0.669	91.11 *	28.90	5.75E-01	2.41E-01
		531.02	13.10		
TL-208	0.928	583.14 *	30.22	1.14E+00	2.86E-01
		860.37 *	4.48	1.91E+00	1.69E+00
		2614.66 *	35.85	8.73E-01	2.70E-01
BI-212	0.714	727.17 *	11.80	9.36E-01	6.84E-01
		1620.62	2.75		
PB-212	0.871	238.63 *	44.60	1.30E+00	1.58E-01
		300.09	3.41		
BI-214	0.949	609.31 *	46.30	1.14E+00	2.24E-01
		1120.29 *	15.10	1.52E+00	5.41E-01
		1764.49 *	15.80	1.29E+00	4.36E-01
		2204.22 *	4.98	7.86E-01	7.76E-01
PB-214	0.972	295.21 *	19.19	1.23E+00	2.90E-01
		351.92 *	37.19	1.30E+00	2.19E-01
RA-226	0.990	186.21 *	3.28	2.76E+00	5.30E+00
AC-228	0.980	338.32 *	11.40	1.50E+00	5.53E-01
		911.07 *	27.70	1.05E+00	2.87E-01
		969.11 *	16.60	1.29E+00	7.28E-01
PA-234	0.457	131.20 *	20.40	1.59E-01	1.53E-01
		733.99	8.80		

Analysis Report for 1606041-12
CP-5030 00-02

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PA-234	0.457	946.00	12.00		
TH-234	0.937	63.29 *	3.80	1.37E+00	1.51E+00
AM-243	0.971	74.67 *	66.00	3.30E-01	7.52E-02

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 10:25:05AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 3	77.57	1.96145E-01	6.91	Tol.	TI-44
6	123.23	1.53591E-02	57.56	Tol.	EU-154
M 7	128.97	1.68828E-02	46.35		
m 11	242.70	4.42254E-02	19.44		
12	257.72	1.18010E-02	51.07		
13	270.55	1.47980E-02	41.65		
17	410.02	8.53517E-03	59.29	Tol.	HO-166M
18	511.18	1.41285E-02	46.94		
20	593.12	7.01389E-03	46.26		
22	623.40	5.51913E-03	54.13		
23	694.35	9.39815E-03	38.17	Tol.	SB-126
25	753.71	1.12436E-02	42.65		
26	816.33	5.57329E-03	47.22	Sum	
M 28	900.65	3.94995E-03	66.90		
32	1165.44	7.75045E-03	41.94		
33	1283.32	9.43957E-03	30.53		
34	1318.84	5.12427E-03	51.69		
35	1378.59	6.84754E-03	39.73		
M 37	1584.03	2.01789E-03	63.46		
m 38	1588.76	4.03110E-03	55.66	Sum	
39	1693.51	1.94444E-03	37.80	S-Esc	
40	1755.69	2.80093E-03	63.26		
42	1840.18	1.48810E-03	56.77	Sum	
43	1847.50	2.26852E-03	67.28		
44	2033.02	1.38889E-03	44.72	Sum	
46	2370.60	2.50000E-03	33.33		

Analysis Report for 1606041-12
CP-5030 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
47	2382.69	2.01923E-03	68.78		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.95	1460.81 *	10.67	1.57E+01	2.07E+00
CD-109	0.99	88.03 *	3.72	3.39E+00	1.06E+00
SN-126	0.97	87.57 *	37.00	3.36E-01	1.03E-01
ND-147	0.66	91.11 *	28.90	5.75E-01	2.41E-01
		531.02 *	13.10		
TL-208	0.92	583.14 *	30.22	1.14E+00	2.86E-01
		860.37 *	4.48	1.91E+00	1.69E+00
		2614.66 *	35.85	8.73E-01	2.70E-01
BI-212	0.71	727.17 *	11.80	9.36E-01	6.84E-01
		1620.62 *	2.75		
PB-212	0.87	238.63 *	44.60	1.30E+00	1.58E-01
		300.09 *	3.41		
BI-214	0.94	609.31 *	46.30	1.14E+00	2.24E-01
		1120.29 *	15.10	1.52E+00	5.41E-01
		1764.49 *	15.80	1.29E+00	4.36E-01
		2204.22 *	4.98	7.86E-01	7.76E-01
PB-214	0.97	295.21 *	19.19	1.23E+00	2.90E-01
		351.92 *	37.19	1.30E+00	2.19E-01
RA-226	0.99	186.21 *	3.28	2.76E+00	5.30E+00
AC-228	0.98	338.32 *	11.40	1.50E+00	5.53E-01
		911.07 *	27.70	1.05E+00	2.87E-01
		969.11 *	16.60	1.29E+00	7.28E-01
PA-234	0.45	131.20 *	20.40	1.59E-01	1.53E-01
		733.99 *	8.80		
		946.00 *	12.00		
TH-234	0.93	63.29 *	3.80	1.37E+00	1.51E+00
AM-243	0.97	74.67 *	66.00	3.30E-01	7.52E-02

Analysis Report for 1606041-12
CP-5030 00-02

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

<i>Nuclide Name</i>	<i>Nuclide Id Confidence</i>	<i>Wt mean Activity (pCi/grams)</i>	<i>Wt mean Activity Uncertainty</i>	<i>Comments</i>
	0.954	1.57E+01	2.07E+00	
? K-40				
? CD-109	0.999	3.39E+00	1.06E+00	
? SN-126	0.978	3.36E-01	1.03E-01	
ND-147	0.669	5.75E-01	2.41E-01	
TL-208	0.928	1.01E+00	1.95E-01	
BI-212	0.714	9.36E-01	6.84E-01	
PB-212	0.871	1.30E+00	1.58E-01	
BI-214	0.949	1.19E+00	1.82E-01	
PB-214	0.972	1.27E+00	1.75E-01	
RA-226	0.990	2.76E+00	5.30E+00	
AC-228	0.980	1.16E+00	2.40E-01	
PA-234	0.457	1.59E-01	1.53E-01	
TH-234	0.937	1.37E+00	1.51E+00	
AM-243	0.971	3.30E-01	7.52E-02	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1606041-12
CP-5030 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 10:25:05AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
m	3	77.57	1.96145E-01	6.91	Tol.	TI-44
	6	123.23	1.53591E-02	57.56	Tol.	EU-154
M	7	128.97	1.68828E-02	46.35		
m	11	242.70	4.42254E-02	19.44		
	12	257.72	1.18010E-02	51.07		
	13	270.55	1.47980E-02	41.65		
	17	410.02	8.53517E-03	59.29	Tol.	HO-166M
	18	511.18	1.41285E-02	46.94		
	20	593.12	7.01389E-03	46.26		
	22	623.40	5.51913E-03	54.13		
	23	694.35	9.39815E-03	38.17	Tol.	SB-126
	25	753.71	1.12436E-02	42.65		
	26	816.33	5.57329E-03	47.22	Sum	
M	28	900.65	3.94995E-03	66.90		
	32	1165.44	7.75045E-03	41.94		
	33	1283.32	9.43957E-03	30.53		
	34	1318.84	5.12427E-03	51.69		
	35	1378.59	6.84754E-03	39.73		
M	37	1584.03	2.01789E-03	63.46		
m	38	1588.76	4.03110E-03	55.66	Sum	
	39	1693.51	1.94444E-03	37.80	S-Esc	
	40	1755.69	2.80093E-03	63.26		
	42	1840.18	1.48810E-03	56.77	Sum	
	43	1847.50	2.26852E-03	67.28		
	44	2033.02	1.38889E-03	44.72	Sum	
	46	2370.60	2.50000E-03	33.33		
	47	2382.69	2.01923E-03	68.78		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1606041-12
CP-5030 00-02

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-1.33E-01	7.30E-01	7.30E-01
+	NA-22	1274.54	99.94	-1.13E-02	1.04E-01	1.04E-01
+	NA-24	1368.53	99.99	-1.81E+03	2.47E+03	4.18E+03
		2754.09	99.86	-3.54E+02		2.47E+03
+	AL-26	1808.65	99.76	5.73E-03	6.82E-02	6.82E-02
+	K-40	1460.81	* 10.67	1.57E+01	1.09E+00	1.09E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	2.37E-02	6.85E-02	6.85E-02
		78.34	96.00	2.03E-01		8.46E-02
+	SC-46	889.25	99.98	1.43E-02	9.03E-02	9.03E-02
		1120.51	99.99	3.12E-01		1.68E-01
+	V-48	983.52	99.98	-2.79E-02	1.48E-01	1.50E-01
		1312.10	97.50	6.15E-02		1.48E-01
+	CR-51	320.08	9.83	1.18E-01	8.87E-01	8.87E-01
+	MN-54	834.83	99.97	-1.05E-02	9.12E-02	9.12E-02
+	CO-56	846.75	99.96	-6.10E-03	9.05E-02	9.05E-02
		1037.75	14.03	-1.94E-02		7.66E-01
		1238.25	67.00	1.83E-01		2.26E-01
		1771.40	15.51	-1.81E-01		4.46E-01
		2598.48	16.90	-2.30E-02		2.54E-01
+	CO-57	122.06	85.51	1.88E-02	5.73E-02	5.73E-02
		136.48	10.60	-2.62E-01		4.35E-01
+	CO-58	810.76	99.40	-9.51E-03	8.76E-02	8.76E-02
+	FE-59	1099.22	56.50	-2.69E-02	1.79E-01	1.79E-01
		1291.56	43.20	1.52E-01		2.94E-01
+	CO-60	1173.22	100.00	1.53E-02	1.07E-01	1.11E-01
		1332.49	100.00	3.59E-04		1.07E-01
+	ZN-65	1115.52	50.75	-8.25E-02	1.78E-01	1.78E-01
+	GA-67	93.31	35.70	2.66E+00	1.45E+00	1.45E+00
		208.95	2.24	1.60E+01		2.45E+01
		300.22	16.00	-1.70E+00		3.61E+00
+	SE-75	121.11	16.70	-5.16E-02	8.10E-02	2.94E-01
		136.00	59.20	-2.50E-02		8.10E-02
		264.65	59.80	2.26E-02		1.05E-01
		279.53	25.20	6.97E-02		2.82E-01
		400.65	11.40	-9.12E-02		6.23E-01
+	RB-82	776.52	13.00	2.16E-01	8.65E-01	8.65E-01
+	RB-83	520.41	46.00	-9.50E-04	1.64E-01	1.64E-01
		529.64	30.30	-4.87E-02		2.54E-01
		552.65	16.40	-2.40E-01		4.68E-01

Analysis Report for 1606041-12
CP-5030 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	KR-85	513.99	0.43	-5.90E-01	2.35E+01	2.35E+01
+	SR-85	513.99	99.27	-2.86E-03	1.14E-01	1.14E-01
+	Y-88	898.02	93.40	8.83E-04	6.09E-02	9.39E-02
		1836.01	99.38	-4.65E-03		6.09E-02
+	NB-93M	16.57	9.43	-8.61E+00	7.60E+01	7.60E+01
+	NB-94	702.63	100.00	1.19E-02	7.76E-02	8.20E-02
		871.10	100.00	-1.37E-03		7.76E-02
+	NB-95	765.79	99.81	2.16E-02	1.17E-01	1.17E-01
+	NB-95M	235.69	25.00	3.40E+00	2.66E+00	2.66E+00
+	ZR-95	724.18	43.70	-9.06E-03	1.82E-01	2.40E-01
		756.72	55.30	5.59E-03		1.82E-01
+	MO-99	181.06	6.20	-2.03E-01	7.16E+00	1.00E+01
		739.58	12.80	2.04E-01		7.16E+00
		778.00	4.50	-7.24E+00		2.14E+01
+	RU-103	497.08	89.00	2.95E-02	9.26E-02	9.26E-02
+	RU-106	621.84	9.80	4.52E-02	8.50E-01	8.50E-01
+	AG-108M	433.93	89.90	-4.90E-03	7.01E-02	7.01E-02
		614.37	90.40	-8.30E-04		1.02E-01
		722.95	90.50	-5.46E-03		9.60E-02
+	CD-109	88.03	* 3.72	3.39E+00	3.33E+00	3.33E+00
+	AG-110M	657.75	93.14	-5.56E-02	7.94E-02	7.94E-02
		677.61	10.53	3.84E-01		7.65E-01
		706.67	16.46	-1.58E-01		4.82E-01
		763.93	21.98	-3.57E-01		4.01E-01
		884.67	71.63	-3.34E-02		1.05E-01
		1384.27	23.94	6.72E-02		3.69E-01
+	CD-113M	263.70	0.02	-3.35E+01	2.58E+02	2.58E+02
+	SN-113	255.12	1.93	-1.49E-01	9.64E-02	3.41E+00
		391.69	64.90	-8.87E-02		9.64E-02
+	TE123M	159.00	84.10	2.72E-03	6.36E-02	6.36E-02
+	SB-124	602.71	97.87	1.62E-04	8.09E-02	8.09E-02
		645.85	7.26	4.79E-01		1.13E+00
		722.78	11.10	-4.98E-02		8.75E-01
		1691.02	49.00	-1.87E-02		1.48E-01
+	I-125	35.49	6.49	-5.81E-01	2.08E+00	2.08E+00
+	SB-125	176.33	6.89	2.87E-01	2.20E-01	7.82E-01
		427.89	29.33	-1.11E-02		2.20E-01
		463.38	10.35	7.25E-01		7.83E-01
		600.56	17.80	1.49E-01		4.10E-01
		635.90	11.32	4.46E-01		6.96E-01
+	SB-126	414.70	83.30	-6.05E-02	1.30E-01	1.30E-01
		666.33	99.60	4.62E-02		1.41E-01
		695.00	99.60	1.37E-02		1.50E-01
		720.50	53.80	-3.32E-02		2.59E-01
+	SN-126	87.57	* 37.00	3.36E-01	3.30E-01	3.30E-01
+	SB-127	473.00	25.00	-5.57E-01	1.14E+00	1.57E+00
		685.20	35.70	-5.99E-01		1.14E+00
		783.80	14.70	1.11E+00		3.53E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-129	29.78	57.00	-4.94E-02	3.77E-01	3.77E-01
		33.60	13.20	6.32E-01		1.11E+00
		39.58	7.52	6.28E-01		1.27E+00
+	I-131	284.30	6.05	3.73E-01	1.79E-01	2.42E+00
		364.48	81.20	-5.11E-02		1.79E-01
		636.97	7.26	1.15E+00		2.46E+00
		722.89	1.80	-6.34E-01		1.12E+01
+	TE-132	49.72	13.10	-6.28E+00	5.84E-01	4.28E+00
		228.16	88.00	8.30E-02		5.84E-01
+	BA-133	81.00	33.00	-9.71E-01	1.62E-01	1.67E-01
		302.84	17.80	2.90E-01		4.00E-01
		356.01	60.00	-1.45E-02		1.62E-01
+	I-133	529.87	86.30	-3.77E+01	1.96E+02	1.96E+02
+	XE-133	81.00	38.00	-3.04E+00	5.23E-01	5.23E-01
+	CS-134	563.23	8.38	3.08E-02	8.07E-02	8.63E-01
		569.32	15.43	1.06E-01		4.95E-01
		604.70	97.60	-1.19E-03		8.07E-02
		795.84	85.40	-2.30E-02		1.03E-01
		801.93	8.73	2.99E-01		1.03E+00
+	CS-135	268.24	16.00	8.68E-02	4.26E-01	4.26E-01
+	I-135	1131.51	22.50	-1.03E+09	1.56E+10	1.81E+10
		1260.41	28.60	-1.56E+09		1.56E+10
		1678.03	9.54	-8.59E+09		2.70E+10
+	CS-136	153.22	7.46	-1.90E-02	1.31E-01	1.19E+00
		163.89	4.61	3.73E-01		1.83E+00
		176.55	13.56	1.28E-01		6.57E-01
		273.65	12.66	2.73E-02		9.01E-01
		340.57	48.50	5.08E-01		2.92E-01
		818.50	99.70	-2.75E-02		1.31E-01
		1048.07	79.60	-1.59E-02		1.79E-01
		1235.34	19.70	-2.37E-01		1.04E+00
+	CS-137	661.65	85.12	3.13E-02	9.75E-02	9.75E-02
+	LA-138	788.74	34.00	3.55E-02	1.17E-01	2.59E-01
		1435.80	66.00	1.44E-02		1.17E-01
+	CE-139	165.85	80.35	2.43E-02	6.66E-02	6.66E-02
+	BA-140	162.64	6.70	-2.51E-02	4.80E-01	1.27E+00
		304.84	4.50	-8.99E-01		2.50E+00
		423.70	3.20	-1.40E+00		3.44E+00
		437.55	2.00	-2.79E-01		5.63E+00
		537.32	25.00	1.76E-01		4.80E-01
+	LA-140	328.77	20.50	4.56E-01	1.90E-01	6.14E-01
		487.03	45.50	6.77E-02		2.68E-01
		815.85	23.50	1.65E-01		5.79E-01
		1596.49	95.49	2.67E-02		1.90E-01
+	CE-141	145.44	48.40	3.25E-02	1.32E-01	1.32E-01
+	CE-143	57.36	11.80	-2.52E+01	2.94E+01	7.56E+01
		293.26	42.00	3.69E+00		2.94E+01
		664.55	5.20	6.21E+01		2.16E+02
+	CE-144	133.54	10.80	-7.90E-02	4.58E-01	4.58E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-144	476.78	42.00	-7.76E-02	7.53E-02	1.60E-01
		618.01	98.60	6.42E-03		7.53E-02
		696.49	99.49	-8.40E-03		9.04E-02
+	PM-145	36.85	21.70	-1.86E-01	2.72E-01	5.08E-01
		37.36	39.70	1.28E-02		2.72E-01
		42.30	15.10	-5.30E-01		5.61E-01
		72.40	2.31	-6.60E+00		3.11E+00
+	PM-146	453.90	39.94	1.59E-03	1.60E-01	1.60E-01
		735.90	14.01	2.10E-01		5.91E-01
		747.13	13.10	-8.51E-03		6.21E-01
+	ND-147	91.11	* 28.90	5.75E-01	7.79E-01	7.79E-01
		531.02	13.10	1.27E-01		1.03E+00
+	PM-149	285.90	3.10	-4.37E+01	3.99E+01	3.99E+01
+	EU-152	121.78	20.50	7.66E-02	2.33E-01	2.33E-01
		244.69	5.40	-1.13E+00		1.44E+00
		344.27	19.13	-4.27E-02		3.06E-01
		778.89	9.20	2.74E-01		9.36E-01
		964.01	10.40	-1.25E+00		1.04E+00
		1085.78	7.22	1.54E-01		1.25E+00
		1112.02	9.60	1.74E-01		1.01E+00
		1407.95	14.94	-9.78E-02		6.61E-01
+	GD-153	97.43	31.30	1.51E-02	1.70E-01	1.70E-01
		103.18	22.20	-1.69E-01		2.20E-01
+	EU-154	123.07	40.50	6.77E-02	1.19E-01	1.19E-01
		723.30	19.70	-2.51E-02		4.42E-01
		873.19	11.50	2.89E-01		7.00E-01
		996.32	10.30	-5.29E-01		8.08E-01
		1004.76	17.90	1.20E-01		5.42E-01
		1274.45	35.50	-3.16E-02		2.91E-01
+	EU-155	86.50	30.90	2.03E-01	2.13E-01	2.13E-01
		105.30	20.70	-8.30E-03		2.32E-01
+	EU-156	811.77	10.40	-5.86E-02	1.19E+00	1.19E+00
		1153.47	7.20	1.51E-01		2.46E+00
		1230.71	8.90	-5.64E-01		1.86E+00
+	HO-166M	184.41	72.60	1.48E-01	9.43E-02	9.43E-02
		280.45	29.60	1.83E-02		2.23E-01
		410.94	11.10	2.17E-01		6.23E-01
		711.69	54.10	4.03E-02		1.56E-01
+	TM-171	66.72	0.14	3.23E+00	4.78E+01	4.78E+01
+	HF-172	81.75	4.52	-5.87E+00	4.22E-01	1.21E+00
		125.81	11.30	-4.33E-01		4.22E-01
+	LU-172	181.53	20.60	2.13E-01	3.78E-01	7.10E-01
		810.06	16.63	-2.69E-01		1.29E+00
		912.12	15.25	5.94E+00		2.86E+00
		1093.66	62.50	-1.90E-01		3.78E-01
+	LU-173	100.72	5.24	3.50E-01	3.36E-01	9.62E-01
		272.11	21.20	4.36E-02		3.36E-01
+	HF-175	343.40	84.00	7.15E-03	8.32E-02	8.32E-02
+	LU-176	88.34	13.30	-1.70E-02	7.12E-02	5.07E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-176	201.83	86.00	-1.75E-02	7.12E-02	7.50E-02
		306.78	94.00	2.67E-02		7.12E-02
+	TA-182	67.75	41.20	5.77E-02	1.67E-01	1.67E-01
		1121.30	34.90	7.21E-01		4.65E-01
		1189.05	16.23	-1.83E-01		6.73E-01
		1221.41	26.98	2.45E-01		4.19E-01
		1231.02	11.44	-1.65E-01		1.02E+00
+	IR-192	308.46	29.68	-2.67E-02	1.63E-01	2.33E-01
		468.07	48.10	-1.07E-01		1.63E-01
+	HG-203	279.19	77.30	7.15E-02	1.02E-01	1.02E-01
+	BI-207	569.67	97.72	7.23E-03	7.50E-02	7.50E-02
		1063.62	74.90	4.00E-02		1.35E-01
+	TL-208	583.14	* 30.22	1.14E+00	2.34E-01	3.67E-01
		860.37	* 4.48	1.91E+00		2.70E+00
		2614.66	* 35.85	8.73E-01		2.34E-01
+	BI-210M	262.00	45.00	-4.06E-02	1.33E-01	1.33E-01
		300.00	23.00	-1.49E-01		3.17E-01
+	PB-210	46.50	4.25	2.08E+00	1.99E+00	1.99E+00
+	PB-211	404.84	2.90	-2.60E-01	2.34E+00	2.34E+00
		831.96	2.90	-1.52E+00		2.87E+00
+	BI-212	727.17	* 11.80	9.36E-01	1.08E+00	1.08E+00
		1620.62	2.75	-8.64E-01		3.07E+00
+	PB-212	238.63	* 44.60	1.30E+00	3.13E-01	3.13E-01
		300.09	3.41	-1.01E+00		2.14E+00
+	BI-214	609.31	* 46.30	1.14E+00	2.56E-01	2.56E-01
		1120.29	* 15.10	1.52E+00		7.08E-01
		1764.49	* 15.80	1.29E+00		4.08E-01
		2204.22	* 4.98	7.86E-01		1.15E+00
+	PB-214	295.21	* 19.19	1.23E+00	2.50E-01	3.87E-01
		351.92	* 37.19	1.30E+00		2.50E-01
+	RN-219	401.80	6.50	-2.76E-01	1.03E+00	1.03E+00
+	RA-223	323.87	3.88	-2.82E-01	1.84E+00	1.84E+00
+	RA-224	240.98	3.95	1.74E+01	3.23E+00	3.23E+00
+	RA-225	40.00	31.00	2.35E-01	4.74E-01	4.74E-01
+	RA-226	186.21	* 3.28	2.76E+00	2.60E+00	2.60E+00
+	TH-227	50.10	8.40	-1.22E+00	8.35E-01	8.35E-01
		236.00	11.50	1.14E+00		8.94E-01
		256.20	6.30	-1.57E-01		1.01E+00
+	AC-228	338.32	* 11.40	1.50E+00	6.42E-01	8.24E-01
		911.07	* 27.70	1.05E+00		6.42E-01
		969.11	* 16.60	1.29E+00		1.13E+00
+	TH-230	48.44	16.90	2.48E-01	4.67E-01	4.67E-01
		62.85	4.60	1.44E+00		1.61E+00
		67.67	0.37	6.06E+00		1.75E+01
+	PA-231	283.67	1.60	6.09E-01	3.09E+00	3.95E+00
		302.67	2.30	2.24E+00		3.09E+00
+	TH-231	25.64	14.70	-2.07E+00	8.81E-01	2.79E+00
		84.21	6.40	-1.65E+00		8.81E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-233	311.98		38.60	-3.41E-02	2.05E-01	2.05E-01
+	PA-234	131.20	*	20.40	1.59E-01	3.25E-01	3.25E-01
		733.99		8.80	5.70E-02		9.68E-01
		946.00		12.00	3.11E-01		7.46E-01
+	PA-234M	1001.03		0.92	-2.73E+00	1.00E+01	1.00E+01
+	TH-234	63.29	*	3.80	1.37E+00	2.46E+00	2.46E+00
+	U-235	143.76		10.50	1.75E-01	4.88E-01	4.88E-01
		163.35		4.70	2.19E-01		1.07E+00
		205.31		4.70	-7.64E-01		1.42E+00
+	NP-237	86.50		12.60	4.96E-01	5.20E-01	5.20E-01
+	NP-239	106.10		22.70	5.79E-01	3.74E+00	3.74E+00
		228.18		10.70	1.51E+00		1.06E+01
		277.60		14.10	1.56E+00		8.36E+00
+	AM-241	59.54		35.90	2.45E-02	1.90E-01	1.90E-01
+	AM-243	74.67	*	66.00	3.30E-01	1.68E-01	1.68E-01
+	CM-243	209.75		3.29	3.41E-01	4.82E-01	2.08E+00
		228.14		10.60	8.71E-02		6.13E-01
		277.60		14.00	8.99E-02		4.82E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	7.30E-01	7.30E-01	-1.33E-01	3.44E-01
NA-22	1274.54	99.94	1.04E-01	1.04E-01	-1.13E-02	4.74E-02
NA-24	1368.53	99.99	4.18E+03	2.47E+03	-1.81E+03	1.87E+03
	2754.09	99.86	2.47E+03		-3.54E+02	8.73E+02

Analysis Report for 1606041-12

CP-5030 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AL-26	1808.65	99.76	6.82E-02	6.82E-02	5.73E-03	2.83E-02
+ K-40	1460.81	* 10.67	1.09E+00	1.09E+00	1.57E+01	4.96E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	6.85E-02	6.85E-02	2.37E-02	3.35E-02
	78.34	96.00	8.46E-02		2.03E-01	4.16E-02
SC-46	889.25	99.98	9.03E-02	9.03E-02	1.43E-02	4.16E-02
	1120.51	99.99	1.68E-01		3.12E-01	7.99E-02
V-48	983.52	99.98	1.50E-01	1.48E-01	-2.79E-02	6.97E-02
	1312.10	97.50	1.48E-01		6.15E-02	6.70E-02
CR-51	320.08	9.83	8.87E-01	8.87E-01	1.18E-01	4.26E-01
MN-54	834.83	99.97	9.12E-02	9.12E-02	-1.05E-02	4.24E-02
CO-56	846.75	99.96	9.05E-02	9.05E-02	-6.10E-03	4.18E-02
	1037.75	14.03	7.66E-01		-1.94E-02	3.54E-01
	1238.25	67.00	2.26E-01		1.83E-01	1.06E-01
	1771.40	15.51	4.46E-01		-1.81E-01	1.83E-01
	2598.48	16.90	2.54E-01		-2.30E-02	8.04E-02
CO-57	122.06	85.51	5.73E-02	5.73E-02	1.88E-02	2.78E-02
	136.48	10.60	4.35E-01		-2.62E-01	2.10E-01
CO-58	810.76	99.40	8.76E-02	8.76E-02	-9.51E-03	4.05E-02
FE-59	1099.22	56.50	1.79E-01	1.79E-01	-2.69E-02	8.12E-02
	1291.56	43.20	2.94E-01		1.52E-01	1.35E-01
CO-60	1173.22	100.00	1.11E-01	1.07E-01	1.53E-02	5.12E-02
	1332.49	100.00	1.07E-01		3.59E-04	4.90E-02
ZN-65	1115.52	50.75	1.78E-01	1.78E-01	-8.25E-02	8.09E-02
GA-67	93.31	35.70	1.45E+00	1.45E+00	2.66E+00	7.11E-01
	208.95	2.24	2.45E+01		1.60E+01	1.19E+01
	300.22	16.00	3.61E+00		-1.70E+00	1.74E+00
SE-75	121.11	16.70	2.94E-01	8.10E-02	-5.16E-02	1.42E-01
	136.00	59.20	8.10E-02		-2.50E-02	3.92E-02
	264.65	59.80	1.05E-01		2.26E-02	5.02E-02
	279.53	25.20	2.82E-01		6.97E-02	1.36E-01
	400.65	11.40	6.23E-01		-9.12E-02	2.96E-01
RB-82	776.52	13.00	8.65E-01	8.65E-01	2.16E-01	4.03E-01
RB-83	520.41	46.00	1.64E-01	1.64E-01	-9.50E-04	7.70E-02
	529.64	30.30	2.54E-01		-4.87E-02	1.19E-01
	552.65	16.40	4.68E-01		-2.40E-01	2.19E-01
KR-85	513.99	0.43	2.35E+01	2.35E+01	-5.90E-01	1.13E+01
SR-85	513.99	99.27	1.14E-01	1.14E-01	-2.86E-03	5.46E-02
Y-88	898.02	93.40	9.39E-02	6.09E-02	8.83E-04	4.31E-02
	1836.01	99.38	6.09E-02		-4.65E-03	2.42E-02
NB-93M	16.57	9.43	7.60E+01	7.60E+01	-8.61E+00	3.70E+01
NB-94	702.63	100.00	8.20E-02	7.76E-02	1.19E-02	3.83E-02
	871.10	100.00	7.76E-02		-1.37E-03	3.56E-02
NB-95	765.79	99.81	1.17E-01	1.17E-01	2.16E-02	5.50E-02
NB-95M	235.69	25.00	2.66E+00	2.66E+00	3.40E+00	1.30E+00
ZR-95	724.18	43.70	2.40E-01	1.82E-01	-9.06E-03	1.13E-01
	756.72	55.30	1.82E-01		5.59E-03	8.51E-02
MO-99	181.06	6.20	1.00E+01	7.16E+00	-2.03E-01	4.84E+00
	739.58	12.80	7.16E+00		2.04E-01	3.33E+00
	778.00	4.50	2.14E+01		-7.24E+00	9.97E+00
RU-103	497.08	89.00	9.26E-02	9.26E-02	2.95E-02	4.37E-02
RU-106	621.84	9.80	8.50E-01	8.50E-01	4.52E-02	4.00E-01
AG-108M	433.93	89.90	7.01E-02	7.01E-02	-4.90E-03	3.31E-02

Analysis Report for 1606041-12
CP-5030 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AG-108M	614.37	90.40	1.02E-01	7.01E-02	-8.30E-04	4.85E-02
	722.95	90.50	9.60E-02		-5.46E-03	4.50E-02
+ CD-109	88.03	* 3.72	3.33E+00	3.33E+00	3.39E+00	1.65E+00
AG-110M	657.75	93.14	7.94E-02	7.94E-02	-5.56E-02	3.69E-02
	677.61	10.53	7.65E-01		3.84E-01	3.57E-01
	706.67	16.46	4.82E-01		-1.58E-01	2.24E-01
	763.93	21.98	4.01E-01		-3.57E-01	1.87E-01
	884.67	71.63	1.05E-01		-3.34E-02	4.78E-02
	1384.27	23.94	3.69E-01		6.72E-02	1.64E-01
CD-113M	263.70	0.02	2.58E+02	2.58E+02	-3.35E+01	1.24E+02
SN-113	255.12	1.93	3.41E+00	9.64E-02	-1.49E-01	1.64E+00
	391.69	64.90	9.64E-02		-8.87E-02	4.56E-02
TE123M	159.00	84.10	6.36E-02	6.36E-02	2.72E-03	3.08E-02
SB-124	602.71	97.87	8.09E-02	8.09E-02	1.62E-04	3.78E-02
	645.85	7.26	1.13E+00		4.79E-01	5.25E-01
	722.78	11.10	8.75E-01		-4.98E-02	4.10E-01
	1691.02	49.00	1.48E-01		-1.87E-02	6.14E-02
I-125	35.49	6.49	2.08E+00	2.08E+00	-5.81E-01	1.01E+00
SB-125	176.33	6.89	7.82E-01	2.20E-01	2.87E-01	3.78E-01
	427.89	29.33	2.20E-01		-1.11E-02	1.04E-01
	463.38	10.35	7.83E-01		7.25E-01	3.74E-01
	600.56	17.80	4.10E-01		1.49E-01	1.92E-01
	635.90	11.32	6.96E-01		4.46E-01	3.26E-01
SB-126	414.70	83.30	1.30E-01	1.30E-01	-6.05E-02	6.15E-02
	666.33	99.60	1.41E-01		4.62E-02	6.60E-02
	695.00	99.60	1.50E-01		1.37E-02	7.03E-02
	720.50	53.80	2.59E-01		-3.32E-02	1.21E-01
+ SN-126	87.57	* 37.00	3.30E-01	3.30E-01	3.36E-01	1.63E-01
SB-127	473.00	25.00	1.57E+00	1.14E+00	-5.57E-01	7.41E-01
	685.20	35.70	1.14E+00		-5.99E-01	5.30E-01
	783.80	14.70	3.53E+00		1.11E+00	1.65E+00
I-129	29.78	57.00	3.77E-01	3.77E-01	-4.94E-02	1.82E-01
	33.60	13.20	1.11E+00		6.32E-01	5.36E-01
	39.58	7.52	1.27E+00		6.28E-01	6.15E-01
I-131	284.30	6.05	2.42E+00	1.79E-01	3.73E-01	1.16E+00
	364.48	81.20	1.79E-01		-5.11E-02	8.51E-02
	636.97	7.26	2.46E+00		1.15E+00	1.15E+00
	722.89	1.80	1.12E+01		-6.34E-01	5.23E+00
TE-132	49.72	13.10	4.28E+00	5.84E-01	-6.28E+00	2.08E+00
	228.16	88.00	5.84E-01		8.30E-02	2.83E-01
BA-133	81.00	33.00	1.67E-01	1.62E-01	-9.71E-01	8.15E-02
	302.84	17.80	4.00E-01		2.90E-01	1.93E-01
	356.01	60.00	1.62E-01		-1.45E-02	7.88E-02
I-133	529.87	86.30	1.96E+02	1.96E+02	-3.77E+01	9.23E+01
XE-133	81.00	38.00	5.23E-01	5.23E-01	-3.04E+00	2.55E-01
CS-134	563.23	8.38	8.63E-01	8.07E-02	3.08E-02	4.05E-01
	569.32	15.43	4.95E-01		1.06E-01	2.33E-01
	604.70	97.60	8.07E-02		-1.19E-03	3.79E-02
	795.84	85.40	1.03E-01		-2.30E-02	4.82E-02
	801.93	8.73	1.03E+00		2.99E-01	4.82E-01
CS-135	268.24	16.00	4.26E-01	4.26E-01	8.68E-02	2.06E-01
I-135	1131.51	22.50	1.81E+10	1.56E+10	-1.03E+09	8.31E+09
	1260.41	28.60	1.56E+10		-1.56E+09	7.14E+09

Analysis Report for 1606041-12
CP-5030 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
I-135	1678.03	9.54	2.70E+10	1.56E+10	-8.59E+09	1.11E+10	
CS-136	153.22	7.46	1.19E+00	1.31E-01	-1.90E-02	5.79E-01	
	163.89	4.61	1.83E+00		3.73E-01	8.83E-01	
	176.55	13.56	6.57E-01		1.28E-01	3.18E-01	
	273.65	12.66	9.01E-01		2.73E-02	4.35E-01	
	340.57	48.50	2.92E-01		5.08E-01	1.41E-01	
	818.50	99.70	1.31E-01		-2.75E-02	6.04E-02	
	1048.07	79.60	1.79E-01		-1.59E-02	8.18E-02	
	1235.34	19.70	1.04E+00		-2.37E-01	4.84E-01	
	CS-137	661.65	85.12	9.75E-02	9.75E-02	3.13E-02	4.58E-02
	LA-138	788.74	34.00	2.59E-01	1.17E-01	3.55E-02	1.21E-01
1435.80		66.00	1.17E-01		1.44E-02	5.09E-02	
CE-139	165.85	80.35	6.66E-02	6.66E-02	2.43E-02	3.22E-02	
BA-140	162.64	6.70	1.27E+00	4.80E-01	-2.51E-02	6.13E-01	
	304.84	4.50	2.50E+00		-8.99E-01	1.20E+00	
	423.70	3.20	3.44E+00		-1.40E+00	1.63E+00	
	437.55	2.00	5.63E+00		-2.79E-01	2.66E+00	
	537.32	25.00	4.80E-01		1.76E-01	2.25E-01	
LA-140	328.77	20.50	6.14E-01	1.90E-01	4.56E-01	2.96E-01	
	487.03	45.50	2.68E-01		6.77E-02	1.27E-01	
	815.85	23.50	5.79E-01		1.65E-01	2.68E-01	
	1596.49	95.49	1.90E-01		2.67E-02	8.55E-02	
CE-141	145.44	48.40	1.32E-01	1.32E-01	3.25E-02	6.41E-02	
CE-143	57.36	11.80	7.56E+01	2.94E+01	-2.52E+01	3.69E+01	
	293.26	42.00	2.94E+01		3.69E+00	1.43E+01	
	664.55	5.20	2.16E+02		6.21E+01	1.02E+02	
CE-144	133.54	10.80	4.58E-01	4.58E-01	-7.90E-02	2.22E-01	
PM-144	476.78	42.00	1.60E-01	7.53E-02	-7.76E-02	7.53E-02	
	618.01	98.60	7.53E-02		6.42E-03	3.52E-02	
	696.49	99.49	9.04E-02		-8.40E-03	4.25E-02	
PM-145	36.85	21.70	5.08E-01	2.72E-01	-1.86E-01	2.46E-01	
	37.36	39.70	2.72E-01		1.28E-02	1.32E-01	
	42.30	15.10	5.61E-01		-5.30E-01	2.72E-01	
	72.40	2.31	3.11E+00		-6.60E+00	1.52E+00	
PM-146	453.90	39.94	1.60E-01	1.60E-01	1.59E-03	7.52E-02	
	735.90	14.01	5.91E-01		2.10E-01	2.75E-01	
	747.13	13.10	6.21E-01		-8.51E-03	2.89E-01	
+ ND-147	91.11	* 28.90	7.79E-01	7.79E-01	5.75E-01	3.85E-01	
	531.02	13.10	1.03E+00		1.27E-01	4.86E-01	
PM-149	285.90	3.10	3.99E+01	3.99E+01	-4.37E+01	1.91E+01	
EU-152	121.78	20.50	2.33E-01	2.33E-01	7.66E-02	1.13E-01	
	244.69	5.40	1.44E+00		-1.13E+00	6.99E-01	
	344.27	19.13	3.06E-01		-4.27E-02	1.45E-01	
	778.89	9.20	9.36E-01		2.74E-01	4.36E-01	
	964.01	10.40	1.04E+00		-1.25E+00	4.84E-01	
	1085.78	7.22	1.25E+00		1.54E-01	5.72E-01	
	1112.02	9.60	1.01E+00		1.74E-01	4.62E-01	
	1407.95	14.94	6.61E-01		-9.78E-02	2.98E-01	
	GD-153	97.43	31.30	1.70E-01	1.70E-01	1.51E-02	8.26E-02
		103.18	22.20	2.20E-01		-1.69E-01	1.07E-01
EU-154	123.07	40.50	1.19E-01	1.19E-01	6.77E-02	5.79E-02	
	723.30	19.70	4.42E-01		-2.51E-02	2.07E-01	
	873.19	11.50	7.00E-01		2.89E-01	3.22E-01	

Analysis Report for 1606041-12

CP-5030 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	996.32	10.30	8.08E-01	1.19E-01	-5.29E-01	3.69E-01
	1004.76	17.90	5.42E-01		1.20E-01	2.51E-01
	1274.45	35.50	2.91E-01		-3.16E-02	1.33E-01
EU-155	86.50	30.90	2.13E-01	2.13E-01	2.03E-01	1.04E-01
	105.30	20.70	2.32E-01		-8.30E-03	1.13E-01
EU-156	811.77	10.40	1.19E+00	1.19E+00	-5.86E-02	5.49E-01
	1153.47	7.20	2.46E+00		1.51E-01	1.14E+00
	1230.71	8.90	1.86E+00		-5.64E-01	8.52E-01
HO-166M	184.41	72.60	9.43E-02	9.43E-02	1.48E-01	4.59E-02
	280.45	29.60	2.23E-01		1.83E-02	1.07E-01
	410.94	11.10	6.23E-01		2.17E-01	2.96E-01
	711.69	54.10	1.56E-01		4.03E-02	7.32E-02
TM-171	66.72	0.14	4.78E+01	4.78E+01	3.23E+00	2.34E+01
HF-172	81.75	4.52	1.21E+00	4.22E-01	-5.87E+00	5.88E-01
	125.81	11.30	4.22E-01		-4.33E-01	2.05E-01
LU-172	181.53	20.60	7.10E-01	3.78E-01	2.13E-01	3.44E-01
	810.06	16.63	1.29E+00		-2.69E-01	5.95E-01
	912.12	15.25	2.86E+00		5.94E+00	1.37E+00
LU-173	1093.66	62.50	3.78E-01		-1.90E-01	1.72E-01
	100.72	5.24	9.62E-01	3.36E-01	3.50E-01	4.68E-01
	272.11	21.20	3.36E-01		4.36E-02	1.62E-01
HF-175	343.40	84.00	8.32E-02	8.32E-02	7.15E-03	3.97E-02
LU-176	88.34	13.30	5.07E-01	7.12E-02	-1.70E-02	2.48E-01
	201.83	86.00	7.50E-02		-1.75E-02	3.64E-02
	306.78	94.00	7.12E-02		2.67E-02	3.42E-02
TA-182	67.75	41.20	1.67E-01	1.67E-01	5.77E-02	8.15E-02
	1121.30	34.90	4.65E-01		7.21E-01	2.20E-01
	1189.05	16.23	6.73E-01		-1.83E-01	3.09E-01
	1221.41	26.98	4.19E-01		2.45E-01	1.92E-01
	1231.02	11.44	1.02E+00		-1.65E-01	4.72E-01
IR-192	308.46	29.68	2.33E-01	1.63E-01	-2.67E-02	1.12E-01
	468.07	48.10	1.63E-01		-1.07E-01	7.70E-02
HG-203	279.19	77.30	1.02E-01	1.02E-01	7.15E-02	4.94E-02
BI-207	569.67	97.72	7.50E-02	7.50E-02	7.23E-03	3.52E-02
	1063.62	74.90	1.35E-01		4.00E-02	6.22E-02
	583.14	* 30.22	3.67E-01	2.34E-01	1.14E+00	1.76E-01
+ TL-208	860.37	* 4.48	2.70E+00		1.91E+00	1.28E+00
	2614.66	* 35.85	2.34E-01		8.73E-01	9.67E-02
	262.00	45.00	1.33E-01	1.33E-01	-4.06E-02	6.40E-02
BI-210M	300.00	23.00	3.17E-01		-1.49E-01	1.53E-01
	46.50	4.25	1.99E+00	1.99E+00	2.08E+00	9.69E-01
PB-210	404.84	2.90	2.34E+00	2.34E+00	-2.60E-01	1.11E+00
	831.96	2.90	2.87E+00		-1.52E+00	1.33E+00
+ BI-212	727.17	* 11.80	1.08E+00	1.08E+00	9.36E-01	5.18E-01
	1620.62	2.75	3.07E+00		-8.64E-01	1.34E+00
+ PB-212	238.63	* 44.60	3.13E-01	3.13E-01	1.30E+00	1.54E-01
	300.09	3.41	2.14E+00		-1.01E+00	1.03E+00
+ BI-214	609.31	* 46.30	2.56E-01	2.56E-01	1.14E+00	1.23E-01
	1120.29	* 15.10	7.08E-01		1.52E+00	3.28E-01
	1764.49	* 15.80	4.08E-01		1.29E+00	1.68E-01
	2204.22	* 4.98	1.15E+00		7.86E-01	4.42E-01
+ PB-214	295.21	* 19.19	3.87E-01	2.50E-01	1.23E+00	1.87E-01
	351.92	* 37.19	2.50E-01		1.30E+00	1.21E-01

Analysis Report for 1606041-12
CP-5030 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RN-219	401.80	6.50	1.03E+00	1.03E+00	-2.76E-01	4.90E-01
RA-223	323.87	3.88	1.84E+00	1.84E+00	-2.82E-01	8.84E-01
RA-224	240.98	3.95	3.23E+00	3.23E+00	1.74E+01	1.59E+00
RA-225	40.00	31.00	4.74E-01	4.74E-01	2.35E-01	2.30E-01
+ RA-226	186.21	* 3.28	2.60E+00	2.60E+00	2.76E+00	1.27E+00
TH-227	50.10	8.40	8.35E-01	8.35E-01	-1.22E+00	4.06E-01
	236.00	11.50	8.94E-01		1.14E+00	4.38E-01
	256.20	6.30	1.01E+00		-1.57E-01	4.87E-01
+ AC-228	338.32	* 11.40	8.24E-01	6.42E-01	1.50E+00	4.00E-01
	911.07	* 27.70	6.42E-01		1.05E+00	3.09E-01
	969.11	* 16.60	1.13E+00		1.29E+00	5.44E-01
TH-230	48.44	16.90	4.67E-01	4.67E-01	2.48E-01	2.27E-01
	62.85	4.60	1.61E+00		1.44E+00	7.91E-01
	67.67	0.37	1.75E+01		6.06E+00	8.56E+00
PA-231	283.67	1.60	3.95E+00	3.09E+00	6.09E-01	1.90E+00
	302.67	2.30	3.09E+00		2.24E+00	1.49E+00
TH-231	25.64	14.70	2.79E+00	8.81E-01	-2.07E+00	1.35E+00
	84.21	6.40	8.81E-01		-1.65E+00	4.30E-01
PA-233	311.98	38.60	2.05E-01	2.05E-01	-3.41E-02	9.80E-02
+ PA-234	131.20	* 20.40	3.25E-01	3.25E-01	1.59E-01	1.59E-01
	733.99	8.80	9.68E-01		5.70E-02	4.53E-01
	946.00	12.00	7.46E-01		3.11E-01	3.44E-01
PA-234M	1001.03	0.92	1.00E+01	1.00E+01	-2.73E+00	4.61E+00
+ TH-234	63.29	* 3.80	2.46E+00	2.46E+00	1.37E+00	1.21E+00
U-235	143.76	10.50	4.88E-01	4.88E-01	1.75E-01	2.37E-01
	163.35	4.70	1.07E+00		2.19E-01	5.18E-01
	205.31	4.70	1.42E+00		-7.64E-01	6.90E-01
NP-237	86.50	12.60	5.20E-01	5.20E-01	4.96E-01	2.55E-01
NP-239	106.10	22.70	3.74E+00	3.74E+00	5.79E-01	1.82E+00
	228.18	10.70	1.06E+01		1.51E+00	5.14E+00
	277.60	14.10	8.36E+00		1.56E+00	4.03E+00
AM-241	59.54	35.90	1.90E-01	1.90E-01	2.45E-02	9.27E-02
+ AM-243	74.67	* 66.00	1.68E-01	1.68E-01	3.30E-01	8.28E-02
CM-243	209.75	3.29	2.08E+00	4.82E-01	3.41E-01	1.01E+00
	228.14	10.60	6.13E-01		8.71E-02	2.97E-01
	277.60	14.00	4.82E-01		8.99E-02	2.32E-01

- + = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

Analysis Report for 1606041-12
CP-5030 00-02

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP-5030 00-02

Elapsed Live time: 3600
 Elapsed Real Time: 3614

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	7	139	138	98	89	102	95	98
17:	113	67	75	86	71	77	90	63
25:	62	72	63	63	69	56	55	61
33:	63	59	62	73	53	51	65	72
41:	62	75	59	71	74	94	144	101
49:	73	78	87	81	93	99	92	100
57:	79	101	116	129	128	121	147	228
65:	153	134	115	136	131	134	122	128
73:	135	153	320	338	318	504	144	86
81:	114	112	79	126	146	107	148	247
89:	131	121	182	129	255	189	106	106
97:	90	80	103	98	90	83	65	77
105:	79	95	83	75	77	87	84	92
113:	94	77	65	103	63	67	57	64
121:	61	78	84	76	69	71	59	72
129:	96	88	80	97	73	64	61	49
137:	73	49	58	66	69	64	58	93
145:	71	74	73	55	80	66	70	70
153:	63	84	78	72	75	61	58	56
161:	62	51	56	62	67	63	61	48
169:	60	49	49	60	59	51	54	65
177:	74	63	49	55	64	69	60	47
185:	72	129	171	68	50	50	61	48
193:	39	55	58	46	51	62	46	52
201:	53	55	57	47	62	55	57	57
209:	49	93	50	50	40	52	51	38
217:	54	36	39	49	47	41	43	39
225:	36	47	55	47	39	42	47	39
233:	50	33	45	46	48	111	429	263
241:	78	104	104	52	35	39	29	40
249:	31	17	43	36	29	30	33	35
257:	38	37	46	23	29	33	23	25
265:	32	31	32	26	29	53	62	33
273:	26	33	40	35	29	39	33	38
281:	31	46	25	18	37	27	22	15
289:	31	31	34	23	32	28	99	175
297:	66	22	31	32	52	31	19	33
305:	43	25	29	22	31	20	23	28
313:	21	15	28	19	31	27	20	24
321:	31	38	26	29	30	29	28	43
329:	34	29	31	30	20	21	23	22
337:	34	53	108	37	22	19	20	18
345:	12	21	13	13	21	27	49	214
353:	192	38	24	24	26	19	17	20
361:	22	20	14	25	17	15	19	21

369: 15 27 21 18 23 15 13 14

Sample Title: CP-5030 00-02

Channel	1	2	3	4	5	6	7	8
377:	12	12	23	18	24	14	23	15
385:	18	23	26	17	13	13	23	12
393:	12	11	17	17	24	23	19	17
401:	17	21	14	16	22	15	20	20
409:	12	34	21	14	18	10	15	14
417:	16	17	24	19	18	15	18	13
425:	17	9	17	15	17	12	15	16
433:	13	17	16	7	12	15	13	16
441:	27	14	18	19	11	17	13	15
449:	11	14	12	12	16	16	9	14
457:	11	20	6	24	14	16	23	29
465:	24	13	8	17	15	18	14	22
473:	11	11	13	8	17	16	12	12
481:	14	17	17	17	18	7	17	15
489:	17	12	11	9	5	11	22	17
497:	8	9	17	8	17	10	15	14
505:	14	15	18	13	13	39	74	40
513:	19	20	14	15	11	13	13	14
521:	13	9	12	7	14	12	9	11
529:	12	15	14	11	14	14	14	13
537:	6	17	9	10	9	6	6	12
545:	12	12	3	13	13	12	14	14
553:	7	15	8	9	17	14	10	14
561:	6	8	13	12	8	17	10	10
569:	11	14	14	10	11	12	7	10
577:	14	6	10	10	13	14	78	102
585:	24	11	9	13	7	3	8	13
593:	15	10	12	5	8	11	11	12
601:	9	10	5	13	9	9	10	26
609:	105	152	58	14	7	11	4	11
617:	9	9	13	12	10	14	13	19
625:	5	8	13	10	11	8	5	11
633:	11	17	10	8	11	9	9	9
641:	3	8	9	7	8	8	10	13
649:	8	4	11	8	7	6	12	4
657:	4	10	9	12	8	15	19	5
665:	11	16	6	9	9	8	6	5
673:	5	6	7	12	15	5	9	7
681:	12	5	10	6	6	9	6	11
689:	14	8	9	8	19	14	13	14
697:	4	7	11	13	11	8	11	10
705:	8	8	12	6	9	7	9	13
713:	11	11	12	11	6	11	12	10
721:	9	9	7	12	7	20	24	14
729:	19	9	13	11	6	10	10	11
737:	8	12	7	7	6	7	8	6
745:	11	9	6	7	10	11	7	10
753:	9	17	11	13	11	3	9	10
761:	5	14	6	12	8	7	13	14
769:	23	14	10	6	14	6	7	6
777:	9	12	10	11	4	11	10	6
785:	11	13	14	6	5	9	10	8
793:	6	11	17	12	7	5	5	12

801: 10 6 10 13 9 11 7 8

Sample Title: CP-5030 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	6	9	5	7	6	8	8	7
817:	15	3	3	3	8	4	7	9
825:	8	9	8	9	3	12	8	6
833:	7	8	8	11	12	8	8	9
841:	6	8	4	8	5	10	9	7
849:	4	7	8	9	4	6	4	5
857:	10	8	6	11	16	14	9	8
865:	3	8	5	6	2	4	9	12
873:	7	1	5	6	2	7	7	4
881:	5	6	7	3	2	7	5	7
889:	7	4	7	9	10	7	4	10
897:	5	4	6	11	4	8	8	13
905:	12	4	6	4	11	13	61	60
913:	17	3	10	7	6	5	11	6
921:	4	3	6	6	9	5	7	5
929:	7	8	3	6	11	12	7	10
937:	7	12	7	4	3	4	6	4
945:	7	7	7	5	12	5	7	5
953:	7	6	5	8	5	8	8	6
961:	8	6	8	11	15	11	10	17
969:	35	31	13	4	5	6	8	6
977:	7	3	8	11	8	6	9	6
985:	10	5	9	13	2	7	6	4
993:	2	9	5	8	5	2	6	8
1001:	13	7	8	2	10	8	7	9
1009:	4	1	6	4	5	7	4	3
1017:	9	6	4	9	8	6	6	6
1025:	9	4	8	6	6	7	1	8
1033:	12	8	4	6	9	9	8	8
1041:	6	2	8	5	2	6	4	3
1049:	4	11	6	6	3	7	2	8
1057:	3	4	4	3	3	8	7	9
1065:	9	11	7	8	6	5	2	4
1073:	8	2	7	6	6	5	7	7
1081:	7	6	6	7	3	3	5	4
1089:	10	3	4	8	4	7	4	4
1097:	9	5	3	3	5	5	7	4
1105:	4	6	8	3	6	5	9	10
1113:	5	4	3	3	7	2	14	36
1121:	34	14	8	3	1	7	3	6
1129:	6	5	2	10	8	4	9	5
1137:	2	7	6	4	7	3	6	5
1145:	5	8	3	8	9	9	5	7
1153:	9	9	9	8	11	3	3	5
1161:	4	1	9	10	12	10	7	5
1169:	3	3	6	8	8	9	11	6
1177:	9	9	9	6	6	1	7	6
1185:	11	4	5	7	7	8	4	8
1193:	7	6	3	10	6	10	5	3
1201:	1	3	4	5	6	7	4	8
1209:	8	7	6	7	3	8	5	5
1217:	3	4	5	8	6	5	7	9
1225:	3	3	4	9	6	10	6	6

1233: 2 8 13 7 8 15 12 11

Sample Title: CP-5030 00-02

Channel	1	2	3	4	5	6	7	8
1241:	10	5	8	7	11	7	6	7
1249:	7	6	9	8	5	5	5	7
1257:	12	4	3	7	6	6	3	4
1265:	9	4	2	6	5	4	6	4
1273:	6	5	1	6	4	2	2	6
1281:	8	7	9	9	10	5	1	5
1289:	7	6	5	4	5	4	5	3
1297:	3	8	4	8	3	3	2	5
1305:	6	2	2	3	6	0	5	5
1313:	1	2	0	8	7	1	5	2
1321:	2	6	4	1	3	7	2	5
1329:	3	3	5	7	6	3	4	2
1337:	4	4	4	3	4	1	4	1
1345:	6	5	3	2	4	1	1	1
1353:	3	2	1	3	3	3	6	1
1361:	2	5	6	2	6	1	1	0
1369:	2	5	3	3	2	3	1	5
1377:	7	10	5	3	4	0	1	2
1385:	1	6	1	4	2	1	2	1
1393:	0	4	0	3	1	1	1	2
1401:	3	6	3	3	2	2	3	5
1409:	5	6	2	1	4	2	4	1
1417:	3	0	0	2	2	3	3	1
1425:	3	2	2	1	3	1	1	2
1433:	2	2	0	3	2	1	3	2
1441:	0	4	1	1	4	0	0	2
1449:	4	1	3	0	1	1	2	1
1457:	4	3	26	109	212	95	23	1
1465:	2	2	1	1	2	1	2	0
1473:	2	1	2	1	2	1	3	2
1481:	1	1	2	1	2	1	2	2
1489:	3	4	4	1	3	3	0	5
1497:	3	3	1	0	1	3	0	1
1505:	1	0	2	3	5	1	4	2
1513:	1	2	1	1	1	2	1	0
1521:	1	4	0	0	2	1	4	2
1529:	1	1	1	0	0	0	4	2
1537:	3	1	2	3	1	2	2	3
1545:	0	5	1	1	1	1	2	3
1553:	1	4	3	3	3	2	2	2
1561:	2	0	2	0	2	2	3	0
1569:	1	5	1	2	2	2	2	2
1577:	1	1	1	2	0	1	2	4
1585:	1	2	4	5	7	1	5	3
1593:	6	6	0	3	2	2	3	3
1601:	2	0	0	1	1	0	1	8
1609:	1	2	0	3	0	3	3	2
1617:	2	2	1	2	2	1	1	3
1625:	2	2	1	3	0	2	3	2
1633:	0	3	2	1	5	2	0	1
1641:	2	1	2	1	0	2	0	1
1649:	0	0	0	1	0	0	1	0
1657:	1	0	0	2	1	1	1	1

1665: 2 1 0 0 3 0 1 1

Sample Title: CP-5030 00-02

Channel	1	2	3	4	5	6	7	8
1673:	1	0	1	2	1	1	1	0
1681:	1	0	2	1	0	2	1	0
1689:	0	0	1	2	0	4	0	0
1697:	0	2	1	0	3	2	0	1
1705:	1	0	1	0	0	1	0	3
1713:	1	0	1	0	0	1	1	3
1721:	2	3	4	3	2	3	2	1
1729:	10	4	1	1	0	3	1	0
1737:	1	0	0	2	1	1	0	0
1745:	3	0	0	1	1	1	0	1
1753:	3	3	3	3	2	1	1	0
1761:	1	1	11	11	19	6	4	0
1769:	1	0	1	1	0	0	0	1
1777:	1	0	1	1	2	1	0	1
1785:	0	2	0	0	1	0	1	0
1793:	0	0	1	3	0	0	0	0
1801:	0	0	1	1	2	1	0	0
1809:	1	2	1	0	0	1	2	2
1817:	0	1	0	1	1	0	0	0
1825:	1	1	0	0	1	1	1	0
1833:	1	0	1	0	0	1	1	4
1841:	1	0	1	0	1	5	2	1
1849:	1	3	1	1	1	0	0	0
1857:	2	1	0	1	1	2	1	0
1865:	0	2	0	1	0	0	0	1
1873:	1	0	0	0	1	3	1	0
1881:	1	1	0	0	1	0	1	2
1889:	1	0	3	1	0	2	2	0
1897:	1	2	1	0	0	0	0	1
1905:	1	0	0	2	1	0	2	1
1913:	1	1	0	0	3	1	1	1
1921:	1	2	1	0	0	1	1	0
1929:	2	1	1	0	0	0	0	0
1937:	1	0	0	1	0	1	1	0
1945:	0	2	2	0	0	0	0	1
1953:	0	0	0	1	1	1	0	0
1961:	3	1	0	1	2	1	1	0
1969:	2	0	1	0	1	0	0	0
1977:	1	0	0	1	1	1	0	1
1985:	1	0	3	0	2	0	2	0
1993:	0	1	0	2	1	1	0	0
2001:	1	0	0	2	1	0	1	0
2009:	0	0	1	0	0	0	2	0
2017:	3	1	3	3	1	1	0	0
2025:	0	0	1	0	0	0	1	1
2033:	3	0	0	0	1	1	1	1
2041:	0	0	0	0	0	1	1	0
2049:	0	0	0	0	0	0	1	2
2057:	1	1	1	1	0	0	0	0
2065:	0	0	1	0	0	1	0	0
2073:	2	0	1	1	0	0	2	0
2081:	0	0	2	0	1	1	0	0
2089:	2	0	0	1	1	3	2	1

2097: 1 1 3 0 3 2 5 2

Sample Title: CP-5030 00-02

Channel	1	2	3	4	5	6	7	8
2105:	2	2	1	1	0	3	2	1
2113:	0	0	0	3	1	2	3	0
2121:	2	0	0	2	0	1	1	1
2129:	1	2	1	2	0	1	0	1
2137:	0	0	1	0	0	0	0	0
2145:	1	0	1	1	1	1	3	0
2153:	0	0	1	0	0	2	0	1
2161:	0	1	0	0	1	1	2	0
2169:	0	0	2	2	1	0	0	1
2177:	0	1	0	0	1	1	2	1
2185:	1	0	2	0	1	1	1	1
2193:	0	0	0	1	4	1	2	0
2201:	1	0	5	1	4	0	1	1
2209:	1	0	0	2	2	0	1	0
2217:	0	2	1	0	1	0	1	1
2225:	0	0	1	0	1	1	3	0
2233:	1	0	2	1	2	2	0	1
2241:	0	1	0	0	2	0	0	0
2249:	1	1	0	0	2	1	2	1
2257:	1	0	1	0	0	2	0	1
2265:	1	1	2	0	0	3	1	0
2273:	2	1	0	2	2	1	0	1
2281:	1	1	3	1	1	0	1	1
2289:	0	0	1	0	1	1	0	0
2297:	1	1	1	1	0	0	2	1
2305:	1	0	1	0	0	0	1	3
2313:	2	1	1	1	0	1	0	1
2321:	0	1	2	1	0	2	0	1
2329:	1	1	1	0	1	1	0	0
2337:	2	0	2	0	0	0	0	3
2345:	0	1	1	1	0	0	2	0
2353:	0	1	0	0	0	1	3	1
2361:	1	1	1	1	0	0	0	2
2369:	2	0	5	0	0	0	2	1
2377:	1	1	1	2	0	6	2	1
2385:	0	1	1	1	1	0	0	0
2393:	0	1	1	1	0	1	2	2
2401:	1	1	2	1	0	1	1	0
2409:	1	1	2	1	0	0	1	1
2417:	0	1	1	0	1	1	1	1
2425:	1	0	2	0	3	0	0	0
2433:	0	0	0	1	1	2	0	0
2441:	0	2	0	0	1	2	1	3
2449:	1	1	1	0	0	1	2	1
2457:	1	0	0	1	0	2	0	0
2465:	0	0	0	0	2	0	0	0
2473:	0	0	1	0	1	0	0	1
2481:	0	0	0	0	0	0	0	0
2489:	1	0	1	0	1	0	1	1
2497:	0	2	1	0	1	1	0	0
2505:	0	0	0	0	0	1	0	1
2513:	0	0	0	0	0	1	3	0
2521:	0	1	0	1	0	0	1	0

2529: 0 1 0 0 0 0 0 1

Sample Title: CP-5030 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	1	0	0	0	0	0
2545:	0	0	0	0	0	0	0	0
2553:	1	0	0	0	0	0	0	0
2561:	0	0	2	0	1	1	0	1
2569:	0	0	0	0	0	0	0	0
2577:	0	1	0	0	0	0	0	1
2585:	1	0	0	1	1	1	0	0
2593:	1	0	0	0	0	0	1	0
2601:	0	0	0	0	0	1	0	1
2609:	2	0	1	3	9	24	18	10
2617:	0	0	0	0	0	0	0	1
2625:	1	1	1	0	0	0	0	1
2633:	0	0	1	0	0	0	0	0
2641:	1	0	1	0	2	1	0	0
2649:	0	0	1	0	0	1	0	0
2657:	0	0	0	0	0	0	0	0
2665:	0	1	0	0	0	0	0	0
2673:	0	0	0	0	0	2	1	0
2681:	1	0	0	0	0	1	0	0
2689:	1	0	1	0	0	0	0	0
2697:	0	0	1	1	0	1	0	0
2705:	0	0	1	0	1	0	0	0
2713:	0	1	1	0	0	0	0	0
2721:	0	0	0	0	0	0	1	0
2729:	1	0	0	0	0	0	0	0
2737:	1	0	1	0	0	0	0	0
2745:	0	1	0	1	0	0	0	0
2753:	1	0	1	0	0	0	0	0
2761:	0	0	0	0	0	0	0	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	0	1	1	0	0	0	0	0
2801:	2	0	1	0	0	0	0	0
2809:	0	1	0	0	0	0	0	0
2817:	0	0	0	0	2	0	0	0
2825:	0	0	0	0	0	0	1	0
2833:	0	0	1	0	0	0	1	0
2841:	0	0	0	0	0	0	0	0
2849:	0	0	0	1	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	1	0	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	1	0	0	0	0	0
2889:	0	1	1	0	0	0	0	0
2897:	0	0	1	0	0	0	1	0
2905:	0	0	0	1	0	0	0	0
2913:	0	1	0	0	0	0	0	0
2921:	0	0	0	0	0	2	0	0
2929:	0	0	1	0	1	0	0	0
2937:	0	0	0	0	0	0	1	1
2945:	0	0	0	1	0	1	1	0
2953:	0	0	1	0	0	0	0	0

2961: 1 0 1 0 1 0 0 0

Sample Title: CP-5030 00-02

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	0	0	0	0
2985:	0	2	0	0	0	1	0	0
2993:	0	1	0	0	0	0	0	0
3001:	0	0	1	0	0	1	0	1
3009:	0	0	0	1	1	0	0	0
3017:	0	1	0	0	0	1	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	1	1	0	0	1	1
3041:	0	1	1	0	0	0	0	0
3049:	0	0	0	0	1	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	1	2
3073:	0	0	0	0	0	0	1	0
3081:	1	0	0	1	1	0	0	0
3089:	0	1	0	0	0	0	0	0
3097:	0	0	1	0	2	0	0	0
3105:	1	0	1	1	0	0	0	0
3113:	0	0	0	1	0	0	0	0
3121:	0	0	1	0	0	0	0	0
3129:	0	0	1	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	0	1
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	1
3193:	0	0	1	2	0	0	1	0
3201:	1	1	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	1
3217:	0	1	0	0	0	1	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	1	0	0	0	0	0
3241:	0	0	0	1	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	1	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	1	0
3297:	0	0	0	0	0	0	0	1
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	1	0	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	1	0	0
3337:	0	0	0	0	0	0	0	1
3345:	0	0	0	0	0	0	0	1
3353:	1	0	1	0	0	0	0	0
3361:	0	1	0	0	2	0	0	0
3369:	0	0	1	0	0	1	0	0
3377:	0	0	0	1	0	0	0	0
3385:	0	0	1	0	0	0	0	0

3393: 0 1 0 0 0 0 0 0

Sample Title: CP-5030 00-02

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	0	0	0	0	0
3409:	1	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0	0
3425:	0	0	0	0	1	0	0	0	0
3433:	0	0	0	0	0	0	0	0	0
3441:	0	0	2	0	0	0	1	0	0
3449:	0	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0	0
3473:	0	0	0	0	1	0	0	0	0
3481:	0	0	0	0	0	0	1	0	0
3489:	0	0	0	0	0	0	0	1	0
3497:	0	0	0	0	0	0	1	0	0
3505:	0	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0	0
3521:	1	0	0	0	0	0	2	0	0
3529:	0	0	0	0	1	0	0	0	0
3537:	0	1	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0	0
3553:	0	0	0	1	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	1	0	0
3593:	0	0	0	1	0	0	0	1	0
3601:	0	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0	0
3617:	0	1	0	0	0	0	0	0	0
3625:	0	0	0	0	2	0	0	0	0
3633:	0	0	0	1	1	0	0	0	0
3641:	0	0	0	0	1	0	0	0	0
3649:	0	0	0	0	1	0	0	0	0
3657:	0	0	0	0	1	0	0	0	0
3665:	0	0	0	0	0	0	1	0	0
3673:	0	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0	0
3689:	0	0	1	0	0	0	0	0	0
3697:	0	0	0	1	0	0	0	0	0
3705:	2	0	0	0	0	0	1	0	0
3713:	0	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0	0
3729:	0	1	0	0	0	0	0	0	0
3737:	0	0	1	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0	0
3753:	0	0	1	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0	0
3777:	0	1	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	1	0
3801:	0	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0	0
3817:	0	0	1	0	0	0	0	0	0

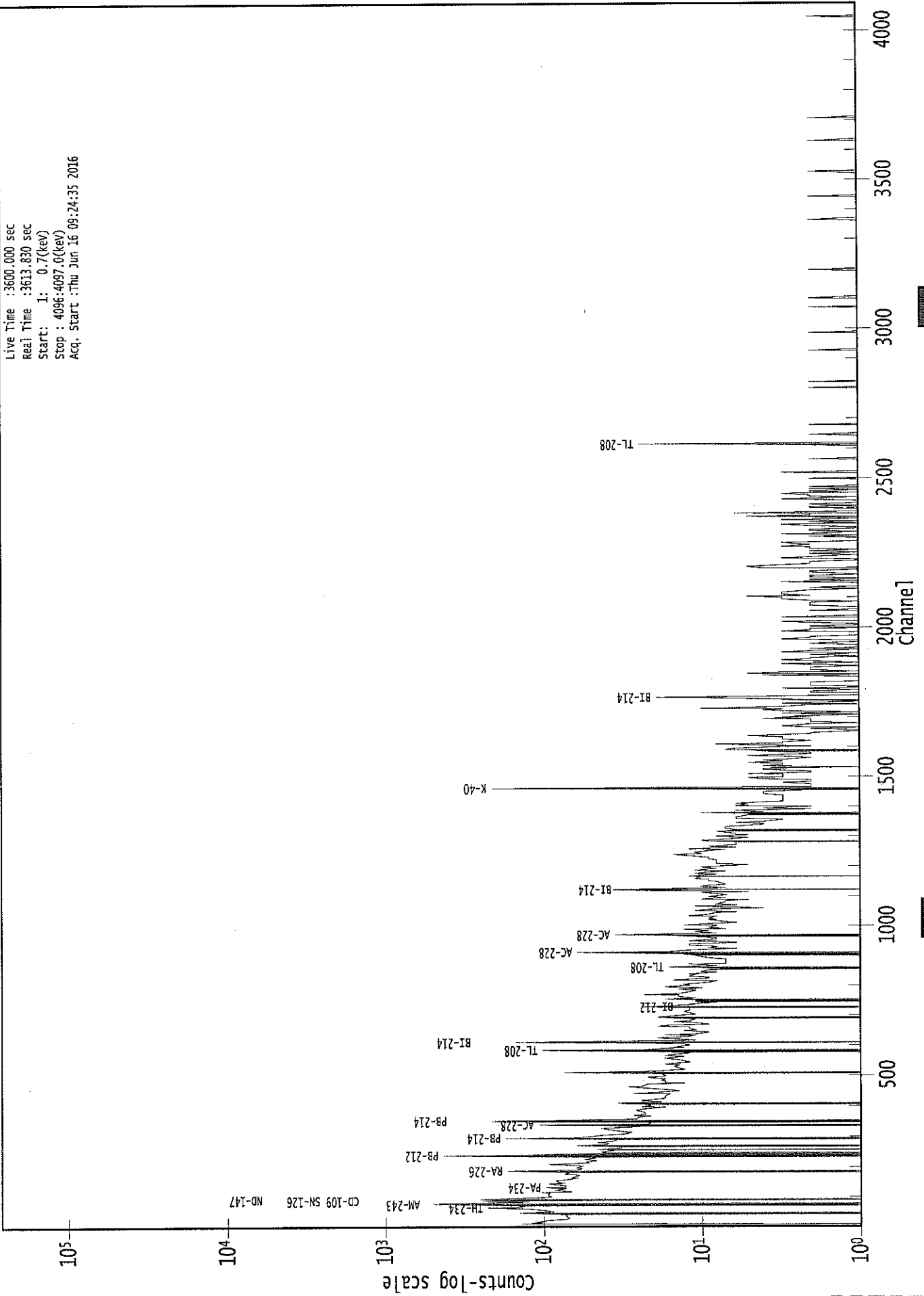
3825: 0 1 0 0 0 0 0 0

Sample Title: CP-5030 00-02

Channel	1	2	3	4	5	6	7	8
3833:	0	0	0	0	0	0	0	1
3841:	0	0	0	0	1	0	0	0
3849:	0	0	0	0	1	0	0	0
3857:	0	0	0	0	0	0	0	1
3865:	0	0	0	0	0	0	0	0
3873:	0	0	1	0	0	0	0	0
3881:	1	0	0	0	0	0	1	0
3889:	0	0	0	0	0	1	0	0
3897:	1	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	1	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	1	0	1	0
3945:	0	1	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	1	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	1	0	0	0	0	1	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	1	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	1	0	0
4041:	0	1	0	1	0	0	2	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	1	1	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	1

0000038982.CNF

Live Time : 3600.000 sec
Real Time : 3613.830 sec
Start : 1: 0.7(keV)
Stop : 4096:4097.0(keV)
Acq. Start : Thu Jun 16 09:24:35 2016



Analysis Report for 1606041-13
CP-5030 02-05

✓
G116

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-13
Sample Description : CP-5030 02-05
Sample Type : SOIL

Sample Size : 4.836E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 4:36:50PM
Acquisition Started : 6/16/2016 9:24:42AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.4 seconds

Dead Time : 0.04 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 15 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 11/8/2014
Efficiency Calibration Description :

Sample Number : 38983

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606041-13
CP-5030 02-05

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 10:24:50AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	63.64	62.90	0.0000	0.00
2	76.30	75.56	0.0000	0.00
3	86.92	86.19	0.0000	0.00
4	93.27	92.55	0.0000	0.00
5	186.37	185.68	0.0000	0.00
6	197.53	196.85	0.0000	0.00
7	210.61	209.94	0.0000	0.00
8	239.41	238.75	0.0000	0.00
9	270.55	269.90	0.0000	0.00
10	295.51	294.87	0.0000	0.00
11	329.06	328.43	0.0000	0.00
12	338.58	337.96	0.0000	0.00
13	351.68	351.07	0.0000	0.00
14	382.14	381.54	0.0000	0.00
15	510.70	510.16	0.0000	0.00
16	583.39	582.89	0.0000	0.00
17	609.06	608.57	0.0000	0.00
18	726.79	726.36	0.0000	0.00
19	768.78	768.36	0.0000	0.00
20	859.61	859.24	0.0000	0.00
21	911.33	910.99	0.0000	0.00
22	967.23	966.92	0.0000	0.00
23	1002.52	1002.23	0.0000	0.00
24	1061.47	1061.21	0.0000	0.00
25	1118.89	1118.67	0.0000	0.00
26	1147.03	1146.82	0.0000	0.00
27	1235.53	1235.37	0.0000	0.00
28	1430.05	1430.01	0.0000	0.00
29	1460.69	1460.66	0.0000	0.00
30	1527.75	1527.76	0.0000	0.00
31	1636.80	1636.88	0.0000	0.00
32	1764.09	1764.25	0.0000	0.00
33	1960.13	1960.42	0.0000	0.00
34	2318.45	2319.00	0.0000	0.00
35	2613.37	2614.14	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606041-13
CP-5030 02-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 10:24:50AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	63.64	60 -	65	62.90	1.02E+02	72.41	9.65E+02	1.37
2	76.30	70 -	82	75.56	6.06E+02	147.26	2.26E+03	4.00
3	86.92	83 -	89	86.19	1.29E+02	84.77	1.22E+03	2.59
4	93.27	89 -	96	92.55	1.72E+02	88.45	1.14E+03	2.59
5	186.37	182 -	190	185.68	9.39E+01	71.33	7.26E+02	2.16
6	197.53	193 -	200	196.85	6.79E+01	57.03	4.90E+02	4.71
7	210.61	207 -	214	209.94	6.54E+01	54.52	4.51E+02	4.54
8	239.41	233 -	245	238.75	5.24E+02	88.66	6.65E+02	2.55
9	270.55	266 -	273	269.90	6.05E+01	45.39	3.01E+02	2.70
10	295.51	291 -	300	294.87	1.20E+02	59.46	4.40E+02	2.13
11	329.06	322 -	333	328.43	4.51E+01	54.85	3.52E+02	6.53
12	338.58	334 -	342	337.96	1.03E+02	47.58	2.87E+02	2.45
13	351.68	345 -	356	351.07	2.25E+02	63.02	3.85E+02	2.42
14	382.14	378 -	385	381.54	5.30E+01	31.94	1.32E+02	4.39
15	510.70	505 -	516	510.16	9.37E+01	43.17	1.87E+02	2.77
16	583.39	577 -	591	582.89	9.77E+01	49.63	2.21E+02	3.26
17	609.06	602 -	612	608.57	1.75E+02	42.62	1.49E+02	2.31
18	726.79	719 -	733	726.36	5.75E+01	36.99	1.19E+02	2.88
19	768.78	760 -	775	768.36	4.42E+01	38.16	1.28E+02	1.08
20	859.61	852 -	866	859.24	3.42E+01	29.09	7.35E+01	4.65
21	911.33	905 -	916	910.99	6.16E+01	32.56	1.01E+02	3.52
22	967.23	961 -	971	966.92	6.00E+01	29.29	8.20E+01	2.85
23	1002.52	997 -	1007	1002.23	2.47E+01	20.64	4.27E+01	1.62
24	1061.47	1054 -	1066	1061.21	2.30E+01	23.02	5.00E+01	3.02
25	1118.89	1114 -	1125	1118.67	3.37E+01	28.50	8.66E+01	2.21
26	1147.03	1141 -	1151	1146.82	1.68E+01	21.87	5.45E+01	3.48
27	1235.53	1229 -	1243	1235.37	3.71E+01	26.87	6.18E+01	5.94
28	1430.05	1427 -	1434	1430.01	8.63E+00	10.39	1.27E+01	4.78
29	1460.69	1455 -	1468	1460.66	2.55E+02	35.61	2.53E+01	2.87
30	1527.75	1522 -	1532	1527.76	8.86E+00	10.79	1.03E+01	7.18
31	1636.80	1633 -	1639	1636.88	6.23E+00	8.99	9.55E+00	2.15
32	1764.09	1760 -	1768	1764.25	2.17E+01	10.78	4.67E+00	2.61
33	1960.13	1956 -	1964	1960.42	5.81E+00	7.23	4.38E+00	6.35
34	2318.45	2316 -	2321	2319.00	6.00E+00	4.90	0.00E+00	2.87
35	2613.37	2609 -	2618	2614.14	4.30E+01	13.11	0.00E+00	4.13

Analysis Report for 1606041-13

CP-5030 02-05

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 10:24:50AM

Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	63.64	60 -	65	1.02E+02	72.41	9.65E+02	5.72E+01
2	76.30	70 -	82	6.06E+02	147.26	2.26E+03	1.14E+02
3	86.92	83 -	89	1.29E+02	84.77	1.22E+03	6.71E+01
4	93.27	89 -	96	1.72E+02	88.45	1.14E+03	6.94E+01
5	186.37	182 -	190	9.39E+01	71.33	7.26E+02	5.64E+01
6	197.53	193 -	200	6.79E+01	57.03	4.90E+02	4.49E+01
7	210.61	207 -	214	6.54E+01	54.52	4.51E+02	4.28E+01
8	239.41	233 -	245	5.24E+02	88.66	6.65E+02	6.24E+01
9	270.55	266 -	273	6.05E+01	45.39	3.01E+02	3.50E+01
10	295.51	291 -	300	1.20E+02	59.46	4.40E+02	4.54E+01
11	329.06	322 -	333	4.51E+01	54.85	3.52E+02	4.37E+01
12	338.58	334 -	342	1.03E+02	47.58	2.87E+02	3.54E+01
13	351.68	345 -	356	2.25E+02	63.02	3.85E+02	4.56E+01
14	382.14	378 -	385	5.30E+01	31.94	1.32E+02	2.34E+01
15	510.70	505 -	516	9.37E+01	43.17	1.87E+02	3.17E+01
16	583.39	577 -	591	9.77E+01	49.63	2.21E+02	3.74E+01
17	609.06	602 -	612	1.75E+02	42.62	1.49E+02	2.74E+01
18	726.79	719 -	733	5.75E+01	36.99	1.19E+02	2.77E+01
19	768.78	760 -	775	4.42E+01	38.16	1.28E+02	2.94E+01
20	859.61	852 -	866	3.42E+01	29.09	7.35E+01	2.19E+01
21	911.33	905 -	916	6.16E+01	32.56	1.01E+02	2.34E+01
22	967.23	961 -	971	6.00E+01	29.29	8.20E+01	2.04E+01
23	1002.52	997 -	1007	2.47E+01	20.64	4.27E+01	1.49E+01
24	1061.47	1054 -	1066	2.30E+01	23.02	5.00E+01	1.72E+01
25	1118.89	1114 -	1125	3.37E+01	28.50	8.66E+01	2.14E+01
26	1147.03	1141 -	1151	1.68E+01	21.87	5.45E+01	1.67E+01
27	1235.53	1229 -	1243	3.71E+01	26.87	6.18E+01	1.97E+01
28	1430.05	1427 -	1434	8.63E+00	10.39	1.27E+01	7.05E+00
29	1460.69	1455 -	1468	2.55E+02	35.61	2.53E+01	1.29E+01
30	1527.75	1522 -	1532	8.86E+00	10.79	1.03E+01	7.40E+00
31	1636.80	1633 -	1639	6.23E+00	8.99	9.55E+00	6.14E+00

Analysis Report for 1606041-13
 CP-5030 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	1764.09	1760 -	1768	2.17E+01	10.78	4.67E+00	4.47E+00
33	1960.13	1956 -	1964	5.81E+00	7.23	4.38E+00	4.43E+00
34	2318.45	2316 -	2321	6.00E+00	4.90	0.00E+00	0.00E+00
35	2613.37	2609 -	2618	4.30E+01	13.11	0.00E+00	0.00E+00

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 10:24:50AM

Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
 Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	63.64	60 -	65	62.90	1.02E+02	72.41	9.65E+02	TH-234 TH-230
2	76.30	70 -	82	75.56	6.06E+02	147.26	2.26E+03	.....
3	86.92	83 -	89	86.19	1.29E+02	84.77	1.22E+03	NP-237 EU-155 SN-126
4	93.27	89 -	96	92.55	1.72E+02	88.45	1.14E+03	GA-67
5	186.37	182 -	190	185.68	9.39E+01	71.33	7.26E+02	RA-226
6	197.53	193 -	200	196.85	6.79E+01	57.03	4.90E+02	.....
7	210.61	207 -	214	209.94	6.54E+01	54.52	4.51E+02	CM-243
8	239.41	233 -	245	238.75	5.24E+02	88.66	6.65E+02	PB-212
9	270.55	266 -	273	269.90	6.05E+01	45.39	3.01E+02	.....
10	295.51	291 -	300	294.87	1.20E+02	59.46	4.40E+02	PB-214
11	329.06	322 -	333	328.43	4.51E+01	54.85	3.52E+02	LA-140
12	338.58	334 -	342	337.96	1.03E+02	47.58	2.87E+02	AC-228
13	351.68	345 -	356	351.07	2.25E+02	63.02	3.85E+02	PB-214
14	382.14	378 -	385	381.54	5.30E+01	31.94	1.32E+02	.....
15	510.70	505 -	516	510.16	9.37E+01	43.17	1.87E+02	.....
16	583.39	577 -	591	582.89	9.77E+01	49.63	2.21E+02	TL-208
17	609.06	602 -	612	608.57	1.75E+02	42.62	1.49E+02	BI-214
18	726.79	719 -	733	726.36	5.75E+01	36.99	1.19E+02	BI-212
19	768.78	760 -	775	768.36	4.42E+01	38.16	1.28E+02	.....

Analysis Report for 1606041-13

CP-5030 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
20	859.61	852 -	866	859.24	3.42E+01	29.09	7.35E+01	TL-208
21	911.33	905 -	916	910.99	6.16E+01	32.56	1.01E+02	AC-228 LU-172
22	967.23	961 -	971	966.92	6.00E+01	29.29	8.20E+01	.....
23	1002.52	997 -	1007	1002.23	2.47E+01	20.64	4.27E+01	.....
24	1061.47	1054 -	1066	1061.21	2.30E+01	23.02	5.00E+01	.....
25	1118.89	1114 -	1125	1118.67	3.37E+01	28.50	8.66E+01	.....
26	1147.03	1141 -	1151	1146.82	1.68E+01	21.87	5.45E+01	.....
27	1235.53	1229 -	1243	1235.37	3.71E+01	26.87	6.18E+01	CS-136
28	1430.05	1427 -	1434	1430.01	8.63E+00	10.39	1.27E+01	.....
29	1460.69	1455 -	1468	1460.66	2.55E+02	35.61	2.53E+01	K-40
30	1527.75	1522 -	1532	1527.76	8.86E+00	10.79	1.03E+01	.....
31	1636.80	1633 -	1639	1636.88	6.23E+00	8.99	9.55E+00	.....
32	1764.09	1760 -	1768	1764.25	2.17E+01	10.78	4.67E+00	BI-214
33	1960.13	1956 -	1964	1960.42	5.81E+00	7.23	4.38E+00	.....
34	2318.45	2316 -	2321	2319.00	6.00E+00	4.90	0.00E+00	.....
35	2613.37	2609 -	2618	2614.14	4.30E+01	13.11	0.00E+00	.....

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 10:24:50AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	63.64	1.02E+02	72.41	2.32E-02	1.76E-03
2	76.30	6.06E+02	147.26	2.12E-02	1.69E-03
3	86.92	1.29E+02	84.77	1.98E-02	1.64E-03
4	93.27	1.72E+02	88.45	1.90E-02	1.62E-03
5	186.37	9.39E+01	71.33	1.16E-02	1.15E-03
6	197.53	6.79E+01	57.03	1.11E-02	1.11E-03
7	210.61	6.54E+01	54.52	1.05E-02	1.07E-03
8	239.41	5.24E+02	88.66	9.39E-03	9.85E-04
9	270.55	6.05E+01	45.39	8.43E-03	8.88E-04
10	295.51	1.20E+02	59.46	7.78E-03	8.43E-04
11	329.06	4.51E+01	54.85	7.04E-03	8.06E-04
12	338.58	1.03E+02	47.58	6.85E-03	7.95E-04
13	351.68	2.25E+02	63.02	6.61E-03	7.80E-04

Analysis Report for 1606041-13
CP-5030 02-05

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
14	382.14	5.30E+01	31.94	6.11E-03	7.47E-04
15	510.70	9.37E+01	43.17	4.61E-03	5.62E-04
16	583.39	9.77E+01	49.63	4.05E-03	4.55E-04
17	609.06	1.75E+02	42.62	3.88E-03	4.17E-04
18	726.79	5.75E+01	36.99	3.26E-03	3.04E-04
19	768.78	4.42E+01	38.16	3.08E-03	2.80E-04
20	859.61	3.42E+01	29.09	2.76E-03	2.29E-04
21	911.33	6.16E+01	32.56	2.61E-03	2.06E-04
22	967.23	6.00E+01	29.29	2.46E-03	1.99E-04
23	1002.52	2.47E+01	20.64	2.38E-03	1.95E-04
24	1061.47	2.30E+01	23.02	2.26E-03	1.87E-04
25	1118.89	3.37E+01	28.50	2.15E-03	1.80E-04
26	1147.03	1.68E+01	21.87	2.10E-03	1.76E-04
27	1235.53	3.71E+01	26.87	1.96E-03	1.89E-04
28	1430.05	8.63E+00	10.39	1.72E-03	1.95E-04
29	1460.69	2.55E+02	35.61	1.68E-03	1.89E-04
30	1527.75	8.86E+00	10.79	1.62E-03	1.75E-04
31	1636.80	6.23E+00	8.99	1.53E-03	1.52E-04
32	1764.09	2.17E+01	10.78	1.43E-03	1.26E-04
33	1960.13	5.81E+00	7.23	1.32E-03	1.11E-04
34	2318.45	6.00E+00	4.90	1.16E-03	1.11E-04
35	2613.37	4.30E+01	13.11	1.07E-03	1.11E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 10:24:50AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038679.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	63.64	1.02E+02	72.41	3.84E+01	6.93E+00	6.32E+01	7.27E+01
2	76.30	6.06E+02	147.26			6.06E+02	1.47E+02
3	86.92	1.29E+02	84.77			1.29E+02	8.48E+01
4	93.27	1.72E+02	88.45	5.93E+01	9.62E+00	1.13E+02	8.90E+01
5	186.37	9.39E+01	71.33	2.90E+01	7.24E+00	6.49E+01	7.17E+01
6	197.53	6.79E+01	57.03			6.79E+01	5.70E+01
7	210.61	6.54E+01	54.52			6.54E+01	5.45E+01
8	239.41	5.24E+02	88.66	7.10E+00	5.46E+00	5.16E+02	8.88E+01

Analysis Report for 1606041-13

CP-5030 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
9	270.55	6.05E+01	45.39			6.05E+01	4.54E+01
10	295.51	1.20E+02	59.46			1.20E+02	5.95E+01
11	329.06	4.51E+01	54.85			4.51E+01	5.48E+01
12	338.58	1.03E+02	47.58			1.03E+02	4.76E+01
13	351.68	2.25E+02	63.02	1.61E+00	4.34E+00	2.23E+02	6.32E+01
14	382.14	5.30E+01	31.94			5.30E+01	3.19E+01
15	510.70	9.37E+01	43.17	4.57E+01	5.07E+00	4.80E+01	4.35E+01
16	583.39	9.77E+01	49.63	2.37E+00	3.72E+00	9.54E+01	4.98E+01
17	609.06	1.75E+02	42.62			1.75E+02	4.26E+01
18	726.79	5.75E+01	36.99			5.75E+01	3.70E+01
19	768.78	4.42E+01	38.16			4.42E+01	3.82E+01
20	859.61	3.42E+01	29.09			3.42E+01	2.91E+01
21	911.33	6.16E+01	32.56			6.16E+01	3.26E+01
22	967.23	6.00E+01	29.29			6.00E+01	2.93E+01
23	1002.52	2.47E+01	20.64			2.47E+01	2.06E+01
24	1061.47	2.30E+01	23.02			2.30E+01	2.30E+01
25	1118.89	3.37E+01	28.50			3.37E+01	2.85E+01
26	1147.03	1.68E+01	21.87			1.68E+01	2.19E+01
27	1235.53	3.71E+01	26.87			3.71E+01	2.69E+01
28	1430.05	8.63E+00	10.39			8.63E+00	1.04E+01
29	1460.69	2.55E+02	35.61	9.79E-01	1.85E+00	2.54E+02	3.57E+01
30	1527.75	8.86E+00	10.79			8.86E+00	1.08E+01
31	1636.80	6.23E+00	8.99			6.23E+00	8.99E+00
32	1764.09	2.17E+01	10.78			2.17E+01	1.08E+01
33	1960.13	5.81E+00	7.23			5.81E+00	7.23E+00
34	2318.45	6.00E+00	4.90			6.00E+00	4.90E+00
35	2613.37	4.30E+01	13.11			4.30E+01	1.31E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 10:24:50AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038679.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	63.64	1.02E+02	72.41	3.84E+01	6.93E+00	6.32E+01	7.27E+01

Analysis Report for 1606041-13

CP-5030 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
2	76.30	6.06E+02	147.26			6.06E+02	1.47E+02
3	86.92	1.29E+02	84.77			1.29E+02	8.48E+01
4	93.27	1.72E+02	88.45	5.93E+01	9.62E+00	1.13E+02	8.90E+01
5	186.37	9.39E+01	71.33	2.90E+01	7.24E+00	6.49E+01	7.17E+01
6	197.53	6.79E+01	57.03			6.79E+01	5.70E+01
7	210.61	6.54E+01	54.52			6.54E+01	5.45E+01
8	239.41	5.24E+02	88.66	7.10E+00	5.46E+00	5.16E+02	8.88E+01
9	270.55	6.05E+01	45.39			6.05E+01	4.54E+01
10	295.51	1.20E+02	59.46			1.20E+02	5.95E+01
11	329.06	4.51E+01	54.85			4.51E+01	5.48E+01
12	338.58	1.03E+02	47.58			1.03E+02	4.76E+01
13	351.68	2.25E+02	63.02	1.61E+00	4.34E+00	2.23E+02	6.32E+01
14	382.14	5.30E+01	31.94			5.30E+01	3.19E+01
15	510.70	9.37E+01	43.17	4.57E+01	5.07E+00	4.80E+01	4.35E+01
16	583.39	9.77E+01	49.63	2.37E+00	3.72E+00	9.54E+01	4.98E+01
17	609.06	1.75E+02	42.62			1.75E+02	4.26E+01
18	726.79	5.75E+01	36.99			5.75E+01	3.70E+01
19	768.78	4.42E+01	38.16			4.42E+01	3.82E+01
20	859.61	3.42E+01	29.09			3.42E+01	2.91E+01
21	911.33	6.16E+01	32.56			6.16E+01	3.26E+01
22	967.23	6.00E+01	29.29			6.00E+01	2.93E+01
23	1002.52	2.47E+01	20.64			2.47E+01	2.06E+01
24	1061.47	2.30E+01	23.02			2.30E+01	2.30E+01
25	1118.89	3.37E+01	28.50			3.37E+01	2.85E+01
26	1147.03	1.68E+01	21.87			1.68E+01	2.19E+01
27	1235.53	3.71E+01	26.87			3.71E+01	2.69E+01
28	1430.05	8.63E+00	10.39			8.63E+00	1.04E+01
29	1460.69	2.55E+02	35.61	9.79E-01	1.85E+00	2.54E+02	3.57E+01
30	1527.75	8.86E+00	10.79			8.86E+00	1.08E+01
31	1636.80	6.23E+00	8.99			6.23E+00	8.99E+00
32	1764.09	2.17E+01	10.78			2.17E+01	1.08E+01
33	1960.13	5.81E+00	7.23			5.81E+00	7.23E+00
34	2318.45	6.00E+00	4.90			6.00E+00	4.90E+00
35	2613.37	4.30E+01	13.11			4.30E+01	1.31E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1606041-13
CP-5030 02-05

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.998	1460.81 *	10.67	2.20E+01	3.97E+00
GA-67	0.575	93.31 *	35.70	2.04E+00	3.81E+00
		208.95	2.24		
		300.22	16.00		
SN-126	0.934	87.57 *	37.00	2.74E-01	1.81E-01
EU-155	0.364	86.50 *	30.90	3.30E-01	2.18E-01
		105.30	20.70		
TL-208	0.426	583.14 *	30.22	1.21E+00	6.47E-01
		860.37 *	4.48	4.29E+00	3.67E+00
		2614.66	35.85		
BI-212	0.761	727.17 *	11.80	2.32E+00	1.51E+00
		1620.62	2.75		
PB-212	0.810	238.63 *	44.60	1.91E+00	3.86E-01
		300.09	3.41		
BI-214	0.669	609.31 *	46.30	1.52E+00	4.03E-01
		1120.29	15.10		
		1764.49 *	15.80	1.48E+00	7.50E-01
		2204.22	4.98		
PB-214	0.989	295.21 *	19.19	1.25E+00	6.33E-01
		351.92 *	37.19	1.41E+00	4.32E-01
RA-226	0.996	186.21 *	3.28	2.65E+00	5.67E+00
AC-228	0.578	338.32 *	11.40	2.05E+00	9.75E-01
		911.07 *	27.70	1.32E+00	7.07E-01
		969.11	16.60		
TH-234	0.981	63.29 *	3.80	1.11E+00	1.28E+00
NP-237	0.973	86.50 *	12.60	8.06E-01	5.33E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.00sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 10:24:50AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	76.30	1.68300E-01	12.15		
6	197.53	1.88729E-02	41.97		
7	210.61	1.81534E-02	41.71	Tol.	CM-243

Analysis Report for 1606041-13
CP-5030 02-05

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
9	270.55	1.67996E-02	37.52		
11	329.06	1.25302E-02	60.79	Tol.	LA-140
14	382.14	1.47129E-02	30.15	Sum	
15	510.70	1.33290E-02	45.30		
19	768.78	1.22891E-02	43.12	Sum	
22	967.23	1.66653E-02	24.41		
23	1002.52	6.84783E-03	41.86		
24	1061.47	6.38889E-03	50.05		
25	1118.89	9.36147E-03	42.28		
26	1147.03	4.65909E-03	65.21		
27	1235.53	1.03023E-02	36.22	Tol.	CS-136
28	1430.05	2.39815E-03	60.19		
30	1527.75	2.46032E-03	60.93		
31	1636.80	1.72980E-03	72.15		
33	1960.13	1.61458E-03	62.18		
34	2318.45	1.66667E-03	40.82		
35	2613.37	1.19444E-02	15.25		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	2.20E+01	3.97E+00
GA-67	0.57	93.31 *	35.70	2.04E+00	3.81E+00
		208.95	2.24		
		300.22	16.00		
SN-126	0.93	87.57 *	37.00	2.74E-01	1.81E-01
EU-155	0.36	86.50 *	30.90	3.30E-01	2.18E-01
		105.30	20.70		
TL-208	0.42	583.14 *	30.22	1.21E+00	6.47E-01
		860.37 *	4.48	4.29E+00	3.67E+00
		2614.66	35.85		
BI-212	0.76	727.17 *	11.80	2.32E+00	1.51E+00

Analysis Report for 1606041-13
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Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-212	0.76	1620.62	2.75		
PB-212	0.81	238.63 *	44.60	1.91E+00	3.86E-01
		300.09	3.41		
BI-214	0.66	609.31 *	46.30	1.52E+00	4.03E-01
		1120.29	15.10		
		1764.49 *	15.80	1.48E+00	7.50E-01
		2204.22	4.98		
PB-214	0.98	295.21 *	19.19	1.25E+00	6.33E-01
		351.92 *	37.19	1.41E+00	4.32E-01
RA-226	0.99	186.21 *	3.28	2.65E+00	5.67E+00
AC-228	0.57	338.32 *	11.40	2.05E+00	9.75E-01
		911.07 *	27.70	1.32E+00	7.07E-01
		969.11	16.60		
TH-234	0.98	63.29 *	3.80	1.11E+00	1.28E+00
NP-237	0.97	86.50 *	12.60	8.06E-01	5.33E-01

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 @ = Energy line not used for Weighted Mean Activity
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.998	2.20E+01	3.97E+00	
GA-67	0.575	2.04E+00	3.81E+00	
? SN-126	0.934	2.74E-01	1.81E-01	
? EU-155	0.364	3.30E-01	2.18E-01	
TL-208	0.426	1.30E+00	6.37E-01	
BI-212	0.761	2.32E+00	1.51E+00	
PB-212	0.810	1.91E+00	3.86E-01	
BI-214	0.669	1.51E+00	3.55E-01	
PB-214	0.989	1.36E+00	3.57E-01	
RA-226	0.996	2.65E+00	5.67E+00	
AC-228	0.578	1.58E+00	5.72E-01	
TH-234	0.981	1.11E+00	1.28E+00	

Analysis Report for 1606041-13
CP-5030 02-05

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
?	NP-237	0.973	8.06E-01	5.33E-01	

- ? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1606041-13
CP-5030 02-05

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 10:24:50AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	76.30	1.68300E-01	12.15		
6	197.53	1.88729E-02	41.97		
7	210.61	1.81534E-02	41.71	Tol.	CM-243
9	270.55	1.67996E-02	37.52		
11	329.06	1.25302E-02	60.79	Tol.	LA-140
14	382.14	1.47129E-02	30.15	Sum	
15	510.70	1.33290E-02	45.30		
19	768.78	1.22891E-02	43.12	Sum	
22	967.23	1.66653E-02	24.41		
23	1002.52	6.84783E-03	41.86		
24	1061.47	6.38889E-03	50.05		
25	1118.89	9.36147E-03	42.28		
26	1147.03	4.65909E-03	65.21		
27	1235.53	1.03023E-02	36.22	Tol.	CS-136
28	1430.05	2.39815E-03	60.19		
30	1527.75	2.46032E-03	60.93		
31	1636.80	1.72980E-03	72.15		
33	1960.13	1.61458E-03	62.18		
34	2318.45	1.66667E-03	40.82		
35	2613.37	1.19444E-02	15.25		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Analysis Report for 1606041-13
CP-5030 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-1.09E-01	1.63E+00	1.63E+00
+	NA-22	1274.54	99.94	8.42E-02	2.67E-01	2.67E-01
+	NA-24	1368.53	99.99	-1.05E+03	5.31E+03	7.59E+03
		2754.09	99.86	7.21E+02		5.31E+03
+	AL-26	1808.65	99.76	-3.39E-02	1.45E-01	1.45E-01
+	K-40	1460.81	* 10.67	2.20E+01	2.50E+00	2.50E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.93E-02	1.03E-01	1.03E-01
		78.34	96.00	3.33E-01		1.33E-01
+	SC-46	889.25	99.98	6.90E-03	2.07E-01	2.07E-01
		1120.51	99.99	2.65E-01		3.16E-01
+	V-48	983.52	99.98	-1.49E-01	2.91E-01	2.91E-01
		1312.10	97.50	-6.79E-02		3.08E-01
+	CR-51	320.08	9.83	-8.42E-02	1.60E+00	1.60E+00
+	MN-54	834.83	99.97	-2.32E-02	1.93E-01	1.93E-01
+	CO-56	846.75	99.96	2.53E-02	2.07E-01	2.07E-01
		1037.75	14.03	-1.47E-01		1.52E+00
		1238.25	67.00	1.53E-01		4.34E-01
		1771.40	15.51	-4.24E-01		1.00E+00
		2598.48	16.90	0.00E+00		2.52E-01
+	CO-57	122.06	85.51	-7.64E-02	1.20E-01	1.20E-01
		136.48	10.60	-9.62E-01		9.65E-01
+	CO-58	810.76	99.40	-8.85E-02	1.80E-01	1.80E-01
+	FE-59	1099.22	56.50	2.24E-01	4.71E-01	4.71E-01
		1291.56	43.20	-1.67E-01		5.98E-01
+	CO-60	1173.22	100.00	-6.79E-02	1.87E-01	2.32E-01
		1332.49	100.00	-2.84E-02		1.87E-01
+	ZN-65	1115.52	50.75	-7.31E-02	4.85E-01	4.85E-01
+	GA-67	93.31	* 35.70	2.04E+00	2.62E+00	2.62E+00
		208.95	2.24	-1.97E+00		4.61E+01
		300.22	16.00	2.58E+00		7.31E+00
+	SE-75	121.11	16.70	-4.25E-01	1.81E-01	6.29E-01
		136.00	59.20	-1.05E-01		1.81E-01
		264.65	59.80	1.83E-02		2.15E-01
		279.53	25.20	1.84E-01		5.63E-01
		400.65	11.40	5.09E-01		1.33E+00
+	RB-82	776.52	13.00	1.62E-02	1.75E+00	1.75E+00
+	RB-83	520.41	46.00	3.38E-02	3.72E-01	3.72E-01
		529.64	30.30	-9.21E-02		5.45E-01
		552.65	16.40	3.35E-01		1.10E+00
+	KR-85	513.99	0.43	3.49E+01	4.65E+01	4.65E+01
+	SR-85	513.99	99.27	1.69E-01	2.25E-01	2.25E-01
+	Y-88	898.02	93.40	3.57E-02	1.11E-01	2.34E-01
		1836.01	99.38	-1.32E-01		1.11E-01
+	NB-93M	16.57	9.43	9.63E-01	4.97E-01	4.97E-01
+	NB-94	702.63	100.00	1.47E-02	1.63E-01	1.77E-01
		871.10	100.00	-2.62E-02		1.63E-01

Analysis Report for 1606041-13
CP-5030 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95	765.79	99.81	8.62E-02	2.45E-01	2.45E-01
+	NB-95M	235.69	25.00	2.89E-01	5.15E+00	5.15E+00
+	ZR-95	724.18	43.70	4.38E-01	3.41E-01	5.57E-01
		756.72	55.30	8.96E-02		3.41E-01
+	MO-99	181.06	6.20	-5.58E+00	1.61E+01	2.18E+01
		739.58	12.80	-3.01E-01		1.61E+01
		778.00	4.50	-7.68E+00		4.07E+01
+	RU-103	497.08	89.00	2.23E-02	2.00E-01	2.00E-01
+	RU-106	621.84	9.80	-4.81E-01	1.57E+00	1.57E+00
+	AG-108M	433.93	89.90	-6.52E-02	1.44E-01	1.44E-01
		614.37	90.40	-1.06E-01		2.19E-01
		722.95	90.50	8.23E-02		2.28E-01
+	CD-109	88.03	3.72	1.32E+00	3.13E+00	3.13E+00
+	AG-110M	657.75	93.14	1.16E-01	1.97E-01	1.97E-01
		677.61	10.53	2.72E-02		1.78E+00
		706.67	16.46	-5.68E-01		1.01E+00
		763.93	21.98	2.81E-01		9.21E-01
		884.67	71.63	-1.88E-01		2.47E-01
		1384.27	23.94	-3.69E-01		7.59E-01
+	CD-113M	263.70	0.02	-7.01E+01	5.16E+02	5.16E+02
+	SN-113	255.12	1.93	-2.58E-01	2.32E-01	6.64E+00
		391.69	64.90	2.19E-02		2.32E-01
+	TE123M	159.00	84.10	-2.11E-02	1.41E-01	1.41E-01
+	SB-124	602.71	97.87	-2.82E-02	1.83E-01	1.83E-01
		645.85	7.26	1.08E+00		2.63E+00
		722.78	11.10	-1.02E+00		1.91E+00
		1691.02	49.00	-1.11E-01		2.21E-01
+	I-125	35.49	6.49	-2.62E-01	9.75E-01	9.75E-01
+	SB-125	176.33	6.89	-1.68E-01	4.92E-01	1.66E+00
		427.89	29.33	1.07E-01		4.92E-01
		463.38	10.35	2.58E-01		1.43E+00
		600.56	17.80	-7.41E-02		8.79E-01
		635.90	11.32	2.50E-01		1.36E+00
+	SB-126	414.70	83.30	-7.09E-02	2.86E-01	2.90E-01
		666.33	99.60	-7.90E-02		2.86E-01
		695.00	99.60	-9.09E-02		3.22E-01
		720.50	53.80	0.00E+00		5.72E-01
+	SN-126	87.57	* 37.00	2.74E-01	2.91E-01	2.91E-01
+	SB-127	473.00	25.00	1.21E+00	3.02E+00	3.44E+00
		685.20	35.70	-3.41E-01		3.02E+00
		783.80	14.70	4.68E-01		6.68E+00
+	I-129	29.78	57.00	-2.96E-02	9.28E-02	9.28E-02
		33.60	13.20	-1.53E-01		4.15E-01
		39.58	7.52	-5.93E-01		8.00E-01
+	I-131	284.30	6.05	-3.07E+00	4.28E-01	4.90E+00
		364.48	81.20	2.79E-01		4.28E-01
		636.97	7.26	-9.84E-01		4.79E+00
		722.89	1.80	-1.30E+01		2.43E+01

Analysis Report for 1606041-13
CP-5030 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE-132	49.72	13.10	3.94E+00	1.11E+00	4.32E+00
		228.16	88.00	-3.96E-01		1.11E+00
+	BA-133	81.00	33.00	-3.11E-01	3.38E-01	3.60E-01
		302.84	17.80	1.48E-01		7.76E-01
		356.01	60.00	-4.04E-02		3.38E-01
+	I-133	529.87	86.30	-7.12E+01	4.21E+02	4.21E+02
+	XE-133	81.00	38.00	-9.75E-01	1.13E+00	1.13E+00
+	CS-134	563.23	8.38	-1.03E+00	2.33E-01	1.77E+00
		569.32	15.43	-4.76E-01		9.71E-01
		604.70	97.60	-1.58E-03		2.33E-01
		795.84	85.40	4.96E-02		2.44E-01
		801.93	8.73	-2.54E-01		2.20E+00
+	CS-135	268.24	16.00	-3.96E-02	8.50E-01	8.50E-01
+	I-135	1131.51	22.50	-4.74E+09	3.20E+10	3.92E+10
		1260.41	28.60	7.61E+09		3.20E+10
		1678.03	9.54	2.06E+10		7.27E+10
+	CS-136	153.22	7.46	9.82E-01	3.16E-01	2.55E+00
		163.89	4.61	-1.16E-01		4.05E+00
		176.55	13.56	-1.41E-01		1.40E+00
		273.65	12.66	-3.49E-02		1.85E+00
		340.57	48.50	-4.61E-03		5.93E-01
		818.50	99.70	2.14E-02		3.16E-01
		1048.07	79.60	-1.43E-02		4.14E-01
		1235.34	19.70	1.60E+00		2.41E+00
+	CS-137	661.65	85.12	-1.45E-02	2.04E-01	2.04E-01
+	LA-138	788.74	34.00	-2.51E-01	2.40E-01	5.36E-01
		1435.80	66.00	3.90E-02		2.40E-01
+	CE-139	165.85	80.35	2.61E-02	1.48E-01	1.48E-01
+	BA-140	162.64	6.70	-3.66E-01	1.04E+00	2.82E+00
		304.84	4.50	-1.28E+00		4.94E+00
		423.70	3.20	2.39E+00		7.68E+00
		437.55	2.00	-3.21E+00		1.11E+01
		537.32	25.00	3.07E-01		1.04E+00
+	LA-140	328.77	20.50	7.34E-01	3.66E-01	1.19E+00
		487.03	45.50	-1.44E-01		5.30E-01
		815.85	23.50	8.95E-03		1.28E+00
		1596.49	95.49	0.00E+00		3.66E-01
+	CE-141	145.44	48.40	8.75E-02	2.85E-01	2.85E-01
+	CE-143	57.36	11.80	-4.30E+01	5.47E+01	8.76E+01
		293.26	42.00	4.87E+00		5.47E+01
		664.55	5.20	5.92E+01		4.47E+02
+	CE-144	133.54	10.80	-1.99E-01	9.77E-01	9.77E-01
+	PM-144	476.78	42.00	7.29E-02	1.75E-01	3.70E-01
		618.01	98.60	6.51E-02		1.75E-01
		696.49	99.49	9.10E-03		1.97E-01
+	PM-145	36.85	21.70	8.88E-02	1.49E-01	2.69E-01
		37.36	39.70	7.30E-02		1.49E-01
		42.30	15.10	4.98E-02		4.30E-01
		72.40	2.31	6.02E-02		5.15E+00

Analysis Report for 1606041-13
CP-5030 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-146	453.90	39.94	4.38E-02	3.51E-01	3.51E-01
		735.90	14.01	2.07E-01		1.21E+00
		747.13	13.10	1.81E-01		1.41E+00
+	ND-147	91.11	28.90	1.70E+00	7.69E-01	7.69E-01
		531.02	13.10	9.96E-01		2.22E+00
+	PM-149	285.90	3.10	-2.83E+00	8.94E+01	8.94E+01
+	EU-152	121.78	20.50	-3.11E-01	4.89E-01	4.89E-01
		244.69	5.40	4.52E-01		2.79E+00
		344.27	19.13	-7.08E-03		7.41E-01
		778.89	9.20	-3.25E-01		1.72E+00
		964.01	10.40	8.54E-01		2.66E+00
		1085.78	7.22	-1.16E-01		2.67E+00
		1112.02	9.60	1.91E-01		2.35E+00
		1407.95	14.94	2.28E-01		1.44E+00
+	GD-153	97.43	31.30	-1.10E-02	3.28E-01	3.28E-01
		103.18	22.20	-1.14E-01		4.46E-01
+	EU-154	123.07	40.50	-1.99E-01	2.48E-01	2.48E-01
		723.30	19.70	3.79E-01		1.05E+00
		873.19	11.50	-6.77E-01		1.42E+00
		996.32	10.30	-8.41E-02		1.75E+00
		1004.76	17.90	5.85E-01		1.18E+00
		1274.45	35.50	2.36E-01		7.48E-01
+	EU-155	86.50	* 30.90	3.30E-01	3.50E-01	3.50E-01
		105.30	20.70	6.23E-02		4.78E-01
+	EU-156	811.77	10.40	-9.09E-01	2.53E+00	2.53E+00
		1153.47	7.20	7.99E-01		4.99E+00
		1230.71	8.90	-1.52E-01		4.24E+00
+	HO-166M	184.41	72.60	-1.39E-02	1.86E-01	1.86E-01
		280.45	29.60	2.76E-01		4.57E-01
		410.94	11.10	3.71E-01		1.31E+00
		711.69	54.10	5.58E-02		3.16E-01
+	TM-171	66.72	0.14	-1.30E+01	6.96E+01	6.96E+01
+	HF-172	81.75	4.52	-7.46E+00	9.57E-01	2.50E+00
		125.81	11.30	5.64E-01		9.57E-01
+	LU-172	181.53	20.60	-2.00E-01	7.75E-01	1.65E+00
		810.06	16.63	-1.31E+00		2.67E+00
		912.12	15.25	5.55E+00		5.18E+00
		1093.66	62.50	-3.64E-01		7.75E-01
+	LU-173	100.72	5.24	-1.18E+00	6.54E-01	1.81E+00
		272.11	21.20	-5.05E-02		6.54E-01
+	HF-175	343.40	84.00	-1.77E-03	2.00E-01	2.00E-01
+	LU-176	88.34	13.30	1.30E+00	1.37E-01	8.85E-01
		201.83	86.00	6.09E-03		1.46E-01
		306.78	94.00	-6.06E-02		1.37E-01
+	TA-182	67.75	41.20	-4.69E-02	2.50E-01	2.50E-01
		1121.30	34.90	6.39E-01		8.86E-01
		1189.05	16.23	1.11E+00		1.64E+00
		1221.41	26.98	1.18E-01		1.01E+00
		1231.02	11.44	-8.03E-02		2.24E+00

Analysis Report for 1606041-13
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	IR-192	308.46	29.68	-3.51E-01	3.17E-01	4.56E-01
		468.07	48.10	-2.12E-01		3.17E-01
+	HG-203	279.19	77.30	6.56E-02	2.00E-01	2.00E-01
+	BI-207	569.67	97.72	-7.46E-02	1.52E-01	1.52E-01
		1063.62	74.90	8.29E-02		2.71E-01
+	TL-208	583.14	* 30.22	1.21E+00	9.91E-01	9.91E-01
		860.37	* 4.48	4.29E+00		5.84E+00
		2614.66	35.85	0.00E+00		1.34E+00
+	BI-210M	262.00	45.00	-1.10E-01	2.59E-01	2.59E-01
		300.00	23.00	8.29E-02		7.11E-01
+	PB-210	46.50	4.25	3.39E-01	1.60E+00	1.60E+00
+	PB-211	404.84	2.90	-2.00E+00	4.83E+00	4.83E+00
		831.96	2.90	1.69E+00		6.56E+00
+	BI-212	727.17	* 11.80	2.32E+00	2.35E+00	2.35E+00
		1620.62	2.75	3.04E+00		7.14E+00
+	PB-212	238.63	* 44.60	1.91E+00	4.75E-01	4.75E-01
		300.09	3.41	5.59E-01		4.80E+00
+	BI-214	609.31	* 46.30	1.52E+00	4.99E-01	4.99E-01
		1120.29	15.10	1.62E+00		1.93E+00
		1764.49	* 15.80	1.48E+00		7.98E-01
		2204.22	4.98	5.60E-01		3.64E+00
+	PB-214	295.21	* 19.19	1.25E+00	5.95E-01	9.74E-01
		351.92	* 37.19	1.41E+00		5.95E-01
+	RN-219	401.80	6.50	-2.97E-01	2.15E+00	2.15E+00
+	RA-223	323.87	3.88	3.32E-01	3.48E+00	3.48E+00
+	RA-224	240.98	3.95	2.12E+01	5.43E+00	5.43E+00
+	RA-225	40.00	31.00	-2.27E-01	3.07E-01	3.07E-01
+	RA-226	186.21	* 3.28	2.65E+00	4.80E+00	4.80E+00
+	TH-227	50.10	8.40	7.80E-01	8.55E-01	8.55E-01
		236.00	11.50	9.74E-02		1.73E+00
		256.20	6.30	-1.70E-01		1.89E+00
+	AC-228	338.32	* 11.40	2.05E+00	1.07E+00	1.46E+00
		911.07	* 27.70	1.32E+00		1.07E+00
		969.11	16.60	-2.79E-01		1.66E+00
+	TH-230	48.44	16.90	2.47E-01	4.16E-01	4.16E-01
		62.85	4.60	1.36E+00		1.97E+00
		67.67	0.37	-4.92E+00		2.62E+01
+	PA-231	283.67	1.60	-4.17E+00	5.99E+00	8.12E+00
		302.67	2.30	1.14E+00		5.99E+00
+	TH-231	25.64	14.70	-3.11E-02	3.63E-01	3.63E-01
		84.21	6.40	-5.76E+00		1.67E+00
+	PA-233	311.98	38.60	1.43E-01	4.26E-01	4.26E-01
+	PA-234	131.20	20.40	3.02E-01	5.29E-01	5.29E-01
		733.99	8.80	-5.05E-02		1.82E+00
		946.00	12.00	-2.54E-01		1.59E+00
+	PA-234M	1001.03	0.92	1.01E+01	2.30E+01	2.30E+01
+	TH-234	63.29	* 3.80	1.11E+00	2.10E+00	2.10E+00

Analysis Report for 1606041-13
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	U-235	143.76	10.50	1.21E-01	1.04E+00	1.04E+00
		163.35	4.70	-6.80E-02		2.38E+00
		205.31	4.70	-4.53E-01		2.72E+00
+	NP-237	86.50	* 12.60	8.06E-01	8.55E-01	8.55E-01
		NP-239	106.10	22.70	9.94E-01	7.63E+00	7.63E+00
+	AM-241	228.18	10.70	-4.29E+00		2.05E+01
		277.60	14.10	4.22E+00		1.65E+01
		59.54	35.90	-9.18E-02	2.38E-01	2.38E-01
+	AM-243	74.67	66.00	6.90E-01	1.95E-01	1.95E-01
+	CM-243	209.75	3.29	-7.39E-01	9.50E-01	3.93E+00
		228.14	10.60	-4.16E-01		1.17E+00
		277.60	14.00	2.44E-01		9.50E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	1.63E+00	1.63E+00	-1.09E-01	7.70E-01
	NA-22	1274.54	99.94	2.67E-01	2.67E-01	8.42E-02	1.22E-01
	NA-24	1368.53	99.99	7.59E+03	5.31E+03	-1.05E+03	3.23E+03
		2754.09	99.86	5.31E+03		7.21E+02	1.68E+03
	AL-26	1808.65	99.76	1.45E-01	1.45E-01	-3.39E-02	5.76E-02
+	K-40	1460.81	* 10.67	2.50E+00	2.50E+00	2.20E+01	1.13E+00
@	AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88	94.40	1.03E-01	1.03E-01	-1.93E-02	5.04E-02
		78.34	96.00	1.33E-01		3.33E-01	6.54E-02
	SC-46	889.25	99.98	2.07E-01	2.07E-01	6.90E-03	9.49E-02

Analysis Report for 1606041-13
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SC-46	1120.51	99.99	3.16E-01	2.07E-01	2.65E-01	1.47E-01
V-48	983.52	99.98	2.91E-01	2.91E-01	-1.49E-01	1.32E-01
	1312.10	97.50	3.08E-01		-6.79E-02	1.36E-01
CR-51	320.08	9.83	1.60E+00	1.60E+00	-8.42E-02	7.65E-01
MN-54	834.83	99.97	1.93E-01	1.93E-01	-2.32E-02	8.90E-02
CO-56	846.75	99.96	2.07E-01	2.07E-01	2.53E-02	9.52E-02
	1037.75	14.03	1.52E+00		-1.47E-01	6.88E-01
	1238.25	67.00	4.34E-01		1.53E-01	1.99E-01
	1771.40	15.51	1.00E+00		-4.24E-01	3.97E-01
	2598.48	16.90	2.52E-01		0.00E+00	0.00E+00
CO-57	122.06	85.51	1.20E-01	1.20E-01	-7.64E-02	5.86E-02
	136.48	10.60	9.65E-01		-9.62E-01	4.69E-01
CO-58	810.76	99.40	1.80E-01	1.80E-01	-8.85E-02	8.20E-02
FE-59	1099.22	56.50	4.71E-01	4.71E-01	2.24E-01	2.15E-01
	1291.56	43.20	5.98E-01		-1.67E-01	2.69E-01
CO-60	1173.22	100.00	2.32E-01	1.87E-01	-6.79E-02	1.06E-01
	1332.49	100.00	1.87E-01		-2.84E-02	8.18E-02
ZN-65	1115.52	50.75	4.85E-01	4.85E-01	-7.31E-02	2.23E-01
+ GA-67	93.31	* 35.70	2.62E+00	2.62E+00	2.04E+00	1.29E+00
	208.95	2.24	4.61E+01		-1.97E+00	2.24E+01
	300.22	16.00	7.31E+00		2.58E+00	3.52E+00
SE-75	121.11	16.70	6.29E-01	1.81E-01	-4.25E-01	3.06E-01
	136.00	59.20	1.81E-01		-1.05E-01	8.79E-02
	264.65	59.80	2.15E-01		1.83E-02	1.03E-01
	279.53	25.20	5.63E-01		1.84E-01	2.70E-01
	400.65	11.40	1.33E+00		5.09E-01	6.34E-01
RB-82	776.52	13.00	1.75E+00	1.75E+00	1.62E-02	8.04E-01
RB-83	520.41	46.00	3.72E-01	3.72E-01	3.38E-02	1.75E-01
	529.64	30.30	5.45E-01		-9.21E-02	2.56E-01
	552.65	16.40	1.10E+00		3.35E-01	5.18E-01
KR-85	513.99	0.43	4.65E+01	4.65E+01	3.49E+01	2.22E+01
SR-85	513.99	99.27	2.25E-01	2.25E-01	1.69E-01	1.08E-01
Y-88	898.02	93.40	2.34E-01	1.11E-01	3.57E-02	1.08E-01
	1836.01	99.38	1.11E-01		-1.32E-01	3.94E-02
NB-93M	16.57	9.43	4.97E-01	4.97E-01	9.63E-01	2.41E-01
NB-94	702.63	100.00	1.77E-01	1.63E-01	1.47E-02	8.24E-02
	871.10	100.00	1.63E-01		-2.62E-02	7.37E-02
NB-95	765.79	99.81	2.45E-01	2.45E-01	8.62E-02	1.14E-01
NB-95M	235.69	25.00	5.15E+00	5.15E+00	2.89E-01	2.52E+00
ZR-95	724.18	43.70	5.57E-01	3.41E-01	4.38E-01	2.62E-01
	756.72	55.30	3.41E-01		8.96E-02	1.57E-01
MO-99	181.06	6.20	2.18E+01	1.61E+01	-5.58E+00	1.06E+01
	739.58	12.80	1.61E+01		-3.01E-01	7.43E+00
	778.00	4.50	4.07E+01		-7.68E+00	1.86E+01
RU-103	497.08	89.00	2.00E-01	2.00E-01	2.23E-02	9.43E-02
RU-106	621.84	9.80	1.57E+00	1.57E+00	-4.81E-01	7.26E-01
AG-108M	433.93	89.90	1.44E-01	1.44E-01	-6.52E-02	6.77E-02
	614.37	90.40	2.19E-01		-1.06E-01	1.03E-01
	722.95	90.50	2.28E-01		8.23E-02	1.07E-01
CD-109	88.03	3.72	3.13E+00	3.13E+00	1.32E+00	1.54E+00
AG-110M	657.75	93.14	1.97E-01	1.97E-01	1.16E-01	9.21E-02
	677.61	10.53	1.78E+00		2.72E-02	8.33E-01
	706.67	16.46	1.01E+00		-5.68E-01	4.67E-01

Analysis Report for 1606041-13
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
AG-110M	763.93	21.98	9.21E-01	1.97E-01	2.81E-01	4.29E-01	
	884.67	71.63	2.47E-01		-1.88E-01	1.12E-01	
	1384.27	23.94	7.59E-01		-3.69E-01	3.28E-01	
CD-113M	263.70	0.02	5.16E+02	5.16E+02	-7.01E+01	2.47E+02	
	SN-113	255.12	1.93	6.64E+00	2.32E-01	-2.58E-01	3.19E+00
TE123M	391.69	64.90	2.32E-01		2.19E-02	1.10E-01	
	159.00	84.10	1.41E-01	1.41E-01	-2.11E-02	6.85E-02	
SB-124	602.71	97.87	1.83E-01	1.83E-01	-2.82E-02	8.56E-02	
	645.85	7.26	2.63E+00		1.08E+00	1.23E+00	
	722.78	11.10	1.91E+00		-1.02E+00	8.89E-01	
	1691.02	49.00	2.21E-01		-1.11E-01	7.85E-02	
I-125	35.49	6.49	9.75E-01	9.75E-01	-2.62E-01	4.75E-01	
SB-125	176.33	6.89	1.66E+00	4.92E-01	-1.68E-01	8.07E-01	
	427.89	29.33	4.92E-01		1.07E-01	2.33E-01	
	463.38	10.35	1.43E+00		2.58E-01	6.75E-01	
	600.56	17.80	8.79E-01		-7.41E-02	4.09E-01	
	635.90	11.32	1.36E+00		2.50E-01	6.29E-01	
SB-126	414.70	83.30	2.90E-01	2.86E-01	-7.09E-02	1.37E-01	
	666.33	99.60	2.86E-01		-7.90E-02	1.33E-01	
	695.00	99.60	3.22E-01		-9.09E-02	1.50E-01	
	720.50	53.80	5.72E-01		0.00E+00	2.66E-01	
+ SN-126	87.57	* 37.00	2.91E-01	2.91E-01	2.74E-01	1.43E-01	
SB-127	473.00	25.00	3.44E+00	3.02E+00	1.21E+00	1.62E+00	
	685.20	35.70	3.02E+00		-3.41E-01	1.41E+00	
	783.80	14.70	6.68E+00		4.68E-01	3.07E+00	
I-129	29.78	57.00	9.28E-02	9.28E-02	-2.96E-02	4.51E-02	
	33.60	13.20	4.15E-01		-1.53E-01	2.02E-01	
	39.58	7.52	8.00E-01		-5.93E-01	3.90E-01	
I-131	284.30	6.05	4.90E+00	4.28E-01	-3.07E+00	2.35E+00	
	364.48	81.20	4.28E-01		2.79E-01	2.05E-01	
	636.97	7.26	4.79E+00		-9.84E-01	2.21E+00	
	722.89	1.80	2.43E+01		-1.30E+01	1.13E+01	
TE-132	49.72	13.10	4.32E+00	1.11E+00	3.94E+00	2.11E+00	
	228.16	88.00	1.11E+00		-3.96E-01	5.38E-01	
BA-133	81.00	33.00	3.60E-01	3.38E-01	-3.11E-01	1.77E-01	
	302.84	17.80	7.76E-01		1.48E-01	3.72E-01	
	356.01	60.00	3.38E-01		-4.04E-02	1.64E-01	
I-133	529.87	86.30	4.21E+02	4.21E+02	-7.12E+01	1.98E+02	
XE-133	81.00	38.00	1.13E+00	1.13E+00	-9.75E-01	5.55E-01	
CS-134	563.23	8.38	1.77E+00	2.33E-01	-1.03E+00	8.24E-01	
	569.32	15.43	9.71E-01		-4.76E-01	4.52E-01	
	604.70	97.60	2.33E-01		-1.58E-03	1.11E-01	
	795.84	85.40	2.44E-01		4.96E-02	1.14E-01	
	801.93	8.73	2.20E+00		-2.54E-01	1.02E+00	
	268.24	16.00	8.50E-01	8.50E-01	-3.96E-02	4.09E-01	
CS-135	I-135	1131.51	22.50	3.92E+10	3.20E+10	-4.74E+09	1.77E+10
	1260.41	28.60	3.20E+10		7.61E+09	1.44E+10	
	1678.03	9.54	7.27E+10		2.06E+10	3.02E+10	
CS-136	153.22	7.46	2.55E+00	3.16E-01	9.82E-01	1.24E+00	
	163.89	4.61	4.05E+00		-1.16E-01	1.97E+00	
	176.55	13.56	1.40E+00		-1.41E-01	6.80E-01	
	273.65	12.66	1.85E+00		-3.49E-02	8.90E-01	
	340.57	48.50	5.93E-01		-4.61E-03	2.86E-01	

Analysis Report for 1606041-13
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
CS-136	818.50	99.70	3.16E-01	3.16E-01	2.14E-02	1.46E-01	
	1048.07	79.60	4.14E-01		-1.43E-02	1.88E-01	
	1235.34	19.70	2.41E+00		1.60E+00	1.12E+00	
CS-137	661.65	85.12	2.04E-01	2.04E-01	-1.45E-02	9.51E-02	
LA-138	788.74	34.00	5.36E-01	2.40E-01	-2.51E-01	2.47E-01	
	1435.80	66.00	2.40E-01		3.90E-02	1.01E-01	
CE-139	165.85	80.35	1.48E-01	1.48E-01	2.61E-02	7.20E-02	
BA-140	162.64	6.70	2.82E+00	1.04E+00	-3.66E-01	1.37E+00	
	304.84	4.50	4.94E+00		-1.28E+00	2.37E+00	
	423.70	3.20	7.68E+00		2.39E+00	3.64E+00	
	437.55	2.00	1.11E+01		-3.21E+00	5.19E+00	
	537.32	25.00	1.04E+00		3.07E-01	4.89E-01	
LA-140	328.77	20.50	1.19E+00	3.66E-01	7.34E-01	5.70E-01	
	487.03	45.50	5.30E-01		-1.44E-01	2.49E-01	
	815.85	23.50	1.28E+00		8.95E-03	5.87E-01	
	1596.49	95.49	3.66E-01		0.00E+00	1.59E-01	
CE-141	145.44	48.40	2.85E-01	2.85E-01	8.75E-02	1.39E-01	
CE-143	57.36	11.80	8.76E+01	5.47E+01	-4.30E+01	4.28E+01	
	293.26	42.00	5.47E+01		4.87E+00	2.65E+01	
	664.55	5.20	4.47E+02		5.92E+01	2.08E+02	
CE-144	133.54	10.80	9.77E-01	9.77E-01	-1.99E-01	4.75E-01	
PM-144	476.78	42.00	3.70E-01	1.75E-01	7.29E-02	1.75E-01	
	618.01	98.60	1.75E-01		6.51E-02	8.17E-02	
	696.49	99.49	1.97E-01		9.10E-03	9.24E-02	
PM-145	36.85	21.70	2.69E-01	1.49E-01	8.88E-02	1.31E-01	
	37.36	39.70	1.49E-01		7.30E-02	7.27E-02	
	42.30	15.10	4.30E-01		4.98E-02	2.10E-01	
	72.40	2.31	5.15E+00		6.02E-02	2.53E+00	
PM-146	453.90	39.94	3.51E-01	3.51E-01	4.38E-02	1.65E-01	
	735.90	14.01	1.21E+00		2.07E-01	5.57E-01	
	747.13	13.10	1.41E+00		1.81E-01	6.53E-01	
ND-147	91.11	28.90	7.69E-01	7.69E-01	1.70E+00	3.77E-01	
	531.02	13.10	2.22E+00		9.96E-01	1.05E+00	
PM-149	285.90	3.10	8.94E+01	8.94E+01	-2.83E+00	4.29E+01	
EU-152	121.78	20.50	4.89E-01	4.89E-01	-3.11E-01	2.38E-01	
	244.69	5.40	2.79E+00		4.52E-01	1.35E+00	
	344.27	19.13	7.41E-01		-7.08E-03	3.54E-01	
	778.89	9.20	1.72E+00		-3.25E-01	7.86E-01	
	964.01	10.40	2.66E+00		8.54E-01	1.25E+00	
	1085.78	7.22	2.67E+00		-1.16E-01	1.20E+00	
	1112.02	9.60	2.35E+00		1.91E-01	1.08E+00	
	1407.95	14.94	1.44E+00		2.28E-01	6.38E-01	
	GD-153	97.43	31.30	3.28E-01	3.28E-01	-1.10E-02	1.60E-01
		103.18	22.20	4.46E-01		-1.14E-01	2.18E-01
EU-154	123.07	40.50	2.48E-01	2.48E-01	-1.99E-01	1.21E-01	
	723.30	19.70	1.05E+00		3.79E-01	4.93E-01	
	873.19	11.50	1.42E+00		-6.77E-01	6.44E-01	
	996.32	10.30	1.75E+00		-8.41E-02	7.90E-01	
	1004.76	17.90	1.18E+00		5.85E-01	5.38E-01	
	1274.45	35.50	7.48E-01		2.36E-01	3.43E-01	
+ EU-155	86.50	* 30.90	3.50E-01	3.50E-01	3.30E-01	1.71E-01	
	105.30	20.70	4.78E-01		6.23E-02	2.33E-01	
EU-156	811.77	10.40	2.53E+00	2.53E+00	-9.09E-01	1.16E+00	

Analysis Report for 1606041-13

CP-5030 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-156	1153.47	7.20	4.99E+00	2.53E+00	7.99E-01	2.28E+00
	1230.71	8.90	4.24E+00		-1.52E-01	1.93E+00
HO-166M	184.41	72.60	1.86E-01	1.86E-01	-1.39E-02	9.07E-02
	280.45	29.60	4.57E-01		2.76E-01	2.20E-01
	410.94	11.10	1.31E+00		3.71E-01	6.20E-01
	711.69	54.10	3.16E-01		5.58E-02	1.46E-01
TM-171	66.72	0.14	6.96E+01	6.96E+01	-1.30E+01	3.42E+01
HF-172	81.75	4.52	2.50E+00	9.57E-01	-7.46E+00	1.23E+00
	125.81	11.30	9.57E-01		5.64E-01	4.66E-01
LU-172	181.53	20.60	1.65E+00	7.75E-01	-2.00E-01	8.01E-01
	810.06	16.63	2.67E+00		-1.31E+00	1.22E+00
	912.12	15.25	5.18E+00		5.55E+00	2.45E+00
	1093.66	62.50	7.75E-01		-3.64E-01	3.46E-01
LU-173	100.72	5.24	1.81E+00	6.54E-01	-1.18E+00	8.85E-01
	272.11	21.20	6.54E-01		-5.05E-02	3.15E-01
HF-175	343.40	84.00	2.00E-01	2.00E-01	-1.77E-03	9.57E-02
LU-176	88.34	13.30	8.85E-01	1.37E-01	1.30E+00	4.34E-01
	201.83	86.00	1.46E-01		6.09E-03	7.10E-02
	306.78	94.00	1.37E-01		-6.06E-02	6.55E-02
TA-182	67.75	41.20	2.50E-01	2.50E-01	-4.69E-02	1.22E-01
	1121.30	34.90	8.86E-01		6.39E-01	4.13E-01
	1189.05	16.23	1.64E+00		1.11E+00	7.54E-01
	1221.41	26.98	1.01E+00		1.18E-01	4.65E-01
	1231.02	11.44	2.24E+00		-8.03E-02	1.02E+00
IR-192	308.46	29.68	4.56E-01	3.17E-01	-3.51E-01	2.18E-01
	468.07	48.10	3.17E-01		-2.12E-01	1.49E-01
HG-203	279.19	77.30	2.00E-01	2.00E-01	6.56E-02	9.62E-02
BI-207	569.67	97.72	1.52E-01	1.52E-01	-7.46E-02	7.09E-02
	1063.62	74.90	2.71E-01		8.29E-02	1.23E-01
+ TL-208	583.14	* 30.22	9.91E-01	9.91E-01	1.21E+00	4.78E-01
	860.37	* 4.48	5.84E+00		4.29E+00	2.75E+00
	2614.66	35.85	1.34E+00		0.00E+00	6.16E-01
BI-210M	262.00	45.00	2.59E-01	2.59E-01	-1.10E-01	1.24E-01
	300.00	23.00	7.11E-01		8.29E-02	3.44E-01
PB-210	46.50	4.25	1.60E+00	1.60E+00	3.39E-01	7.82E-01
PB-211	404.84	2.90	4.83E+00	4.83E+00	-2.00E+00	2.29E+00
	831.96	2.90	6.56E+00		1.69E+00	3.03E+00
+ BI-212	727.17	* 11.80	2.35E+00	2.35E+00	2.32E+00	1.12E+00
	1620.62	2.75	7.14E+00		3.04E+00	3.08E+00
+ PB-212	238.63	* 44.60	4.75E-01	4.75E-01	1.91E+00	2.33E-01
	300.09	3.41	4.80E+00		5.59E-01	2.32E+00
+ BI-214	609.31	* 46.30	4.99E-01	4.99E-01	1.52E+00	2.38E-01
	1120.29	15.10	1.93E+00		1.62E+00	9.00E-01
	1764.49	* 15.80	7.98E-01		1.48E+00	3.06E-01
	2204.22	4.98	3.64E+00		5.60E-01	1.47E+00
+ PB-214	295.21	* 19.19	9.74E-01	5.95E-01	1.25E+00	4.73E-01
	351.92	* 37.19	5.95E-01		1.41E+00	2.89E-01
RN-219	401.80	6.50	2.15E+00	2.15E+00	-2.97E-01	1.02E+00
RA-223	323.87	3.88	3.48E+00	3.48E+00	3.32E-01	1.66E+00
RA-224	240.98	3.95	5.43E+00	5.43E+00	2.12E+01	2.66E+00
RA-225	40.00	31.00	3.07E-01	3.07E-01	-2.27E-01	1.50E-01
+ RA-226	186.21	* 3.28	4.80E+00	4.80E+00	2.65E+00	2.34E+00
	TH-227	50.10	8.40	8.55E-01	8.55E-01	7.80E-01	4.18E-01

Analysis Report for 1606041-13
CP-5030 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TH-227	236.00	11.50	1.73E+00	8.55E-01	9.74E-02	8.48E-01
	256.20	6.30	1.89E+00		-1.70E-01	9.05E-01
+ AC-228	338.32 *	11.40	1.46E+00	1.07E+00	2.05E+00	7.03E-01
	911.07 *	27.70	1.07E+00		1.32E+00	5.04E-01
	969.11	16.60	1.66E+00		-2.79E-01	7.76E-01
TH-230	48.44	16.90	4.16E-01	4.16E-01	2.47E-01	2.03E-01
	62.85	4.60	1.97E+00		1.36E+00	9.67E-01
	67.67	0.37	2.62E+01		-4.92E+00	1.28E+01
PA-231	283.67	1.60	8.12E+00	5.99E+00	-4.17E+00	3.89E+00
	302.67	2.30	5.99E+00		1.14E+00	2.88E+00
TH-231	25.64	14.70	3.63E-01	3.63E-01	-3.11E-02	1.77E-01
	84.21	6.40	1.67E+00		-5.76E+00	8.20E-01
PA-233	311.98	38.60	4.26E-01	4.26E-01	1.43E-01	2.03E-01
PA-234	131.20	20.40	5.29E-01	5.29E-01	3.02E-01	2.58E-01
	733.99	8.80	1.82E+00		-5.05E-02	8.35E-01
	946.00	12.00	1.59E+00		-2.54E-01	7.27E-01
PA-234M	1001.03	0.92	2.30E+01	2.30E+01	1.01E+01	1.05E+01
+ TH-234	63.29 *	3.80	2.10E+00	2.10E+00	1.11E+00	1.03E+00
U-235	143.76	10.50	1.04E+00	1.04E+00	1.21E-01	5.06E-01
	163.35	4.70	2.38E+00		-6.80E-02	1.15E+00
	205.31	4.70	2.72E+00		-4.53E-01	1.32E+00
+ NP-237	86.50 *	12.60	8.55E-01	8.55E-01	8.06E-01	4.19E-01
NP-239	106.10	22.70	7.63E+00	7.63E+00	9.94E-01	3.72E+00
	228.18	10.70	2.05E+01		-4.29E+00	9.90E+00
	277.60	14.10	1.65E+01		4.22E+00	7.92E+00
AM-241	59.54	35.90	2.38E-01	2.38E-01	-9.18E-02	1.16E-01
AM-243	74.67	66.00	1.95E-01	1.95E-01	6.90E-01	9.62E-02
CM-243	209.75	3.29	3.93E+00	9.50E-01	-7.39E-01	1.91E+00
	228.14	10.60	1.17E+00		-4.16E-01	5.65E-01
	277.60	14.00	9.50E-01		2.44E-01	4.57E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User
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Analysis Report for 1606041-13
CP-5030 02-05

No Data Review Comments Entered.

369: 14 13 14 15 20 12 19 22

Sample Title: CP-5030 02-05

Channel	14	13	14	15	20	12	19	22
377:	8	12	13	19	16	22	17	14
385:	6	8	12	16	16	16	16	16
393:	10	8	14	19	16	13	12	12
401:	15	14	11	10	11	11	13	16
409:	13	17	18	10	8	12	13	15
417:	8	7	14	12	13	12	9	7
425:	15	12	17	8	15	10	13	8
433:	9	10	5	5	8	16	10	7
441:	13	12	11	10	11	10	10	10
449:	11	12	8	12	10	6	11	6
457:	13	8	7	11	15	14	18	9
465:	6	7	8	5	9	16	7	16
473:	7	9	12	13	9	10	11	10
481:	12	8	7	11	14	12	6	9
489:	7	6	9	13	7	3	13	11
497:	11	13	4	13	11	8	8	10
505:	5	9	12	18	25	37	24	20
513:	8	7	12	10	6	8	17	8
521:	9	14	10	5	8	9	9	7
529:	10	6	7	9	13	13	6	9
537:	4	8	7	9	8	5	6	10
545:	7	7	6	12	12	5	12	9
553:	12	5	6	13	11	11	5	4
561:	10	10	10	10	4	7	3	10
569:	9	5	9	5	11	5	14	6
577:	7	6	9	3	20	36	40	32
585:	15	4	7	7	7	5	10	6
593:	6	10	8	10	7	5	6	5
601:	8	6	4	11	9	12	21	58
609:	75	36	14	4	9	10	9	8
617:	4	5	7	9	8	10	4	4
625:	3	10	1	7	5	5	5	4
633:	9	4	1	9	10	4	7	3
641:	7	4	12	5	8	4	8	9
649:	8	2	9	7	4	8	6	10
657:	8	9	5	8	11	5	3	4
665:	11	5	4	12	7	6	4	8
673:	9	7	5	6	10	8	10	8
681:	5	11	10	5	8	5	9	9
689:	8	8	5	11	6	10	10	8
697:	8	4	5	10	11	6	8	3
705:	7	5	2	7	4	6	7	11
713:	2	8	6	4	7	5	4	5
721:	7	8	7	10	5	13	18	14
729:	9	3	6	3	5	2	8	5
737:	2	9	8	4	6	4	7	4
745:	10	10	7	5	5	5	3	8
753:	5	6	8	3	3	4	5	4
761:	5	3	5	9	4	17	6	9
769:	7	7	8	6	9	5	4	3
777:	6	2	5	6	3	3	3	5
785:	4	5	9	7	5	4	3	7
793:	6	14	12	5	9	5	2	5

801: 9 6 5 7 9 4 7 2

Sample Title: CP-5030 02-05

Channel	1	2	3	4	5	6	7	8
809:	3	2	7	4	3	4	7	2
817:	5	7	4	6	7	7	4	7
825:	6	3	4	5	5	2	5	5
833:	5	5	6	10	4	5	4	8
841:	8	5	7	8	7	2	5	2
849:	6	4	4	2	4	6	4	4
857:	7	6	6	9	8	1	5	3
865:	5	1	3	5	1	4	5	3
873:	7	1	2	2	6	6	8	6
881:	3	1	3	4	6	5	1	5
889:	6	6	6	3	4	7	8	3
897:	7	7	3	5	4	4	5	6
905:	4	4	7	8	6	21	23	15
913:	14	3	5	2	5	4	6	5
921:	5	6	4	2	4	3	2	3
929:	11	7	3	3	3	6	5	5
937:	3	6	5	6	4	2	3	6
945:	4	3	4	5	6	4	2	8
953:	3	6	3	2	5	6	8	3
961:	6	5	8	11	8	9	10	19
969:	12	11	2	4	2	5	5	9
977:	7	4	3	4	3	2	4	3
985:	5	7	3	3	3	7	3	4
993:	0	8	1	2	3	3	2	6
1001:	10	4	4	4	5	4	1	2
1009:	4	1	3	2	4	6	5	5
1017:	4	1	3	3	6	3	5	5
1025:	4	4	4	5	3	1	6	2
1033:	4	4	0	5	0	8	0	9
1041:	2	6	3	5	2	2	4	1
1049:	5	5	4	4	3	3	5	3
1057:	2	3	2	6	4	8	4	4
1065:	3	1	1	1	6	1	3	4
1073:	4	1	5	4	2	8	7	6
1081:	6	3	6	2	1	4	2	4
1089:	5	1	2	1	0	3	4	5
1097:	2	4	5	4	7	6	3	2
1105:	2	8	1	8	5	5	4	4
1113:	0	2	5	5	3	5	15	16
1121:	8	4	6	3	5	7	1	4
1129:	4	4	2	2	5	5	4	2
1137:	2	4	5	2	4	2	4	2
1145:	2	10	3	6	6	2	3	1
1153:	3	5	6	5	6	3	4	3
1161:	5	5	4	1	4	4	7	8
1169:	7	4	4	3	2	3	3	4
1177:	6	1	5	6	3	1	1	1
1185:	6	4	5	2	5	2	3	6
1193:	9	3	5	2	6	1	4	3
1201:	2	3	2	3	3	6	1	8
1209:	4	5	8	4	3	3	4	9
1217:	4	3	6	8	4	4	2	3
1225:	8	3	6	1	2	5	5	5

1233: 7 3 2 9 9 7 4 1

Sample Title: CP-5030 02-05

Channel	1	2	3	4	5	6	7	8	9
1241:	3	6	0	5	1	5	5	2	
1249:	3	4	7	6	2	4	7	3	
1257:	5	3	2	6	1	3	2	2	
1265:	1	0	2	1	4	6	10	3	
1273:	4	3	5	7	2	1	3	3	
1281:	6	5	4	0	8	5	0	4	
1289:	5	2	1	4	4	2	5	2	
1297:	5	3	4	2	7	6	0	5	
1305:	5	3	1	3	3	1	3	4	
1313:	2	0	1	3	4	3	1	2	
1321:	3	3	2	5	1	3	0	0	
1329:	1	3	3	4	2	2	2	0	
1337:	3	2	4	2	4	3	1	2	
1345:	2	1	3	4	4	4	3	0	
1353:	4	2	6	1	1	2	3	1	
1361:	1	1	2	0	1	0	4	2	
1369:	0	1	2	1	2	2	1	3	
1377:	2	2	6	2	2	3	3	0	
1385:	2	2	0	0	3	1	3	0	
1393:	2	1	2	0	1	0	0	5	
1401:	2	2	0	1	2	3	3	5	
1409:	4	0	1	2	1	2	4	1	
1417:	2	1	0	0	2	1	3	4	
1425:	1	1	0	3	2	3	3	3	
1433:	1	0	2	3	0	0	1	0	
1441:	1	0	0	0	1	1	2	1	
1449:	1	0	3	1	0	3	0	1	
1457:	1	13	35	77	79	43	10	2	
1465:	2	3	1	1	0	1	2	4	
1473:	1	2	1	0	2	2	1	0	
1481:	2	2	0	1	0	0	3	2	
1489:	0	2	1	1	1	1	3	0	
1497:	3	1	1	2	2	2	2	1	
1505:	1	1	1	0	2	2	1	3	
1513:	0	1	0	0	0	0	2	2	
1521:	1	1	3	0	0	0	2	1	
1529:	4	2	1	0	0	0	0	0	
1537:	1	2	1	0	2	1	0	1	
1545:	2	0	1	1	2	1	1	0	
1553:	3	0	2	1	4	0	3	1	
1561:	0	1	5	0	1	1	2	1	
1569:	0	0	1	0	0	1	3	1	
1577:	0	2	1	0	1	1	1	2	
1585:	2	2	0	1	1	2	1	2	
1593:	2	2	3	1	1	1	1	2	
1601:	2	3	1	1	0	0	1	2	
1609:	1	2	1	1	1	0	1	0	
1617:	1	1	2	2	1	2	3	1	
1625:	0	1	0	1	2	1	0	2	
1633:	1	2	0	2	3	3	0	0	
1641:	2	0	1	1	1	1	0	0	
1649:	1	1	0	0	2	1	0	0	
1657:	0	0	1	0	0	0	0	2	

1665: 0 1 0 0 0 0 0 0 0

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
1673:	0	0	2	1	2	0	1	0
1681:	1	1	1	1	0	0	1	0
1689:	0	0	0	0	0	1	0	1
1697:	1	1	0	0	0	0	1	1
1705:	3	1	0	0	1	1	0	0
1713:	0	1	1	2	1	0	0	0
1721:	0	0	1	1	1	1	2	1
1729:	0	1	0	0	1	0	1	1
1737:	0	2	0	1	1	0	1	1
1745:	2	0	0	1	1	1	0	0
1753:	1	1	2	0	0	0	0	0
1761:	2	2	3	4	7	4	2	0
1769:	1	0	0	1	0	0	0	1
1777:	0	0	0	1	0	0	1	0
1785:	1	1	1	0	1	2	1	2
1793:	2	1	0	0	1	1	0	0
1801:	2	1	1	1	0	2	0	0
1809:	0	0	0	1	0	1	1	0
1817:	0	0	0	2	1	1	1	0
1825:	1	0	1	1	1	2	0	0
1833:	0	1	0	0	0	0	0	1
1841:	0	1	1	1	1	3	2	2
1849:	0	1	1	1	1	2	0	0
1857:	0	2	2	0	1	0	0	0
1865:	1	0	1	1	1	1	0	0
1873:	0	1	0	0	1	0	1	0
1881:	0	0	2	0	0	1	0	0
1889:	0	1	1	0	0	0	1	0
1897:	0	0	0	0	0	0	0	0
1905:	1	0	1	0	0	1	2	0
1913:	0	1	1	1	0	0	1	1
1921:	0	1	1	0	1	0	0	2
1929:	1	0	1	1	1	0	1	1
1937:	0	0	1	0	0	0	0	1
1945:	2	0	1	1	0	0	0	0
1953:	0	0	0	0	2	0	0	0
1961:	3	1	2	0	1	1	3	1
1969:	1	0	0	1	1	0	1	1
1977:	1	0	0	1	0	1	0	0
1985:	2	1	1	0	2	0	0	0
1993:	0	0	0	0	0	1	0	1
2001:	1	0	1	0	2	1	1	2
2009:	1	0	1	0	0	1	1	1
2017:	2	1	1	0	0	0	1	0
2025:	0	1	1	0	0	0	1	1
2033:	1	1	0	0	0	0	1	0
2041:	0	0	0	1	1	2	0	2
2049:	1	1	0	0	0	0	0	0
2057:	0	0	0	1	0	1	0	0
2065:	1	0	0	1	0	1	2	0
2073:	1	2	1	1	1	0	1	1
2081:	1	0	2	1	0	3	0	1
2089:	1	0	1	0	0	0	0	1

2097: 0 1 0 1 0 2 3 1

Sample Title: CP-5030 02-05

Channel	1	2	3	4	5	6	7	8
2105:	3	2	0	0	0	1	2	1
2113:	1	2	1	0	2	1	1	1
2121:	0	2	1	0	1	0	1	1
2129:	0	0	0	1	1	0	0	1
2137:	0	0	0	0	0	0	0	1
2145:	1	1	0	0	0	1	2	0
2153:	2	0	0	0	1	0	1	1
2161:	0	0	0	0	0	1	2	1
2169:	0	0	0	1	1	1	0	0
2177:	0	0	1	2	0	2	1	0
2185:	0	0	1	0	0	0	2	0
2193:	1	0	1	1	1	1	1	0
2201:	0	2	1	2	0	0	0	1
2209:	0	0	0	0	0	1	1	0
2217:	0	3	2	2	0	0	1	0
2225:	0	1	0	0	1	1	1	1
2233:	0	0	0	3	1	0	1	0
2241:	1	1	0	1	1	1	0	0
2249:	0	0	0	0	2	0	0	1
2257:	3	0	0	1	0	0	0	1
2265:	0	0	0	1	1	0	2	0
2273:	1	1	1	0	0	2	0	0
2281:	0	0	0	1	1	1	1	0
2289:	1	0	0	0	0	0	1	1
2297:	0	1	1	2	0	0	1	0
2305:	0	0	0	0	0	0	0	0
2313:	1	0	0	0	0	2	2	2
2321:	0	0	0	0	1	0	2	0
2329:	0	0	0	2	1	1	0	1
2337:	1	0	0	1	1	0	1	0
2345:	0	1	2	0	1	2	2	1
2353:	1	1	0	0	0	2	2	0
2361:	2	2	2	0	1	0	0	1
2369:	2	0	1	1	0	1	0	0
2377:	1	0	0	1	0	1	1	3
2385:	0	0	0	0	1	0	1	0
2393:	0	0	0	1	1	0	1	1
2401:	0	0	0	1	0	0	0	0
2409:	0	0	0	1	1	1	0	1
2417:	0	0	0	0	0	0	0	1
2425:	0	0	1	0	0	0	0	0
2433:	0	0	0	0	1	0	0	0
2441:	1	0	0	0	1	1	0	0
2449:	1	0	0	2	0	0	0	1
2457:	0	2	0	0	1	0	1	1
2465:	1	1	0	1	0	0	0	0
2473:	0	1	1	1	2	0	0	2
2481:	1	1	2	0	0	0	1	0
2489:	0	0	2	1	0	0	0	1
2497:	0	0	0	0	0	0	0	0
2505:	0	1	0	1	1	0	0	0
2513:	0	1	1	0	0	0	2	0
2521:	0	0	0	0	0	0	2	0

2529: 1 0 0 1 0 1 0 0

Sample Title: CP-5030 02-05

Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	1	1	0	1	0	1	
2545:	1	0	0	0	0	0	0	0	0
2553:	0	0	0	0	1	0	0	1	0
2561:	0	1	0	0	0	0	1	0	0
2569:	1	2	0	1	0	0	1	0	0
2577:	0	0	0	0	0	0	0	0	0
2585:	0	0	0	1	0	0	1	0	0
2593:	0	0	0	0	0	0	0	0	0
2601:	0	0	0	0	0	1	0	0	0
2609:	0	1	1	4	9	10	9	6	1
2617:	3	0	0	0	0	0	0	0	0
2625:	0	1	0	0	0	0	0	0	0
2633:	0	0	1	0	0	1	0	0	0
2641:	0	0	0	0	0	0	0	0	0
2649:	2	0	0	0	0	1	0	0	0
2657:	0	0	0	0	0	0	0	0	0
2665:	0	0	0	0	1	0	0	0	0
2673:	0	0	0	0	2	0	0	0	0
2681:	0	0	0	0	0	0	0	0	0
2689:	0	0	0	0	1	1	0	1	0
2697:	0	1	0	0	0	0	0	0	0
2705:	0	0	0	2	0	0	0	1	0
2713:	0	0	0	0	0	0	0	0	0
2721:	0	0	0	0	0	1	0	0	0
2729:	0	0	0	0	0	0	0	0	0
2737:	0	0	0	0	0	0	0	0	0
2745:	0	0	0	1	0	1	0	0	0
2753:	0	0	0	0	0	0	0	0	0
2761:	0	0	0	0	0	0	1	1	0
2769:	0	0	1	0	0	0	0	0	0
2777:	0	0	0	1	1	0	0	1	0
2785:	0	2	0	0	1	0	0	0	0
2793:	0	0	0	0	0	1	0	0	0
2801:	0	0	0	0	0	0	1	0	0
2809:	0	0	1	0	1	0	0	0	0
2817:	0	0	0	0	1	0	0	0	0
2825:	0	0	1	1	1	0	0	0	0
2833:	0	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	0	0
2849:	0	1	0	0	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0	0
2865:	0	0	1	0	1	0	0	0	0
2873:	1	0	0	1	0	0	0	1	0
2881:	0	0	0	1	0	1	0	0	0
2889:	0	0	0	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0	0
2905:	0	0	0	1	0	0	0	1	0
2913:	0	0	0	0	0	0	0	0	0
2921:	0	0	0	0	0	3	0	1	0
2929:	0	0	0	0	0	0	0	1	0
2937:	0	0	0	0	0	0	0	0	0
2945:	0	1	0	0	0	0	0	0	0
2953:	0	0	0	0	1	1	0	0	0

2961: 0 0 0 1 0 0 0 0

Sample Title: CP-5030 02-05

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	1	1	0	0	0
2977:	1	0	0	0	0	0	0	0
2985:	0	0	0	0	0	0	1	0
2993:	0	0	0	1	0	0	0	0
3001:	0	0	0	0	0	0	1	0
3009:	1	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	0	0	0	0	2	0
3041:	1	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	1
3057:	0	0	0	0	0	0	0	0
3065:	0	1	0	0	0	0	0	0
3073:	0	1	0	0	0	0	1	0
3081:	0	2	0	0	0	0	0	0
3089:	0	0	0	0	0	0	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	0	0	1	0	0	0
3113:	0	1	0	0	1	0	0	0
3121:	0	0	0	0	0	0	0	0
3129:	0	0	1	0	1	0	0	0
3137:	0	0	1	0	0	0	1	0
3145:	0	0	0	2	0	0	0	0
3153:	0	1	0	0	0	0	0	0
3161:	0	0	0	1	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	1	0	0	1	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	1	0	0
3201:	0	0	1	0	0	0	0	0
3209:	0	0	0	0	1	0	0	0
3217:	0	0	0	1	0	0	0	0
3225:	0	0	1	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	1
3249:	0	0	0	0	0	0	0	0
3257:	0	1	0	0	0	0	0	0
3265:	0	0	0	0	0	1	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	1	0	1	0	0
3289:	0	0	0	0	0	0	0	1
3297:	0	0	0	0	0	0	0	0
3305:	0	0	1	0	0	0	0	0
3313:	0	2	0	0	0	1	0	0
3321:	0	0	1	0	0	0	1	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	1	0
3377:	1	0	0	0	0	0	0	0
3385:	0	0	0	0	1	0	0	0

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5030 02-05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	1	0	0	0	0	0
3409:	0	1	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	1	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	1
3481:	0	0	1	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	1	0	0	0	0	0	0	0
3505:	0	1	0	0	0	0	0	0
3513:	1	1	1	0	0	0	0	0
3521:	0	0	0	0	1	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	1	0	0	0	0	0
3545:	0	0	0	0	0	1	0	0
3553:	0	0	0	0	0	0	1	0
3561:	0	0	1	0	0	0	1	0
3569:	1	0	0	0	0	0	0	0
3577:	1	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	1
3593:	0	0	0	0	0	0	0	1
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	1	0	0	0	1
3649:	0	0	0	0	1	0	0	0
3657:	0	0	1	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	1	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	1	0	0	0	0	0	1	1
3697:	0	1	0	0	0	1	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	1	0	0	0	0	0
3721:	0	0	1	1	0	0	0	1
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	1	0
3777:	0	1	0	0	0	1	0	0
3785:	0	1	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	1	0	0	0	0	0	0

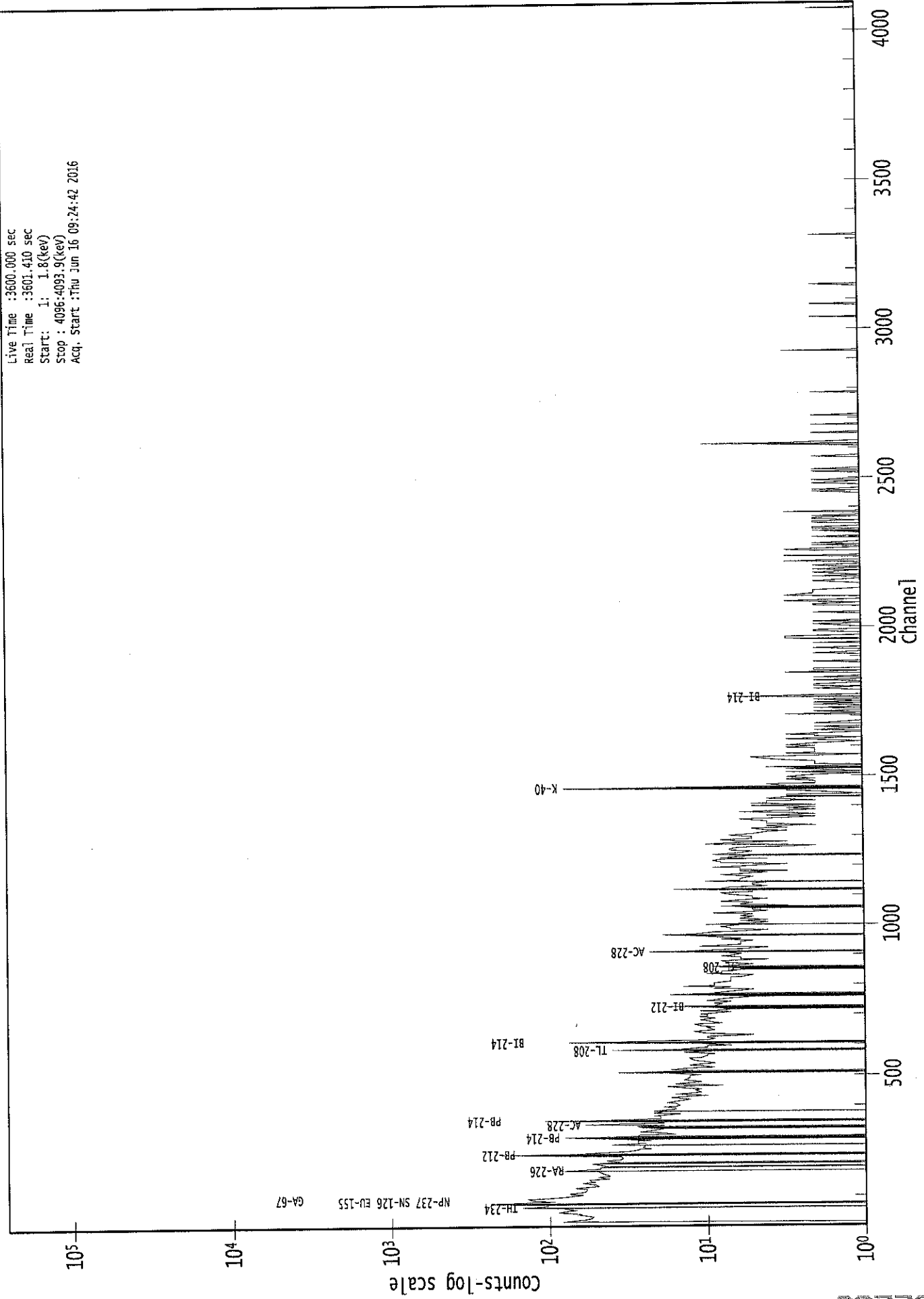
3825: 0 0 1 0 1 0 0 0

Sample Title: CP-5030 02-05

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	1	0
3849:	1	0	1	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	1	1	0	0	0
3873:	0	0	0	1	0	0	1	0
3881:	0	0	0	1	0	0	0	1
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	1	1	0	0
3905:	0	0	0	1	0	0	0	1
3913:	0	0	0	1	0	0	0	0
3921:	1	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	1	0	0	0	0	1
3961:	0	1	0	1	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	1	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	1	0	0	0	0
4001:	0	1	0	1	1	0	0	0
4009:	0	0	0	0	0	1	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	1	0	0	0	0	1
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	1	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	1	0	0	0	0	0	0
4073:	2	0	0	1	0	0	0	0
4081:	0	0	0	0	0	1	0	0
4089:	0	0	0	0	0	0	0	0

0000038983.CNF

Live Time :3600.000 sec
Real Time :3601.410 sec
Start : 1: 1.8(kev)
Stop : 4096:4093.9(kev)
Acq. Start :Thu Jun 16 09:24:42 2016



ROI Type: 1

Analysis Report for 1606041-14
CP-5030 05-10


6116

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-14
Sample Description : CP-5030 05-10
Sample Type : SOIL

Sample Size : 2.743E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 4:37:13PM
Acquisition Started : 6/16/2016 9:30:13AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.0 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 19 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 38984

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606041-14
CP-5030 05-10

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 10:30:21AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	47.00	47.35	0.0000	0.00
2	76.77	77.12	0.0000	0.00
3	87.66	88.00	0.0000	0.00
4	93.19	93.52	0.0000	0.00
5	100.00	100.33	0.0000	0.00
6	106.86	107.19	0.0000	0.00
7	114.55	114.88	0.0000	0.00
8	128.96	129.28	0.0000	0.00
9	186.29	186.60	0.0000	0.00
10	209.87	210.17	0.0000	0.00
11	239.65	239.93	0.0000	0.00
12	270.27	270.55	0.0000	0.00
13	277.24	277.52	0.0000	0.00
14	295.73	296.00	0.0000	0.00
15	300.80	301.07	0.0000	0.00
16	315.12	315.38	0.0000	0.00
17	338.95	339.21	0.0000	0.00
18	352.50	352.75	0.0000	0.00
19	463.61	463.82	0.0000	0.00
20	511.53	511.73	0.0000	0.00
21	529.05	529.24	0.0000	0.00
22	565.71	565.89	0.0000	0.00
23	583.71	583.88	0.0000	0.00
24	609.92	610.08	0.0000	0.00
25	676.59	676.72	0.0000	0.00
26	728.86	728.98	0.0000	0.00
27	754.41	754.52	0.0000	0.00
28	768.59	768.70	0.0000	0.00
29	795.86	795.96	0.0000	0.00
30	860.91	860.98	0.0000	0.00
31	911.85	911.91	0.0000	0.00
32	965.40	965.44	0.0000	0.00
33	969.77	969.80	0.0000	0.00
34	1022.31	1022.33	0.0000	0.00
35	1120.88	1120.86	0.0000	0.00
36	1142.81	1142.78	0.0000	0.00
37	1208.59	1208.54	0.0000	0.00
38	1225.98	1225.92	0.0000	0.00
39	1271.40	1271.33	0.0000	0.00
40	1375.11	1375.00	0.0000	0.00
41	1378.11	1378.00	0.0000	0.00
42	1461.65	1461.50	0.0000	0.00

Analysis Report for 1606041-14
CP-5030 05-10

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1559.38	1559.20	0.0000	0.00
44	1562.85	1562.67	0.0000	0.00
45	1588.81	1588.62	0.0000	0.00
46	1593.94	1593.74	0.0000	0.00
47	1600.74	1600.54	0.0000	0.00
48	1620.68	1620.48	0.0000	0.00
49	1630.91	1630.70	0.0000	0.00
50	1730.31	1730.06	0.0000	0.00
51	1765.57	1765.32	0.0000	0.00
52	1829.38	1829.10	0.0000	0.00
53	1849.39	1849.10	0.0000	0.00
54	1921.71	1921.40	0.0000	0.00
55	2206.21	2205.79	0.0000	0.00
56	2282.17	2281.71	0.0000	0.00
57	2316.59	2316.13	0.0000	0.00
58	2345.09	2344.61	0.0000	0.00
59	2615.08	2614.49	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606041-14
CP-5030 05-10

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 10:30:21AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	47.00	44 -	50	47.35	1.37E+02	69.80	7.90E+02	1.94
2	76.77	72 -	81	77.12	9.68E+02	132.47	1.95E+03	2.91
3	87.66	86 -	89	88.00	5.90E+01	62.45	9.16E+02	0.90
4	93.19	90 -	97	93.52	3.92E+02	98.85	1.31E+03	2.12
5	100.00	98 -	103	100.33	5.76E+01	57.66	6.07E+02	1.87
6	106.86	104 -	111	107.19	1.08E+02	71.27	7.79E+02	2.88
7	114.55	112 -	118	114.88	6.09E+01	61.76	6.40E+02	1.96
8	128.96	126 -	133	129.28	6.85E+01	71.11	7.99E+02	2.24
9	186.29	182 -	191	186.60	2.39E+02	79.30	7.66E+02	1.68
10	209.87	206 -	214	210.17	9.55E+01	66.05	6.03E+02	1.73
11	239.65	234 -	245	239.93	9.63E+02	98.04	7.20E+02	2.01
12	270.27	266 -	274	270.55	6.96E+01	58.19	4.81E+02	1.96
13	277.24	275 -	280	277.52	4.30E+01	41.48	3.02E+02	1.99
M 14	295.73	287 -	304	296.00	2.29E+02	42.57	2.06E+02	1.51
m 15	300.80	287 -	304	301.07	4.00E+01	32.13	2.08E+02	1.74
16	315.12	312 -	318	315.38	3.70E+01	37.96	2.36E+02	2.48
17	338.95	334 -	343	339.21	1.72E+02	54.04	3.16E+02	1.62
18	352.50	349 -	357	352.75	3.71E+02	55.66	2.51E+02	1.76
19	463.61	460 -	466	463.82	5.61E+01	30.28	1.26E+02	1.76
20	511.53	507 -	518	511.73	1.49E+02	53.48	2.86E+02	2.45
21	529.05	521 -	538	529.24	5.16E+01	58.00	2.83E+02	6.54
22	565.71	564 -	568	565.89	2.23E+01	21.07	7.74E+01	2.02
23	583.71	579 -	588	583.88	2.62E+02	46.91	1.65E+02	1.64
24	609.92	605 -	614	610.08	2.86E+02	46.84	1.50E+02	1.98
25	676.59	671 -	681	676.72	3.43E+01	31.55	1.11E+02	6.63
26	728.86	725 -	734	728.98	8.12E+01	32.33	9.76E+01	1.89
27	754.41	750 -	758	754.52	2.70E+01	26.78	9.19E+01	5.10
28	768.59	764 -	771	768.70	3.60E+01	29.80	1.24E+02	1.95
29	795.86	793 -	800	795.96	3.71E+01	24.74	7.97E+01	1.81
30	860.91	858 -	865	860.98	3.08E+01	25.61	9.04E+01	1.55
31	911.85	905 -	918	911.91	1.75E+02	43.53	1.33E+02	2.22
M 32	965.40	960 -	974	965.44	4.84E+01	25.53	4.80E+01	2.51
m 33	969.77	960 -	974	969.80	7.72E+01	25.20	4.20E+01	2.19
34	1022.31	1019 -	1025	1022.33	1.99E+01	16.45	3.43E+01	4.48
35	1120.88	1116 -	1124	1120.86	6.07E+01	33.46	1.35E+02	1.62
36	1142.81	1137 -	1146	1142.78	2.38E+01	24.88	7.44E+01	2.73
37	1208.59	1205 -	1211	1208.54	1.79E+01	20.90	6.61E+01	2.72
38	1225.98	1221 -	1231	1225.92	3.36E+01	25.64	6.48E+01	4.32
39	1271.40	1265 -	1277	1271.33	2.97E+01	28.94	8.46E+01	5.65
M 40	1375.11	1373 -	1381	1375.00	1.14E+01	7.07	4.86E+00	3.17

Analysis Report for 1606041-14

CP-5030 05-10

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
m	41	1378.11	1373 - 1381		1378.00	1.72E+01	17.20	3.59E+01	3.17
	42	1461.65	1455 - 1466		1461.50	6.47E+02	53.63	3.69E+01	2.29
M	43	1559.38	1558 - 1567		1559.20	6.86E+00	4.24	2.00E+00	3.41
m	44	1562.85	1558 - 1567		1562.67	1.49E+01	10.79	9.00E+00	2.97
M	45	1588.81	1581 - 1598		1588.62	1.41E+01	12.03	1.63E+01	2.99
m	46	1593.94	1581 - 1598		1593.74	1.32E+01	12.36	6.08E+00	2.99
	47	1600.74	1599 - 1603		1600.54	4.75E+00	6.67	6.50E+00	1.82
	48	1620.68	1616 - 1623		1620.48	8.86E+00	10.20	1.03E+01	1.56
	49	1630.91	1628 - 1633		1630.70	1.00E+01	6.32	0.00E+00	3.59
	50	1730.31	1727 - 1734		1730.06	7.79E+00	10.20	1.24E+01	1.37
	51	1765.57	1761 - 1771		1765.32	6.37E+01	17.27	6.55E+00	2.56
	52	1829.38	1825 - 1833		1829.10	1.00E+01	8.26	3.92E+00	1.09
	53	1849.39	1846 - 1852		1849.10	1.15E+01	8.02	3.00E+00	1.49
	54	1921.71	1917 - 1923		1921.40	5.00E+00	4.47	0.00E+00	1.24
	55	2206.21	2201 - 2213		2205.79	2.14E+01	13.73	9.15E+00	4.19
	56	2282.17	2279 - 2284		2281.71	7.00E+00	5.29	0.00E+00	3.31
	57	2316.59	2312 - 2319		2316.13	8.00E+00	5.66	0.00E+00	2.92
	58	2345.09	2339 - 2349		2344.61	1.14E+01	9.29	5.29E+00	1.90
	59	2615.08	2611 - 2619		2614.49	8.30E+01	18.22	0.00E+00	2.37

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.00sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 10:30:21AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	47.00	44 -	50	1.37E+02	69.80	7.90E+02	5.41E+01
2	76.77	72 -	81	9.68E+02	132.47	1.95E+03	9.61E+01
3	87.66	86 -	89	5.90E+01	62.45	9.16E+02	4.98E+01
4	93.19	90 -	97	3.92E+02	98.85	1.31E+03	7.45E+01
5	100.00	98 -	103	5.76E+01	57.66	6.07E+02	4.57E+01
6	106.86	104 -	111	1.08E+02	71.27	7.79E+02	5.60E+01
7	114.55	112 -	118	6.09E+01	61.76	6.40E+02	4.91E+01
8	128.96	126 -	133	6.85E+01	71.11	7.99E+02	5.68E+01
9	186.29	182 -	191	2.39E+02	79.30	7.66E+02	2.41E+01

Analysis Report for 1606041-14

CP-5030 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
10	209.87	206 -	214	9.55E+01	66.05	6.03E+02	5.19E+01
11	239.65	234 -	245	9.63E+02	98.04	7.20E+02	6.24E+01
12	270.27	266 -	274	6.96E+01	58.19	4.81E+02	4.58E+01
13	277.24	275 -	280	4.30E+01	41.48	3.02E+02	3.24E+01
M 14	295.73	287 -	304	2.29E+02	42.57	2.06E+02	2.36E+01
m 15	300.80	287 -	304	4.00E+01	32.13	2.08E+02	2.37E+01
16	315.12	312 -	318	3.70E+01	37.96	2.36E+02	2.96E+01
17	338.95	334 -	343	1.72E+02	54.04	3.16E+02	3.88E+01
18	352.50	349 -	357	3.71E+02	55.66	2.51E+02	3.30E+01
19	463.61	460 -	466	5.61E+01	30.28	1.26E+02	2.16E+01
20	511.53	507 -	518	1.49E+02	53.48	2.86E+02	3.91E+01
21	529.05	521 -	538	5.16E+01	58.00	2.83E+02	4.62E+01
22	565.71	564 -	568	2.23E+01	21.07	7.74E+01	1.55E+01
23	583.71	579 -	588	2.62E+02	46.91	1.65E+02	2.79E+01
24	609.92	605 -	614	2.86E+02	46.84	1.50E+02	2.66E+01
25	676.59	671 -	681	3.43E+01	31.55	1.11E+02	2.41E+01
26	728.86	725 -	734	8.12E+01	32.33	9.76E+01	2.21E+01
27	754.41	750 -	758	2.70E+01	26.78	9.19E+01	2.03E+01
28	768.59	764 -	771	3.60E+01	29.80	1.24E+02	2.24E+01
29	795.86	793 -	800	3.71E+01	24.74	7.97E+01	1.77E+01
30	860.91	858 -	865	3.08E+01	25.61	9.04E+01	1.90E+01
31	911.85	905 -	918	1.75E+02	43.53	1.33E+02	2.84E+01
M 32	965.40	960 -	974	4.84E+01	25.53	4.80E+01	1.14E+01
m 33	969.77	960 -	974	7.72E+01	25.20	4.20E+01	1.07E+01
34	1022.31	1019 -	1025	1.99E+01	16.45	3.43E+01	1.14E+01
35	1120.88	1116 -	1124	6.07E+01	33.46	1.35E+02	2.43E+01
36	1142.81	1137 -	1146	2.38E+01	24.88	7.44E+01	1.88E+01
37	1208.59	1205 -	1211	1.79E+01	20.90	6.61E+01	1.57E+01
38	1225.98	1221 -	1231	3.36E+01	25.64	6.48E+01	1.88E+01
39	1271.40	1265 -	1277	2.97E+01	28.94	8.46E+01	2.20E+01
M 40	1375.11	1373 -	1381	1.14E+01	7.07	4.86E+00	3.62E+00
m 41	1378.11	1373 -	1381	1.72E+01	17.20	3.59E+01	9.84E+00
42	1461.65	1455 -	1466	6.47E+02	53.63	3.69E+01	1.40E+01
M 43	1559.38	1558 -	1567	6.86E+00	4.24	2.00E+00	2.33E+00
m 44	1562.85	1558 -	1567	1.49E+01	10.79	9.00E+00	4.93E+00
M 45	1588.81	1581 -	1598	1.41E+01	12.03	1.63E+01	6.65E+00
m 46	1593.94	1581 -	1598	1.32E+01	12.36	6.08E+00	4.05E+00
47	1600.74	1599 -	1603	4.75E+00	6.67	6.50E+00	4.15E+00
48	1620.68	1616 -	1623	8.86E+00	10.20	1.03E+01	6.81E+00
49	1630.91	1628 -	1633	1.00E+01	6.32	0.00E+00	0.00E+00
50	1730.31	1727 -	1734	7.79E+00	10.20	1.24E+01	7.02E+00
51	1765.57	1761 -	1771	6.37E+01	17.27	6.55E+00	5.41E+00
52	1829.38	1825 -	1833	1.00E+01	8.26	3.92E+00	4.36E+00
53	1849.39	1846 -	1852	1.15E+01	8.02	3.00E+00	3.51E+00
54	1921.71	1917 -	1923	5.00E+00	4.47	0.00E+00	0.00E+00
55	2206.21	2201 -	2213	2.14E+01	13.73	9.15E+00	8.33E+00
56	2282.17	2279 -	2284	7.00E+00	5.29	0.00E+00	0.00E+00
57	2316.59	2312 -	2319	8.00E+00	5.66	0.00E+00	0.00E+00
58	2345.09	2339 -	2349	1.14E+01	9.29	5.29E+00	5.25E+00
59	2615.08	2611 -	2619	8.30E+01	18.22	0.00E+00	0.00E+00

Analysis Report for 1606041-14
CP-5030 05-10

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 10:30:21AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	47.00	44 -	50	47.35	1.37E+02	69.80	7.90E+02	PB-210
2	76.77	72 -	81	77.12	9.68E+02	132.47	1.95E+03	.....
3	87.66	86 -	89	88.00	5.90E+01	62.45	9.16E+02	SN-126 CD-109 LU-176
4	93.19	90 -	97	93.52	3.92E+02	98.85	1.31E+03	GA-67
5	100.00	98 -	103	100.33	5.76E+01	57.66	6.07E+02	LU-173
6	106.86	104 -	111	107.19	1.08E+02	71.27	7.79E+02	NP-239
7	114.55	112 -	118	114.88	6.09E+01	61.76	6.40E+02	.....
8	128.96	126 -	133	129.28	6.85E+01	71.11	7.99E+02	.....
9	186.29	182 -	191	186.60	2.39E+02	79.30	7.66E+02	RA-226
10	209.87	206 -	214	210.17	9.55E+01	66.05	6.03E+02	CM-243 GA-67
11	239.65	234 -	245	239.93	9.63E+02	98.04	7.20E+02	.....
12	270.27	266 -	274	270.55	6.96E+01	58.19	4.81E+02	.....
13	277.24	275 -	280	277.52	4.30E+01	41.48	3.02E+02	CM-243 NP-239
M 14	295.73	287 -	304	296.00	2.29E+02	42.57	2.06E+02	PB-214
m 15	300.80	287 -	304	301.07	4.00E+01	32.13	2.08E+02	GA-67 PB-212 BI-210M
16	315.12	312 -	318	315.38	3.70E+01	37.96	2.36E+02	.....
17	338.95	334 -	343	339.21	1.72E+02	54.04	3.16E+02	AC-228
18	352.50	349 -	357	352.75	3.71E+02	55.66	2.51E+02	PB-214
19	463.61	460 -	466	463.82	5.61E+01	30.28	1.26E+02	SB-125
20	511.53	507 -	518	511.73	1.49E+02	53.48	2.86E+02	.....
21	529.05	521 -	538	529.24	5.16E+01	58.00	2.83E+02	RB-83 I-133
22	565.71	564 -	568	565.89	2.23E+01	21.07	7.74E+01	.....
23	583.71	579 -	588	583.88	2.62E+02	46.91	1.65E+02	TL-208

Analysis Report for 1606041-14

CP-5030 05-10

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	24	609.92	605 -	614	610.08	2.86E+02	46.84	1.50E+02	BI-214
	25	676.59	671 -	681	676.72	3.43E+01	31.55	1.11E+02	.....
	26	728.86	725 -	734	728.98	8.12E+01	32.33	9.76E+01	.....
	27	754.41	750 -	758	754.52	2.70E+01	26.78	9.19E+01	.....
	28	768.59	764 -	771	768.70	3.60E+01	29.80	1.24E+02	.....
	29	795.86	793 -	800	795.96	3.71E+01	24.74	7.97E+01	CS-134
	30	860.91	858 -	865	860.98	3.08E+01	25.61	9.04E+01	TL-208
	31	911.85	905 -	918	911.91	1.75E+02	43.53	1.33E+02	LU-172 AC-228
M	32	965.40	960 -	974	965.44	4.84E+01	25.53	4.80E+01	.....
m	33	969.77	960 -	974	969.80	7.72E+01	25.20	4.20E+01	AC-228
	34	1022.31	1019 -	1025	1022.33	1.99E+01	16.45	3.43E+01	.....
	35	1120.88	1116 -	1124	1120.86	6.07E+01	33.46	1.35E+02	SC-46 TA-182 BI-214
	36	1142.81	1137 -	1146	1142.78	2.38E+01	24.88	7.44E+01	.....
	37	1208.59	1205 -	1211	1208.54	1.79E+01	20.90	6.61E+01	.....
	38	1225.98	1221 -	1231	1225.92	3.36E+01	25.64	6.48E+01	.....
	39	1271.40	1265 -	1277	1271.33	2.97E+01	28.94	8.46E+01	.....
M	40	1375.11	1373 -	1381	1375.00	1.14E+01	7.07	4.86E+00	.....
m	41	1378.11	1373 -	1381	1378.00	1.72E+01	17.20	3.59E+01	.....
	42	1461.65	1455 -	1466	1461.50	6.47E+02	53.63	3.69E+01	K-40
M	43	1559.38	1558 -	1567	1559.20	6.86E+00	4.24	2.00E+00	.....
m	44	1562.85	1558 -	1567	1562.67	1.49E+01	10.79	9.00E+00	.....
M	45	1588.81	1581 -	1598	1588.62	1.41E+01	12.03	1.63E+01	.....
m	46	1593.94	1581 -	1598	1593.74	1.32E+01	12.36	6.08E+00	.....
	47	1600.74	1599 -	1603	1600.54	4.75E+00	6.67	6.50E+00	.....
	48	1620.68	1616 -	1623	1620.48	8.86E+00	10.20	1.03E+01	BI-212
	49	1630.91	1628 -	1633	1630.70	1.00E+01	6.32	0.00E+00	.....
	50	1730.31	1727 -	1734	1730.06	7.79E+00	10.20	1.24E+01	.....
	51	1765.57	1761 -	1771	1765.32	6.37E+01	17.27	6.55E+00	.....
	52	1829.38	1825 -	1833	1829.10	1.00E+01	8.26	3.92E+00	.....
	53	1849.39	1846 -	1852	1849.10	1.15E+01	8.02	3.00E+00	.....
	54	1921.71	1917 -	1923	1921.40	5.00E+00	4.47	0.00E+00	.....
	55	2206.21	2201 -	2213	2205.79	2.14E+01	13.73	9.15E+00	.....
	56	2282.17	2279 -	2284	2281.71	7.00E+00	5.29	0.00E+00	.....
	57	2316.59	2312 -	2319	2316.13	8.00E+00	5.66	0.00E+00	.....
	58	2345.09	2339 -	2349	2344.61	1.14E+01	9.29	5.29E+00	.....
	59	2615.08	2611 -	2619	2614.49	8.30E+01	18.22	0.00E+00	TL-208

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1606041-14
CP-5030 05-10

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 10:30:21AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
1	47.00	1.37E+02	69.80	1.71E-02	1.78E-03	
2	76.77	9.68E+02	132.47	2.77E-02	2.36E-03	
3	87.66	5.90E+01	62.45	2.85E-02	2.73E-03	
4	93.19	3.92E+02	98.85	2.86E-02	2.64E-03	
5	100.00	5.76E+01	57.66	2.85E-02	2.50E-03	
6	106.86	1.08E+02	71.27	2.82E-02	2.37E-03	
7	114.55	6.09E+01	61.76	2.77E-02	2.22E-03	
8	128.96	6.85E+01	71.11	2.67E-02	2.09E-03	
9	186.29	2.39E+02	79.30	2.24E-02	2.02E-03	
10	209.87	9.55E+01	66.05	2.08E-02	1.85E-03	
11	239.65	9.63E+02	98.04	1.92E-02	1.63E-03	
12	270.27	6.96E+01	58.19	1.77E-02	1.40E-03	
13	277.24	4.30E+01	41.48	1.74E-02	1.35E-03	
M	14	295.73	2.29E+02	42.57	1.67E-02	1.31E-03
m	15	300.80	4.00E+01	32.13	1.65E-02	1.30E-03
16	315.12	3.70E+01	37.96	1.60E-02	1.27E-03	
17	338.95	1.72E+02	54.04	1.52E-02	1.22E-03	
18	352.50	3.71E+02	55.66	1.47E-02	1.19E-03	
19	463.61	5.61E+01	30.28	1.21E-02	1.04E-03	
20	511.53	1.49E+02	53.48	1.12E-02	9.90E-04	
21	529.05	5.16E+01	58.00	1.10E-02	9.72E-04	
22	565.71	2.23E+01	21.07	1.04E-02	9.34E-04	
23	583.71	2.62E+02	46.91	1.02E-02	9.15E-04	
24	609.92	2.86E+02	46.84	9.82E-03	8.88E-04	
25	676.59	3.43E+01	31.55	9.06E-03	8.21E-04	
26	728.86	8.12E+01	32.33	8.54E-03	7.74E-04	
27	754.41	2.70E+01	26.78	8.31E-03	7.51E-04	
28	768.59	3.60E+01	29.80	8.19E-03	7.38E-04	
29	795.86	3.71E+01	24.74	7.96E-03	7.14E-04	
30	860.91	3.08E+01	25.61	7.48E-03	6.56E-04	
31	911.85	1.75E+02	43.53	7.14E-03	6.15E-04	
M	32	965.40	4.84E+01	25.53	6.83E-03	5.87E-04
m	33	969.77	7.72E+01	25.20	6.80E-03	5.85E-04
34	1022.31	1.99E+01	16.45	6.52E-03	5.58E-04	
35	1120.88	6.07E+01	33.46	6.06E-03	5.06E-04	
36	1142.81	2.38E+01	24.88	5.97E-03	4.95E-04	
37	1208.59	1.79E+01	20.90	5.72E-03	4.73E-04	
38	1225.98	3.36E+01	25.64	5.66E-03	4.70E-04	
39	1271.40	2.97E+01	28.94	5.50E-03	4.62E-04	
M	40	1375.11	1.14E+01	7.07	5.19E-03	4.41E-04
m	41	1378.11	1.72E+01	17.20	5.18E-03	4.40E-04
42	1461.65	6.47E+02	53.63	4.97E-03	4.19E-04	
M	43	1559.38	6.86E+00	4.24	4.75E-03	3.95E-04
m	44	1562.85	1.49E+01	10.79	4.75E-03	3.94E-04
M	45	1588.81	1.41E+01	12.03	4.69E-03	3.87E-04

Analysis Report for 1606041-14
CP-5030 05-10

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	46	1593.94	1.32E+01	12.36	4.68E-03	3.86E-04
	47	1600.74	4.75E+00	6.67	4.67E-03	3.84E-04
	48	1620.68	8.86E+00	10.20	4.63E-03	3.79E-04
	49	1630.91	1.00E+01	6.32	4.61E-03	3.77E-04
	50	1730.31	7.79E+00	10.20	4.45E-03	3.52E-04
	51	1765.57	6.37E+01	17.27	4.39E-03	3.43E-04
	52	1829.38	1.00E+01	8.26	4.31E-03	3.27E-04
	53	1849.39	1.15E+01	8.02	4.28E-03	3.26E-04
	54	1921.71	5.00E+00	4.47	4.19E-03	3.26E-04
	55	2206.21	2.14E+01	13.73	3.95E-03	3.26E-04
	56	2282.17	7.00E+00	5.29	3.90E-03	3.26E-04
	57	2316.59	8.00E+00	5.66	3.89E-03	3.26E-04
	58	2345.09	1.14E+01	9.29	3.87E-03	3.26E-04
	59	2615.08	8.30E+01	18.22	3.79E-03	3.26E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 10:30:21AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038676.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	47.00	1.37E+02	69.80	4.33E+01	8.35E+00	9.37E+01	7.03E+01
	2	76.77	9.68E+02	132.47			9.68E+02	1.32E+02
	3	87.66	5.90E+01	62.45			5.90E+01	6.24E+01
	4	93.19	3.92E+02	98.85	1.29E+02	7.14E+00	2.63E+02	9.91E+01
	5	100.00	5.76E+01	57.66	7.10E+00	2.43E+00	5.05E+01	5.77E+01
	6	106.86	1.08E+02	71.27			1.08E+02	7.13E+01
	7	114.55	6.09E+01	61.76			6.09E+01	6.18E+01
	8	128.96	6.85E+01	71.11			6.85E+01	7.11E+01
	9	186.29	2.39E+02	79.30	5.81E+01	8.50E+00	1.81E+02	7.98E+01
	10	209.87	9.55E+01	66.05			9.55E+01	6.60E+01
	11	239.65	9.63E+02	98.04	1.81E+01	5.76E+00	9.45E+02	9.82E+01
	12	270.27	6.96E+01	58.19			6.96E+01	5.82E+01
	13	277.24	4.30E+01	41.48			4.30E+01	4.15E+01
M	14	295.73	2.29E+02	42.57	1.02E+00	5.38E+00	2.28E+02	4.29E+01
m	15	300.80	4.00E+01	32.13			4.00E+01	3.21E+01
	16	315.12	3.70E+01	37.96			3.70E+01	3.80E+01

Analysis Report for 1606041-14

CP-5030 05-10

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
17	338.95	1.72E+02	54.04	3.86E+00	4.98E+00	1.68E+02	5.43E+01
18	352.50	3.71E+02	55.66	7.25E+00	4.86E+00	3.63E+02	5.59E+01
19	463.61	5.61E+01	30.28			5.61E+01	3.03E+01
20	511.53	1.49E+02	53.48	7.58E+01	5.38E+00	7.33E+01	5.37E+01
21	529.05	5.16E+01	58.00			5.16E+01	5.80E+01
22	565.71	2.23E+01	21.07	0.00E+00	0.00E+00	2.23E+01	2.11E+01
23	583.71	2.62E+02	46.91	6.11E+00	3.78E+00	2.56E+02	4.71E+01
24	609.92	2.86E+02	46.84	6.74E+00	3.64E+00	2.79E+02	4.70E+01
25	676.59	3.43E+01	31.55			3.43E+01	3.15E+01
26	728.86	8.12E+01	32.33			8.12E+01	3.23E+01
27	754.41	2.70E+01	26.78			2.70E+01	2.68E+01
28	768.59	3.60E+01	29.80			3.60E+01	2.98E+01
29	795.86	3.71E+01	24.74			3.71E+01	2.47E+01
30	860.91	3.08E+01	25.61			3.08E+01	2.56E+01
31	911.85	1.75E+02	43.53	4.21E+00	2.98E+00	1.70E+02	4.36E+01
M	32	965.40	4.84E+01	25.53		4.84E+01	2.55E+01
m	33	969.77	7.72E+01	25.20		7.72E+01	2.52E+01
	34	1022.31	1.99E+01	16.45		1.99E+01	1.64E+01
	35	1120.88	6.07E+01	33.46		6.07E+01	3.35E+01
	36	1142.81	2.38E+01	24.88		2.38E+01	2.49E+01
	37	1208.59	1.79E+01	20.90		1.79E+01	2.09E+01
	38	1225.98	3.36E+01	25.64		3.36E+01	2.56E+01
	39	1271.40	2.97E+01	28.94		2.97E+01	2.89E+01
M	40	1375.11	1.14E+01	7.07		1.14E+01	7.07E+00
m	41	1378.11	1.72E+01	17.20		1.72E+01	1.72E+01
	42	1461.65	6.47E+02	53.63	6.83E+00	2.10E+00	6.40E+02
M	43	1559.38	6.86E+00	4.24		6.86E+00	4.24E+00
m	44	1562.85	1.49E+01	10.79		1.49E+01	1.08E+01
M	45	1588.81	1.41E+01	12.03		1.41E+01	1.20E+01
m	46	1593.94	1.32E+01	12.36		1.32E+01	1.24E+01
	47	1600.74	4.75E+00	6.67		4.75E+00	6.67E+00
	48	1620.68	8.86E+00	10.20		8.86E+00	1.02E+01
	49	1630.91	1.00E+01	6.32		1.00E+01	6.32E+00
	50	1730.31	7.79E+00	10.20		7.79E+00	1.02E+01
	51	1765.57	6.37E+01	17.27	1.66E+00	1.65E+00	6.21E+01
	52	1829.38	1.00E+01	8.26		1.00E+01	8.26E+00
	53	1849.39	1.15E+01	8.02		1.15E+01	8.02E+00
	54	1921.71	5.00E+00	4.47		5.00E+00	4.47E+00
	55	2206.21	2.14E+01	13.73		2.14E+01	1.37E+01
	56	2282.17	7.00E+00	5.29		7.00E+00	5.29E+00
	57	2316.59	8.00E+00	5.66		8.00E+00	5.66E+00
	58	2345.09	1.14E+01	9.29		1.14E+01	9.29E+00
	59	2615.08	8.30E+01	18.22	4.95E+00	1.35E+00	7.80E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1606041-14
CP-5030 05-10

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 10:30:21AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038676.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
1	47.00	1.37E+02	69.80	4.33E+01	8.35E+00	9.37E+01	7.03E+01	
2	76.77	9.68E+02	132.47			9.68E+02	1.32E+02	
3	87.66	5.90E+01	62.45			5.90E+01	6.24E+01	
4	93.19	3.92E+02	98.85	1.29E+02	7.14E+00	2.63E+02	9.91E+01	
5	100.00	5.76E+01	57.66	7.10E+00	2.43E+00	5.05E+01	5.77E+01	
6	106.86	1.08E+02	71.27			1.08E+02	7.13E+01	
7	114.55	6.09E+01	61.76			6.09E+01	6.18E+01	
8	128.96	6.85E+01	71.11			6.85E+01	7.11E+01	
9	186.29	2.39E+02	79.30	5.81E+01	8.50E+00	1.81E+02	7.98E+01	
10	209.87	9.55E+01	66.05			9.55E+01	6.60E+01	
11	239.65	9.63E+02	98.04	1.81E+01	5.76E+00	9.45E+02	9.82E+01	
12	270.27	6.96E+01	58.19			6.96E+01	5.82E+01	
13	277.24	4.30E+01	41.48			4.30E+01	4.15E+01	
M	14	295.73	2.29E+02	42.57	1.02E+00	5.38E+00	2.28E+02	4.29E+01
m	15	300.80	4.00E+01	32.13			4.00E+01	3.21E+01
	16	315.12	3.70E+01	37.96			3.70E+01	3.80E+01
	17	338.95	1.72E+02	54.04	3.86E+00	4.98E+00	1.68E+02	5.43E+01
	18	352.50	3.71E+02	55.66	7.25E+00	4.86E+00	3.63E+02	5.59E+01
	19	463.61	5.61E+01	30.28			5.61E+01	3.03E+01
	20	511.53	1.49E+02	53.48	7.58E+01	5.38E+00	7.33E+01	5.37E+01
	21	529.05	5.16E+01	58.00			5.16E+01	5.80E+01
	22	565.71	2.23E+01	21.07	0.00E+00	0.00E+00	2.23E+01	2.11E+01
	23	583.71	2.62E+02	46.91	6.11E+00	3.78E+00	2.56E+02	4.71E+01
	24	609.92	2.86E+02	46.84	6.74E+00	3.64E+00	2.79E+02	4.70E+01
	25	676.59	3.43E+01	31.55			3.43E+01	3.15E+01
	26	728.86	8.12E+01	32.33			8.12E+01	3.23E+01
	27	754.41	2.70E+01	26.78			2.70E+01	2.68E+01
	28	768.59	3.60E+01	29.80			3.60E+01	2.98E+01
	29	795.86	3.71E+01	24.74			3.71E+01	2.47E+01
	30	860.91	3.08E+01	25.61			3.08E+01	2.56E+01
	31	911.85	1.75E+02	43.53	4.21E+00	2.98E+00	1.70E+02	4.36E+01
M	32	965.40	4.84E+01	25.53			4.84E+01	2.55E+01
m	33	969.77	7.72E+01	25.20			7.72E+01	2.52E+01
	34	1022.31	1.99E+01	16.45			1.99E+01	1.64E+01
	35	1120.88	6.07E+01	33.46			6.07E+01	3.35E+01
	36	1142.81	2.38E+01	24.88			2.38E+01	2.49E+01
	37	1208.59	1.79E+01	20.90			1.79E+01	2.09E+01
	38	1225.98	3.36E+01	25.64			3.36E+01	2.56E+01
	39	1271.40	2.97E+01	28.94			2.97E+01	2.89E+01
M	40	1375.11	1.14E+01	7.07			1.14E+01	7.07E+00
m	41	1378.11	1.72E+01	17.20			1.72E+01	1.72E+01

Analysis Report for 1606041-14

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	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	42	1461.65	6.47E+02	53.63	6.83E+00	2.10E+00	6.40E+02	5.37E+01
M	43	1559.38	6.86E+00	4.24			6.86E+00	4.24E+00
m	44	1562.85	1.49E+01	10.79			1.49E+01	1.08E+01
M	45	1588.81	1.41E+01	12.03			1.41E+01	1.20E+01
m	46	1593.94	1.32E+01	12.36			1.32E+01	1.24E+01
	47	1600.74	4.75E+00	6.67			4.75E+00	6.67E+00
	48	1620.68	8.86E+00	10.20			8.86E+00	1.02E+01
	49	1630.91	1.00E+01	6.32			1.00E+01	6.32E+00
	50	1730.31	7.79E+00	10.20			7.79E+00	1.02E+01
	51	1765.57	6.37E+01	17.27	1.66E+00	1.65E+00	6.21E+01	1.73E+01
	52	1829.38	1.00E+01	8.26			1.00E+01	8.26E+00
	53	1849.39	1.15E+01	8.02			1.15E+01	8.02E+00
	54	1921.71	5.00E+00	4.47			5.00E+00	4.47E+00
	55	2206.21	2.14E+01	13.73			2.14E+01	1.37E+01
	56	2282.17	7.00E+00	5.29			7.00E+00	5.29E+00
	57	2316.59	8.00E+00	5.66			8.00E+00	5.66E+00
	58	2345.09	1.14E+01	9.29			1.14E+01	9.29E+00
	59	2615.08	8.30E+01	18.22	4.95E+00	1.35E+00	7.80E+01	1.83E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.894	1460.81	* 10.67	3.30E+01	3.99E+00
GA-67	0.935	93.31	* 35.70	5.57E+00	9.66E+00
		208.95	* 2.24	4.42E+01	6.39E+01
		300.22	* 16.00	3.28E+00	6.16E+00
		88.03	* 3.72	1.55E+00	1.65E+00
CD-109	0.978	87.57	* 37.00	1.53E-01	1.63E-01
SN-126	0.999	529.87	* 86.30	3.57E+02	4.02E+02
I-133	0.480	583.14	* 30.22	2.28E+00	4.67E-01
		860.37	* 4.48	2.51E+00	2.10E+00
		2614.66	* 35.85	1.57E+00	3.92E-01
PB-210	0.961	46.50	* 4.25	3.53E+00	2.67E+00
BI-214	0.652	609.31	* 46.30	1.68E+00	3.21E-01
		1120.29	* 15.10	1.81E+00	1.01E+00

Analysis Report for 1606041-14
 CP-5030 05-10

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.652	1764.49 2204.22	15.80 4.98		
PB-214	0.951	295.21 * 351.92 *	19.19 37.19	1.95E+00 1.81E+00	3.98E-01 3.15E-01
RA-226	0.999	186.21 *	3.28	6.76E+00	1.27E+01
AC-228	0.921	338.32 * 911.07 * 969.11 *	11.40 27.70 16.60	2.66E+00 2.36E+00 1.87E+00	8.86E-01 6.37E-01 6.32E-01
NP-239	0.565	106.10 * 228.18 277.60 *	22.70 10.70 14.10	8.11E+00 8.38E+00	5.38E+00 8.12E+00

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 10:30:21AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	76.77	2.68952E-01	6.84		
5	100.00	1.40237E-02	57.16	Tol.	LU-173
7	114.55	1.69094E-02	50.73		
8	128.96	1.90334E-02	51.89		
11	239.65	2.62421E-01	5.20		
12	270.27	1.93369E-02	41.80		
16	315.12	1.02778E-02	51.29		
19	463.61	1.55719E-02	27.01	Sum	
20	511.53	2.03709E-02	36.65	Sum	
22	565.71	6.19308E-03	47.26		
25	676.59	9.53086E-03	45.97	Sum	
26	728.86	2.25524E-02	19.91		
27	754.41	7.50951E-03	49.53		
28	768.59	9.99291E-03	41.42		
29	795.86	1.03139E-02	33.31	Sum	
M 32	965.40	1.34510E-02	26.37		
34	1022.31	5.51802E-03	41.40		
36	1142.81	6.61658E-03	52.23		

Analysis Report for 1606041-14
CP-5030 05-10

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
37	1208.59	4.98094E-03	58.27	Sum	
38	1225.98	9.33081E-03	38.16		
39	1271.40	8.24653E-03	48.73	Sum	
M	40	1375.11	3.17057E-03	30.98	
m	41	1378.11	4.76408E-03	50.16	
M	43	1559.38	1.90496E-03	30.93	
m	44	1562.85	4.13305E-03	36.27	
M	45	1588.81	3.90435E-03	42.80	
m	46	1593.94	3.67125E-03	46.76	D-Esc
	47	1600.74	1.31944E-03	70.22	
	48	1620.68	2.46032E-03	57.57	Tol. BI-212
	49	1630.91	2.77778E-03	31.62	
	50	1730.31	2.16270E-03	65.49	Sum
	51	1765.57	1.72387E-02	13.98	
	52	1829.38	2.78935E-03	41.14	
	53	1849.39	3.19444E-03	34.85	
	54	1921.71	1.38889E-03	44.72	
	55	2206.21	5.95085E-03	32.04	
	56	2282.17	1.94444E-03	37.80	
	57	2316.59	2.22222E-03	35.36	
	58	2345.09	3.15476E-03	40.89	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.89	1460.81 *	10.67	3.30E+01	3.99E+00
GA-67	0.93	93.31 *	35.70	5.57E+00	9.66E+00
		208.95 *	2.24	4.42E+01	6.39E+01
		300.22 *	16.00	3.28E+00	6.16E+00
CD-109	0.97	88.03 *	3.72	1.55E+00	1.65E+00
SN-126	0.99	87.57 *	37.00	1.53E-01	1.63E-01
I-133	0.48	529.87 *	86.30	3.57E+02	4.02E+02

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Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TL-208	0.96	583.14	*	30.22	2.28E+00	4.67E-01
		860.37	*	4.48	2.51E+00	2.10E+00
		2614.66	*	35.85	1.57E+00	3.92E-01
PB-210	0.96	46.50	*	4.25	3.53E+00	2.67E+00
BI-214	0.65	609.31	*	46.30	1.68E+00	3.21E-01
		1120.29	*	15.10	1.81E+00	1.01E+00
		1764.49		15.80		
		2204.22		4.98		
PB-214	0.95	295.21	*	19.19	1.95E+00	3.98E-01
		351.92	*	37.19	1.81E+00	3.15E-01
RA-226	0.99	186.21	*	3.28	6.76E+00	1.27E+01
AC-228	0.92	338.32	*	11.40	2.66E+00	8.86E-01
		911.07	*	27.70	2.36E+00	6.37E-01
		969.11	*	16.60	1.87E+00	6.32E-01
NP-239	0.56	106.10	*	22.70	8.11E+00	5.38E+00
		228.18		10.70		
		277.60	*	14.10	8.38E+00	8.12E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.894	3.30E+01	3.99E+00	
GA-67	0.935	4.60E+00	6.91E+00	
? CD-109	0.978	1.55E+00	1.65E+00	
? SN-126	0.999	1.53E-01	1.63E-01	
I-133	0.480	3.57E+02	4.02E+02	
TL-208	0.962	1.88E+00	2.97E-01	
PB-210	0.961	3.53E+00	2.67E+00	
BI-214	0.652	1.69E+00	3.06E-01	
PB-214	0.951	1.87E+00	2.47E-01	
RA-226	0.999	6.76E+00	1.27E+01	

Analysis Report for 1606041-14
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<i>Nuclide Name</i>	<i>Nuclide Id Confidence</i>	<i>Wt mean Activity (pCi/grams)</i>	<i>Wt mean Activity Uncertainty</i>	<i>Comments</i>
AC-228	0.921	2.22E+00	4.00E-01	
NP-239	0.565	8.19E+00	4.48E+00	
X CM-243	0.364			

- ? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 10:30:21AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	76.77	2.68952E-01	6.84		
5	100.00	1.40237E-02	57.16	Tol.	LU-173
7	114.55	1.69094E-02	50.73		
8	128.96	1.90334E-02	51.89		
11	239.65	2.62421E-01	5.20		
12	270.27	1.93369E-02	41.80		
16	315.12	1.02778E-02	51.29		
19	463.61	1.55719E-02	27.01	Sum	
20	511.53	2.03709E-02	36.65	Sum	
22	565.71	6.19308E-03	47.26		
25	676.59	9.53086E-03	45.97	Sum	
26	728.86	2.25524E-02	19.91		
27	754.41	7.50951E-03	49.53		
28	768.59	9.99291E-03	41.42		
29	795.86	1.03139E-02	33.31	Sum	
M 32	965.40	1.34510E-02	26.37		
34	1022.31	5.51802E-03	41.40		
36	1142.81	6.61658E-03	52.23		
37	1208.59	4.98094E-03	58.27	Sum	
38	1225.98	9.33081E-03	38.16		
39	1271.40	8.24653E-03	48.73	Sum	
M 40	1375.11	3.17057E-03	30.98		
m 41	1378.11	4.76408E-03	50.16		
M 43	1559.38	1.90496E-03	30.93		
m 44	1562.85	4.13305E-03	36.27		
M 45	1588.81	3.90435E-03	42.80		
m 46	1593.94	3.67125E-03	46.76	D-Esc	
47	1600.74	1.31944E-03	70.22		
48	1620.68	2.46032E-03	57.57	Tol.	BI-212
49	1630.91	2.77778E-03	31.62		
50	1730.31	2.16270E-03	65.49	Sum	
51	1765.57	1.72387E-02	13.98		
52	1829.38	2.78935E-03	41.14		
53	1849.39	3.19444E-03	34.85		
54	1921.71	1.38889E-03	44.72		

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
55	2206.21	5.95085E-03	32.04		
56	2282.17	1.94444E-03	37.80		
57	2316.59	2.22222E-03	35.36		
58	2345.09	3.15476E-03	40.89		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	7.64E-01	1.21E+00	1.21E+00
+	NA-22	1274.54	99.94	-1.70E-02	1.63E-01	1.63E-01
+	NA-24	1368.53	99.99	4.62E+03	4.20E+03	6.59E+03
		2754.09	99.86	-3.20E+02		4.20E+03
+	AL-26	1808.65	99.76	2.09E-02	8.30E-02	8.30E-02
+	K-40	1460.81	* 10.67	3.30E+01	1.66E+00	1.66E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.74E-01	1.21E-01	1.21E-01
		78.34	96.00	2.91E-01		1.60E-01
+	SC-46	889.25	99.98	7.33E-02	1.49E-01	1.49E-01
		1120.51	99.99	2.82E-01		2.52E-01
+	V-48	983.52	99.98	2.09E-02	1.60E-01	2.02E-01
		1312.10	97.50	-5.98E-02		1.60E-01
+	CR-51	320.08	9.83	-2.27E-01	1.11E+00	1.11E+00
+	MN-54	834.83	99.97	-1.30E-03	1.29E-01	1.29E-01
+	CO-56	846.75	99.96	-6.84E-02	1.21E-01	1.21E-01
		1037.75	14.03	-9.89E-02		9.01E-01
		1238.25	67.00	1.39E-01		3.30E-01
		1771.40	15.51	-2.19E-02		6.95E-01
		2598.48	16.90	7.75E-02		6.55E-01
+	CO-57	122.06	85.51	5.93E-02	9.49E-02	9.49E-02
		136.48	10.60	-1.75E-02		7.89E-01
+	CO-58	810.76	99.40	-1.05E-01	1.20E-01	1.20E-01
+	FE-59	1099.22	56.50	5.68E-02	2.87E-01	2.87E-01
		1291.56	43.20	1.68E-01		4.10E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-60	1173.22	100.00	-1.11E-02	1.32E-01	1.54E-01
		1332.49	100.00	-1.97E-02		1.32E-01
+	ZN-65	1115.52	50.75	-7.00E-02	2.96E-01	2.96E-01
+	GA-67	93.31	* 35.70	5.57E+00	3.33E+00	3.33E+00
		208.95	* 2.24	4.42E+01		4.93E+01
		300.22	* 16.00	3.28E+00		1.16E+01
+	SE-75	121.11	16.70	1.33E-01	1.44E-01	4.92E-01
		136.00	59.20	6.50E-02		1.48E-01
		264.65	59.80	3.59E-03		1.44E-01
		279.53	25.20	4.57E-02		3.97E-01
		400.65	11.40	1.56E-01		8.56E-01
+	RB-82	776.52	13.00	-5.90E-01	1.23E+00	1.23E+00
+	RB-83	520.41	46.00	4.73E-02	2.60E-01	2.60E-01
		529.64	30.30	-1.81E-01		3.69E-01
		552.65	16.40	-2.64E-01		7.00E-01
+	KR-85	513.99	0.43	6.56E+01	4.05E+01	4.05E+01
+	SR-85	513.99	99.27	3.18E-01	1.96E-01	1.96E-01
+	Y-88	898.02	93.40	3.84E-02	8.20E-02	1.48E-01
		1836.01	99.38	-4.44E-02		8.20E-02
+	NB-93M	16.57	9.43	-1.50E+02	1.20E+02	1.20E+02
+	NB-94	702.63	100.00	-1.45E-02	1.19E-01	1.31E-01
		871.10	100.00	-4.02E-02		1.19E-01
+	NB-95	765.79	99.81	4.05E-02	1.83E-01	1.83E-01
+	NB-95M	235.69	25.00	-3.25E+01	2.51E+00	2.51E+00
+	ZR-95	724.18	43.70	7.41E-02	2.55E-01	3.38E-01
		756.72	55.30	-3.73E-03		2.55E-01
+	MO-99	181.06	6.20	9.29E-01	1.12E+01	1.56E+01
		739.58	12.80	-6.94E-01		1.12E+01
		778.00	4.50	-2.29E+01		3.10E+01
+	RU-103	497.08	89.00	5.53E-02	1.52E-01	1.52E-01
+	RU-106	621.84	9.80	3.12E-01	1.23E+00	1.23E+00
+	AG-108M	433.93	89.90	-3.92E-02	1.17E-01	1.17E-01
		614.37	90.40	-3.78E-03		1.27E-01
		722.95	90.50	4.76E-02		1.44E-01
+	CD-109	88.03	* 3.72	1.55E+00	2.68E+00	2.68E+00
+	AG-110M	657.75	93.14	-3.92E-02	1.35E-01	1.35E-01
		677.61	10.53	-3.63E-01		1.07E+00
		706.67	16.46	3.11E-01		8.45E-01
		763.93	21.98	9.68E-02		6.02E-01
		884.67	71.63	-9.89E-02		1.84E-01
		1384.27	23.94	1.36E-01		5.35E-01
+	CD-113M	263.70	0.02	-2.29E+01	3.52E+02	3.52E+02
+	SN-113	255.12	1.93	-1.85E-01	1.48E-01	4.62E+00
		391.69	64.90	6.09E-02		1.48E-01
+	TE123M	159.00	84.10	3.00E-02	1.07E-01	1.07E-01
+	SB-124	602.71	97.87	5.27E-03	1.21E-01	1.21E-01
		645.85	7.26	5.84E-01		1.67E+00
		722.78	11.10	4.34E-01		1.31E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	1691.02	49.00	-5.85E-02	1.21E-01	2.31E-01
+	I-125	35.49	6.49	-6.13E-01	4.35E+00	4.35E+00
+	SB-125	176.33	6.89	-1.47E-01	3.47E-01	1.20E+00
		427.89	29.33	-8.71E-02		3.47E-01
		463.38	10.35	1.23E+00		1.21E+00
		600.56	17.80	-2.19E-01		5.75E-01
		635.90	11.32	3.36E-01		1.09E+00
+	SB-126	414.70	83.30	-7.90E-02	2.00E-01	2.32E-01
		666.33	99.60	2.88E-03		2.00E-01
		695.00	99.60	1.03E-02		2.18E-01
		720.50	53.80	7.72E-02		4.18E-01
+	SN-126	87.57	*	37.00	1.53E-01	2.66E-01
+	SB-127	473.00	25.00	8.20E-01	1.58E+00	2.56E+00
		685.20	35.70	-1.04E+00		1.58E+00
		783.80	14.70	3.35E+00		5.79E+00
+	I-129	29.78	57.00	-1.83E-01	8.00E-01	8.00E-01
		33.60	13.20	1.29E+00		2.28E+00
		39.58	7.52	2.29E+00		2.62E+00
+	I-131	284.30	6.05	5.24E-02	2.33E-01	3.16E+00
		364.48	81.20	-1.32E-01		2.33E-01
		636.97	7.26	1.61E+00		3.87E+00
		722.89	1.80	5.53E+00		1.67E+01
+	TE-132	49.72	13.10	-4.99E-01	7.75E-01	8.04E+00
		228.16	88.00	6.80E-02		7.75E-01
+	BA-133	81.00	33.00	5.03E-02	1.63E-01	3.33E-01
		302.84	17.80	3.11E-01		5.30E-01
		356.01	60.00	-6.80E-01		1.63E-01
+	I-133	529.87	*	86.30	3.57E+02	6.57E+02
+	XE-133	81.00	38.00	1.58E-01	1.05E+00	1.05E+00
+	CS-134	563.23	8.38	-4.93E-02	1.19E-01	1.49E+00
		569.32	15.43	1.00E-01		7.66E-01
		604.70	97.60	1.40E-02		1.19E-01
		795.84	85.40	1.09E-01		1.70E-01
		801.93	8.73	1.39E-03		1.51E+00
+	CS-135	268.24	16.00	4.17E-01	6.41E-01	6.41E-01
+	I-135	1131.51	22.50	1.72E+09	1.97E+10	2.66E+10
		1260.41	28.60	-8.16E+08		1.97E+10
		1678.03	9.54	-1.61E+09		3.53E+10
+	CS-136	153.22	7.46	4.21E-01	2.09E-01	1.87E+00
		163.89	4.61	-1.71E+00		2.99E+00
		176.55	13.56	-1.24E-01		1.02E+00
		273.65	12.66	-1.35E+00		1.27E+00
		340.57	48.50	8.43E-01		4.45E-01
		818.50	99.70	-3.14E-02		2.09E-01
		1048.07	79.60	2.76E-02		2.98E-01
		1235.34	19.70	2.08E-01		1.49E+00
+	CS-137	661.65	85.12	-2.21E-02	1.43E-01	1.43E-01
+	LA-138	788.74	34.00	2.72E-01	1.61E-01	4.04E-01
		1435.80	66.00	-3.93E-02		1.61E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CE-139	165.85	80.35	-1.35E-02	1.09E-01	1.09E-01
+	BA-140	162.64	6.70	1.56E-01	6.79E-01	2.17E+00
		304.84	4.50	-7.91E-01		3.15E+00
		423.70	3.20	-3.23E+00		5.09E+00
		437.55	2.00	4.76E+00		9.17E+00
		537.32	25.00	1.57E-02		6.79E-01
+	LA-140	328.77	20.50	5.62E-01	2.02E-01	8.38E-01
		487.03	45.50	2.63E-02		4.20E-01
		815.85	23.50	2.08E-01		8.83E-01
		1596.49	95.49	-9.54E-02		2.02E-01
+	CE-141	145.44	48.40	8.55E-03	2.23E-01	2.23E-01
+	CE-143	57.36	11.80	-9.74E+01	4.29E+01	1.26E+02
		293.26	42.00	6.43E+01		4.29E+01
		664.55	5.20	8.29E+00		3.15E+02
+	CE-144	133.54	10.80	3.45E-01	7.65E-01	7.65E-01
+	PM-144	476.78	42.00	-4.73E-02	1.21E-01	2.63E-01
		618.01	98.60	7.61E-03		1.21E-01
		696.49	99.49	5.88E-02		1.32E-01
+	PM-145	36.85	21.70	2.62E-01	5.60E-01	1.07E+00
		37.36	39.70	-4.73E-01		5.60E-01
		42.30	15.10	6.32E-02		1.06E+00
		72.40	2.31	-2.32E+01		5.20E+00
+	PM-146	453.90	39.94	3.08E-02	2.50E-01	2.50E-01
		735.90	14.01	-4.90E-01		7.52E-01
		747.13	13.10	3.14E-01		9.39E-01
+	ND-147	91.11	28.90	-2.62E+00	7.56E-01	7.56E-01
		531.02	13.10	3.24E-02		1.50E+00
+	PM-149	285.90	3.10	1.07E+00	5.52E+01	5.52E+01
+	EU-152	121.78	20.50	2.42E-01	3.84E-01	3.86E-01
		244.69	5.40	4.02E-01		1.95E+00
		344.27	19.13	1.03E-02		3.84E-01
		778.89	9.20	-7.98E-01		1.33E+00
		964.01	10.40	-7.93E-01		1.62E+00
		1085.78	7.22	9.55E-02		1.75E+00
		1112.02	9.60	-8.45E-02		1.34E+00
		1407.95	14.94	9.06E-02		9.34E-01
+	GD-153	97.43	31.30	-3.63E-01	2.77E-01	2.77E-01
		103.18	22.20	-4.47E-01		3.56E-01
+	EU-154	123.07	40.50	-1.06E-02	1.94E-01	1.94E-01
		723.30	19.70	2.19E-01		6.61E-01
		873.19	11.50	1.81E-01		1.11E+00
		996.32	10.30	-1.06E+00		1.09E+00
		1004.76	17.90	3.80E-01		8.02E-01
		1274.45	35.50	-4.77E-02		4.57E-01
+	EU-155	86.50	30.90	4.22E-01	3.77E-01	3.77E-01
		105.30	20.70	3.21E-01		4.06E-01
+	EU-156	811.77	10.40	-8.39E-01	1.64E+00	1.64E+00
		1153.47	7.20	-1.66E+00		2.73E+00
		1230.71	8.90	-9.00E-02		2.43E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HO-166M	184.41	72.60	1.90E-01	1.59E-01	1.59E-01
		280.45	29.60	3.76E-02		3.01E-01
		410.94	11.10	2.27E-02		1.02E+00
		711.69	54.10	6.67E-03		2.39E-01
+	TM-171	66.72	0.14	-8.91E+01	8.75E+01	8.75E+01
+	HF-172	81.75	4.52	-1.57E+00	7.13E-01	2.19E+00
		125.81	11.30	-1.55E-01		7.13E-01
		181.53	20.60	8.94E-02	5.62E-01	1.11E+00
+	LU-172	810.06	16.63	-4.49E-01		1.84E+00
		912.12	15.25	1.06E+01		4.73E+00
		1093.66	62.50	3.72E-02		5.62E-01
		100.72	5.24	1.12E+00	5.23E-01	1.57E+00
+	LU-173	272.11	21.20	4.50E-01		5.23E-01
		343.40	84.00	3.70E-03	9.94E-02	9.94E-02
+	HF-175	88.34	13.30	1.41E+00	9.07E-02	8.90E-01
		201.83	86.00	5.49E-03		1.02E-01
		306.78	94.00	2.73E-02		9.07E-02
		67.75	41.20	-4.23E-01	2.93E-01	2.93E-01
+	TA-182	1121.30	34.90	1.04E+00		7.25E-01
		1189.05	16.23	4.94E-01		1.04E+00
		1221.41	26.98	1.14E-01		6.23E-01
		1231.02	11.44	-4.76E-02		1.29E+00
		308.46	29.68	5.63E-02	2.50E-01	3.03E-01
+	IR-192	468.07	48.10	-1.09E-01		2.50E-01
		279.19	77.30	1.86E-02	1.43E-01	1.43E-01
+	HG-203	569.67	97.72	-1.00E-02	1.10E-01	1.10E-01
		1063.62	74.90	-6.65E-02		1.63E-01
+	BI-207	583.14	* 30.22	2.28E+00	2.08E-01	5.31E-01
		860.37	* 4.48	2.51E+00		3.32E+00
		2614.66	* 35.85	1.57E+00		2.08E-01
+	BI-210M	262.00	45.00	3.14E-02	1.85E-01	1.85E-01
		300.00	23.00	-1.38E+00		4.02E-01
+	PB-210	46.50	* 4.25	3.53E+00	4.29E+00	4.29E+00
+	PB-211	404.84	2.90	6.33E-01	3.10E+00	3.10E+00
		831.96	2.90	-9.98E-01		3.95E+00
		727.17	11.80	8.51E-01	1.38E+00	1.38E+00
+	BI-212	1620.62	2.75	1.53E+00		4.32E+00
		238.63	44.60	1.89E+00	4.66E-01	4.66E-01
		300.09	3.41	-9.30E+00		2.71E+00
+	PB-212	609.31	* 46.30	1.68E+00	3.43E-01	3.43E-01
		1120.29	* 15.10	1.81E+00		1.54E+00
		1764.49	15.80	2.15E+00		1.54E+00
		2204.22	4.98	2.39E+00		3.55E+00
+	PB-214	295.21	* 19.19	1.95E+00	3.49E-01	1.21E+00
		351.92	* 37.19	1.81E+00		3.49E-01
+	RN-219	401.80	6.50	-2.40E-01	1.34E+00	1.34E+00
+	RA-223	323.87	3.88	-1.28E+00	2.25E+00	2.25E+00
+	RA-224	240.98	3.95	3.15E+01	5.58E+00	5.58E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-225	40.00		31.00	8.52E-01	9.77E-01	9.77E-01
+	RA-226	186.21	*	3.28	6.76E+00	4.71E+00	4.71E+00
+	TH-227	50.10		8.40	-9.71E-02	8.44E-01	1.56E+00
		236.00		11.50	-1.09E+01		8.44E-01
		256.20		6.30	-4.81E-01		1.32E+00
+	AC-228	338.32	*	11.40	2.66E+00	8.33E-01	1.28E+00
		911.07	*	27.70	2.36E+00		8.33E-01
		969.11	*	16.60	1.87E+00		1.16E+00
+	TH-230	48.44		16.90	1.10E+00	8.92E-01	8.92E-01
		62.85		4.60	5.28E+00		2.94E+00
		67.67		0.37	-4.44E+01		3.08E+01
+	PA-231	283.67		1.60	2.08E+00	4.09E+00	5.40E+00
		302.67		2.30	2.41E+00		4.09E+00
+	TH-231	25.64		14.70	-7.41E+01	1.61E+00	8.13E+00
		84.21		6.40	7.25E-02		1.61E+00
+	PA-233	311.98		38.60	-4.11E-02	2.55E-01	2.55E-01
+	PA-234	131.20		20.40	1.56E-01	4.16E-01	4.16E-01
		733.99		8.80	1.09E-01		1.30E+00
		946.00		12.00	-3.62E-01		1.01E+00
+	PA-234M	1001.03		0.92	7.11E+00	1.61E+01	1.61E+01
+	TH-234	63.29		3.80	4.18E+00	3.52E+00	3.52E+00
+	U-235	143.76		10.50	4.82E-02	8.16E-01	8.16E-01
		163.35		4.70	-1.00E+00		1.76E+00
		205.31		4.70	-2.35E-01		1.88E+00
+	NP-237	86.50		12.60	1.03E+00	9.22E-01	9.22E-01
+	NP-239	106.10	*	22.70	8.11E+00	8.60E+00	8.60E+00
		228.18		10.70	1.24E+00		1.41E+01
		277.60	*	14.10	8.38E+00		1.32E+01
+	AM-241	59.54		35.90	-3.22E-02	3.20E-01	3.20E-01
+	AM-243	74.67		66.00	-8.04E-01	2.23E-01	2.23E-01
+	CM-243	209.75	*	3.29	3.81E+00	7.58E-01	4.25E+00
		228.14		10.60	7.14E-02		8.14E-01
		277.60	*	14.00	4.83E-01		7.58E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

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NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	1.21E+00	1.21E+00	7.64E-01	5.71E-01
NA-22	1274.54	99.94	1.63E-01	1.63E-01	-1.70E-02	7.48E-02
NA-24	1368.53	99.99	6.59E+03	4.20E+03	4.62E+03	2.95E+03
	2754.09	99.86	4.20E+03		-3.20E+02	1.63E+03
AL-26	1808.65	99.76	8.30E-02	8.30E-02	2.09E-02	3.29E-02
+ K-40	1460.81	* 10.67	1.66E+00	1.66E+00	3.30E+01	7.62E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	1.21E-01	1.21E-01	-1.74E-01	5.88E-02
	78.34	96.00	1.60E-01		2.91E-01	7.88E-02
SC-46	889.25	99.98	1.49E-01	1.49E-01	7.33E-02	6.89E-02
	1120.51	99.99	2.52E-01		2.82E-01	1.19E-01
V-48	983.52	99.98	2.02E-01	1.60E-01	2.09E-02	9.25E-02
	1312.10	97.50	1.60E-01		-5.98E-02	6.94E-02
CR-51	320.08	9.83	1.11E+00	1.11E+00	-2.27E-01	5.26E-01
MN-54	834.83	99.97	1.29E-01	1.29E-01	-1.30E-03	5.94E-02
CO-56	846.75	99.96	1.21E-01	1.21E-01	-6.84E-02	5.49E-02
	1037.75	14.03	9.01E-01		-9.89E-02	4.06E-01
	1238.25	67.00	3.30E-01		1.39E-01	1.54E-01
	1771.40	15.51	6.95E-01		-2.19E-02	2.88E-01
	2598.48	16.90	6.55E-01		7.75E-02	2.65E-01
CO-57	122.06	85.51	9.49E-02	9.49E-02	5.93E-02	4.58E-02
	136.48	10.60	7.89E-01		-1.75E-02	3.81E-01
CO-58	810.76	99.40	1.20E-01	1.20E-01	-1.05E-01	5.46E-02
FE-59	1099.22	56.50	2.87E-01	2.87E-01	5.68E-02	1.31E-01
	1291.56	43.20	4.10E-01		1.68E-01	1.87E-01
CO-60	1173.22	100.00	1.54E-01	1.32E-01	-1.11E-02	7.08E-02
	1332.49	100.00	1.32E-01		-1.97E-02	5.89E-02
ZN-65	1115.52	50.75	2.96E-01	2.96E-01	-7.00E-02	1.36E-01
+ GA-67	93.31	* 35.70	3.33E+00	3.33E+00	5.57E+00	1.63E+00
	208.95	* 2.24	4.93E+01		4.42E+01	2.40E+01
	300.22	* 16.00	1.16E+01		3.28E+00	5.67E+00
SE-75	121.11	16.70	4.92E-01	1.44E-01	1.33E-01	2.37E-01
	136.00	59.20	1.48E-01		6.50E-02	7.14E-02
	264.65	59.80	1.44E-01		3.59E-03	6.81E-02
	279.53	25.20	3.97E-01		4.57E-02	1.90E-01
	400.65	11.40	8.56E-01		1.56E-01	4.02E-01
RB-82	776.52	13.00	1.23E+00	1.23E+00	-5.90E-01	5.72E-01
RB-83	520.41	46.00	2.60E-01	2.60E-01	4.73E-02	1.22E-01
	529.64	30.30	3.69E-01		-1.81E-01	1.73E-01
	552.65	16.40	7.00E-01		-2.64E-01	3.27E-01
KR-85	513.99	0.43	4.05E+01	4.05E+01	6.56E+01	1.95E+01
SR-85	513.99	99.27	1.96E-01	1.96E-01	3.18E-01	9.43E-02
Y-88	898.02	93.40	1.48E-01	8.20E-02	3.84E-02	6.81E-02
	1836.01	99.38	8.20E-02		-4.44E-02	3.18E-02
NB-93M	16.57	9.43	1.20E+02	1.20E+02	-1.50E+02	5.52E+01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
NB-94	702.63	100.00	1.31E-01	1.19E-01	-1.45E-02	6.15E-02	
	871.10	100.00	1.19E-01		-4.02E-02	5.44E-02	
NB-95	765.79	99.81	1.83E-01	1.83E-01	4.05E-02	8.58E-02	
NB-95M	235.69	25.00	2.51E+00	2.51E+00	-3.25E+01	1.21E+00	
ZR-95	724.18	43.70	3.38E-01	2.55E-01	7.41E-02	1.58E-01	
	756.72	55.30	2.55E-01		-3.73E-03	1.19E-01	
MO-99	181.06	6.20	1.56E+01	1.12E+01	9.29E-01	7.52E+00	
	739.58	12.80	1.12E+01		-6.94E-01	5.20E+00	
	778.00	4.50	3.10E+01		-2.29E+01	1.43E+01	
RU-103	497.08	89.00	1.52E-01	1.52E-01	5.53E-02	7.17E-02	
RU-106	621.84	9.80	1.23E+00	1.23E+00	3.12E-01	5.76E-01	
AG-108M	433.93	89.90	1.17E-01	1.17E-01	-3.92E-02	5.52E-02	
	614.37	90.40	1.27E-01		-3.78E-03	5.91E-02	
	722.95	90.50	1.44E-01		4.76E-02	6.70E-02	
+ CD-109	88.03	*	3.72	2.68E+00	2.68E+00	1.55E+00	
	AG-110M	657.75	93.14	1.35E-01	1.35E-01	-3.92E-02	6.30E-02
		677.61	10.53	1.07E+00		-3.63E-01	4.95E-01
		706.67	16.46	8.45E-01		3.11E-01	3.96E-01
		763.93	21.98	6.02E-01		9.68E-02	2.80E-01
		884.67	71.63	1.84E-01		-9.89E-02	8.46E-02
1384.27	23.94	5.35E-01		1.36E-01	2.37E-01		
CD-113M	263.70	0.02	3.52E+02	3.52E+02	-2.29E+01	1.67E+02	
SN-113	255.12	1.93	4.62E+00	1.48E-01	-1.85E-01	2.20E+00	
	391.69	64.90	1.48E-01		6.09E-02	6.97E-02	
TE123M	159.00	84.10	1.07E-01	1.07E-01	3.00E-02	5.13E-02	
SB-124	602.71	97.87	1.21E-01	1.21E-01	5.27E-03	5.64E-02	
	645.85	7.26	1.67E+00		5.84E-01	7.75E-01	
	722.78	11.10	1.31E+00		4.34E-01	6.11E-01	
	1691.02	49.00	2.31E-01		-5.85E-02	9.67E-02	
I-125	35.49	6.49	4.35E+00	4.35E+00	-6.13E-01	2.10E+00	
SB-125	176.33	6.89	1.20E+00	3.47E-01	-1.47E-01	5.79E-01	
	427.89	29.33	3.47E-01		-8.71E-02	1.63E-01	
	463.38	10.35	1.21E+00		1.23E+00	5.75E-01	
	600.56	17.80	5.75E-01		-2.19E-01	2.66E-01	
	635.90	11.32	1.09E+00		3.36E-01	5.12E-01	
	666.33	99.60	2.00E-01	2.00E-01	-7.90E-02	1.10E-01	
SB-126	695.00	99.60	2.18E-01		2.88E-03	9.31E-02	
	720.50	53.80	4.18E-01		1.03E-02	1.02E-01	
	720.50	53.80	4.18E-01		7.72E-02	1.95E-01	
+ SN-126	87.57	*	37.00	2.66E-01	2.66E-01	1.53E-01	
	SB-127	473.00	25.00	2.56E+00	1.58E+00	8.20E-01	1.21E+00
		685.20	35.70	1.58E+00		-1.04E+00	7.25E-01
I-129	783.80	14.70	5.79E+00		3.35E+00	2.72E+00	
	29.78	57.00	8.00E-01	8.00E-01	-1.83E-01	3.85E-01	
	33.60	13.20	2.28E+00		1.29E+00	1.10E+00	
I-131	39.58	7.52	2.62E+00		2.29E+00	1.27E+00	
	284.30	6.05	3.16E+00	2.33E-01	5.24E-02	1.50E+00	
	364.48	81.20	2.33E-01		-1.32E-01	1.09E-01	
	636.97	7.26	3.87E+00		1.61E+00	1.81E+00	
TE-132	722.89	1.80	1.67E+01		5.53E+00	7.79E+00	
	49.72	13.10	8.04E+00	7.75E-01	-4.99E-01	3.90E+00	
BA-133	228.16	88.00	7.75E-01		6.80E-02	3.71E-01	
	81.00	33.00	3.33E-01	1.63E-01	5.03E-02	1.63E-01	

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	302.84	17.80	5.30E-01	1.63E-01	3.11E-01	2.52E-01
	356.01	60.00	1.63E-01		-6.80E-01	7.72E-02
+ I-133	529.87 *	86.30	6.57E+02	6.57E+02	3.57E+02	3.19E+02
XE-133	81.00	38.00	1.05E+00	1.05E+00	1.58E-01	5.10E-01
CS-134	563.23	8.38	1.49E+00	1.19E-01	-4.93E-02	7.01E-01
	569.32	15.43	7.66E-01		1.00E-01	3.60E-01
	604.70	97.60	1.19E-01		1.40E-02	5.57E-02
	795.84	85.40	1.70E-01		1.09E-01	7.96E-02
	801.93	8.73	1.51E+00		1.39E-03	7.02E-01
CS-135	268.24	16.00	6.41E-01	6.41E-01	4.17E-01	3.07E-01
I-135	1131.51	22.50	2.66E+10	1.97E+10	1.72E+09	1.22E+10
	1260.41	28.60	1.97E+10		-8.16E+08	8.88E+09
	1678.03	9.54	3.53E+10		-1.61E+09	1.40E+10
CS-136	153.22	7.46	1.87E+00	2.09E-01	4.21E-01	9.04E-01
	163.89	4.61	2.99E+00		-1.71E+00	1.44E+00
	176.55	13.56	1.02E+00		-1.24E-01	4.88E-01
	273.65	12.66	1.27E+00		-1.35E+00	6.08E-01
	340.57	48.50	4.45E-01		8.43E-01	2.14E-01
	818.50	99.70	2.09E-01		-3.14E-02	9.68E-02
	1048.07	79.60	2.98E-01		2.76E-02	1.37E-01
	1235.34	19.70	1.49E+00		2.08E-01	6.92E-01
CS-137	661.65	85.12	1.43E-01	1.43E-01	-2.21E-02	6.70E-02
LA-138	788.74	34.00	4.04E-01	1.61E-01	2.72E-01	1.88E-01
	1435.80	66.00	1.61E-01		-3.93E-02	6.91E-02
CE-139	165.85	80.35	1.09E-01	1.09E-01	-1.35E-02	5.22E-02
BA-140	162.64	6.70	2.17E+00	6.79E-01	1.56E-01	1.04E+00
	304.84	4.50	3.15E+00		-7.91E-01	1.49E+00
	423.70	3.20	5.09E+00		-3.23E+00	2.39E+00
	437.55	2.00	9.17E+00		4.76E+00	4.34E+00
	537.32	25.00	6.79E-01		1.57E-02	3.16E-01
LA-140	328.77	20.50	8.38E-01	2.02E-01	5.62E-01	3.99E-01
	487.03	45.50	4.20E-01		2.63E-02	1.98E-01
	815.85	23.50	8.83E-01		2.08E-01	4.07E-01
	1596.49	95.49	2.02E-01		-9.54E-02	8.70E-02
CE-141	145.44	48.40	2.23E-01	2.23E-01	8.55E-03	1.08E-01
CE-143	57.36	11.80	1.26E+02	4.29E+01	-9.74E+01	6.14E+01
	293.26	42.00	4.29E+01		6.43E+01	2.08E+01
	664.55	5.20	3.15E+02		8.29E+00	1.47E+02
CE-144	133.54	10.80	7.65E-01	7.65E-01	3.45E-01	3.69E-01
PM-144	476.78	42.00	2.63E-01	1.21E-01	-4.73E-02	1.24E-01
	618.01	98.60	1.21E-01		7.61E-03	5.66E-02
	696.49	99.49	1.32E-01		5.88E-02	6.16E-02
PM-145	36.85	21.70	1.07E+00	5.60E-01	2.62E-01	5.17E-01
	37.36	39.70	5.60E-01		-4.73E-01	2.70E-01
	42.30	15.10	1.06E+00		6.32E-02	5.14E-01
	72.40	2.31	5.20E+00		-2.32E+01	2.54E+00
PM-146	453.90	39.94	2.50E-01	2.50E-01	3.08E-02	1.17E-01
	735.90	14.01	7.52E-01		-4.90E-01	3.45E-01
	747.13	13.10	9.39E-01		3.14E-01	4.36E-01
ND-147	91.11	28.90	7.56E-01	7.56E-01	-2.62E+00	3.70E-01
	531.02	13.10	1.50E+00		3.24E-02	7.03E-01
PM-149	285.90	3.10	5.52E+01	5.52E+01	1.07E+00	2.61E+01
EU-152	121.78	20.50	3.86E-01	3.84E-01	2.42E-01	1.86E-01

Analysis Report for 1606041-14
CP-5030 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	244.69	5.40	1.95E+00	3.84E-01	4.02E-01	9.37E-01
	344.27	19.13	3.84E-01		1.03E-02	1.79E-01
	778.89	9.20	1.33E+00		-7.98E-01	6.17E-01
	964.01	10.40	1.62E+00		-7.93E-01	7.56E-01
	1085.78	7.22	1.75E+00		9.55E-02	7.91E-01
	1112.02	9.60	1.34E+00		-8.45E-02	6.06E-01
	1407.95	14.94	9.34E-01		9.06E-02	4.18E-01
GD-153	97.43	31.30	2.77E-01	2.77E-01	-3.63E-01	1.34E-01
	103.18	22.20	3.56E-01		-4.47E-01	1.72E-01
EU-154	123.07	40.50	1.94E-01	1.94E-01	-1.06E-02	9.35E-02
	723.30	19.70	6.61E-01		2.19E-01	3.09E-01
	873.19	11.50	1.11E+00		1.81E-01	5.09E-01
	996.32	10.30	1.09E+00		-1.06E+00	4.93E-01
	1004.76	17.90	8.02E-01		3.80E-01	3.70E-01
EU-155	1274.45	35.50	4.57E-01	3.77E-01	-4.77E-02	2.10E-01
	86.50	30.90	3.77E-01		4.22E-01	1.84E-01
	105.30	20.70	4.06E-01		3.21E-01	1.96E-01
EU-156	811.77	10.40	1.64E+00	1.64E+00	-8.39E-01	7.50E-01
	1153.47	7.20	2.73E+00		-1.66E+00	1.23E+00
	1230.71	8.90	2.43E+00		-9.00E-02	1.10E+00
HO-166M	184.41	72.60	1.59E-01	1.59E-01	1.90E-01	7.71E-02
	280.45	29.60	3.01E-01		3.76E-02	1.43E-01
	410.94	11.10	1.02E+00		2.27E-02	4.85E-01
	711.69	54.10	2.39E-01		6.67E-03	1.12E-01
TM-171	66.72	0.14	8.75E+01	8.75E+01	-8.91E+01	4.27E+01
HF-172	81.75	4.52	2.19E+00	7.13E-01	-1.57E+00	1.07E+00
	125.81	11.30	7.13E-01		-1.55E-01	3.44E-01
LU-172	181.53	20.60	1.11E+00	5.62E-01	8.94E-02	5.33E-01
	810.06	16.63	1.84E+00		-4.49E-01	8.43E-01
	912.12	15.25	4.73E+00		1.06E+01	2.27E+00
	1093.66	62.50	5.62E-01		3.72E-02	2.55E-01
	100.72	5.24	1.57E+00		5.23E-01	1.12E+00	7.58E-01
LU-173	272.11	21.20	5.23E-01	5.23E-01	4.50E-01	2.51E-01
	343.40	84.00	9.94E-02		9.94E-02	3.70E-03	4.65E-02
LU-176	88.34	13.30	8.90E-01	9.07E-02	1.41E+00	4.35E-01
	201.83	86.00	1.02E-01		5.49E-03	4.89E-02
	306.78	94.00	9.07E-02		2.73E-02	4.29E-02
	67.75	41.20	2.93E-01		2.93E-01	-4.23E-01	1.43E-01
TA-182	1121.30	34.90	7.25E-01	2.93E-01	1.04E+00	3.44E-01
	1189.05	16.23	1.04E+00		4.94E-01	4.77E-01
	1221.41	26.98	6.23E-01		1.14E-01	2.86E-01
	1231.02	11.44	1.29E+00		-4.76E-02	5.83E-01
	308.46	29.68	3.03E-01		2.50E-01	5.63E-02	1.43E-01
IR-192	468.07	48.10	2.50E-01	2.50E-01	-1.09E-01	1.18E-01
	279.19	77.30	1.43E-01		1.43E-01	1.86E-02	6.82E-02
HG-203	279.19	77.30	1.43E-01	1.43E-01	1.86E-02	6.82E-02
BI-207	569.67	97.72	1.10E-01	1.10E-01	-1.00E-02	5.16E-02
	1063.62	74.90	1.63E-01		-6.65E-02	7.37E-02
+ TL-208	583.14	* 30.22	5.31E-01	2.08E-01	2.28E+00	2.53E-01
	860.37	* 4.48	3.32E+00		2.51E+00	1.55E+00
	2614.66	* 35.85	2.08E-01		1.57E+00	7.70E-02
BI-210M	262.00	45.00	1.85E-01	1.85E-01	3.14E-02	8.78E-02
	300.00	23.00	4.02E-01		-1.38E+00	1.91E-01
+ PB-210	46.50	* 4.25	4.29E+00	4.29E+00	3.53E+00	2.09E+00

Analysis Report for 1606041-14
CP-5030 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PB-211	404.84	2.90	3.10E+00	3.10E+00	6.33E-01	1.45E+00
	831.96	2.90	3.95E+00		-9.98E-01	1.81E+00
BI-212	727.17	11.80	1.38E+00	1.38E+00	8.51E-01	6.52E-01
	1620.62	2.75	4.32E+00		1.53E+00	1.87E+00
PB-212	238.63	44.60	4.66E-01	4.66E-01	1.89E+00	2.29E-01
	300.09	3.41	2.71E+00		-9.30E+00	1.29E+00
+ BI-214	609.31	* 46.30	3.43E-01	3.43E-01	1.68E+00	1.64E-01
	1120.29	* 15.10	1.54E+00		1.81E+00	7.28E-01
	1764.49	15.80	1.54E+00		2.15E+00	7.16E-01
	2204.22	4.98	3.55E+00		2.39E+00	1.59E+00
+ PB-214	295.21	* 19.19	1.21E+00	3.49E-01	1.95E+00	5.93E-01
	351.92	* 37.19	3.49E-01		1.81E+00	1.68E-01
RN-219	401.80	6.50	1.34E+00	1.34E+00	-2.40E-01	6.28E-01
RA-223	323.87	3.88	2.25E+00	2.25E+00	-1.28E+00	1.06E+00
RA-224	240.98	3.95	5.58E+00	5.58E+00	3.15E+01	2.74E+00
RA-225	40.00	31.00	9.77E-01	9.77E-01	8.52E-01	4.73E-01
+ RA-226	186.21	* 3.28	4.71E+00	4.71E+00	6.76E+00	2.30E+00
TH-227	50.10	8.40	1.56E+00	8.44E-01	-9.71E-02	7.59E-01
	236.00	11.50	8.44E-01		-1.09E+01	4.05E-01
	256.20	6.30	1.32E+00		-4.81E-01	6.26E-01
+ AC-228	338.32	* 11.40	1.28E+00	8.33E-01	2.66E+00	6.21E-01
	911.07	* 27.70	8.33E-01		2.36E+00	3.98E-01
	969.11	* 16.60	1.16E+00		1.87E+00	5.49E-01
TH-230	48.44	16.90	8.92E-01	8.92E-01	1.10E+00	4.34E-01
	62.85	4.60	2.94E+00		5.28E+00	1.44E+00
	67.67	0.37	3.08E+01		-4.44E+01	1.50E+01
PA-231	283.67	1.60	5.40E+00	4.09E+00	2.08E+00	2.56E+00
	302.67	2.30	4.09E+00		2.41E+00	1.95E+00
TH-231	25.64	14.70	8.13E+00	1.61E+00	-7.41E+01	3.95E+00
	84.21	6.40	1.61E+00		7.25E-02	7.82E-01
PA-233	311.98	38.60	2.55E-01	2.55E-01	-4.11E-02	1.20E-01
PA-234	131.20	20.40	4.16E-01	4.16E-01	1.56E-01	2.01E-01
	733.99	8.80	1.30E+00		1.09E-01	6.02E-01
	946.00	12.00	1.01E+00		-3.62E-01	4.59E-01
PA-234M	1001.03	0.92	1.61E+01	1.61E+01	7.11E+00	7.45E+00
TH-234	63.29	3.80	3.52E+00	3.52E+00	4.18E+00	1.72E+00
U-235	143.76	10.50	8.16E-01	8.16E-01	4.82E-02	3.94E-01
	163.35	4.70	1.76E+00		-1.00E+00	8.45E-01
	205.31	4.70	1.88E+00		-2.35E-01	9.03E-01
NP-237	86.50	12.60	9.22E-01	9.22E-01	1.03E+00	4.51E-01
+ NP-239	106.10	* 22.70	8.60E+00	8.60E+00	8.11E+00	4.20E+00
	228.18	10.70	1.41E+01		1.24E+00	6.74E+00
	277.60	* 14.10	1.32E+01		8.38E+00	6.32E+00
AM-241	59.54	35.90	3.20E-01	3.20E-01	-3.22E-02	1.55E-01
AM-243	74.67	66.00	2.23E-01	2.23E-01	-8.04E-01	1.10E-01
CM-243	209.75	* 3.29	4.25E+00	7.58E-01	3.81E+00	2.07E+00
	228.14	10.60	8.14E-01		7.14E-02	3.89E-01
	277.60	* 14.00	7.58E-01		4.83E-01	3.64E-01

Analysis Report for 1606041-14
CP-5030 05-10

- + = Nuclide identified during the nuclide identification
 - * = Energy line found in the spectrum
 - > = MDA value not calculated
 - @ = Half-life too short to be able to perform the decay correction
-

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP-5030 05-10

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel	1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193	201	209	217	225	233	241	249	257	265	273	281	289	297	305	313	321	329	337	345	353	361																																																																																																																																																																																																																																																																																																																																																	
1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																														
9:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																												
17:	0	0	44	86	86	117	834	178	60	51	53	49	41	54	41	54	50	51	56	51	63	128	119	64	51	69	61	73	78	73	70	63	73	106	199	65	92	104	100	120	104	115	93	73	91	127	196	339	218	505	198	88	88	95	92	84	127	102	92	209	114	115	142	91	211	229	125	69	97	65	55	64	81	65	53	43	46	105	63	68	82	64	57	68	50	54	63	60	56	60	68	47	36	47	48	113	60	56	60	68	47	36	47	48	121	44	58	61	56	41	56	53	60	129	64	78	68	45	44	58	46	67	137	46	53	49	49	60	48	53	52	145	62	61	50	61	59	54	45	57	153	35	44	68	44	47	36	46	49	161	66	45	46	51	36	47	45	45	169	47	40	28	48	38	36	49	46	177	33	40	38	47	33	37	51	37	185	52	94	157	77	50	36	31	51	193	57	35	48	34	30	47	44	52	201	37	27	42	41	36	43	43	35	209	51	69	46	41	37	32	26	35	217	46	34	36	39	33	31	34	32	225	38	37	30	25	39	33	26	33	233	33	26	34	44	33	64	381	389	241	81	110	94	42	25	36	28	19	249	25	29	25	35	29	25	31	22	257	27	24	27	30	22	23	32	19	265	20	24	23	31	20	50	65	43	273	30	24	38	27	34	43	34	18	281	25	31	24	24	23	20	20	19	289	29	28	32	25	20	24	54	168	297	61	18	20	24	45	23	23	22	305	20	19	19	26	22	13	17	14	313	19	20	32	27	25	18	18	14	321	31	20	22	27	23	11	24	33	329	45	22	14	19	24	15	19	22	337	24	32	108	62	19	18	11	14	345	14	13	13	12	13	17	16	139	353	217	45	16	22	11	19	19	18	361	16	17	10	15	16	19	15	23

369: 22 19 16 23 13 18 17 18

Sample Title: CP-5030 05-10

Channel	19	17	18	15	16	18	17	17
377:	19	17	18	15	16	18	17	17
385:	16	13	18	17	11	22	11	20
393:	15	16	14	11	23	17	20	15
401:	19	8	22	10	14	16	16	16
409:	12	28	17	14	19	19	18	20
417:	19	12	17	19	12	10	12	6
425:	16	12	16	14	15	12	7	20
433:	17	12	16	13	13	19	18	10
441:	14	7	10	14	8	15	14	12
449:	10	11	11	9	8	19	16	11
457:	7	11	11	5	13	11	17	39
465:	26	8	12	10	13	13	13	19
473:	13	11	11	16	11	12	17	12
481:	16	9	5	14	13	15	11	23
489:	6	13	15	20	12	16	18	15
497:	12	13	14	6	9	7	12	12
505:	5	14	7	13	15	25	63	59
513:	35	20	13	18	12	12	14	12
521:	7	9	13	15	17	16	4	3
529:	14	21	12	8	7	8	11	10
537:	13	5	8	7	9	7	7	13
545:	7	11	7	19	10	8	4	10
553:	7	19	10	10	11	8	18	10
561:	10	19	9	9	15	19	12	6
569:	8	11	13	11	6	13	10	3
577:	6	9	8	12	9	15	70	148
585:	54	14	6	8	8	5	9	10
593:	6	6	12	6	15	7	6	5
601:	7	10	10	9	6	12	8	15
609:	57	143	92	11	13	4	11	9
617:	7	12	9	13	9	10	11	11
625:	8	8	8	8	13	18	9	9
633:	12	14	12	11	5	9	11	10
641:	7	5	6	9	14	6	7	7
649:	6	8	4	8	9	13	9	12
657:	12	5	8	16	7	14	10	2
665:	11	13	11	6	7	9	5	9
673:	6	18	6	7	4	11	11	11
681:	2	5	9	5	8	8	3	2
689:	8	12	9	6	7	10	4	12
697:	12	16	10	6	9	7	12	13
705:	15	10	10	8	12	8	4	12
713:	10	10	12	11	9	7	9	10
721:	9	14	11	8	6	9	13	38
729:	27	6	9	9	8	5	2	10
737:	7	5	4	13	11	11	7	5
745:	17	8	7	6	9	4	6	12
753:	8	10	12	12	7	2	6	10
761:	11	9	7	6	7	10	10	16
769:	27	19	3	15	7	10	10	6
777:	6	10	5	6	7	12	13	9
785:	11	13	12	11	7	11	8	3
793:	2	4	15	24	10	8	8	6

801: 8 8 13 12 2 11 8 8

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Channel	1	2	3	4	5	6	7	8	9
809:	7	6	6	1	4	5	9	9	
817:	6	11	4	6	9	5	9	8	
825:	5	9	5	3	8	5	4	6	
833:	4	6	7	7	11	8	9	10	
841:	13	7	6	3	5	9	5	4	
849:	4	6	9	8	5	2	8	3	
857:	6	2	6	12	23	11	9	6	
865:	7	7	4	6	5	7	7	5	
873:	5	5	5	12	3	9	7	11	
881:	8	9	8	6	4	4	5	10	
889:	9	9	13	3	6	4	9	5	
897:	7	9	4	6	6	9	2	6	
905:	4	4	8	5	8	11	52	80	
913:	42	2	7	10	4	4	5	7	
921:	8	5	6	3	6	3	5	7	
929:	7	5	2	8	7	4	8	8	
937:	2	5	6	3	6	5	6	6	
945:	7	3	4	6	4	4	11	8	
953:	6	8	4	5	4	6	3	3	
961:	5	5	8	7	13	28	5	13	
969:	36	40	15	6	7	2	4	6	
977:	4	6	7	5	7	9	4	8	
985:	4	3	6	2	8	6	7	8	
993:	5	4	2	3	6	6	2	7	
1001:	9	14	6	7	3	8	3	6	
1009:	2	3	10	4	4	6	5	1	
1017:	5	4	2	7	4	6	9	7	
1025:	2	2	5	4	2	5	3	4	
1033:	4	6	5	4	2	3	6	5	
1041:	3	7	1	7	4	8	7	7	
1049:	3	9	5	6	8	4	6	6	
1057:	6	4	6	7	1	6	4	7	
1065:	7	3	2	8	3	3	5	9	
1073:	6	6	4	5	5	2	4	3	
1081:	3	6	3	6	3	8	5	3	
1089:	3	5	3	6	7	3	7	2	
1097:	4	3	6	7	8	8	3	5	
1105:	7	3	4	2	5	2	5	8	
1113:	2	3	6	7	5	10	8	21	
1121:	39	18	9	11	6	5	5	7	
1129:	4	5	6	7	4	4	5	5	
1137:	4	4	4	7	6	8	10	11	
1145:	5	2	4	7	4	5	5	1	
1153:	4	7	2	4	7	7	7	7	
1161:	6	7	6	3	5	8	4	7	
1169:	2	8	5	7	4	10	5	3	
1177:	10	5	6	5	5	10	6	5	
1185:	3	8	6	7	6	6	8	3	
1193:	3	5	7	6	5	7	5	7	
1201:	8	3	7	6	4	5	8	11	
1209:	12	8	3	6	4	6	6	5	
1217:	7	7	4	7	3	3	9	9	
1225:	12	8	8	3	5	5	1	2	

1233: 7 8 10 7 5 13 16 5

Sample Title: CP-5030 05-10

Channel	1	2	3	4	5	6	7	8
1241:	14	7	8	5	5	9	7	8
1249:	8	5	5	3	5	5	3	9
1257:	7	1	5	8	3	1	2	3
1265:	3	3	1	7	8	9	8	4
1273:	10	4	5	6	4	3	7	4
1281:	4	6	5	5	6	2	7	5
1289:	7	6	6	4	6	1	3	2
1297:	1	3	9	5	1	8	3	5
1305:	6	3	4	1	2	3	2	0
1313:	2	3	2	3	4	4	4	6
1321:	4	1	3	3	1	2	6	4
1329:	5	6	4	2	2	5	0	3
1337:	4	3	1	4	2	3	4	1
1345:	2	4	5	5	3	1	3	1
1353:	2	3	3	0	2	3	2	3
1361:	2	1	1	2	4	3	3	1
1369:	4	6	4	1	0	5	3	6
1377:	7	6	11	2	2	5	2	3
1385:	1	3	4	1	3	2	1	2
1393:	2	1	1	3	1	3	2	1
1401:	3	3	4	3	4	3	1	8
1409:	2	5	2	4	2	2	0	1
1417:	4	2	0	4	4	2	1	4
1425:	3	0	1	2	3	3	5	1
1433:	2	1	1	1	2	1	5	2
1441:	2	0	2	4	3	1	2	3
1449:	1	2	4	3	1	4	0	3
1457:	2	5	12	70	237	247	76	11
1465:	2	0	2	5	0	1	1	1
1473:	1	1	0	2	1	1	1	2
1481:	1	1	2	3	1	1	1	3
1489:	1	1	2	2	2	1	2	3
1497:	2	4	2	2	2	1	2	1
1505:	1	4	1	2	4	3	3	1
1513:	2	5	2	3	3	1	1	3
1521:	3	1	3	0	0	1	1	0
1529:	1	0	2	2	1	1	1	2
1537:	4	1	0	3	1	2	0	3
1545:	0	2	0	1	2	1	1	1
1553:	1	2	1	0	1	0	4	1
1561:	1	7	2	2	1	1	0	1
1569:	2	0	3	2	1	1	2	4
1577:	1	1	3	1	2	1	1	3
1585:	0	1	0	7	4	3	2	1
1593:	6	2	3	1	1	0	0	3
1601:	4	1	0	2	0	2	2	0
1609:	1	2	2	3	1	1	0	0
1617:	1	1	1	1	6	4	0	3
1625:	1	3	0	0	2	2	3	3
1633:	0	0	2	2	1	0	0	2
1641:	0	2	1	4	3	2	1	4
1649:	1	1	1	1	1	1	0	1
1657:	1	2	3	1	3	1	3	1

1665: 2 0 1 2 1 2 0 1

Sample Title: CP-5030 05-10

Channel	1	2	3	4	5	6	7	8
1673:	1	1	0	0	1	0	2	1
1681:	1	1	0	2	2	2	1	4
1689:	1	2	0	1	1	0	3	1
1697:	0	1	0	0	2	3	0	0
1705:	0	1	1	0	1	0	2	2
1713:	0	1	0	0	0	1	1	1
1721:	1	1	0	0	1	0	1	0
1729:	1	6	3	1	1	1	1	1
1737:	2	0	2	1	1	1	2	0
1745:	1	0	0	0	1	0	2	0
1753:	1	0	1	0	0	0	1	0
1761:	0	3	2	12	19	22	3	1
1769:	2	2	1	0	2	0	0	1
1777:	0	3	1	0	0	0	0	0
1785:	1	0	2	0	0	0	1	0
1793:	2	1	1	2	2	1	0	0
1801:	1	1	0	0	0	1	0	1
1809:	2	0	1	1	0	0	1	0
1817:	0	2	0	0	0	2	1	1
1825:	0	2	2	1	0	5	1	1
1833:	0	0	1	2	0	1	0	3
1841:	2	0	3	1	1	0	1	3
1849:	6	1	2	0	0	1	1	0
1857:	1	1	0	0	0	0	1	1
1865:	1	1	1	0	1	1	1	3
1873:	1	1	1	0	0	0	2	3
1881:	2	2	1	0	2	1	0	1
1889:	0	1	0	2	2	2	2	1
1897:	1	1	2	0	0	3	0	1
1905:	1	1	0	0	1	4	1	1
1913:	0	1	0	0	0	0	0	1
1921:	1	3	0	0	0	0	1	0
1929:	0	0	2	0	0	1	0	1
1937:	0	0	2	2	2	0	1	0
1945:	1	0	0	1	1	0	0	2
1953:	1	0	0	2	0	1	0	2
1961:	0	0	2	0	1	0	1	0
1969:	1	2	2	0	1	0	2	1
1977:	2	1	0	1	0	2	1	2
1985:	0	2	1	1	1	0	0	2
1993:	1	1	0	1	1	0	1	0
2001:	1	0	3	3	1	0	1	2
2009:	0	0	1	1	1	0	0	0
2017:	1	3	1	0	1	1	1	0
2025:	0	0	3	0	1	0	0	0
2033:	0	0	1	1	1	2	0	1
2041:	0	0	1	0	0	0	1	0
2049:	0	0	0	0	0	1	0	1
2057:	2	2	1	2	0	1	1	4
2065:	0	2	0	0	1	2	2	0
2073:	0	1	3	0	1	1	0	1
2081:	3	0	0	1	0	0	0	0
2089:	0	0	3	2	0	3	0	0

2097: 1 0 1 0 1 0 2 5

Sample Title: CP-5030 05-10

Channel	1	2	3	4	5	6	7	8	9
2105:	3	2	1	1	1	1	1	1	0
2113:	0	0	1	2	1	2	3	1	1
2121:	0	0	2	0	0	0	0	0	0
2129:	1	0	1	3	0	0	1	0	0
2137:	1	2	0	0	0	0	1	2	2
2145:	0	0	2	0	3	1	0	2	2
2153:	2	0	1	1	1	0	0	0	0
2161:	3	0	1	0	0	2	2	1	1
2169:	2	0	0	0	0	0	1	1	1
2177:	1	1	1	0	0	0	0	0	0
2185:	0	0	3	0	1	0	0	1	1
2193:	2	0	1	1	1	0	1	2	2
2201:	0	2	4	4	5	4	2	1	1
2209:	1	1	1	1	0	0	0	0	0
2217:	0	2	0	1	1	1	2	1	1
2225:	0	0	0	1	1	1	0	1	1
2233:	2	0	0	0	1	1	0	0	0
2241:	1	0	0	1	2	3	0	1	1
2249:	1	0	1	1	0	0	1	0	0
2257:	0	0	0	2	0	1	0	1	1
2265:	0	1	1	0	1	2	0	0	0
2273:	2	0	1	2	0	0	0	1	1
2281:	2	2	2	0	0	0	1	0	0
2289:	1	1	2	1	1	0	0	3	3
2297:	1	1	1	2	0	0	0	0	0
2305:	0	1	2	0	3	0	0	0	0
2313:	0	0	3	2	2	1	0	0	0
2321:	0	1	2	1	1	1	1	0	0
2329:	1	0	0	1	0	2	0	1	1
2337:	0	1	0	1	1	2	0	2	2
2345:	4	2	1	1	0	0	2	0	0
2353:	0	1	1	1	0	1	0	0	0
2361:	1	0	1	2	2	0	1	0	0
2369:	2	0	3	1	0	1	0	3	3
2377:	0	0	0	4	0	1	1	0	0
2385:	1	1	3	1	0	2	1	0	0
2393:	1	0	0	1	1	2	0	1	1
2401:	3	2	1	1	2	0	1	2	2
2409:	0	0	1	0	1	0	0	0	0
2417:	0	2	1	1	1	1	0	1	1
2425:	0	0	1	2	0	0	2	1	1
2433:	1	0	1	1	0	1	0	0	0
2441:	0	1	0	1	1	0	1	1	1
2449:	1	1	2	0	0	0	1	0	0
2457:	0	0	0	0	0	0	0	2	2
2465:	1	0	1	0	0	1	2	0	0
2473:	1	0	1	1	1	1	1	2	2
2481:	1	1	0	0	0	0	0	0	0
2489:	1	0	0	0	2	0	0	0	0
2497:	2	0	0	0	1	1	1	0	0
2505:	1	1	0	2	0	1	1	0	0
2513:	0	0	0	0	0	1	1	0	0
2521:	0	0	0	0	0	0	2	0	0

2529: 0 0 1 0 1 0 0 0

Sample Title: CP-5030 05-10

Channel	1	2	3	4	5	6	7	8	9
2537:	0	1	0	1	0	0	1	0	
2545:	1	0	0	0	1	0	1	0	
2553:	0	1	0	1	0	1	0	1	
2561:	0	1	0	1	0	0	0	0	
2569:	1	1	0	0	1	0	0	0	
2577:	0	1	0	0	0	1	0	0	
2585:	0	0	0	0	2	0	0	0	
2593:	1	0	0	1	1	0	1	1	
2601:	2	0	1	1	0	0	0	1	
2609:	0	0	0	4	12	23	31	10	
2617:	2	1	0	0	0	0	1	0	
2625:	0	0	1	0	0	1	0	0	
2633:	0	0	0	0	0	1	0	0	
2641:	1	0	0	0	0	1	0	0	
2649:	0	0	1	0	0	0	1	1	
2657:	0	0	0	0	1	0	0	0	
2665:	0	2	0	0	0	0	1	0	
2673:	0	0	0	0	0	0	0	1	
2681:	1	0	0	0	0	0	0	2	
2689:	0	0	1	1	1	0	0	0	
2697:	0	0	0	0	1	0	0	0	
2705:	1	1	0	0	0	4	0	1	
2713:	0	2	0	0	0	0	0	0	
2721:	0	0	0	0	0	0	0	0	
2729:	2	0	0	0	1	1	0	0	
2737:	0	0	1	0	0	1	1	1	
2745:	0	1	0	1	0	0	0	1	
2753:	0	0	2	0	1	0	0	1	
2761:	0	0	1	0	0	0	0	0	
2769:	3	0	0	0	1	0	0	0	
2777:	0	1	1	0	0	0	0	0	
2785:	1	0	0	0	0	0	0	0	
2793:	0	1	0	0	1	0	0	0	
2801:	2	0	0	0	0	1	1	1	
2809:	0	0	1	1	1	0	0	0	
2817:	3	0	0	0	1	0	0	0	
2825:	0	0	0	0	0	1	1	0	
2833:	0	1	0	1	0	0	0	1	
2841:	0	0	0	0	1	0	1	0	
2849:	0	1	1	0	0	0	1	0	
2857:	0	0	0	0	0	0	0	1	
2865:	0	1	0	0	0	0	0	0	
2873:	0	0	0	0	0	0	0	0	
2881:	0	0	0	0	0	1	0	0	
2889:	0	0	0	0	1	1	0	0	
2897:	0	0	0	0	0	0	0	0	
2905:	0	1	0	0	0	0	0	0	
2913:	0	0	0	1	1	0	0	0	
2921:	0	1	1	1	0	0	0	2	
2929:	1	1	0	0	0	0	0	0	
2937:	0	0	0	0	0	0	0	0	
2945:	0	0	1	0	1	1	1	0	
2953:	0	0	0	0	0	0	1	0	

2961: 1 1 0 0 1 0 0 0

Sample Title: CP-5030 05-10

Channel	1	2	3	4	5	6	7	8
2969:	0	0	1	0	1	0	0	1
2977:	0	1	0	1	0	0	0	0
2985:	1	0	0	2	0	1	1	0
2993:	0	0	0	0	0	0	0	0
3001:	0	1	0	0	0	1	0	0
3009:	0	0	1	1	1	0	0	0
3017:	0	0	0	0	1	0	0	0
3025:	0	0	0	0	0	0	1	0
3033:	0	0	0	0	0	1	0	0
3041:	0	0	0	1	0	0	1	0
3049:	1	0	0	0	1	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	1	0	0	0	0	0	0	1
3073:	0	0	1	0	0	1	2	0
3081:	0	0	0	0	0	0	0	0
3089:	0	2	0	0	0	0	0	0
3097:	0	0	0	1	0	0	0	0
3105:	0	0	0	1	0	0	0	0
3113:	0	0	0	1	0	0	0	1
3121:	0	0	0	0	0	1	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	1
3185:	0	0	0	0	0	0	1	0
3193:	1	0	0	2	2	1	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	1	1	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	1	1	0	0	0	0
3233:	0	0	0	1	0	0	0	0
3241:	0	0	0	1	1	0	0	1
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	1	0	0	0	1
3265:	0	0	1	0	0	0	0	0
3273:	0	1	0	0	0	1	1	0
3281:	0	0	0	2	0	0	2	0
3289:	0	0	0	0	0	0	0	0
3297:	0	1	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	1	0
3321:	0	0	0	1	0	1	0	1
3329:	1	0	0	0	0	0	0	0
3337:	1	0	1	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	1	0	0	0	0
3361:	0	0	0	0	0	0	0	1
3369:	0	0	0	0	0	0	0	0
3377:	0	1	1	0	0	1	0	0
3385:	0	0	0	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0 1

Sample Title: CP-5030 05-10

Channel	1	2	3	4	5	6	7	8	9
3401:	0	1	0	0	0	0	0	0	0
3409:	0	0	1	0	0	0	0	1	0
3417:	0	0	0	0	0	0	0	0	1
3425:	0	0	0	0	0	0	0	0	0
3433:	1	0	1	0	1	0	0	0	0
3441:	1	0	0	0	0	0	0	0	0
3449:	0	0	0	1	0	0	0	0	0
3457:	0	0	0	0	0	1	0	0	0
3465:	0	0	0	0	0	0	0	0	0
3473:	0	0	0	1	0	0	0	0	0
3481:	0	1	0	0	1	0	0	1	0
3489:	0	0	0	1	0	0	0	0	0
3497:	0	0	1	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0	1
3521:	0	0	0	0	0	0	0	0	0
3529:	0	0	1	0	0	0	0	0	0
3537:	0	0	0	1	0	0	0	1	0
3545:	0	0	0	1	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0	0
3569:	0	1	1	0	0	0	0	0	0
3577:	0	0	0	0	1	1	0	0	0
3585:	0	0	0	0	0	1	0	0	0
3593:	0	0	0	0	1	0	0	0	0
3601:	0	1	0	0	0	0	0	0	0
3609:	0	2	0	0	1	0	0	0	0
3617:	1	0	0	0	0	0	0	0	0
3625:	1	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0	0
3641:	0	0	3	0	0	0	0	0	0
3649:	0	0	0	0	1	0	0	1	0
3657:	0	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0	1
3673:	1	0	0	0	0	1	0	0	0
3681:	0	1	0	0	1	0	0	0	1
3689:	0	0	0	0	0	0	0	0	0
3697:	1	0	0	0	0	0	0	0	0
3705:	1	0	0	0	0	0	0	0	0
3713:	0	0	1	0	1	0	0	0	0
3721:	0	1	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0	0
3737:	0	0	2	0	0	0	0	0	1
3745:	0	0	0	1	0	0	0	1	0
3753:	0	0	0	0	0	0	0	0	0
3761:	0	1	1	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	1	0
3777:	0	1	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	1	0	0	0
3809:	0	0	0	0	0	0	0	0	0
3817:	0	2	1	1	0	0	2	0	0

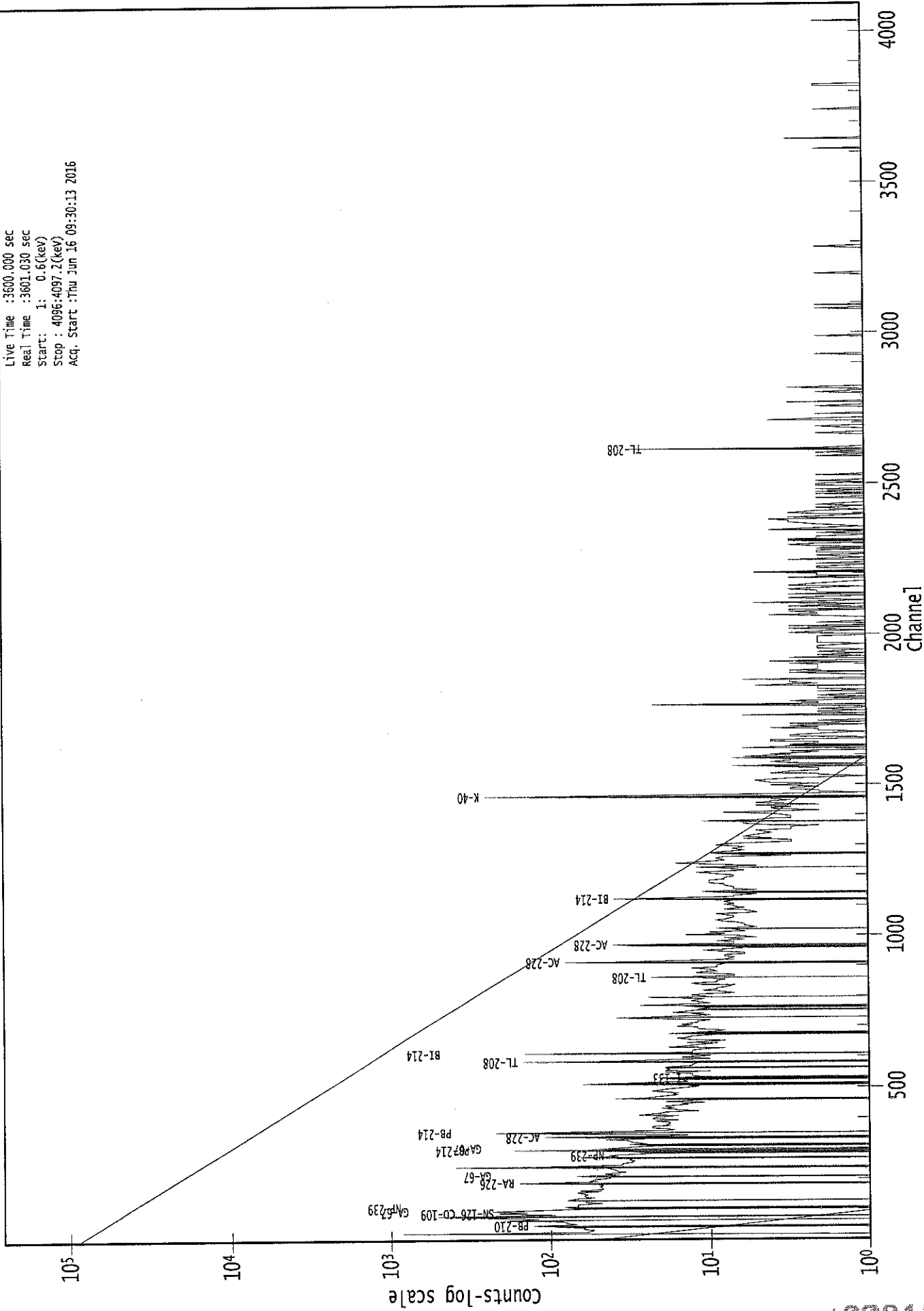
3825: 0 0 0 0 0 0 0 1 0

Sample Title: CP-5030 05-10

Channel								
3833:	0	0	0	1	0	0	0	1
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	1
3857:	0	1	0	0	0	0	0	1
3865:	0	0	0	0	0	0	0	0
3873:	1	0	1	0	0	0	1	0
3881:	0	0	1	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	1	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	1	0	0	0	0	1
3937:	0	0	0	1	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	1	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	1
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	1
3985:	0	0	0	0	0	0	1	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	1	1	0	0	0	0
4009:	0	0	0	0	0	0	1	0
4017:	1	1	0	1	0	1	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	2	1	0	0	0	0
4041:	0	0	0	0	0	0	1	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	1	1	1	0	0	0	1	0
4089:	0	0	0	0	0	0	0	0

0000038984.CNF

Live Time : 3600.000 sec
Real Time : 3601.030 sec
Start: 1: 0.6(keV)
Stop : 4096:4097.2(keV)
Acq. Start : Thu Jun 16 09:30:13 2016



ROI Type: 2

ROI Type: 1

Analysis Report for 1606041-15
CP-5030 10-15

[Handwritten signature]
6/16/16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606041-15
Sample Description : CP-5030 10-15
Sample Type : SOIL

Sample Size : 2.940E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 4:37:38PM
Acquisition Started : 6/16/2016 10:26:45AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3613.2 seconds

Dead Time : 0.37 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 9 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 38986

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606041-15
CP-5030 10-15

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 11:27:00AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.75	46.98	0.0000	0.00
2	75.17	75.38	0.0000	0.00
3	77.64	77.85	0.0000	0.00
4	87.53	87.74	0.0000	0.00
5	93.36	93.57	0.0000	0.00
6	114.94	115.14	0.0000	0.00
7	186.42	186.58	0.0000	0.00
8	204.21	204.35	0.0000	0.00
9	209.95	210.09	0.0000	0.00
10	239.10	239.23	0.0000	0.00
11	242.35	242.47	0.0000	0.00
12	270.37	270.48	0.0000	0.00
13	295.73	295.83	0.0000	0.00
14	300.69	300.79	0.0000	0.00
15	317.04	317.13	0.0000	0.00
16	328.39	328.47	0.0000	0.00
17	338.86	338.94	0.0000	0.00
18	352.33	352.40	0.0000	0.00
19	464.19	464.20	0.0000	0.00
20	511.65	511.65	0.0000	0.00
21	583.74	583.69	0.0000	0.00
22	609.80	609.74	0.0000	0.00
23	617.24	617.18	0.0000	0.00
24	711.98	711.87	0.0000	0.00
25	727.50	727.39	0.0000	0.00
26	770.13	770.00	0.0000	0.00
27	795.35	795.21	0.0000	0.00
28	799.02	798.87	0.0000	0.00
29	911.83	911.63	0.0000	0.00
30	969.83	969.60	0.0000	0.00
31	1041.74	1041.49	0.0000	0.00
32	1120.99	1120.70	0.0000	0.00
33	1239.69	1239.35	0.0000	0.00
34	1328.32	1327.95	0.0000	0.00
35	1438.18	1437.76	0.0000	0.00
36	1446.73	1446.32	0.0000	0.00
37	1461.41	1460.99	0.0000	0.00
38	1559.50	1559.05	0.0000	0.00
39	1589.00	1588.53	0.0000	0.00
40	1592.65	1592.18	0.0000	0.00
41	1765.05	1764.52	0.0000	0.00
42	1977.10	1976.50	0.0000	0.00

Analysis Report for 1606041-15
CP-5030 10-15

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2203.56	2202.89	0.0000	0.00
44	2217.63	2216.95	0.0000	0.00
45	2275.26	2274.57	0.0000	0.00
46	2291.46	2290.77	0.0000	0.00
47	2393.87	2393.15	0.0000	0.00
48	2467.24	2466.50	0.0000	0.00
49	2614.86	2614.09	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606041-15
CP-5030 10-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 11:27:00AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.75	44 -	50	46.98	1.37E+02	68.92	7.67E+02	1.35
M	2	75.17	67 -	80	75.38	5.09E+02	103.32	1.20E+03	2.43
m	3	77.64	67 -	80	77.85	5.80E+02	76.52	6.69E+02	1.41
	4	87.53	86 -	89	87.74	8.15E+01	62.23	8.85E+02	1.23
	5	93.36	89 -	97	93.57	1.96E+02	110.31	1.63E+03	1.80
	6	114.94	112 -	119	115.14	8.90E+01	69.97	7.42E+02	1.58
	7	186.42	183 -	190	186.58	1.44E+02	67.50	6.61E+02	1.61
M	8	204.21	203 -	213	204.35	4.11E+01	20.83	1.23E+02	2.03
m	9	209.95	203 -	213	210.09	9.64E+01	47.81	3.82E+02	2.04
M	10	239.10	234 -	245	239.23	7.58E+02	67.51	3.45E+02	1.86
m	11	242.35	234 -	245	242.47	1.26E+02	52.18	2.61E+02	1.77
	12	270.37	268 -	273	270.48	4.91E+01	36.21	2.20E+02	2.01
M	13	295.73	292 -	304	295.83	1.76E+02	41.49	2.40E+02	1.62
m	14	300.69	292 -	304	300.79	3.63E+01	48.99	3.49E+02	2.68
	15	317.04	315 -	319	317.13	2.31E+01	28.20	1.58E+02	2.00
	16	328.39	324 -	332	328.47	4.99E+01	47.98	3.22E+02	1.61
	17	338.86	335 -	342	338.94	1.05E+02	46.86	2.96E+02	1.57
	18	352.33	348 -	355	352.40	3.23E+02	52.04	2.35E+02	1.99
	19	464.19	460 -	468	464.20	4.81E+01	40.45	2.16E+02	2.48
	20	511.65	507 -	518	511.65	1.26E+02	41.18	1.47E+02	2.74
	21	583.74	579 -	587	583.69	1.70E+02	45.61	2.14E+02	1.51
M	22	609.80	604 -	621	609.74	2.38E+02	37.01	7.73E+01	2.27
m	23	617.24	604 -	621	617.18	2.11E+01	26.00	1.08E+02	2.67
	24	711.98	707 -	720	711.87	4.00E+01	34.29	1.16E+02	3.12
	25	727.50	722 -	732	727.39	5.77E+01	31.86	1.05E+02	3.88
	26	770.13	765 -	774	770.00	4.53E+01	30.15	1.01E+02	1.44
M	27	795.35	792 -	801	795.21	3.56E+01	19.57	4.26E+01	2.32
m	28	799.02	792 -	801	798.87	1.31E+01	18.73	3.27E+01	2.32
	29	911.83	907 -	916	911.63	1.51E+02	32.51	6.46E+01	2.16
	30	969.83	965 -	974	969.60	4.73E+01	35.72	1.43E+02	1.60
	31	1041.74	1037 -	1047	1041.49	2.77E+01	21.91	4.86E+01	3.38
	32	1120.99	1116 -	1125	1120.70	3.50E+01	31.30	1.20E+02	2.10
	33	1239.69	1236 -	1243	1239.35	2.44E+01	23.83	7.52E+01	3.37
	34	1328.32	1326 -	1330	1327.95	9.93E+00	12.01	2.41E+01	2.74
	35	1438.18	1435 -	1440	1437.76	1.07E+01	7.55	2.58E+00	1.74
	36	1446.73	1442 -	1452	1446.32	1.78E+01	10.69	6.43E+00	6.92
	37	1461.41	1456 -	1467	1460.99	3.78E+02	42.90	3.88E+01	2.34
	38	1559.50	1556 -	1561	1559.05	6.22E+00	7.35	5.56E+00	2.88
M	39	1589.00	1587 -	1596	1588.53	9.54E+00	4.47	2.25E+00	2.05
m	40	1592.65	1587 -	1596	1592.18	2.24E+01	14.46	1.99E+01	2.99

Analysis Report for 1606041-15
CP-5030 10-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1765.05	1761 - 1768		1764.52	2.10E+01	13.42	1.60E+01	1.94
42	1977.10	1973 - 1978		1976.50	6.00E+00	4.90	0.00E+00	1.88
43	2203.56	2197 - 2209		2202.89	1.80E+01	8.49	0.00E+00	6.32
44	2217.63	2213 - 2219		2216.95	5.50E+00	6.34	3.00E+00	2.87
45	2275.26	2270 - 2277		2274.57	7.00E+00	5.29	0.00E+00	3.00
46	2291.46	2288 - 2293		2290.77	5.71E+00	6.08	2.57E+00	2.74
47	2393.87	2388 - 2399		2393.15	1.08E+01	9.59	6.43E+00	3.23
48	2467.24	2463 - 2469		2466.50	6.00E+00	4.90	0.00E+00	1.88
49	2614.86	2609 - 2618		2614.09	4.70E+01	13.71	0.00E+00	2.51

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 11:27:00AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.75	44 -	50	1.37E+02	68.92	7.67E+02	5.33E+01
M	2	75.17	67 -	80	5.09E+02	103.32	1.20E+03	5.70E+01
m	3	77.64	67 -	80	5.80E+02	76.52	6.69E+02	4.25E+01
	4	87.53	86 -	89	8.15E+01	62.23	8.85E+02	4.89E+01
	5	93.36	89 -	97	1.96E+02	110.31	1.63E+03	8.77E+01
	6	114.94	112 -	119	8.90E+01	69.97	7.42E+02	5.54E+01
	7	186.42	183 -	190	1.44E+02	67.50	6.61E+02	5.18E+01
M	8	204.21	203 -	213	4.11E+01	20.83	1.23E+02	1.82E+01
m	9	209.95	203 -	213	9.64E+01	47.81	3.82E+02	3.21E+01
M	10	239.10	234 -	245	7.58E+02	67.51	3.45E+02	3.05E+01
m	11	242.35	234 -	245	1.26E+02	52.18	2.61E+02	2.66E+01
	12	270.37	268 -	273	4.91E+01	36.21	2.20E+02	2.74E+01
M	13	295.73	292 -	304	1.76E+02	41.49	2.40E+02	2.55E+01
m	14	300.69	292 -	304	3.63E+01	48.99	3.49E+02	3.07E+01
	15	317.04	315 -	319	2.31E+01	28.20	1.58E+02	2.18E+01
	16	328.39	324 -	332	4.99E+01	47.98	3.22E+02	3.77E+01
	17	338.86	335 -	342	1.05E+02	46.86	2.96E+02	3.46E+01
	18	352.33	348 -	355	3.23E+02	52.04	2.35E+02	3.09E+01

Analysis Report for 1606041-15

CP-5030 10-15

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
19	464.19	460 -	468	4.81E+01	40.45	2.16E+02	3.12E+01
20	511.65	507 -	518	1.26E+02	41.18	1.47E+02	2.84E+01
21	583.74	579 -	587	1.70E+02	45.61	2.14E+02	3.08E+01
M 22	609.80	604 -	621	2.38E+02	37.01	7.73E+01	1.45E+01
m 23	617.24	604 -	621	2.11E+01	26.00	1.08E+02	1.70E+01
24	711.98	707 -	720	4.00E+01	34.29	1.16E+02	2.62E+01
25	727.50	722 -	732	5.77E+01	31.86	1.05E+02	2.30E+01
26	770.13	765 -	774	4.53E+01	30.15	1.01E+02	2.22E+01
M 27	795.35	792 -	801	3.56E+01	19.57	4.26E+01	1.07E+01
m 28	799.02	792 -	801	1.31E+01	18.73	3.27E+01	9.41E+00
29	911.83	907 -	916	1.51E+02	32.51	6.46E+01	1.75E+01
30	969.83	965 -	974	4.73E+01	35.72	1.43E+02	2.71E+01
31	1041.74	1037 -	1047	2.77E+01	21.91	4.86E+01	1.58E+01
32	1120.99	1116 -	1125	3.50E+01	31.30	1.20E+02	2.38E+01
33	1239.69	1236 -	1243	2.44E+01	23.83	7.52E+01	1.78E+01
34	1328.32	1326 -	1330	9.93E+00	12.01	2.41E+01	8.40E+00
35	1438.18	1435 -	1440	1.07E+01	7.55	2.58E+00	3.09E+00
36	1446.73	1442 -	1452	1.78E+01	10.69	6.43E+00	5.40E+00
37	1461.41	1456 -	1467	3.78E+02	42.90	3.88E+01	1.49E+01
38	1559.50	1556 -	1561	6.22E+00	7.35	5.56E+00	4.44E+00
M 39	1589.00	1587 -	1596	9.54E+00	4.47	2.25E+00	2.47E+00
m 40	1592.65	1587 -	1596	2.24E+01	14.46	1.99E+01	7.34E+00
41	1765.05	1761 -	1768	2.10E+01	13.42	1.60E+01	8.05E+00
42	1977.10	1973 -	1978	6.00E+00	4.90	0.00E+00	0.00E+00
43	2203.56	2197 -	2209	1.80E+01	8.49	0.00E+00	0.00E+00
44	2217.63	2213 -	2219	5.50E+00	6.34	3.00E+00	3.51E+00
45	2275.26	2270 -	2277	7.00E+00	5.29	0.00E+00	0.00E+00
46	2291.46	2288 -	2293	5.71E+00	6.08	2.57E+00	3.09E+00
47	2393.87	2388 -	2399	1.08E+01	9.59	6.43E+00	5.75E+00
48	2467.24	2463 -	2469	6.00E+00	4.90	0.00E+00	0.00E+00
49	2614.86	2609 -	2618	4.70E+01	13.71	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.00sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 11:27:00AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Peak Match Tolerance : 1.000 keV

Analysis Report for 1606041-15
CP-5030 10-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.75	44 -	50	46.98	1.37E+02	68.92	7.67E+02	PB-210
M	2	75.17	67 -	80	75.38	5.09E+02	103.32	1.20E+03	AM-243
m	3	77.64	67 -	80	77.85	5.80E+02	76.52	6.69E+02	TI-44
	4	87.53	86 -	89	87.74	8.15E+01	62.23	8.85E+02	SN-126 CD-109 LU-176
	5	93.36	89 -	97	93.57	1.96E+02	110.31	1.63E+03	GA-67
	6	114.94	112 -	119	115.14	8.90E+01	69.97	7.42E+02	.....
	7	186.42	183 -	190	186.58	1.44E+02	67.50	6.61E+02	RA-226
M	8	204.21	203 -	213	204.35	4.11E+01	20.83	1.23E+02	.....
m	9	209.95	203 -	213	210.09	9.64E+01	47.81	3.82E+02	CM-243 GA-67
M	10	239.10	234 -	245	239.23	7.58E+02	67.51	3.45E+02	PB-212
m	11	242.35	234 -	245	242.47	1.26E+02	52.18	2.61E+02	.....
	12	270.37	268 -	273	270.48	4.91E+01	36.21	2.20E+02	.....
M	13	295.73	292 -	304	295.83	1.76E+02	41.49	2.40E+02	PB-214
m	14	300.69	292 -	304	300.79	3.63E+01	48.99	3.49E+02	GA-67 PB-212 BI-210M
	15	317.04	315 -	319	317.13	2.31E+01	28.20	1.58E+02	.....
	16	328.39	324 -	332	328.47	4.99E+01	47.98	3.22E+02	LA-140
	17	338.86	335 -	342	338.94	1.05E+02	46.86	2.96E+02	AC-228
	18	352.33	348 -	355	352.40	3.23E+02	52.04	2.35E+02	PB-214
	19	464.19	460 -	468	464.20	4.81E+01	40.45	2.16E+02	SB-125
	20	511.65	507 -	518	511.65	1.26E+02	41.18	1.47E+02	.....
	21	583.74	579 -	587	583.69	1.70E+02	45.61	2.14E+02	TL-208
M	22	609.80	604 -	621	609.74	2.38E+02	37.01	7.73E+01	BI-214
m	23	617.24	604 -	621	617.18	2.11E+01	26.00	1.08E+02	PM-144
	24	711.98	707 -	720	711.87	4.00E+01	34.29	1.16E+02	HO-166M
	25	727.50	722 -	732	727.39	5.77E+01	31.86	1.05E+02	BI-212
	26	770.13	765 -	774	770.00	4.53E+01	30.15	1.01E+02	.....
M	27	795.35	792 -	801	795.21	3.56E+01	19.57	4.26E+01	CS-134
m	28	799.02	792 -	801	798.87	1.31E+01	18.73	3.27E+01	.....
	29	911.83	907 -	916	911.63	1.51E+02	32.51	6.46E+01	LU-172 AC-228
	30	969.83	965 -	974	969.60	4.73E+01	35.72	1.43E+02	AC-228
	31	1041.74	1037 -	1047	1041.49	2.77E+01	21.91	4.86E+01	.....
	32	1120.99	1116 -	1125	1120.70	3.50E+01	31.30	1.20E+02	TA-182 SC-46 BI-214
	33	1239.69	1236 -	1243	1239.35	2.44E+01	23.83	7.52E+01	.....
	34	1328.32	1326 -	1330	1327.95	9.93E+00	12.01	2.41E+01	.....
	35	1438.18	1435 -	1440	1437.76	1.07E+01	7.55	2.58E+00	.....
	36	1446.73	1442 -	1452	1446.32	1.78E+01	10.69	6.43E+00	.....
	37	1461.41	1456 -	1467	1460.99	3.78E+02	42.90	3.88E+01	K-40
	38	1559.50	1556 -	1561	1559.05	6.22E+00	7.35	5.56E+00	.....
M	39	1589.00	1587 -	1596	1588.53	9.54E+00	4.47	2.25E+00	.....
m	40	1592.65	1587 -	1596	1592.18	2.24E+01	14.46	1.99E+01	.....
	41	1765.05	1761 -	1768	1764.52	2.10E+01	13.42	1.60E+01	BI-214
	42	1977.10	1973 -	1978	1976.50	6.00E+00	4.90	0.00E+00	.....
	43	2203.56	2197 -	2209	2202.89	1.80E+01	8.49	0.00E+00	BI-214

Analysis Report for 1606041-15
CP-5030 10-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
44	2217.63	2213 -	2219	2216.95	5.50E+00	6.34	3.00E+00	.....
45	2275.26	2270 -	2277	2274.57	7.00E+00	5.29	0.00E+00	.....
46	2291.46	2288 -	2293	2290.77	5.71E+00	6.08	2.57E+00	.....
47	2393.87	2388 -	2399	2393.15	1.08E+01	9.59	6.43E+00	.....
48	2467.24	2463 -	2469	2466.50	6.00E+00	4.90	0.00E+00	.....
49	2614.86	2609 -	2618	2614.09	4.70E+01	13.71	0.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 11:27:00AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.75	1.37E+02	68.92	1.51E-02	1.58E-03
M	2	75.17	5.09E+02	103.32	2.37E-02	2.10E-03
m	3	77.64	5.80E+02	76.52	2.39E-02	2.18E-03
	4	87.53	8.15E+01	62.23	2.44E-02	2.51E-03
	5	93.36	1.96E+02	110.31	2.44E-02	2.40E-03
	6	114.94	8.90E+01	69.97	2.35E-02	1.90E-03
	7	186.42	1.44E+02	67.50	1.83E-02	1.42E-03
M	8	204.21	4.11E+01	20.83	1.71E-02	1.34E-03
m	9	209.95	9.64E+01	47.81	1.68E-02	1.31E-03
M	10	239.10	7.58E+02	67.51	1.52E-02	1.18E-03
m	11	242.35	1.26E+02	52.18	1.50E-02	1.16E-03
	12	270.37	4.91E+01	36.21	1.38E-02	1.04E-03
M	13	295.73	1.76E+02	41.49	1.28E-02	9.73E-04
m	14	300.69	3.63E+01	48.99	1.26E-02	9.66E-04
	15	317.04	2.31E+01	28.20	1.21E-02	9.43E-04
	16	328.39	4.99E+01	47.98	1.17E-02	9.27E-04
	17	338.86	1.05E+02	46.86	1.14E-02	9.12E-04
	18	352.33	3.23E+02	52.04	1.10E-02	8.93E-04
	19	464.19	4.81E+01	40.45	8.71E-03	7.65E-04
	20	511.65	1.26E+02	41.18	8.00E-03	7.18E-04
	21	583.74	1.70E+02	45.61	7.13E-03	6.46E-04
M	22	609.80	2.38E+02	37.01	6.87E-03	6.20E-04
m	23	617.24	2.11E+01	26.00	6.79E-03	6.12E-04
	24	711.98	4.00E+01	34.29	6.00E-03	5.27E-04

Analysis Report for 1606041-15
CP-5030 10-15

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	25	727.50	5.77E+01	31.86	5.89E-03	5.14E-04
	26	770.13	4.53E+01	30.15	5.61E-03	4.79E-04
M	27	795.35	3.56E+01	19.57	5.45E-03	4.59E-04
m	28	799.02	1.31E+01	18.73	5.43E-03	4.56E-04
	29	911.83	1.51E+02	32.51	4.85E-03	3.72E-04
	30	969.83	4.73E+01	35.72	4.60E-03	3.61E-04
	31	1041.74	2.77E+01	21.91	4.33E-03	3.48E-04
	32	1120.99	3.50E+01	31.30	4.08E-03	3.33E-04
	33	1239.69	2.44E+01	23.83	3.75E-03	3.09E-04
	34	1328.32	9.93E+00	12.01	3.55E-03	2.89E-04
	35	1438.18	1.07E+01	7.55	3.33E-03	2.73E-04
	36	1446.73	1.78E+01	10.69	3.32E-03	2.71E-04
	37	1461.41	3.78E+02	42.90	3.29E-03	2.69E-04
	38	1559.50	6.22E+00	7.35	3.13E-03	2.55E-04
M	39	1589.00	9.54E+00	4.47	3.09E-03	2.50E-04
m	40	1592.65	2.24E+01	14.46	3.08E-03	2.50E-04
	41	1765.05	2.10E+01	13.42	2.86E-03	2.24E-04
	42	1977.10	6.00E+00	4.90	2.64E-03	2.13E-04
	43	2203.56	1.80E+01	8.49	2.46E-03	2.13E-04
	44	2217.63	5.50E+00	6.34	2.45E-03	2.13E-04
	45	2275.26	7.00E+00	5.29	2.42E-03	2.13E-04
	46	2291.46	5.71E+00	6.08	2.41E-03	2.13E-04
	47	2393.87	1.08E+01	9.59	2.35E-03	2.13E-04
	48	2467.24	6.00E+00	4.90	2.31E-03	2.13E-04
	49	2614.86	4.70E+01	13.71	2.24E-03	2.13E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 11:27:00AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038678.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.75	1.37E+02	68.92	4.97E+01	7.81E+00	8.69E+01	6.94E+01
M	2	75.17	5.09E+02	103.32			5.09E+02	1.03E+02
m	3	77.64	5.80E+02	76.52	6.70E+00	3.28E+00	5.74E+02	7.66E+01
	4	87.53	8.15E+01	62.23	1.07E+01	3.99E+00	7.08E+01	6.24E+01
	5	93.36	1.96E+02	110.31	8.20E+01	2.30E+01	1.14E+02	1.13E+02

Analysis Report for 1606041-15

CP-5030 10-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	6	114.94	8.90E+01	69.97			8.90E+01	7.00E+01
	7	186.42	1.44E+02	67.50	3.45E+01	5.92E+00	1.10E+02	6.78E+01
M	8	204.21	4.11E+01	20.83			4.11E+01	2.08E+01
m	9	209.95	9.64E+01	47.81			9.64E+01	4.78E+01
M	10	239.10	7.58E+02	67.51	1.33E+01	5.09E+00	7.45E+02	6.77E+01
m	11	242.35	1.26E+02	52.18			1.26E+02	5.22E+01
	12	270.37	4.91E+01	36.21			4.91E+01	3.62E+01
M	13	295.73	1.76E+02	41.49	1.94E+00	4.39E+00	1.74E+02	4.17E+01
m	14	300.69	3.63E+01	48.99			3.63E+01	4.90E+01
	15	317.04	2.31E+01	28.20			2.31E+01	2.82E+01
	16	328.39	4.99E+01	47.98			4.99E+01	4.80E+01
	17	338.86	1.05E+02	46.86			1.05E+02	4.69E+01
	18	352.33	3.23E+02	52.04	4.00E+00	3.58E+00	3.19E+02	5.22E+01
	19	464.19	4.81E+01	40.45			4.81E+01	4.05E+01
	20	511.65	1.26E+02	41.18	6.05E+01	4.93E+00	6.52E+01	4.15E+01
	21	583.74	1.70E+02	45.61	5.50E+00	3.61E+00	1.65E+02	4.57E+01
M	22	609.80	2.38E+02	37.01	5.07E+00	3.83E+00	2.33E+02	3.72E+01
m	23	617.24	2.11E+01	26.00			2.11E+01	2.60E+01
	24	711.98	4.00E+01	34.29			4.00E+01	3.43E+01
	25	727.50	5.77E+01	31.86			5.77E+01	3.19E+01
	26	770.13	4.53E+01	30.15			4.53E+01	3.01E+01
M	27	795.35	3.56E+01	19.57			3.56E+01	1.96E+01
m	28	799.02	1.31E+01	18.73			1.31E+01	1.87E+01
	29	911.83	1.51E+02	32.51			1.51E+02	3.25E+01
	30	969.83	4.73E+01	35.72			4.73E+01	3.57E+01
	31	1041.74	2.77E+01	21.91			2.77E+01	2.19E+01
	32	1120.99	3.50E+01	31.30	1.09E+00	2.08E+00	3.39E+01	3.14E+01
	33	1239.69	2.44E+01	23.83			2.44E+01	2.38E+01
	34	1328.32	9.93E+00	12.01			9.93E+00	1.20E+01
	35	1438.18	1.07E+01	7.55			1.07E+01	7.55E+00
	36	1446.73	1.78E+01	10.69			1.78E+01	1.07E+01
	37	1461.41	3.78E+02	42.90	4.33E+00	2.02E+00	3.73E+02	4.29E+01
	38	1559.50	6.22E+00	7.35			6.22E+00	7.35E+00
M	39	1589.00	9.54E+00	4.47			9.54E+00	4.47E+00
m	40	1592.65	2.24E+01	14.46			2.24E+01	1.45E+01
	41	1765.05	2.10E+01	13.42			2.10E+01	1.34E+01
	42	1977.10	6.00E+00	4.90			6.00E+00	4.90E+00
	43	2203.56	1.80E+01	8.49			1.80E+01	8.49E+00
	44	2217.63	5.50E+00	6.34			5.50E+00	6.34E+00
	45	2275.26	7.00E+00	5.29			7.00E+00	5.29E+00
	46	2291.46	5.71E+00	6.08			5.71E+00	6.08E+00
	47	2393.87	1.08E+01	9.59			1.08E+01	9.59E+00
	48	2467.24	6.00E+00	4.90			6.00E+00	4.90E+00
	49	2614.86	4.70E+01	13.71	2.52E+00	1.44E+00	4.45E+01	1.38E+01

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1606041-15

CP-5030 10-15

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 11:27:00AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038678.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	1.37E+02	68.92	4.97E+01	7.81E+00	8.69E+01	6.94E+01
M	2	5.09E+02	103.32			5.09E+02	1.03E+02
m	3	5.80E+02	76.52	6.70E+00	3.28E+00	5.74E+02	7.66E+01
	4	8.15E+01	62.23	1.07E+01	3.99E+00	7.08E+01	6.24E+01
	5	1.96E+02	110.31	8.20E+01	2.30E+01	1.14E+02	1.13E+02
	6	8.90E+01	69.97			8.90E+01	7.00E+01
	7	1.44E+02	67.50	3.45E+01	5.92E+00	1.10E+02	6.78E+01
M	8	4.11E+01	20.83			4.11E+01	2.08E+01
m	9	9.64E+01	47.81			9.64E+01	4.78E+01
M	10	7.58E+02	67.51	1.33E+01	5.09E+00	7.45E+02	6.77E+01
m	11	1.26E+02	52.18			1.26E+02	5.22E+01
	12	4.91E+01	36.21			4.91E+01	3.62E+01
M	13	1.76E+02	41.49	1.94E+00	4.39E+00	1.74E+02	4.17E+01
m	14	3.63E+01	48.99			3.63E+01	4.90E+01
	15	2.31E+01	28.20			2.31E+01	2.82E+01
	16	4.99E+01	47.98			4.99E+01	4.80E+01
	17	1.05E+02	46.86			1.05E+02	4.69E+01
	18	3.23E+02	52.04	4.00E+00	3.58E+00	3.19E+02	5.22E+01
	19	4.81E+01	40.45			4.81E+01	4.05E+01
	20	1.26E+02	41.18	6.05E+01	4.93E+00	6.52E+01	4.15E+01
	21	1.70E+02	45.61	5.50E+00	3.61E+00	1.65E+02	4.57E+01
M	22	2.38E+02	37.01	5.07E+00	3.83E+00	2.33E+02	3.72E+01
m	23	2.11E+01	26.00			2.11E+01	2.60E+01
	24	4.00E+01	34.29			4.00E+01	3.43E+01
	25	5.77E+01	31.86			5.77E+01	3.19E+01
	26	4.53E+01	30.15			4.53E+01	3.01E+01
M	27	3.56E+01	19.57			3.56E+01	1.96E+01
m	28	1.31E+01	18.73			1.31E+01	1.87E+01
	29	1.51E+02	32.51			1.51E+02	3.25E+01
	30	4.73E+01	35.72			4.73E+01	3.57E+01
	31	2.77E+01	21.91			2.77E+01	2.19E+01
	32	3.50E+01	31.30	1.09E+00	2.08E+00	3.39E+01	3.14E+01
	33	2.44E+01	23.83			2.44E+01	2.38E+01
	34	9.93E+00	12.01			9.93E+00	1.20E+01
	35	1.07E+01	7.55			1.07E+01	7.55E+00
	36	1.78E+01	10.69			1.78E+01	1.07E+01
	37	3.78E+02	42.90	4.33E+00	2.02E+00	3.73E+02	4.29E+01
	38	6.22E+00	7.35			6.22E+00	7.35E+00
M	39	9.54E+00	4.47			9.54E+00	4.47E+00
m	40	2.24E+01	14.46			2.24E+01	1.45E+01
	41	2.10E+01	13.42			2.10E+01	1.34E+01

Analysis Report for 1606041-15

CP-5030 10-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1977.10	6.00E+00	4.90			6.00E+00	4.90E+00
43	2203.56	1.80E+01	8.49			1.80E+01	8.49E+00
44	2217.63	5.50E+00	6.34			5.50E+00	6.34E+00
45	2275.26	7.00E+00	5.29			7.00E+00	5.29E+00
46	2291.46	5.71E+00	6.08			5.71E+00	6.08E+00
47	2393.87	1.08E+01	9.59			1.08E+01	9.59E+00
48	2467.24	6.00E+00	4.90			6.00E+00	4.90E+00
49	2614.86	4.70E+01	13.71	2.52E+00	1.44E+00	4.45E+01	1.38E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.944	1460.81 *	10.67	2.71E+01	3.87E+00
GA-67	0.940	93.31 *	35.70	2.67E+00	5.24E+00
		208.95 *	2.24	5.22E+01	7.13E+01
		300.22 *	16.00	3.66E+00	7.93E+00
		88.03 *	3.72	2.02E+00	1.80E+00
CD-109	0.961	87.57 *	37.00	2.00E-01	1.78E-01
SN-126	1.000	583.14 *	30.22	1.95E+00	5.70E-01
TL-208	0.861	860.37	4.48		
		2614.66 *	35.85	1.41E+00	4.59E-01
		46.50 *	4.25	3.45E+00	2.78E+00
PB-210	0.990	727.17 *	11.80	2.12E+00	1.19E+00
BI-212	0.756	1620.62	2.75		
		238.63 *	44.60	2.81E+00	3.35E-01
PB-212	0.964	300.09 *	3.41	2.15E+00	2.91E+00
		609.31 *	46.30	1.87E+00	3.43E-01
BI-214	0.951	1120.29 *	15.10	1.41E+00	1.31E+00
		1764.49 *	15.80	1.19E+00	7.65E-01
		2204.22 *	4.98	3.75E+00	1.80E+00
		295.21 *	19.19	1.81E+00	4.55E-01
PB-214	0.968	351.92 *	37.19	1.98E+00	3.62E-01
		186.21 *	3.28	4.68E+00	9.05E+00
RA-226	0.993	338.32 *	11.40	2.06E+00	9.34E-01
AC-228	0.923	911.07 *	27.70	2.86E+00	6.56E-01

Analysis Report for 1606041-15
CP-5030 10-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AC-228	0.923	969.11 *	16.60	1.58E+00	1.20E+00
AM-243	0.961	74.67 *	66.00	8.32E-01	1.84E-01

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 11:27:00AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 3	77.64	1.59308E-01	6.68		
6	114.94	2.47313E-02	39.30		
M 8	204.21	1.14216E-02	25.33		
m 11	242.35	3.49534E-02	20.73		
12	270.37	1.36478E-02	36.85		
15	317.04	6.42157E-03	61.00		
16	328.39	1.38547E-02	48.10	Tol.	LA-140
19	464.19	1.33547E-02	42.07		
20	511.65	1.81181E-02	31.79		
m 23	617.24	5.85449E-03	61.68	Tol.	PM-144
24	711.98	1.11224E-02	42.82	Tol.	HO-166M
26	770.13	1.25897E-02	33.26	Sum	
M 27	795.35	9.88157E-03	27.51	Sum	
m 28	799.02	3.63653E-03	71.55		
31	1041.74	7.68964E-03	39.58		
33	1239.69	6.78315E-03	48.80		
34	1328.32	2.75884E-03	60.46		
35	1438.18	2.97454E-03	35.25		
36	1446.73	4.94048E-03	30.05		
38	1559.50	1.72840E-03	59.05		
M 39	1589.00	2.64927E-03	23.45		
m 40	1592.65	6.22451E-03	32.26	D-Esc	
42	1977.10	1.66667E-03	40.82		
44	2217.63	1.52778E-03	57.68		
45	2275.26	1.94444E-03	37.80		
46	2291.46	1.58730E-03	53.22	Sum	
47	2393.87	2.99603E-03	44.46		

Analysis Report for 1606041-15
CP-5030 10-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
48	2467.24	1.66667E-03	40.82		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.94	1460.81 *	10.67	2.71E+01	3.87E+00
GA-67	0.94	93.31 *	35.70	2.67E+00	5.24E+00
		208.95 *	2.24	5.22E+01	7.13E+01
		300.22 *	16.00	3.66E+00	7.93E+00
CD-109	0.96	88.03 *	3.72	2.02E+00	1.80E+00
SN-126	1.00	87.57 *	37.00	2.00E-01	1.78E-01
TL-208	0.86	583.14 *	30.22	1.95E+00	5.70E-01
		860.37	4.48		
		2614.66 *	35.85	1.41E+00	4.59E-01
PB-210	0.99	46.50 *	4.25	3.45E+00	2.78E+00
BI-212	0.75	727.17 *	11.80	2.12E+00	1.19E+00
		1620.62	2.75		
PB-212	0.96	238.63 *	44.60	2.81E+00	3.35E-01
		300.09 *	3.41	2.15E+00	2.91E+00
BI-214	0.95	609.31 *	46.30	1.87E+00	3.43E-01
		1120.29 *	15.10	1.41E+00	1.31E+00
		1764.49 *	15.80	1.19E+00	7.65E-01
		2204.22 *	4.98	3.75E+00	1.80E+00
PB-214	0.96	295.21 *	19.19	1.81E+00	4.55E-01
		351.92 *	37.19	1.98E+00	3.62E-01
RA-226	0.99	186.21 *	3.28	4.68E+00	9.05E+00
AC-228	0.92	338.32 *	11.40	2.06E+00	9.34E-01
		911.07 *	27.70	2.86E+00	6.56E-01
		969.11 *	16.60	1.58E+00	1.20E+00
AM-243	0.96	74.67 *	66.00	8.32E-01	1.84E-01

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* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.944	2.71E+01	3.87E+00	
GA-67	0.940	2.23E+00	3.67E+00	
? CD-109	0.961	2.02E+00	1.80E+00	
? SN-126	1.000	2.00E-01	1.78E-01	
TL-208	0.861	1.62E+00	3.57E-01	
PB-210	0.990	3.45E+00	2.78E+00	
BI-212	0.756	2.12E+00	1.19E+00	
PB-212	0.964	2.78E+00	3.34E-01	
BI-214	0.951	1.79E+00	3.00E-01	
PB-214	0.968	1.92E+00	2.83E-01	
RA-226	0.993	4.68E+00	9.05E+00	
AC-228	0.923	2.43E+00	4.90E-01	
AM-243	0.961	8.32E-01	1.84E-01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 11:27:00AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	3	77.64	1.59308E-01		
	6	114.94	2.47313E-02		
M	8	204.21	1.14216E-02		
m	11	242.35	3.49534E-02		
	12	270.37	1.36478E-02		
	15	317.04	6.42157E-03		
	16	328.39	1.38547E-02	Tol.	LA-140
	19	464.19	1.33547E-02		
	20	511.65	1.81181E-02		
m	23	617.24	5.85449E-03	Tol.	PM-144
	24	711.98	1.11224E-02	Tol.	HO-166M
	26	770.13	1.25897E-02	Sum	
M	27	795.35	9.88157E-03	Sum	
m	28	799.02	3.63653E-03		
	31	1041.74	7.68964E-03		
	33	1239.69	6.78315E-03		
	34	1328.32	2.75884E-03		
	35	1438.18	2.97454E-03		
	36	1446.73	4.94048E-03		
	38	1559.50	1.72840E-03		
M	39	1589.00	2.64927E-03		
m	40	1592.65	6.22451E-03	D-Esc	
	42	1977.10	1.66667E-03		
	44	2217.63	1.52778E-03		
	45	2275.26	1.94444E-03		
	46	2291.46	1.58730E-03	Sum	
	47	2393.87	2.99603E-03		
	48	2467.24	1.66667E-03		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

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NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)	
+	BE-7	477.59	10.42	-2.13E-01	1.35E+00	1.35E+00
+	NA-22	1274.54	99.94	-1.05E-01	2.23E-01	2.23E-01
+	NA-24	1368.53	99.99	3.14E+03	6.35E+03	9.29E+03
		2754.09	99.86	8.52E+02		6.35E+03
+	AL-26	1808.65	99.76	-1.62E-02	1.52E-01	1.52E-01
+	K-40	1460.81	* 10.67	2.71E+01	2.44E+00	2.44E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	2.12E-03	1.30E-01	1.30E-01
		78.34	96.00	3.83E-01		1.68E-01
+	SC-46	889.25	99.98	4.49E-02	1.53E-01	1.53E-01
		1120.51	99.99	2.31E-01		2.94E-01
+	V-48	983.52	99.98	-1.20E-01	2.53E-01	2.53E-01
		1312.10	97.50	-3.13E-02		3.05E-01
+	CR-51	320.08	9.83	-6.65E-02	1.62E+00	1.62E+00
+	MN-54	834.83	99.97	1.06E-01	1.90E-01	1.90E-01
+	CO-56	846.75	99.96	8.20E-02	1.75E-01	1.75E-01
		1037.75	14.03	-1.03E-01		1.31E+00
		1238.25	67.00	3.16E-01		4.38E-01
		1771.40	15.51	-5.46E-02		8.88E-01
		2598.48	16.90	1.38E-01		7.89E-01
+	CO-57	122.06	85.51	1.26E-02	1.02E-01	1.02E-01
		136.48	10.60	-1.83E-01		8.59E-01
+	CO-58	810.76	99.40	1.58E-02	1.61E-01	1.61E-01
+	FE-59	1099.22	56.50	3.67E-02	3.89E-01	3.89E-01
		1291.56	43.20	1.38E-01		6.30E-01
+	CO-60	1173.22	100.00	2.35E-02	1.92E-01	1.92E-01
		1332.49	100.00	4.92E-02		2.40E-01
+	ZN-65	1115.52	50.75	1.36E-02	3.82E-01	3.82E-01
+	GA-67	93.31	* 35.70	2.67E+00	4.31E+00	4.31E+00
		208.95	* 2.24	5.22E+01		6.17E+01
		300.22	* 16.00	3.66E+00		1.15E+01
+	SE-75	121.11	16.70	-2.42E-02	1.57E-01	5.17E-01
		136.00	59.20	-7.12E-02		1.57E-01
		264.65	59.80	4.69E-02		1.96E-01
		279.53	25.20	1.80E-01		5.40E-01
		400.65	11.40	-6.04E-01		1.20E+00
+	RB-82	776.52	13.00	7.42E-03	1.56E+00	1.56E+00
+	RB-83	520.41	46.00	-1.03E-01	2.64E-01	2.64E-01
		529.64	30.30	1.03E-02		5.05E-01
		552.65	16.40	-9.65E-03		9.37E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	KR-85	513.99	0.43	6.04E+01	4.27E+01	4.27E+01
+	SR-85	513.99	99.27	2.93E-01	2.07E-01	2.07E-01
+	Y-88	898.02	93.40	-4.20E-02	1.75E-01	1.75E-01
		1836.01	99.38	4.38E-02		1.85E-01
+	NB-93M	16.57	9.43	7.20E+00	1.54E+02	1.54E+02
+	NB-94	702.63	100.00	8.31E-02	1.53E-01	1.66E-01
		871.10	100.00	6.34E-02		1.53E-01
+	NB-95	765.79	99.81	-7.34E-03	2.25E-01	2.25E-01
+	NB-95M	235.69	25.00	7.50E+00	5.30E+00	5.30E+00
+	ZR-95	724.18	43.70	-2.05E-01	3.12E-01	4.29E-01
		756.72	55.30	-1.04E-01		3.12E-01
+	MO-99	181.06	6.20	6.05E-01	1.38E+01	1.80E+01
		739.58	12.80	-6.38E+00		1.38E+01
		778.00	4.50	-1.55E+01		3.93E+01
+	RU-103	497.08	89.00	-5.45E-02	1.68E-01	1.68E-01
+	RU-106	621.84	9.80	1.18E-01	1.51E+00	1.51E+00
+	AG-108M	433.93	89.90	-9.23E-02	1.40E-01	1.40E-01
		614.37	90.40	-7.93E-01		1.96E-01
		722.95	90.50	-1.53E-01		1.65E-01
+	CD-109	88.03	* 3.72	2.02E+00	2.90E+00	2.90E+00
+	AG-110M	657.75	93.14	-6.02E-02	1.71E-01	1.71E-01
		677.61	10.53	2.21E-01		1.31E+00
		706.67	16.46	1.17E-01		1.01E+00
		763.93	21.98	1.62E-01		7.53E-01
		884.67	71.63	-1.21E-01		1.81E-01
		1384.27	23.94	6.66E-02		7.99E-01
+	CD-113M	263.70	0.02	1.84E+01	4.84E+02	4.84E+02
+	SN-113	255.12	1.93	2.57E-02	2.04E-01	6.26E+00
		391.69	64.90	-1.65E-01		2.04E-01
+	TE123M	159.00	84.10	4.09E-02	1.20E-01	1.20E-01
+	SB-124	602.71	97.87	-2.23E-02	1.54E-01	1.54E-01
		645.85	7.26	-4.95E-02		2.20E+00
		722.78	11.10	-1.40E+00		1.50E+00
		1691.02	49.00	-7.42E-02		2.38E-01
+	I-125	35.49	6.49	-1.06E+00	4.39E+00	4.39E+00
+	SB-125	176.33	6.89	2.28E-01	4.62E-01	1.40E+00
		427.89	29.33	1.71E-01		4.62E-01
		463.38	10.35	9.09E-01		1.60E+00
		600.56	17.80	-6.47E-02		7.11E-01
		635.90	11.32	1.92E-01		1.42E+00
+	SB-126	414.70	83.30	-1.43E-01	2.65E-01	2.65E-01
		666.33	99.60	-8.60E-03		2.90E-01
		695.00	99.60	5.31E-02		2.66E-01
		720.50	53.80	-3.16E-01		4.12E-01
+	SN-126	87.57	* 37.00	2.00E-01	2.87E-01	2.87E-01
+	SB-127	473.00	25.00	1.53E+00	2.57E+00	3.05E+00
		685.20	35.70	2.01E-01		2.57E+00
		783.80	14.70	1.85E+00		6.85E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-129	29.78	57.00	-1.87E-01	7.72E-01	7.72E-01
		33.60	13.20	-1.94E-01		2.29E+00
		39.58	7.52	8.23E-01		2.64E+00
+	I-131	284.30	6.05	2.49E+00	3.56E-01	4.77E+00
		364.48	81.20	9.72E-03		3.56E-01
		636.97	7.26	4.82E-02		4.93E+00
		722.89	1.80	-1.79E+01		1.92E+01
+	TE-132	49.72	13.10	-2.40E-01	1.01E+00	8.07E+00
		228.16	88.00	-3.24E-02		1.01E+00
+	BA-133	81.00	33.00	-2.95E-01	3.09E-01	3.31E-01
		302.84	17.80	-1.95E-02		7.19E-01
		356.01	60.00	7.33E-04		3.09E-01
+	I-133	529.87	86.30	8.26E+00	4.03E+02	4.03E+02
+	XE-133	81.00	38.00	-9.29E-01	1.04E+00	1.04E+00
+	CS-134	563.23	8.38	3.28E-01	1.53E-01	1.81E+00
		569.32	15.43	-1.27E-01		9.21E-01
		604.70	97.60	-2.54E-02		1.53E-01
		795.84	85.40	2.53E-01		2.19E-01
		801.93	8.73	-6.41E-03		1.49E+00
+	CS-135	268.24	16.00	-4.78E-02	7.69E-01	7.69E-01
+	I-135	1131.51	22.50	1.81E+10	2.77E+10	4.23E+10
		1260.41	28.60	-9.10E+09		2.77E+10
		1678.03	9.54	8.47E+09		7.68E+10
+	CS-136	153.22	7.46	5.42E-01	2.56E-01	2.12E+00
		163.89	4.61	2.96E-01		3.23E+00
		176.55	13.56	3.82E-01		1.20E+00
		273.65	12.66	-4.54E-01		1.57E+00
		340.57	48.50	5.62E-02		5.75E-01
		818.50	99.70	1.77E-02		2.56E-01
		1048.07	79.60	-2.80E-02		2.99E-01
		1235.34	19.70	-4.38E-02		2.01E+00
+	CS-137	661.65	85.12	3.75E-02	2.06E-01	2.06E-01
+	LA-138	788.74	34.00	2.19E-01	2.54E-01	4.91E-01
		1435.80	66.00	2.32E-03		2.54E-01
+	CE-139	165.85	80.35	-6.19E-02	1.13E-01	1.13E-01
+	BA-140	162.64	6.70	9.84E-01	9.35E-01	2.38E+00
		304.84	4.50	-1.47E+00		4.43E+00
		423.70	3.20	4.36E-01		6.87E+00
		437.55	2.00	3.66E+00		1.18E+01
		537.32	25.00	-7.85E-02		9.35E-01
+	LA-140	328.77	20.50	6.41E-01	3.90E-01	1.15E+00
		487.03	45.50	9.12E-04		4.90E-01
		815.85	23.50	-1.89E-01		1.02E+00
		1596.49	95.49	-8.61E-03		3.90E-01
+	CE-141	145.44	48.40	6.15E-02	2.40E-01	2.40E-01
+	CE-143	57.36	11.80	-3.96E+01	5.46E+01	1.43E+02
		293.26	42.00	5.07E+00		5.46E+01
		664.55	5.20	2.83E+02		4.66E+02
+	CE-144	133.54	10.80	-2.78E-02	8.59E-01	8.59E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-144	476.78	42.00	-2.00E-01	1.55E-01	2.84E-01
		618.01	98.60	7.78E-02		1.61E-01
		696.49	99.49	-2.88E-02		1.55E-01
+	PM-145	36.85	21.70	-5.56E-01	5.75E-01	1.07E+00
		37.36	39.70	-2.70E-02		5.75E-01
		42.30	15.10	-2.05E-01		1.09E+00
		72.40	2.31	-9.70E+00		6.03E+00
+	PM-146	453.90	39.94	-2.28E-01	3.31E-01	3.31E-01
		735.90	14.01	2.20E-01		1.09E+00
		747.13	13.10	1.21E-03		1.12E+00
+	ND-147	91.11	28.90	-7.90E-01	7.97E-01	7.97E-01
		531.02	13.10	-2.30E-01		1.95E+00
+	PM-149	285.90	3.10	-1.78E+01	8.11E+01	8.11E+01
+	EU-152	121.78	20.50	5.14E-02	4.15E-01	4.15E-01
		244.69	5.40	6.86E-01		2.68E+00
		344.27	19.13	1.28E-01		6.11E-01
		778.89	9.20	4.72E-01		1.72E+00
		964.01	10.40	-4.29E-02		1.96E+00
		1085.78	7.22	-1.19E+00		2.46E+00
		1112.02	9.60	1.28E-01		1.80E+00
		1407.95	14.94	-4.21E-01		1.13E+00
+	GD-153	97.43	31.30	1.41E-02	2.87E-01	2.87E-01
		103.18	22.20	-2.82E-01		4.02E-01
+	EU-154	123.07	40.50	2.26E-02	2.15E-01	2.15E-01
		723.30	19.70	-7.07E-01		7.59E-01
		873.19	11.50	-1.30E-01		1.25E+00
		996.32	10.30	-4.77E-01		1.53E+00
		1004.76	17.90	-1.07E-01		9.29E-01
		1274.45	35.50	-2.95E-01		6.24E-01
+	EU-155	86.50	30.90	3.11E-01	4.18E-01	4.18E-01
		105.30	20.70	8.79E-02		4.42E-01
+	EU-156	811.77	10.40	1.05E-01	2.14E+00	2.14E+00
		1153.47	7.20	-1.94E-01		3.86E+00
		1230.71	8.90	-7.92E-01		3.73E+00
+	HO-166M	184.41	72.60	2.30E-01	1.71E-01	1.71E-01
		280.45	29.60	2.64E-01		4.37E-01
		410.94	11.10	8.01E-01		1.29E+00
		711.69	54.10	8.23E-02		2.97E-01
+	TM-171	66.72	0.14	-6.36E+00	8.94E+01	8.94E+01
+	HF-172	81.75	4.52	-1.25E+00	7.88E-01	2.41E+00
		125.81	11.30	-7.01E-01		7.88E-01
+	LU-172	181.53	20.60	1.40E-01	8.05E-01	1.29E+00
		810.06	16.63	2.01E-01		2.41E+00
		912.12	15.25	1.43E+01		6.06E+00
		1093.66	62.50	1.26E-01		8.05E-01
+	LU-173	100.72	5.24	1.48E-01	5.94E-01	1.70E+00
		272.11	21.20	2.63E-02		5.94E-01
+	HF-175	343.40	84.00	5.14E-02	1.72E-01	1.72E-01
+	LU-176	88.34	13.30	5.40E-01	1.28E-01	9.87E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-176	201.83	86.00	1.16E-02	1.28E-01	1.39E-01
		306.78	94.00	-1.45E-02		1.28E-01
+	TA-182	67.75	41.20	5.15E-03	3.16E-01	3.16E-01
		1121.30	34.90	6.94E-01		8.29E-01
		1189.05	16.23	-2.35E-01		1.35E+00
		1221.41	26.98	3.19E-01		8.88E-01
		1231.02	11.44	2.04E-01		2.04E+00
+	IR-192	308.46	29.68	1.92E-01	3.15E-01	4.48E-01
		468.07	48.10	-4.10E-02		3.15E-01
+	HG-203	279.19	77.30	3.09E-02	1.89E-01	1.89E-01
+	BI-207	569.67	97.72	-7.48E-02	1.38E-01	1.38E-01
		1063.62	74.90	2.08E-02		2.29E-01
+	TL-208	583.14	* 30.22	1.95E+00	2.68E-01	7.70E-01
		860.37	4.48	7.72E-01		3.68E+00
		2614.66	* 35.85	1.41E+00		2.68E-01
+	BI-210M	262.00	45.00	4.19E-02	2.49E-01	2.49E-01
		300.00	23.00	-1.31E+00		6.08E-01
+	PB-210	46.50	* 4.25	3.45E+00	4.47E+00	4.47E+00
+	PB-211	404.84	2.90	-5.11E-01	4.68E+00	4.68E+00
		831.96	2.90	9.89E-01		5.98E+00
+	BI-212	727.17	* 11.80	2.12E+00	1.79E+00	1.79E+00
		1620.62	2.75	-2.14E+00		5.54E+00
+	PB-212	238.63	* 44.60	2.81E+00	4.41E-01	4.41E-01
		300.09	* 3.41	2.15E+00		6.80E+00
+	BI-214	609.31	* 46.30	1.87E+00	5.63E-01	6.20E-01
		1120.29	* 15.10	1.41E+00		2.10E+00
		1764.49	* 15.80	1.19E+00		1.06E+00
		2204.22	* 4.98	3.75E+00		5.63E-01
+	PB-214	295.21	* 19.19	1.81E+00	4.05E-01	1.17E+00
		351.92	* 37.19	1.98E+00		4.05E-01
+	RN-219	401.80	6.50	1.25E-01	2.04E+00	2.04E+00
+	RA-223	323.87	3.88	1.32E-01	3.17E+00	3.17E+00
+	RA-224	240.98	3.95	3.42E+01	6.41E+00	6.41E+00
+	RA-225	40.00	31.00	3.08E-01	9.89E-01	9.89E-01
+	RA-226	186.21	* 3.28	4.68E+00	4.64E+00	4.64E+00
+	TH-227	50.10	8.40	-4.63E-02	1.56E+00	1.56E+00
		236.00	11.50	2.50E+00		1.77E+00
		256.20	6.30	3.44E-01		1.80E+00
+	AC-228	338.32	* 11.40	2.06E+00	7.18E-01	1.41E+00
		911.07	* 27.70	2.86E+00		7.18E-01
		969.11	* 16.60	1.58E+00		1.90E+00
+	TH-230	48.44	16.90	5.94E-01	8.97E-01	8.97E-01
		62.85	4.60	2.48E+00		3.01E+00
		67.67	0.37	5.41E-01		3.32E+01
+	PA-231	283.67	1.60	4.06E+00	5.55E+00	7.76E+00
		302.67	2.30	-1.51E-01		5.55E+00
+	TH-231	25.64	14.70	-1.67E+00	1.78E+00	5.78E+00
		84.21	6.40	6.60E-01		1.78E+00

Analysis Report for 1606041-15
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-233	311.98	38.60	6.20E-02	3.93E-01	3.93E-01
+	PA-234	131.20	20.40	3.78E-01	4.77E-01	4.77E-01
		733.99	8.80	1.25E-01		1.70E+00
		946.00	12.00	-6.34E-01		1.28E+00
+	PA-234M	1001.03	0.92	7.68E+00	1.87E+01	1.87E+01
+	TH-234	63.29	3.80	4.52E+00	3.62E+00	3.62E+00
+	U-235	143.76	10.50	4.55E-02	8.90E-01	8.90E-01
		163.35	4.70	1.73E-01		1.89E+00
		205.31	4.70	-3.48E+00		2.49E+00
+	NP-237	86.50	12.60	7.61E-01	1.02E+00	1.02E+00
+	NP-239	106.10	22.70	4.51E-01	7.22E+00	7.22E+00
		228.18	10.70	-5.91E-01		1.85E+01
		277.60	14.10	6.00E+00		1.58E+01
+	AM-241	59.54	35.90	-4.08E-02	3.54E-01	3.54E-01
+	AM-243	74.67	* 66.00	8.32E-01	3.78E-01	3.78E-01
+	CM-243	209.75	3.29	2.87E+00	8.98E-01	3.96E+00
		228.14	10.60	-3.37E-02		1.06E+00
		277.60	14.00	3.42E-01		8.98E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	1.35E+00	1.35E+00	-2.13E-01	6.33E-01
NA-22	1274.54	99.94	2.23E-01	2.23E-01	-1.05E-01	1.02E-01
NA-24	1368.53	99.99	9.29E+03	6.35E+03	3.14E+03	4.14E+03
	2754.09	99.86	6.35E+03		8.52E+02	2.38E+03

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AL-26	1808.65	99.76	1.52E-01	1.52E-01	-1.62E-02	6.36E-02
+ K-40	1460.81	* 10.67	2.44E+00	2.44E+00	2.71E+01	1.12E+00
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	1.30E-01	1.30E-01	2.12E-03	6.34E-02
	78.34	96.00	1.68E-01		3.83E-01	8.27E-02
SC-46	889.25	99.98	1.53E-01	1.53E-01	4.49E-02	6.88E-02
	1120.51	99.99	2.94E-01		2.31E-01	1.38E-01
V-48	983.52	99.98	2.53E-01	2.53E-01	-1.20E-01	1.15E-01
	1312.10	97.50	3.05E-01		-3.13E-02	1.37E-01
CR-51	320.08	9.83	1.62E+00	1.62E+00	-6.65E-02	7.72E-01
MN-54	834.83	99.97	1.90E-01	1.90E-01	1.06E-01	8.84E-02
CO-56	846.75	99.96	1.75E-01	1.75E-01	8.20E-02	8.03E-02
	1037.75	14.03	1.31E+00		-1.03E-01	5.91E-01
	1238.25	67.00	4.38E-01		3.16E-01	2.04E-01
	1771.40	15.51	8.88E-01		-5.46E-02	3.59E-01
	2598.48	16.90	7.89E-01		1.38E-01	2.95E-01
CO-57	122.06	85.51	1.02E-01	1.02E-01	1.26E-02	4.92E-02
	136.48	10.60	8.59E-01		-1.83E-01	4.15E-01
CO-58	810.76	99.40	1.61E-01	1.61E-01	1.58E-02	7.36E-02
FE-59	1099.22	56.50	3.89E-01	3.89E-01	3.67E-02	1.77E-01
	1291.56	43.20	6.30E-01		1.38E-01	2.89E-01
CO-60	1173.22	100.00	1.92E-01	1.92E-01	2.35E-02	8.73E-02
	1332.49	100.00	2.40E-01		4.92E-02	1.10E-01
ZN-65	1115.52	50.75	3.82E-01	3.82E-01	1.36E-02	1.74E-01
+ GA-67	93.31	* 35.70	4.31E+00	4.31E+00	2.67E+00	2.12E+00
	208.95	* 2.24	6.17E+01		5.22E+01	3.01E+01
	300.22	* 16.00	1.15E+01		3.66E+00	5.63E+00
SE-75	121.11	16.70	5.17E-01	1.57E-01	-2.42E-02	2.49E-01
	136.00	59.20	1.57E-01		-7.12E-02	7.57E-02
	264.65	59.80	1.96E-01		4.69E-02	9.36E-02
	279.53	25.20	5.40E-01		1.80E-01	2.59E-01
	400.65	11.40	1.20E+00		-6.04E-01	5.65E-01
RB-82	776.52	13.00	1.56E+00	1.56E+00	7.42E-03	7.18E-01
RB-83	520.41	46.00	2.64E-01	2.64E-01	-1.03E-01	1.21E-01
	529.64	30.30	5.05E-01		1.03E-02	2.37E-01
	552.65	16.40	9.37E-01		-9.65E-03	4.38E-01
KR-85	513.99	0.43	4.27E+01	4.27E+01	6.04E+01	2.04E+01
SR-85	513.99	99.27	2.07E-01	2.07E-01	2.93E-01	9.86E-02
Y-88	898.02	93.40	1.75E-01	1.75E-01	-4.20E-02	7.92E-02
	1836.01	99.38	1.85E-01		4.38E-02	7.94E-02
NB-93M	16.57	9.43	1.54E+02	1.54E+02	7.20E+00	7.47E+01
NB-94	702.63	100.00	1.66E-01	1.53E-01	8.31E-02	7.71E-02
	871.10	100.00	1.53E-01		6.34E-02	6.97E-02
NB-95	765.79	99.81	2.25E-01	2.25E-01	-7.34E-03	1.05E-01
NB-95M	235.69	25.00	5.30E+00	5.30E+00	7.50E+00	2.59E+00
ZR-95	724.18	43.70	4.29E-01	3.12E-01	-2.05E-01	2.00E-01
	756.72	55.30	3.12E-01		-1.04E-01	1.44E-01
MO-99	181.06	6.20	1.80E+01	1.38E+01	6.05E-01	8.67E+00
	739.58	12.80	1.38E+01		-6.38E+00	6.35E+00
	778.00	4.50	3.93E+01		-1.55E+01	1.80E+01
RU-103	497.08	89.00	1.68E-01	1.68E-01	-5.45E-02	7.85E-02
RU-106	621.84	9.80	1.51E+00	1.51E+00	1.18E-01	7.03E-01
AG-108M	433.93	89.90	1.40E-01	1.40E-01	-9.23E-02	6.60E-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AG-108M	614.37	90.40	1.96E-01	1.40E-01	-7.93E-01	9.24E-02
	722.95	90.50	1.65E-01		-1.53E-01	7.60E-02
+ CD-109	88.03 *	3.72	2.90E+00	2.90E+00	2.02E+00	1.41E+00
AG-110M	657.75	93.14	1.71E-01	1.71E-01	-6.02E-02	7.96E-02
	677.61	10.53	1.31E+00		2.21E-01	6.00E-01
	706.67	16.46	1.01E+00		1.17E-01	4.68E-01
	763.93	21.98	7.53E-01		1.62E-01	3.48E-01
	884.67	71.63	1.81E-01		-1.21E-01	8.03E-02
	1384.27	23.94	7.99E-01		6.66E-02	3.56E-01
CD-113M	263.70	0.02	4.84E+02	4.84E+02	1.84E+01	2.31E+02
SN-113	255.12	1.93	6.26E+00	2.04E-01	2.57E-02	3.00E+00
	391.69	64.90	2.04E-01		-1.65E-01	9.62E-02
TE123M	159.00	84.10	1.20E-01	1.20E-01	4.09E-02	5.81E-02
SB-124	602.71	97.87	1.54E-01	1.54E-01	-2.23E-02	7.13E-02
	645.85	7.26	2.20E+00		-4.95E-02	1.02E+00
	722.78	11.10	1.50E+00		-1.40E+00	6.93E-01
	1691.02	49.00	2.38E-01		-7.42E-02	9.21E-02
I-125	35.49	6.49	4.39E+00	4.39E+00	-1.06E+00	2.12E+00
SB-125	176.33	6.89	1.40E+00	4.62E-01	2.28E-01	6.75E-01
	427.89	29.33	4.62E-01		1.71E-01	2.18E-01
	463.38	10.35	1.60E+00		9.09E-01	7.61E-01
	600.56	17.80	7.11E-01		-6.47E-02	3.27E-01
	635.90	11.32	1.42E+00		1.92E-01	6.63E-01
SB-126	414.70	83.30	2.65E-01	2.65E-01	-1.43E-01	1.25E-01
	666.33	99.60	2.90E-01		-8.60E-03	1.35E-01
	695.00	99.60	2.66E-01		5.31E-02	1.23E-01
	720.50	53.80	4.12E-01		-3.16E-01	1.87E-01
+ SN-126	87.57 *	37.00	2.87E-01	2.87E-01	2.00E-01	1.40E-01
SB-127	473.00	25.00	3.05E+00	2.57E+00	1.53E+00	1.43E+00
	685.20	35.70	2.57E+00		2.01E-01	1.19E+00
	783.80	14.70	6.85E+00		1.85E+00	3.18E+00
I-129	29.78	57.00	7.72E-01	7.72E-01	-1.87E-01	3.73E-01
	33.60	13.20	2.29E+00		-1.94E-01	1.11E+00
	39.58	7.52	2.64E+00		8.23E-01	1.28E+00
I-131	284.30	6.05	4.77E+00	3.56E-01	2.49E+00	2.29E+00
	364.48	81.20	3.56E-01		9.72E-03	1.69E-01
	636.97	7.26	4.93E+00		4.82E-02	2.30E+00
	722.89	1.80	1.92E+01		-1.79E+01	8.87E+00
TE-132	49.72	13.10	8.07E+00	1.01E+00	-2.40E-01	3.91E+00
	228.16	88.00	1.01E+00		-3.24E-02	4.87E-01
BA-133	81.00	33.00	3.31E-01	3.09E-01	-2.95E-01	1.61E-01
	302.84	17.80	7.19E-01		-1.95E-02	3.44E-01
	356.01	60.00	3.09E-01		7.33E-04	1.49E-01
I-133	529.87	86.30	4.03E+02	4.03E+02	8.26E+00	1.89E+02
XE-133	81.00	38.00	1.04E+00	1.04E+00	-9.29E-01	5.09E-01
CS-134	563.23	8.38	1.81E+00	1.53E-01	3.28E-01	8.47E-01
	569.32	15.43	9.21E-01		-1.27E-01	4.30E-01
	604.70	97.60	1.53E-01		-2.54E-02	7.16E-02
	795.84	85.40	2.19E-01		2.53E-01	1.02E-01
	801.93	8.73	1.49E+00		-6.41E-03	6.71E-01
CS-135	268.24	16.00	7.69E-01	7.69E-01	-4.78E-02	3.69E-01
I-135	1131.51	22.50	4.23E+10	2.77E+10	1.81E+10	1.94E+10
	1260.41	28.60	2.77E+10		-9.10E+09	1.23E+10

Analysis Report for 1606041-15
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-135	1678.03	9.54	7.68E+10	2.77E+10	8.47E+09	3.27E+10
CS-136	153.22	7.46	2.12E+00	2.56E-01	5.42E-01	1.02E+00
	163.89	4.61	3.23E+00		2.96E-01	1.55E+00
	176.55	13.56	1.20E+00		3.82E-01	5.79E-01
	273.65	12.66	1.57E+00		-4.54E-01	7.50E-01
	340.57	48.50	5.75E-01		5.62E-02	2.77E-01
	818.50	99.70	2.56E-01		1.77E-02	1.17E-01
	1048.07	79.60	2.99E-01		-2.80E-02	1.33E-01
	1235.34	19.70	2.01E+00		-4.38E-02	9.29E-01
CS-137	661.65	85.12	2.06E-01	2.06E-01	3.75E-02	9.64E-02
LA-138	788.74	34.00	4.91E-01	2.54E-01	2.19E-01	2.27E-01
	1435.80	66.00	2.54E-01		2.32E-03	1.11E-01
CE-139	165.85	80.35	1.13E-01	1.13E-01	-6.19E-02	5.40E-02
BA-140	162.64	6.70	2.38E+00	9.35E-01	9.84E-01	1.14E+00
	304.84	4.50	4.43E+00		-1.47E+00	2.11E+00
	423.70	3.20	6.87E+00		4.36E-01	3.24E+00
	437.55	2.00	1.18E+01		3.66E+00	5.58E+00
	537.32	25.00	9.35E-01		-7.85E-02	4.37E-01
LA-140	328.77	20.50	1.15E+00	3.90E-01	6.41E-01	5.51E-01
	487.03	45.50	4.90E-01		9.12E-04	2.30E-01
	815.85	23.50	1.02E+00		-1.89E-01	4.62E-01
	1596.49	95.49	3.90E-01		-8.61E-03	1.75E-01
CE-141	145.44	48.40	2.40E-01	2.40E-01	6.15E-02	1.16E-01
CE-143	57.36	11.80	1.43E+02	5.46E+01	-3.96E+01	6.95E+01
	293.26	42.00	5.46E+01		5.07E+00	2.64E+01
	664.55	5.20	4.66E+02		2.83E+02	2.19E+02
CE-144	133.54	10.80	8.59E-01	8.59E-01	-2.78E-02	4.15E-01
PM-144	476.78	42.00	2.84E-01	1.55E-01	-2.00E-01	1.32E-01
	618.01	98.60	1.61E-01		7.78E-02	7.51E-02
	696.49	99.49	1.55E-01		-2.88E-02	7.17E-02
PM-145	36.85	21.70	1.07E+00	5.75E-01	-5.56E-01	5.16E-01
	37.36	39.70	5.75E-01		-2.70E-02	2.78E-01
	42.30	15.10	1.09E+00		-2.05E-01	5.28E-01
	72.40	2.31	6.03E+00		-9.70E+00	2.95E+00
PM-146	453.90	39.94	3.31E-01	3.31E-01	-2.28E-01	1.56E-01
	735.90	14.01	1.09E+00		2.20E-01	5.00E-01
	747.13	13.10	1.12E+00		1.21E-03	5.12E-01
ND-147	91.11	28.90	7.97E-01	7.97E-01	-7.90E-01	3.90E-01
	531.02	13.10	1.95E+00		-2.30E-01	9.13E-01
PM-149	285.90	3.10	8.11E+01	8.11E+01	-1.78E+01	3.88E+01
EU-152	121.78	20.50	4.15E-01	4.15E-01	5.14E-02	2.00E-01
	244.69	5.40	2.68E+00		6.86E-01	1.30E+00
	344.27	19.13	6.11E-01		1.28E-01	2.89E-01
	778.89	9.20	1.72E+00		4.72E-01	7.90E-01
	964.01	10.40	1.96E+00		-4.29E-02	9.09E-01
	1085.78	7.22	2.46E+00		-1.19E+00	1.11E+00
	1112.02	9.60	1.80E+00		1.28E-01	8.13E-01
	1407.95	14.94	1.13E+00		-4.21E-01	4.99E-01
GD-153	97.43	31.30	2.87E-01	2.87E-01	1.41E-02	1.39E-01
	103.18	22.20	4.02E-01		-2.82E-01	1.94E-01
EU-154	123.07	40.50	2.15E-01	2.15E-01	2.26E-02	1.04E-01
	723.30	19.70	7.59E-01		-7.07E-01	3.50E-01
	873.19	11.50	1.25E+00		-1.30E-01	5.63E-01

Analysis Report for 1606041-15
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	996.32	10.30	1.53E+00	2.15E-01	-4.77E-01	6.92E-01
	1004.76	17.90	9.29E-01		-1.07E-01	4.21E-01
	1274.45	35.50	6.24E-01		-2.95E-01	2.85E-01
EU-155	86.50	30.90	4.18E-01	4.18E-01	3.11E-01	2.05E-01
	105.30	20.70	4.42E-01		8.79E-02	2.14E-01
EU-156	811.77	10.40	2.14E+00	2.14E+00	1.05E-01	9.71E-01
	1153.47	7.20	3.86E+00		-1.94E-01	1.74E+00
	1230.71	8.90	3.73E+00		-7.92E-01	1.70E+00
HO-166M	184.41	72.60	1.71E-01	1.71E-01	2.30E-01	8.29E-02
	280.45	29.60	4.37E-01		2.64E-01	2.10E-01
	410.94	11.10	1.29E+00		8.01E-01	6.11E-01
	711.69	54.10	2.97E-01		8.23E-02	1.38E-01
TM-171	66.72	0.14	8.94E+01	8.94E+01	-6.36E+00	4.36E+01
HF-172	81.75	4.52	2.41E+00	7.88E-01	-1.25E+00	1.17E+00
	125.81	11.30	7.88E-01		-7.01E-01	3.80E-01
LU-172	181.53	20.60	1.29E+00	8.05E-01	1.40E-01	6.19E-01
	810.06	16.63	2.41E+00		2.01E-01	1.10E+00
	912.12	15.25	6.06E+00		1.43E+01	2.90E+00
LU-173	1093.66	62.50	8.05E-01	5.94E-01	1.26E-01	3.66E-01
	100.72	5.24	1.70E+00		1.48E-01	8.21E-01
	272.11	21.20	5.94E-01		2.63E-02	2.85E-01
HF-175	343.40	84.00	1.72E-01	1.72E-01	5.14E-02	8.22E-02
LU-176	88.34	13.30	9.87E-01	1.28E-01	5.40E-01	4.83E-01
	201.83	86.00	1.39E-01		1.16E-02	6.71E-02
	306.78	94.00	1.28E-01		-1.45E-02	6.13E-02
TA-182	67.75	41.20	3.16E-01	3.16E-01	5.15E-03	1.54E-01
	1121.30	34.90	8.29E-01		6.94E-01	3.89E-01
	1189.05	16.23	1.35E+00		-2.35E-01	6.17E-01
	1221.41	26.98	8.88E-01		3.19E-01	4.08E-01
	1231.02	11.44	2.04E+00		2.04E-01	9.35E-01
IR-192	308.46	29.68	4.48E-01	3.15E-01	1.92E-01	2.14E-01
	468.07	48.10	3.15E-01		-4.10E-02	1.48E-01
HG-203	279.19	77.30	1.89E-01	1.89E-01	3.09E-02	9.08E-02
BI-207	569.67	97.72	1.38E-01	1.38E-01	-7.48E-02	6.41E-02
	1063.62	74.90	2.29E-01		2.08E-02	1.04E-01
+ TL-208	583.14	* 30.22	7.70E-01	2.68E-01	1.95E+00	3.69E-01
	860.37	4.48	3.68E+00		7.72E-01	1.69E+00
	2614.66	* 35.85	2.68E-01		1.41E+00	9.12E-02
BI-210M	262.00	45.00	2.49E-01	2.49E-01	4.19E-02	1.19E-01
	300.00	23.00	6.08E-01		-1.31E+00	2.92E-01
+ PB-210	46.50	* 4.25	4.47E+00	4.47E+00	3.45E+00	2.18E+00
	404.84	2.90	4.68E+00		4.68E+00	-5.11E-01	2.22E+00
+ PB-211	831.96	2.90	5.98E+00	1.79E+00	9.89E-01	2.76E+00
	727.17	* 11.80	1.79E+00		2.12E+00	8.46E-01
+ BI-212	1620.62	2.75	5.54E+00	4.41E-01	-2.14E+00	2.36E+00
	238.63	* 44.60	4.41E-01		2.81E+00	2.15E-01
+ PB-212	300.09	* 3.41	6.80E+00	5.63E-01	2.15E+00	3.32E+00
	609.31	* 46.30	6.20E-01		1.87E+00	2.99E-01
+ BI-214	1120.29	* 15.10	2.10E+00	4.05E-01	1.41E+00	9.94E-01
	1764.49	* 15.80	1.06E+00		1.19E+00	4.56E-01
	2204.22	* 4.98	5.63E-01		3.75E+00	0.00E+00
+ PB-214	295.21	* 19.19	1.17E+00	4.05E-01	1.81E+00	5.69E-01
	351.92	* 37.19	4.05E-01		1.98E+00	1.94E-01

Analysis Report for 1606041-15
CP-5030 10-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RN-219	401.80	6.50	2.04E+00	2.04E+00	1.25E-01	9.67E-01
RA-223	323.87	3.88	3.17E+00	3.17E+00	1.32E-01	1.51E+00
RA-224	240.98	3.95	6.41E+00	6.41E+00	3.42E+01	3.15E+00
RA-225	40.00	31.00	9.89E-01	9.89E-01	3.08E-01	4.79E-01
+ RA-226	186.21 *	3.28	4.64E+00	4.64E+00	4.68E+00	2.26E+00
TH-227	50.10	8.40	1.56E+00	1.56E+00	-4.63E-02	7.56E-01
	236.00	11.50	1.77E+00		2.50E+00	8.66E-01
	256.20	6.30	1.80E+00		3.44E-01	8.64E-01
+ AC-228	338.32 *	11.40	1.41E+00	7.18E-01	2.06E+00	6.80E-01
	911.07 *	27.70	7.18E-01		2.86E+00	3.33E-01
	969.11 *	16.60	1.90E+00		1.58E+00	9.06E-01
TH-230	48.44	16.90	8.97E-01	8.97E-01	5.94E-01	4.36E-01
	62.85	4.60	3.01E+00		2.48E+00	1.47E+00
	67.67	0.37	3.32E+01		5.41E-01	1.62E+01
PA-231	283.67	1.60	7.76E+00	5.55E+00	4.06E+00	3.72E+00
	302.67	2.30	5.55E+00		-1.51E-01	2.66E+00
TH-231	25.64	14.70	5.78E+00	1.78E+00	-1.67E+00	2.80E+00
	84.21	6.40	1.78E+00		6.60E-01	8.69E-01
PA-233	311.98	38.60	3.93E-01	3.93E-01	6.20E-02	1.87E-01
PA-234	131.20	20.40	4.77E-01	4.77E-01	3.78E-01	2.31E-01
	733.99	8.80	1.70E+00		1.25E-01	7.83E-01
	946.00	12.00	1.28E+00		-6.34E-01	5.77E-01
PA-234M	1001.03	0.92	1.87E+01	1.87E+01	7.68E+00	8.53E+00
TH-234	63.29	3.80	3.62E+00	3.62E+00	4.52E+00	1.77E+00
U-235	143.76	10.50	8.90E-01	8.90E-01	4.55E-02	4.30E-01
	163.35	4.70	1.89E+00		1.73E-01	9.07E-01
	205.31	4.70	2.49E+00		-3.48E+00	1.20E+00
NP-237	86.50	12.60	1.02E+00	1.02E+00	7.61E-01	5.00E-01
NP-239	106.10	22.70	7.22E+00	7.22E+00	4.51E-01	3.50E+00
	228.18	10.70	1.85E+01		-5.91E-01	8.89E+00
	277.60	14.10	1.58E+01		6.00E+00	7.56E+00
AM-241	59.54	35.90	3.54E-01	3.54E-01	-4.08E-02	1.72E-01
+ AM-243	74.67 *	66.00	3.78E-01	3.78E-01	8.32E-01	1.87E-01
CM-243	209.75	3.29	3.96E+00	8.98E-01	2.87E+00	1.92E+00
	228.14	10.60	1.06E+00		-3.37E-02	5.07E-01
	277.60	14.00	8.98E-01		3.42E-01	4.30E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

Analysis Report for 1606041-15
CP-5030 10-15

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP-5030 10-15

Elapsed Live time: 3600
 Elapsed Real Time: 3613

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	2	140	151	103	82	97	85	82	
17:	87	77	76	70	66	78	86	62	
25:	71	57	57	61	54	47	48	73	
33:	63	61	59	47	70	58	63	73	
41:	66	53	49	56	62	65	138	85	
49:	59	55	58	67	67	85	72	71	
57:	61	76	79	110	95	97	118	175	
65:	113	93	87	110	115	113	96	93	
73:	101	143	282	260	258	478	124	77	
81:	87	95	84	113	144	82	141	196	
89:	105	113	141	88	178	189	77	64	
97:	57	43	72	64	56	58	50	53	
105:	74	74	68	60	66	78	52	58	
113:	65	61	62	77	51	48	38	43	
121:	47	49	57	57	52	54	62	41	
129:	70	82	45	59	58	53	43	54	
137:	54	42	58	51	53	47	55	63	
145:	50	49	42	62	43	53	37	52	
153:	55	53	54	41	49	46	54	41	
161:	57	49	35	50	39	31	40	28	
169:	55	38	43	42	47	34	36	55	
177:	47	45	41	36	44	51	35	45	
185:	53	88	126	46	40	42	38	46	
193:	42	28	37	24	40	30	42	49	
201:	32	33	28	49	48	34	35	35	
209:	46	79	56	37	29	36	30	41	
217:	48	30	33	27	37	37	19	29	
225:	23	32	28	34	29	22	35	30	
233:	37	25	30	29	45	78	418	262	
241:	53	91	73	25	22	29	34	34	
249:	25	27	25	26	28	23	27	31	
257:	28	13	24	25	18	23	28	25	
265:	19	19	26	16	25	41	44	20	
273:	13	20	26	23	24	36	34	22	
281:	22	27	29	25	24	18	31	14	
289:	15	19	29	22	23	17	79	119	
297:	47	24	27	23	43	20	21	23	
305:	19	18	20	17	27	21	20	22	
313:	16	12	16	20	24	28	14	20	
321:	15	19	24	14	25	22	18	40	
329:	30	22	28	12	22	17	20	15	
337:	20	42	86	44	14	12	25	14	
345:	16	17	12	16	15	19	34	154	
353:	162	28	13	18	21	17	13	19	
361:	12	20	16	17	13	13	17	18	

369: 17 16 14 19 14 15 15 17

Sample Title: CP-5030 10-15

Channel	1	2	3	4	5	6	7	8
377:	18	20	10	22	18	13	14	12
385:	10	22	20	20	17	19	13	16
393:	15	12	8	21	19	15	14	9
401:	16	23	12	14	21	13	14	16
409:	17	23	20	17	17	12	12	12
417:	12	13	13	16	17	14	15	10
425:	14	12	12	17	7	23	15	9
433:	13	12	12	8	16	13	22	14
441:	18	12	13	16	12	10	14	12
449:	16	17	12	16	8	17	9	12
457:	12	15	19	13	11	18	30	27
465:	19	14	16	8	10	15	8	11
473:	16	5	12	12	6	9	10	7
481:	13	11	11	13	12	9	9	11
489:	14	7	12	9	8	11	8	6
497:	12	9	9	11	12	15	14	10
505:	19	4	10	9	12	22	42	39
513:	23	11	9	9	7	6	5	6
521:	10	10	3	14	9	11	17	9
529:	8	7	11	12	11	13	9	7
537:	10	8	11	11	8	11	11	11
545:	9	15	11	12	7	9	11	10
553:	8	12	8	12	9	12	11	5
561:	8	12	13	13	9	16	9	7
569:	5	11	8	9	10	9	12	6
577:	10	17	12	19	15	17	56	110
585:	30	8	10	9	5	4	10	11
593:	11	10	9	7	9	7	10	7
601:	10	3	6	3	12	12	8	21
609:	75	114	34	8	9	5	8	11
617:	17	9	12	6	6	8	6	9
625:	12	8	11	6	13	9	10	7
633:	10	5	13	10	10	13	8	5
641:	14	5	9	8	8	10	6	3
649:	9	8	5	3	10	5	5	7
657:	12	8	9	10	10	11	16	6
665:	16	13	7	4	8	12	8	8
673:	4	7	10	3	7	4	2	12
681:	4	6	4	12	11	6	12	8
689:	12	4	7	8	11	8	4	5
697:	9	9	6	9	9	7	13	6
705:	14	4	2	8	10	14	11	5
713:	6	5	6	9	6	4	9	3
721:	7	2	3	10	7	15	17	18
729:	19	7	7	5	5	9	7	6
737:	7	8	5	5	6	9	5	14
745:	6	4	4	5	3	6	3	8
753:	5	10	8	7	5	4	7	6
761:	9	10	5	7	7	4	8	12
769:	24	10	6	11	11	3	4	6
777:	7	7	7	8	3	8	9	4
785:	7	10	15	5	6	7	4	4
793:	6	9	19	12	4	5	8	2

801: 1 3 6 4 4 10 2 6

Sample Title: CP-5030 10-15

Channel	1	3	6	4	4	10	2	6
809:	7	8	4	2	7	2	4	4
817:	6	3	7	8	7	7	5	8
825:	6	6	5	3	8	4	6	5
833:	8	6	13	7	10	9	5	6
841:	6	5	6	4	4	4	10	5
849:	8	6	1	3	8	6	4	2
857:	3	5	4	8	7	9	6	10
865:	4	1	7	5	5	3	5	2
873:	8	7	4	1	4	5	8	3
881:	3	3	8	2	1	3	2	4
889:	7	3	7	2	5	3	3	5
897:	5	9	3	4	4	9	5	8
905:	6	4	3	4	2	17	65	57
913:	19	5	8	3	3	7	4	7
921:	3	5	6	3	4	6	6	5
929:	7	8	1	4	9	11	7	6
937:	6	5	6	4	9	3	3	6
945:	4	5	4	3	5	7	6	6
953:	5	6	4	7	3	4	6	7
961:	4	6	5	16	9	10	4	15
969:	36	20	9	7	6	3	4	1
977:	1	5	4	5	4	6	10	4
985:	1	3	8	8	4	6	4	3
993:	7	3	5	2	6	3	3	5
1001:	8	5	4	7	2	3	8	3
1009:	7	1	4	4	5	8	6	9
1017:	6	6	6	2	5	7	1	6
1025:	6	7	2	4	7	4	6	6
1033:	6	5	5	1	4	4	2	7
1041:	8	9	6	3	5	2	2	2
1049:	1	5	4	7	3	4	4	8
1057:	3	2	5	3	4	7	3	6
1065:	3	5	6	3	9	3	4	7
1073:	4	6	6	9	2	5	1	8
1081:	3	9	4	6	5	2	6	7
1089:	2	6	8	4	2	5	5	4
1097:	5	3	6	6	9	3	5	4
1105:	10	6	2	2	4	5	1	4
1113:	4	6	5	7	4	5	6	23
1121:	21	12	5	5	7	5	5	7
1129:	4	10	8	1	7	3	3	3
1137:	3	8	4	5	2	8	4	4
1145:	7	6	2	4	2	4	5	2
1153:	4	1	9	4	4	7	5	6
1161:	8	6	4	7	9	3	8	9
1169:	0	5	3	8	4	7	3	3
1177:	5	3	5	3	5	4	4	6
1185:	7	4	4	9	8	3	7	3
1193:	5	7	7	2	4	4	4	5
1201:	3	3	5	10	3	7	3	5
1209:	5	7	5	8	6	3	11	4
1217:	4	5	5	5	8	12	6	3
1225:	6	4	4	3	7	10	4	4

1233: 6 7 8 5 7 11 15 6

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Channel	11	4	3	4	7	4	5	7
1241:	11	4	3	4	7	4	5	7
1249:	4	6	3	2	5	5	5	3
1257:	2	2	5	3	7	3	0	3
1265:	6	2	0	7	5	4	6	4
1273:	3	6	3	2	7	4	5	7
1281:	5	7	7	7	4	7	5	6
1289:	4	8	7	4	3	2	4	3
1297:	3	2	3	1	1	4	5	2
1305:	2	2	3	5	6	1	2	3
1313:	3	3	2	3	2	6	6	5
1321:	1	4	3	6	1	2	6	6
1329:	7	1	5	5	5	6	3	5
1337:	4	3	1	3	4	6	4	1
1345:	0	4	3	3	1	1	3	2
1353:	1	2	0	4	2	1	1	4
1361:	2	2	3	1	2	8	2	2
1369:	0	5	1	2	1	1	2	3
1377:	6	1	5	5	4	3	3	1
1385:	3	1	1	2	1	3	4	2
1393:	4	1	2	1	2	2	1	3
1401:	4	4	4	0	3	1	2	4
1409:	3	3	1	1	3	1	2	4
1417:	2	2	0	3	1	0	3	2
1425:	2	1	2	0	0	1	1	2
1433:	2	0	1	2	1	5	3	0
1441:	0	0	1	4	3	4	2	2
1449:	1	3	1	0	1	4	2	3
1457:	2	3	21	93	161	97	11	2
1465:	2	2	0	2	1	1	3	2
1473:	1	1	0	0	3	2	3	0
1481:	1	1	0	1	2	1	2	0
1489:	0	2	1	1	2	1	4	2
1497:	3	4	1	1	3	2	0	2
1505:	1	0	1	3	4	5	0	3
1513:	2	2	2	1	0	1	1	2
1521:	3	1	0	2	1	0	3	3
1529:	1	5	1	2	1	1	4	0
1537:	0	5	1	1	2	1	1	3
1545:	2	0	1	1	1	0	2	1
1553:	2	0	2	0	1	3	2	3
1561:	0	0	3	1	0	0	0	0
1569:	2	0	0	1	5	1	1	2
1577:	2	0	1	1	0	1	0	3
1585:	3	1	0	4	5	0	3	10
1593:	5	1	4	0	3	0	2	1
1601:	1	2	3	0	1	3	0	2
1609:	0	2	0	2	0	3	1	0
1617:	2	0	2	1	1	2	2	1
1625:	1	3	1	1	2	5	5	4
1633:	3	0	1	0	0	1	0	0
1641:	0	0	2	1	1	1	0	1
1649:	3	2	0	1	0	0	0	0
1657:	2	0	1	1	1	3	0	2

1665: 0 1 4 1 1 0 0 0

Sample Title: CP-5030 10-15

Channel	1	2	3	4	5	6	7	8	9
1673:	2	0	2	1	2	1	2	0	
1681:	3	0	0	2	1	0	0	0	
1689:	1	0	1	0	0	1	1	1	
1697:	1	0	0	0	3	0	0	3	
1705:	1	1	0	0	0	3	0	0	
1713:	0	2	1	1	0	0	2	2	
1721:	0	0	0	1	0	2	2	2	
1729:	2	1	2	0	0	0	1	1	
1737:	0	3	0	1	1	0	0	1	
1745:	1	0	0	1	1	0	1	0	
1753:	2	1	1	2	0	0	0	2	
1761:	0	1	4	8	12	3	1	0	
1769:	2	0	1	1	1	0	0	0	
1777:	1	1	0	0	1	0	0	0	
1785:	0	0	0	0	1	2	1	2	
1793:	1	2	1	1	0	0	0	1	
1801:	1	1	0	2	0	0	1	1	
1809:	3	0	0	2	2	2	1	0	
1817:	0	0	1	1	2	1	3	2	
1825:	0	0	0	1	1	0	2	1	
1833:	0	1	2	1	2	1	2	1	
1841:	2	0	1	0	1	0	3	2	
1849:	1	0	1	1	1	0	1	0	
1857:	1	1	1	1	2	2	0	0	
1865:	0	1	2	1	3	2	0	1	
1873:	0	1	0	1	0	2	0	0	
1881:	0	1	2	1	1	1	0	1	
1889:	1	1	0	0	1	1	0	0	
1897:	0	0	0	4	0	0	0	1	
1905:	0	1	1	0	1	0	3	1	
1913:	0	1	1	0	0	1	0	0	
1921:	1	1	0	1	1	1	1	1	
1929:	0	0	1	0	2	0	1	0	
1937:	1	1	1	3	1	1	2	1	
1945:	1	0	0	0	0	0	0	1	
1953:	1	0	2	2	2	0	2	0	
1961:	3	0	2	0	1	1	0	2	
1969:	1	0	0	0	0	0	0	3	
1977:	3	0	0	2	1	0	0	0	
1985:	1	2	0	1	0	1	0	1	
1993:	2	2	2	0	2	0	0	0	
2001:	0	0	1	1	0	1	0	0	
2009:	0	1	1	0	1	1	0	1	
2017:	0	1	1	0	1	1	0	2	
2025:	0	0	1	1	2	1	0	0	
2033:	3	0	1	0	1	1	0	1	
2041:	1	1	0	1	0	0	0	0	
2049:	1	2	1	0	0	1	0	0	
2057:	1	2	0	1	1	0	1	2	
2065:	0	0	0	0	0	0	0	1	
2073:	2	2	0	0	1	1	0	1	
2081:	2	0	3	0	0	0	1	0	
2089:	0	0	0	1	0	0	0	0	

2097: 0 0 0 0 1 3 4 2

Sample Title: CP-5030 10-15

Channel	1	2	3	4	5	6	7	8
2105:	0	4	0	3	0	1	1	0
2113:	0	0	0	0	0	2	1	1
2121:	0	0	1	1	1	0	0	2
2129:	0	2	0	0	2	0	0	0
2137:	0	0	0	1	1	2	2	0
2145:	0	1	1	1	0	0	2	1
2153:	0	1	1	0	0	0	0	1
2161:	0	0	1	0	1	2	2	0
2169:	2	1	2	0	1	1	0	0
2177:	2	1	1	0	0	0	1	1
2185:	0	0	0	0	0	1	0	0
2193:	2	0	0	0	0	3	1	0
2201:	0	3	4	2	1	1	2	1
2209:	0	0	0	0	0	0	0	3
2217:	1	3	0	1	0	2	0	0
2225:	1	0	1	0	1	1	0	0
2233:	1	0	0	2	1	1	1	0
2241:	0	0	0	2	0	2	0	1
2249:	1	1	0	1	0	0	1	0
2257:	1	0	0	0	1	0	1	0
2265:	1	0	1	0	0	0	0	0
2273:	1	3	1	2	0	0	1	0
2281:	1	0	0	0	1	2	0	1
2289:	0	2	2	2	0	0	0	0
2297:	2	1	0	1	0	0	2	0
2305:	0	0	0	2	0	1	2	0
2313:	1	1	1	0	2	1	1	0
2321:	0	0	0	0	0	0	2	1
2329:	0	0	1	1	1	1	1	1
2337:	1	0	2	1	0	2	1	1
2345:	0	2	0	0	0	0	2	0
2353:	0	0	1	1	2	0	1	0
2361:	2	1	2	2	3	2	1	0
2369:	0	2	3	1	0	0	1	1
2377:	1	0	1	0	2	1	1	2
2385:	1	0	0	0	1	0	1	4
2393:	0	4	1	1	1	1	0	1
2401:	0	0	0	0	1	2	0	0
2409:	0	1	1	1	2	0	0	0
2417:	0	0	1	0	3	0	0	1
2425:	0	0	0	0	0	0	1	0
2433:	2	0	0	0	2	1	0	1
2441:	2	0	1	0	1	0	1	1
2449:	0	1	0	1	0	0	1	1
2457:	0	2	0	0	0	0	0	0
2465:	0	3	3	0	0	0	1	1
2473:	0	1	0	1	1	0	0	0
2481:	0	0	0	1	0	0	0	0
2489:	0	0	0	1	1	0	1	1
2497:	0	0	0	0	0	2	0	0
2505:	0	0	0	1	1	0	0	0
2513:	0	3	0	0	0	0	0	1
2521:	0	0	0	0	2	0	0	1

2529: 0 0 1 0 2 0 1 1

Sample Title: CP-5030 10-15

Channel	1	2	3	4	5	6	7	8
2537:	0	0	0	0	0	0	0	0
2545:	0	0	0	0	0	3	0	0
2553:	1	0	0	0	0	0	0	2
2561:	0	0	0	0	0	2	0	0
2569:	0	0	0	0	0	0	0	1
2577:	0	0	0	0	0	0	0	0
2585:	2	0	0	0	0	1	0	0
2593:	0	0	0	0	0	1	0	1
2601:	1	0	1	0	0	0	0	0
2609:	0	1	0	3	9	17	12	4
2617:	1	0	0	0	0	1	1	0
2625:	0	1	1	0	0	1	0	0
2633:	1	0	0	0	0	0	0	0
2641:	0	1	0	0	0	0	0	0
2649:	1	1	1	1	0	0	0	2
2657:	0	0	0	0	0	0	0	0
2665:	2	0	1	0	1	0	0	0
2673:	0	1	0	1	0	0	0	0
2681:	0	0	0	0	2	0	0	0
2689:	0	0	0	1	0	0	0	0
2697:	0	0	0	0	0	0	0	0
2705:	0	0	0	1	0	0	0	1
2713:	0	0	0	1	1	1	0	0
2721:	0	0	0	0	0	0	0	0
2729:	0	1	0	0	0	0	0	0
2737:	0	0	1	0	0	0	0	0
2745:	0	0	0	0	0	1	0	0
2753:	1	0	0	0	1	0	0	1
2761:	0	1	1	0	1	0	0	0
2769:	0	0	0	0	1	0	1	0
2777:	0	0	0	0	0	1	1	0
2785:	1	0	0	0	0	0	1	0
2793:	0	1	0	1	0	1	0	0
2801:	0	0	0	0	1	0	0	1
2809:	0	0	1	0	0	0	0	1
2817:	0	0	0	1	0	0	0	0
2825:	0	0	0	0	1	0	1	1
2833:	1	1	1	0	0	0	1	0
2841:	0	0	0	0	0	0	1	0
2849:	0	0	2	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	0	1	0	1	0	1	0	0
2873:	1	0	0	0	1	1	1	0
2881:	1	0	0	0	0	0	0	1
2889:	1	0	0	0	0	0	1	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	1	0	0	1	1	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	1	0	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	1	0	0

2961: 0 1 2 0 0 0 0 0

Sample Title: CP-5030 10-15

Channel	1	2	3	4	5	6	7	8	9
2969:	0	0	0	0	0	0	0	1	0
2977:	0	2	0	0	0	0	0	0	0
2985:	0	0	0	2	0	0	0	0	0
2993:	0	0	0	0	0	0	0	1	0
3001:	0	0	0	0	0	0	0	1	0
3009:	0	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0	0
3033:	0	1	0	0	0	0	0	0	0
3041:	0	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	1	0	0
3057:	0	0	0	0	0	0	0	1	0
3065:	0	0	1	0	0	0	0	1	1
3073:	0	0	0	0	0	0	1	0	0
3081:	0	0	2	0	1	0	0	0	0
3089:	0	0	0	1	0	0	0	0	0
3097:	1	1	0	0	0	0	0	0	0
3105:	0	0	0	0	1	0	0	0	0
3113:	0	0	0	0	0	0	0	0	0
3121:	0	0	0	0	0	0	1	0	0
3129:	0	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0	0
3145:	1	0	0	0	0	0	0	1	1
3153:	1	0	0	0	0	0	0	0	0
3161:	0	0	0	1	0	0	0	0	0
3169:	0	0	1	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	1	0
3185:	0	0	0	0	0	0	0	0	0
3193:	0	0	1	0	1	0	0	0	0
3201:	1	0	0	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0	1
3217:	0	0	0	0	0	0	0	0	0
3225:	0	0	0	1	0	0	0	0	0
3233:	0	2	0	0	1	0	0	0	0
3241:	0	0	0	0	0	0	0	1	1
3249:	0	1	0	0	1	0	0	0	0
3257:	0	0	0	0	0	0	0	0	0
3265:	0	0	0	0	1	0	0	0	1
3273:	0	0	0	0	0	0	0	0	0
3281:	0	0	0	1	0	0	0	0	1
3289:	0	0	1	0	0	0	0	1	0
3297:	1	0	1	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	0	0	0	0
3329:	0	0	0	1	1	0	0	0	0
3337:	0	0	0	0	0	0	0	0	0
3345:	1	0	0	0	0	0	0	0	0
3353:	0	0	0	1	1	0	0	0	0
3361:	0	1	0	0	0	0	0	0	0
3369:	0	0	2	0	0	0	0	0	0
3377:	0	0	0	0	0	0	0	0	0
3385:	1	1	0	0	0	1	0	0	0

3393: 1 0 0 0 0 0 0 0

Sample Title: CP-5030 10-15

Channel	1	2	3	4	5	6	7	8
3401:	0	0	0	1	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	1	0	0
3441:	0	0	0	0	1	0	0	0
3449:	0	0	1	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	1	0	0	0	0	0	0	0
3473:	0	0	0	1	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	1	0	0	1	0	0	0	0
3497:	0	0	0	1	1	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	1	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	1	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	1	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	1	1
3561:	0	1	0	0	0	1	0	1
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	1	0	1	0	0	0	0	1
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	1	0	1	2
3609:	0	1	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	1	0	1	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	1	0	0	0
3657:	0	0	0	0	1	0	0	0
3665:	1	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	1	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	3	0	0	0	3	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	1
3753:	0	0	1	0	0	0	0	0
3761:	0	0	1	0	1	0	0	0
3769:	1	0	0	1	0	0	0	0
3777:	0	0	0	0	0	1	0	0
3785:	0	1	2	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	1	0	1	0
3817:	0	0	0	0	0	1	1	0

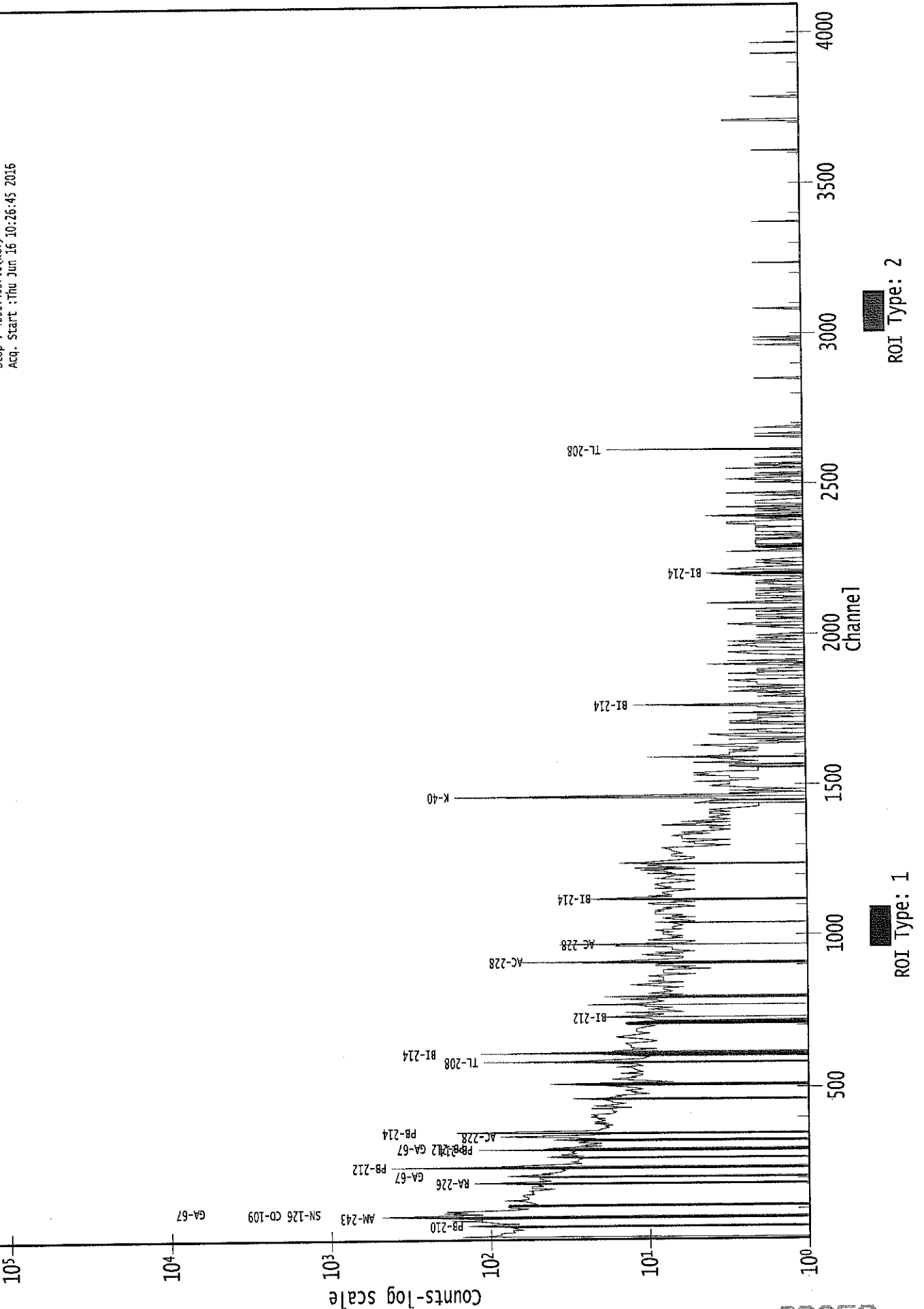
3825: 0 0 0 0 0 0 0 1 0

Sample Title: CP-5030 10-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	1	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	1	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	1	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	1
3881:	0	0	0	1	0	0	0	0
3889:	0	0	0	0	0	0	1	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	1
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	2	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	1	0	0	0	0	1
3953:	0	1	0	0	0	0	0	0
3961:	0	0	0	0	2	0	0	0
3969:	0	0	0	0	1	0	0	0
3977:	1	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	1	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	1	0
4017:	0	0	0	0	0	0	0	1
4025:	0	0	1	0	0	0	0	0
4033:	0	1	0	0	0	0	1	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	1	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	1	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000038986.CNF

Live Time : 3600.000 sec
Real Time : 3613.230 sec
Start : 1: 0.7(keV)
Stop : 4096.4097.0(keV)
Acq. Start : Thu Jun 16 10:26:45 2016



Analysis Report for 1606047-04
MW-49-W-162405

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606047-04
 Sample Description : MW-49-W-162405
 Sample Type : RA RECOVERY

 Sample Size : 1.000E+00 units
 Facility : Countroom

 Sample Taken On : 6/16/2016 10:58:22AM
 Acquisition Started : 6/16/2016 11:12:34AM

 Procedure : BAFIL
 Operator : Administrator
 Detector Name : GE5
 Geometry : BAFIL
 Live Time : 900.0 seconds
 Real Time : 901.4 seconds

 Dead Time : 0.15 %

 Peak Locate Threshold : 2.50
 Peak Locate Range (in channels) : 1 - 4096
 Peak Area Range (in channels) : 33 - 4096
 Identification Energy Tolerance : 1.000 keV

 Energy Calibration Used Done On : 10/25/2014
 Efficiency Calibration Used Done On : 10/26/2014
 Efficiency Calibration Description :

 Sample Number : 38992

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 11:27:38AM

Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 1606047-04

MW-49-W-162405

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	21.33	194 -	226	212.78	1.67E+02	42.66	9.13E+01	1.64
	2	30.83	287 -	316	303.67	1.77E+03	100.98	2.64E+02	0.80
M	3	34.98	330 -	362	343.33	3.92E+02	46.89	5.00E+01	0.74
m	4	35.78	330 -	362	351.00	1.71E+02	48.16	5.02E+01	0.80
	5	53.20	504 -	523	517.64	2.58E+01	25.92	8.44E+01	0.79
	6	61.64	587 -	609	598.39	2.20E+02	38.77	8.02E+01	0.90
M	7	65.36	625 -	653	634.00	3.80E+01	22.53	7.22E+00	0.87
m	8	65.90	625 -	653	639.17	7.03E+01	26.62	1.80E+01	0.96
M	9	79.66	754 -	794	770.79	4.87E+01	51.27	3.27E+01	1.08
m	10	81.08	754 -	794	784.35	7.88E+02	57.97	2.57E+01	0.75
	11	84.10	803 -	822	813.22	3.38E+01	17.58	2.45E+01	0.88
	12	112.00	1066 -	1092	1080.14	1.69E+02	39.49	9.98E+01	0.84
	13	276.85	2642 -	2668	2657.47	4.97E+01	15.40	4.57E+00	0.71
M	14	303.14	2894 -	2922	2909.00	8.37E+01	23.23	1.57E+01	1.15
m	15	303.56	2894 -	2922	2913.00	4.29E+01	21.89	1.24E+01	1.15
	16	307.58	2937 -	2963	2951.52	3.61E+01	13.61	5.70E+00	1.31
M	17	333.86	3190 -	3215	3203.00	5.41E+01	14.14	0.00E+00	1.18
m	18	334.70	3190 -	3215	3211.02	1.53E+01	9.80	0.00E+00	0.98
	19	356.56	3402 -	3435	3420.15	3.91E+02	40.99	1.26E+01	1.04
	20	384.38	3671 -	3697	3686.47	6.95E+01	18.82	9.09E+00	1.17
M	21	387.23	3700 -	3726	3713.65	7.71E+01	24.38	1.08E+01	1.62
m	22	387.68	3700 -	3726	3718.00	1.72E+02	21.98	6.80E+00	1.22
	23	415.34	3969 -	3993	3982.68	1.90E+01	14.70	2.00E+01	0.73

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 11:27:38AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038680.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	21.33	1.67E+02	42.66	8.89E+01	4.05E+00	7.84E+01	4.29E+01
	2	30.83	1.77E+03	100.98			1.77E+03	1.01E+02
M	3	34.98	3.92E+02	46.89			3.92E+02	4.69E+01
m	4	35.78	1.71E+02	48.16			1.71E+02	4.82E+01
	5	53.20	2.58E+01	25.92			2.58E+01	2.59E+01
	6	61.64	2.20E+02	38.77	1.07E-01	2.01E-01	2.20E+02	3.88E+01

Analysis Report for 1606047-04

MW-49-W-162405

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	7	65.36	3.80E+01	22.53			3.80E+01	2.25E+01
m	8	65.90	7.03E+01	26.62			7.03E+01	2.66E+01
M	9	79.66	4.87E+01	51.27			4.87E+01	5.13E+01
m	10	81.08	7.88E+02	57.97			7.88E+02	5.80E+01
	11	84.10	3.38E+01	17.58			3.38E+01	1.76E+01
	12	112.00	1.69E+02	39.49			1.69E+02	3.95E+01
	13	276.85	4.97E+01	15.40			4.97E+01	1.54E+01
M	14	303.14	8.37E+01	23.23			8.37E+01	2.32E+01
m	15	303.56	4.29E+01	21.89	9.97E-02	2.94E-01	4.28E+01	2.19E+01
	16	307.58	3.61E+01	13.61			3.61E+01	1.36E+01
M	17	333.86	5.41E+01	14.14			5.41E+01	1.41E+01
m	18	334.70	1.53E+01	9.80			1.53E+01	9.80E+00
	19	356.56	3.91E+02	40.99			3.91E+02	4.10E+01
	20	384.38	6.95E+01	18.82			6.95E+01	1.88E+01
M	21	387.23	7.71E+01	24.38			7.71E+01	2.44E+01
m	22	387.68	1.72E+02	21.98			1.72E+02	2.20E+01
	23	415.34	1.90E+01	14.70			1.90E+01	1.47E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
I-125	0.98	35.49 *	6.49	3.10E+02	8.85E+01
BA-133	0.98	30.80 *	97.60	1.99E+02	1.36E+01
		302.84 *	17.80	2.90E+02	9.64E+01
		356.01 *	60.00	4.77E+02	7.28E+01

Analysis Report for 1606047-04

MW-49-W-162405

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 @ = Energy line not used for Weighted Mean Activity
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

<i>Nuclide Name</i>	<i>Nuclide Id Confidence</i>	<i>Wt mean Activity (pCi/units)</i>	<i>Wt mean Activity Uncertainty</i>	<i>Comments</i>
I-125	0.987	3.10E+02	8.85E+01	
BA-133	0.982	2.10E+02	1.33E+01	

? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1606047-04
MW-49-W-162405

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 11:27:38AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
	1	21.33	8.71281E-02	27.32	Tol.	PA-234M
M	3	34.98	4.35759E-01	5.98	Tol.	I-125
	5	53.20	2.86601E-02	50.25		
	6	61.64	2.44196E-01	8.82	Sum	
M	7	65.36	4.22066E-02	29.66		
m	8	65.90	7.80729E-02	18.94	Sum	
M	9	79.66	5.40977E-02	52.65		
m	10	81.08	8.75740E-01	3.68		
	11	84.10	3.75121E-02	26.03	Tol.	TH-231
	12	112.00	1.87900E-01	11.68		
	13	276.85	5.52393E-02	15.49		
m	15	303.56	4.75272E-02	25.59	Tol.	BA-133 PA-231
	16	307.58	4.01652E-02	18.82		
M	17	333.86	6.00792E-02	13.08	Sum	
m	18	334.70	1.70116E-02	32.00	Sum	
	20	384.38	7.71712E-02	13.55		
M	21	387.23	8.56465E-02	15.81	Sum	
m	22	387.68	1.91326E-01	6.38	Sum	
	23	415.34	2.11111E-02	38.68		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

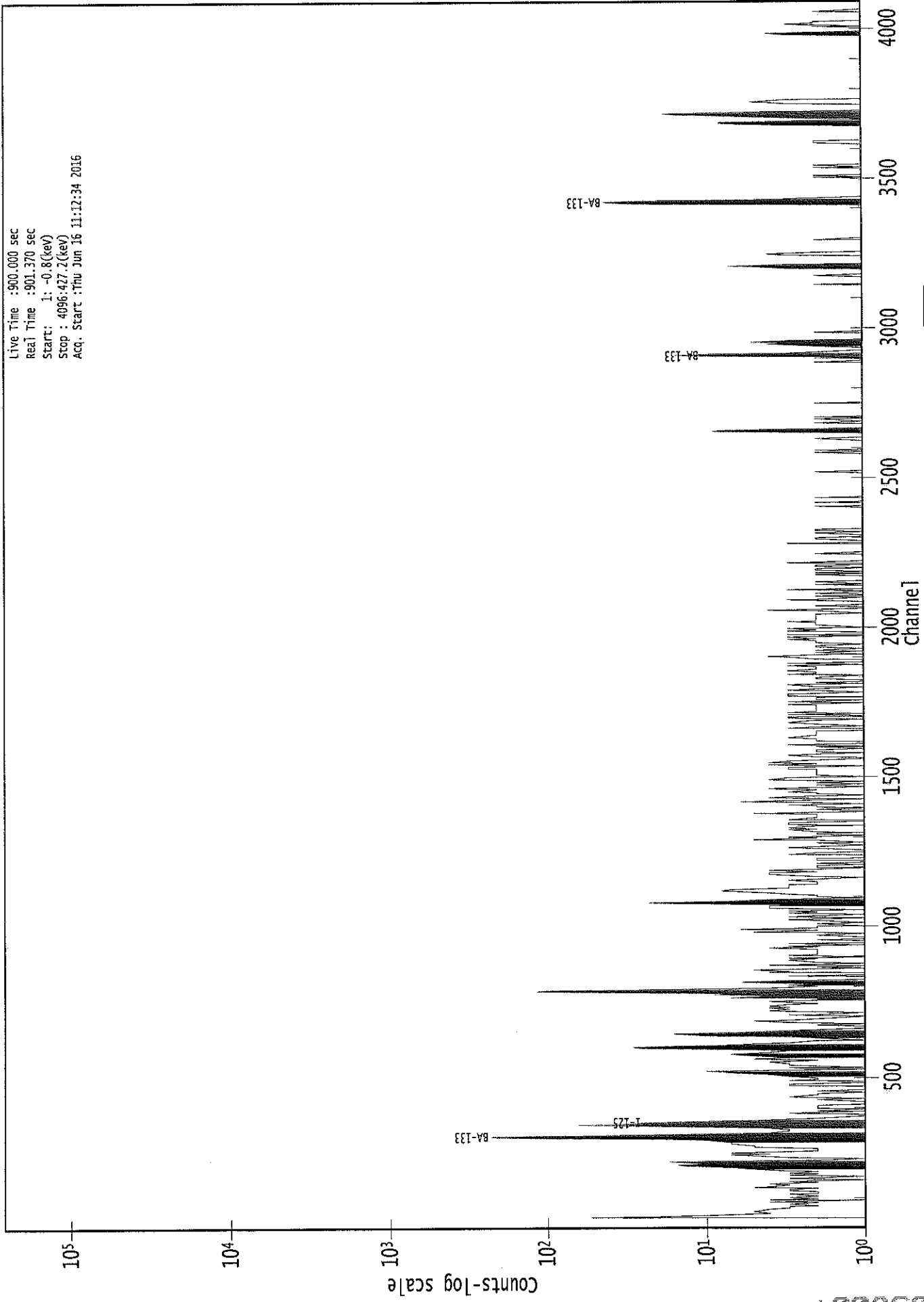
Analysis Report for 1606047-04
MW-49-W-162405

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
FE-55	5.89	24.50	8.61E+00	8.61E+00	-1.81E+00	3.92E+00
CO-57	122.06	85.51	8.64E+00	8.64E+00	-2.22E+00	3.90E+00
	136.48	10.60	6.76E+01		-2.11E+01	3.01E+01
NI-59	6.92	29.80	6.70E+00	6.70E+00	7.22E-01	3.03E+00
MO-93	16.59	52.90	4.13E+00	4.13E+00	-1.43E+00	1.84E+00
	18.60	10.00	2.99E+01		-8.29E+00	1.37E+01
NB-93M	16.57	9.43	2.31E+01	2.31E+01	-8.04E+00	1.03E+01
CD-109	88.03	3.72	1.52E+02	1.52E+02	2.22E+01	6.84E+01
SN-113	255.12	1.93	4.48E+02	4.40E+01	0.00E+00	1.87E+02
	391.69	61.90	4.40E+01		4.75E+01	2.02E+01
SN-119M	23.87	16.10	2.14E+01	1.78E+01	-4.44E+01	9.90E+00
	25.10	22.70	1.78E+01		1.79E+01	8.32E+00
+ I-125	35.49 *	6.49	9.70E+01	9.70E+01	3.10E+02	4.61E+01
I-129	29.78	57.00	3.31E+01	3.31E+01	5.02E-01	1.63E+01
	33.60	13.20	4.76E+01		-1.37E+01	2.26E+01
	39.58	7.52	3.53E+01		-7.18E+00	1.54E+01
+ BA-133	30.80 *	97.60	1.06E+01	1.06E+01	1.99E+02	5.17E+00
	302.84 *	17.80	7.50E+01		2.90E+02	3.28E+01
	356.01 *	60.00	2.51E+01		4.77E+02	1.09E+01
CE-139	165.85	80.35	1.25E+01	1.25E+01	3.15E+00	5.66E+00
CE-144	133.54	10.80	6.64E+01	6.64E+01	2.57E-02	2.96E+01
HG-203	279.19	77.30	1.48E+01	1.48E+01	-2.38E+01	6.39E+00
PB-210	46.50	4.25	6.44E+01	6.44E+01	-3.30E+01	2.79E+01
PA-231	9.28	42.00	4.65E+00	4.65E+00	-2.13E+00	2.09E+00
	10.11	20.20	1.02E+01		3.57E-01	4.58E+00
	283.67	1.60	4.33E+02		-4.28E+02	1.68E+02
	302.67	2.30	1.39E+03		-3.17E+01	6.60E+02
TH-231	25.64	14.70	2.60E+01	2.60E+01	-3.68E+00	1.21E+01
	84.21	6.40	1.11E+02		4.87E+01	5.15E+01
PA-234M	9.89	89.00	2.47E+00	2.47E+00	1.01E+00	1.12E+00
	21.72	64.90	9.28E+00		1.68E+01	4.44E+00
	37.93	23.75	1.26E+01		-8.73E+00	5.59E+00
	131.42	20.40	3.33E+01		4.35E+00	1.48E+01
TH-234	63.29	3.80	1.96E+02	1.96E+02	-9.95E+01	9.23E+01
NP-237	29.37	14.00	8.47E+01	3.72E+01	2.73E+00	4.13E+01
	86.50	12.60	3.72E+01		-5.07E+01	1.64E+01
U-237	97.08	16.30	3.67E+01	2.61E+01	8.49E+00	1.65E+01
	101.07	26.30	2.61E+01		7.02E+00	1.18E+01
	114.00	12.30	7.57E+01		-1.11E+02	3.51E+01
	208.01	22.00	5.70E+01		-7.53E+00	2.59E+01
AM-241	59.54	35.90	1.78E+01	1.78E+01	-5.13E+00	8.33E+00
AM-243	74.67	66.00	8.75E+00	8.75E+00	2.52E+00	4.00E+00

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

0000038992.CNF

Live Time : 900.000 sec
Real Time : 901.370 sec
Start: 1: -0.8(keV)
Stop : 4096.427.2(keV)
Acq. Start : Thu Jun 16 11:12:34 2016



ROI Type: 1

ROI Type: 2

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/16/16 6:04:33 AM

6/16

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000004B.QCK

Detector: GE4
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 6/16/16 5:49:18 AM
 Measurement Date: 6/16/16 5:49:20 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 900.2 seconds

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >
DAILY BKG CT RATE GE4	1.5322E+000	-5.0981E-002
[SD: 9.5453E+000+/-157.17]		< : : : >
Trend Test: The last	9 samples exhibit a bias trend.	

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/16/16 6:04:25 AM

6116

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000003B.QCK

Detector: GE3
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 6/16/16 5:49:11 AM
 Measurement Date: 6/16/16 5:49:13 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 902.9 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags					
		< LU	: SD	: UD	: BS >		
DAILY BKG CT RATE GE3 [SD: 2.2369E+003+/-1366.4]	1.5880E+003	<	-4.7485E-001	:	:	:	>

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

```

*****
*****      G E N I E    Q U A L I T Y    A S S U R A N C E      *****
*****

```

Last Results Report
6/16/16 6:04:17 AM

6/16

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000002B.QCK

```

Detector:      GE2
Geometry:     <None>
Certificate:   <None>
Sample ID:    QA Background Ch
Sample Desc:   QA Count
Sample Quantity: 1.0000E+000
Sample Date:   6/16/16 5:49:03 AM
Measurement Date: 6/16/16 5:49:05 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 900.2 seconds

```

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE2 [SD:-2.4376E+035+/-*****]	3.4578E+000	3.7851E-002
Trend Test: The last	9 samples exhibit a bias trend.	< : : : >

```

Flags Key:  LU = Lower/Upper Bounds Test      (Ab = Above, Be = Below)
            SD = Sample Driven N-Sigma Test   (In = Investigate, Ac = Action)
            UD = User Driven N-Sigma Test     (In = Investigate, Ac = Action)
            BS = Measurement Bias Test        (In = Investigate, Ac = Action)

```

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/16/16 5:40:22 AM

Bill

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000004GAW-14C.QCK

Detector: GE4
 Geometry: <None>
 Certificate: GAW-14
 Sample ID: QA Calibration C
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 10/1/14 12:00:00 AM
 Measurement Date: 6/16/16 5:24:34 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 935.5 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 keV	5.8816E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 661.65 keV	6.6101E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : >
Peak centroid 1332.49 keV	1.3320E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : >
Peak centroid 1836.1 keV	1.8356E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Am-241	2.2044E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Cs-137	2.5433E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Co-60	2.8396E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : >
Peak FWHM Y-88	2.8656E+000	
Boundary Limits: [5.000E-001, 3.500E+000]		< : : >
Decay corrected activity	1.2556E+005	
Boundary Limits: [1.200E-001, 1.816E-001]		< : : >
Decay corrected activity	6.8489E+004	

Boundary Limits: [4.918E-002, 7.377E-002] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >

Decay corrected activity	1.0589E+005	
Boundary Limits: [7.892E-002, 1.184E-001]		< : : : >
Trend Test: The last	9 samples exhibit a bias trend.	

Decay corrected activity	2.3119E+005	
Boundary Limits: [1.695E-001, 2.543E-001]		< : : : >
Trend Test: The last	9 samples exhibit a bias trend.	

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** G E N I E Q U A L I T Y A S S U R A N C E *****

Last Results Report
 6/16/16 7:09:58 AM

0116

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000003GAS-1402C.QC

Detector: GE3
 Geometry: <None>
 Certificate: GAS-1402
 Sample ID: QA Calibration C
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 10/1/14 12:00:00 AM
 Measurement Date: 6/16/16 6:54:18 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 930.6 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 keV	6.0000E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 661.65 keV	6.6197E+002	
Boundary Limits: [6.600E+002, 6.640E+002]		< : : : >
Peak centroid 1332.49 keV	1.3326E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Peak centroid 1836.1 keV	1.8361E+003	
Boundary Limits: [1.833E+003, 1.838E+003]		< : : : >
Peak FWHM Am-241	1.3791E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Cs-137	1.7210E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Co-60	2.2776E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	2.4288E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Decay corrected activity	1.6957E+005	
Boundary Limits: [1.223E-001, 1.834E-001]		< : : : >
Decay corrected activity	6.7611E+004	
Boundary Limits: [4.969E-002, 7.453E-002]		< : : : >

Decay corrected activity 1.0346E+005
Boundary Limits: [7.972E-002, 1.120E-001]

< : : : >

Parameter Description
[Mean +/- Std. Dev.]

Value

Deviation/Flags
< LU : SD : UD : BS >

Decay corrected activity 2.1390E+005
Boundary Limits: [1.713E-001, 2.569E-001]

< : : : >

Flags Key:

LU = Lower/Upper Bounds Test
SD = Sample Driven N-Sigma Test
UD = User Driven N-Sigma Test
BS = Measurement Bias Test

(Ab = Above, Be = Below)
(In = Investigate, Ac = Action)
(In = Investigate, Ac = Action)
(In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/16/16 5:39:56 AM

C
6/16

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D000000002GAS-1401C.QC

Detector: GE2
 Geometry: <None>
 Certificate: GAS-1401
 Sample ID: QA Calibration C
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 10/1/14 12:00:00 AM
 Measurement Date: 6/16/16 5:24:17 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 928.0 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54keV Boundary Limits: [5.800E+001, 6.100E+001]	5.9878E+001	< : : : >
Peak centroid 661.65 keV Boundary Limits: [6.600E+002, 6.640E+002] Trend Test: The last 9 samples exhibit a bias trend.	6.6133E+002	< : : : >
Peak centroid 1332.49 ke Boundary Limits: [1.331E+003, 1.334E+003] Trend Test: The last 9 samples exhibit a bias trend.	1.3320E+003	< : : : >
Peak centroid 1836.1 keV Boundary Limits: [1.834E+003, 1.838E+003] Trend Test: The last 9 samples exhibit a bias trend.	1.8353E+003	< : : : >
Peak FWHM Am-241 Boundary Limits: [5.000E-001, 3.000E+000]	1.6498E+000	< : : : >
Peak FWHM Cs-137 Boundary Limits: [5.000E-001, 3.000E+000]	1.8564E+000	< : : : >
Peak FWHM Co-60 Boundary Limits: [5.000E-001, 3.000E+000]	1.8804E+000	< : : : >
Peak FWHM Y-88 Boundary Limits: [5.000E-001, 3.000E+000] Trend Test: The last 9 samples exhibit a bias trend.	2.4911E+000	< : : : >
Decay corrected activity Boundary Limits: [1.224E-001, 1.836E-001]	1.4760E+005	< : : : >
Decay corrected activity	6.1547E+004	

Boundary Limits: [4.971E-002, 7.457E-002] < : : : >

Decay corrected activity 9.8284E+004
Boundary Limits: [7.978E-002, 1.197E-001] < : : : >

Parameter Description	Value	Deviation/Flags			
[Mean +/- Std. Dev.]		< LU	: SD	: UD	: BS >

Decay corrected activity	2.0307E+005				
Boundary Limits: [1.714E-001, 2.571E-001]		<	:	:	: >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/16/16 6:04:08 AM

6/16

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D000000001B.QCK

Detector: GE1
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 6/16/16 5:48:55 AM
 Measurement Date: 6/16/16 5:48:57 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 900.1 seconds

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >
DAILY BKG CT RATE GE1	2.3678E+000	5.7781E-002
[SD: 2.2815E+000 +/- 1.492]		< : : : >
Trend Test: The last	9 samples exhibit a bias trend.	

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/16/16 7:26:52 AM

6/16

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D000000001GAF-14C.QCK

Detector: GE1
 Geometry: <None>
 Certificate: GAF-14
 Sample ID: QA Calibration C
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 10/1/14 12:00:00 AM
 Measurement Date: 6/16/16 7:11:21 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 918.4 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >			
Peak centroid 59.54 kev	6.0471E+001				
Boundary Limits: [5.800E+001, 6.100E+001]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak centroid 661.65 kev	6.6241E+002				
Boundary Limits: [6.600E+002, 6.630E+002]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak centroid 1332.49 ke	1.3334E+003				
Boundary Limits: [1.331E+003, 1.334E+003]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak centroid 1836.01 ke	1.8367E+003				
Boundary Limits: [1.834E+003, 1.838E+003]		<	:	:	>
Peak FWHM Am-241	8.8355E-001				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak FWHM Cs-137	2.0406E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Peak FWHM Co-60	2.1487E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Peak FWHM Y-90	2.2832E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Decay corrected activity	1.7215E+004				
Boundary Limits: [1.170E-002, 1.754E-002]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					

Decay corrected activity 6.5708E+003
Boundary Limits: [4.716E-003, 7.075E-003] < : : : >

Parameter Description Value Deviation/Flags
[Mean +/- Std. Dev.] < LU : SD : UD : BS >

Decay corrected activity 1.0745E+004
Boundary Limits: [7.572E-003, 1.136E-002] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 1.9594E+004
Boundary Limits: [1.626E-002, 2.440E-002] < : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)