AUXIER & ASSOCIATES, INC.

PAP/KAN

STANDARD LEVEL IV
REPORT OF ANALYSIS

WORK ORDER #16-06043-OR

August 10, 2016

Eberline Analytical
Oak Ridge Laboratory
OAK RIDGE, TN

TABLE OF CONTENTS

Eberline Services – Oak Ridge Laboratory

LABORATORY DATA SUPPORT CHECKLIST

MP-001-3

Eberline Services Work Order # 16-06043

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
		6/27/16	KBS	Data Compilation
		7-14-16	MH	First Technical Data Review
		7/19/16	MSK	Second Technical Data Review
		8/9/16		Data Entry/Electronic Deliverable
		8/9/16		Case Narrative
		8/9/16	KBS	Electronic Deliverable Proof
		8/10/16	MSK	Samples Analyzed within Holding Time Yes? [X] No? [ ]
		8/10/16	MSK	QA/QC Review
		06/29/16	EJ	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: _____ 8/10/16

Laboratory Manager — Date

Copy No. _____

SECTION I

CHAIN OF CUSTODY

JEB 6-9-16

~~16-06041~~

REC'D JUN 09 2016

16-06043

6-9-16 JEB

~~RECD JUN 09 2016~~

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

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

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
1	CP-5028.00-02	6/6/16	Soil in Plastic Bag	4	CP-5031.00-02	6/1/16	Soil in Plastic Bag
2	CP-5028.02-05		Soil in Plastic Bag	5	CP-5031.02-05		Soil in Plastic Bag
3	CP-5028.05-10		Soil in Plastic Bag	6	CP-5031.05-10		Soil in Plastic Bag
4	CP-5028.10-15		Soil in Plastic Bag	7	CP-5031.10-15		Soil in Plastic Bag
5	CP-5029.00-02		Soil in Plastic Bag	8	CP-5010.00-02	6/7/16	Soil in Plastic Bag
6	CP-5029.02-05		Soil in Plastic Bag	9	CP-5010.02-05		Soil in Plastic Bag
7	CP-5029.05-10		Soil in Plastic Bag	10	CP-5010.05-09 mAS		Soil in Plastic Bag
8	CP-5029.10-15		Soil in Plastic Bag	11	CP-5010.09-15 mAS		Soil in Plastic Bag
9	CP-5030.00-02		Soil in Plastic Bag	12	CP-5012.00-02		Soil in Plastic Bag
10	CP-5030.02-05		Soil in Plastic Bag	13	CP-5012.02-05		Soil in Plastic Bag
11	CP-5030.05-10		Soil in Plastic Bag	14	CP-5012.05-09		Soil in Plastic Bag
12	CP-5030.10-15		Soil in Plastic Bag	15	CP-5012.09-15		Soil in Plastic Bag

JEB 6-9-16

Relinquished By: Marsha Joseph	Date Shipped: 6/7/16
Method Of Shipment & Tracking #: 8003 3737 9785 FEDEX	Received In Good Condition By: [signature] Date Received: 6-9-16 @ 0915

EBERLINE SERVICES
Oak Ridge Laboratory

Internal Chain of Custody

Work Order #	16-06043
Lab Deadline	6/29/2016
Analysis	UUISO - Level 4
Sample Matrix	Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
REPORT ON DRY WEIGHT BASIS	04	46	G1.3
	05	39	G1.3
	06	52	G1.3
	07	46	G1.3
	08	53	G1.3
	09	43	G1.3
	10	35	G1.3
	11	41	G1.3
	12	47	G1.3
	13	50	G1.3
	14	38	G1.3
	15	37	G1.3

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 0930	Kay Seig	6-15-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 0952	Kay Seig	6-16-16
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 952	LaRue	6-16-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	Lowe 6/17/16 0725	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible] 6/17/16 0725	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible] 6/17/16 0820	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	AG 6/24/16 0820	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible] 6/27/16 0824	
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 #	16-06043
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	46	G1.3
	05	39	G1.3
	06	52	G1.3
	07	46	G1.3
	08	53	G1.3
	09	43	G1.3
	10	35	G1.3
	11	41	G1.3
	12	47	G1.3
	13	50	G1.3
	14	38	G1.3
	15	37	G1.3

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 0930	Kmy Seej	6-15-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 0952	Kmy Seej	6-16-16
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 952	Michelle	6-16-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible] 0725	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible] 6-17-16 0725	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible] 6-24-16 0820	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	AG 6/24/16	0820
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KD 6/24/16	1584
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 #	**16-06043**
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	46	G1.3
	05	39	G1.3
	06	52	G1.3
	07	46	G1.3
	08	53	G1.3
	09	43	G1.3
	10	35	G1.3
	11	41	G1.3
	12	47	G1.3
Report Ac228, Bi214, Pb210/214, Pa231, K40 & positives.	13	50	G1.3
Pb-212, Tl-208	14	38	G1.3
	15	37	G1.3

	Location (circle one)	Initials	Date
Received by	(Sample Storage) (Rough Prep) Prep Separations Count Room 0930	Kenny Scy	6-15-16
Relinquished by	Sample Storage (Rough Prep) Prep Separations Count Room 1055	Kenny Scy	6-16-16
Received by	Sample Storage Rough Prep Prep Separations (Count Room)	KB	6/16/16 1100
Relinquished by	Sample Storage Rough Prep Prep Separations (Count Room)	KB	6/16/16 1610
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		
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	Contract/PO	Project Type	Date Received	Required Turnaround Days	Eberline Services Work Order
Auxier & Associates, Inc.	PAP-KAN	Environmental	06/09/2016	28	16-06043
Project Name	**Client WO**	**Sample Disp**	**Lab Deadline**	**Internal Deadline**	**Client Deadline**
PAP-KAN	PAP/KAN	H	06/29/2016	07/06/2016	07/07/2016

Internal ID	Client ID	Sample Date	Matrix	Storage	Gamma	ThISO	UUISO																				Ttl
01	LCS	06/09/16	SO	G1.3	X	X	X																				3
02	BLANK	06/09/16	SO	G1.3	X	X	X																				3
03	DUP	06/09/16	SO	G1.3	X	X	X																				3
04	CP-5031 00-02	06/01/16 00:00	SO	G1.3	X	X	X																				3
05	CP-5031 02-05	06/01/16 00:00	SO	G1.3	X	X	X																				3
06	CP-5031 05-10	06/01/16 00:00	SO	G1.3	X	X	X																				3
07	CP-5031 10-15	06/01/16 00:00	SO	G1.3	X	X	X																				3
08	CP-5010 00-02	06/07/16 00:00	SO	G1.3	X	X	X																				3
09	CP-5010 02-05	06/07/16 00:00	SO	G1.3	X	X	X																				3
10	CP-5010 05-09	06/07/16 00:00	SO	G1.3	X	X	X																				3
11	CP-5010 09-15	06/07/16 00:00	SO	G1.3	X	X	X																				3
12	CP-5012 00-02	06/07/16 00:00	SO	G1.3	X	X	X																				3
13	CP-5012 02-05	06/07/16 00:00	SO	G1.3	X	X	X																				3
14	CP-5012 05-09	06/07/16 00:00	SO	G1.3	X	X	X																				3
15	CP-5012 09-15	06/07/16 00:00	SO	G1.3	X	X	X																				3
																											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	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		Report Data	
	Accounts Payable		Cecilia Greene
	Auxier & Associates, Inc.		Auxier & Associates, Inc.
	9821 Cogdill Drive #1		9821 Cogdill Road, Suite 1
	Knoxville, TN 37932		Knoxville, TN 37932
Voice	865-675-3669	*Voice*	865-675-3669
Fax	865-675-3677	*Fax*	865-675-3677
Contact	Harvey Cohen		
Voice	301-718-8900		
Fax	301-718-8909		

Printed: 6/9/2016 1:22 PM

Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2

WORK ORDER # 16-06043

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

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

WERE SAMPLES:

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

WERE CHAIN OF CUSTODY SEALS:

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

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

REMARKS: _____

SIGNATURE: James E Bailey DATE: 6-9-16

SECTION III

CASE NARRATIVE

EBERLINE SERVICES

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

EBS-OR-41086

August 10, 2016

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

CASE NARRATIVE
Work Order # 16-06043-OR

SAMPLE RECEIPT

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

CLIENT ID	LAB ID	CLIENT ID	LAB ID
CP-5031 00-02	16-06043-04	CP-5010 05-09	16-06043-10
CP-5031 02-05	16-06043-05	CP-5010 09-15	16-06043-11
CP-5031 05-10	16-06043-06	CP-5012 00-02	16-06043-12
CP-5031 10-15	16-06043-07	CP-5012 02-05	16-06043-13
CP-5010 00-02	16-06043-08	CP-5012 05-09	16-06043-14
CP-5010 02-05	16-06043-09	CP-5012 09-15	16-06043-15

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 method blank demonstrated a result slightly greater than the method detection limit. The Uranium-235 and Uranium-238 method blank demonstrated acceptable results. Results for the Uranium-234 and Uranium-238 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Uranium-235 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. 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-232 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Thorium-230 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.

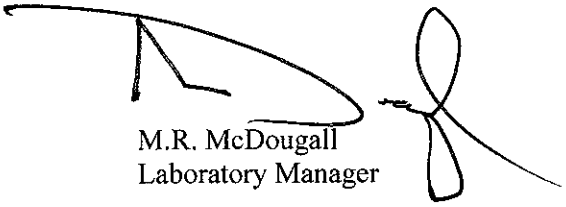
GAMMA SPECTROSCOPY

Samples for Gamma Spectroscopy analysis were prepared by transferring a known mass/aliquot of each prepared and homogenized sample to a standard geometry container. Samples were counted on High Purity Germanium (HPGe) gamma ray detector.

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: 8/10/2016

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

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

Work Order Details:
SDG: 16-06043
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
16-06043-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/16/2016	16-06043	Cobalt-60	LANL ER-130 Modified	1.37E+02	5.48E+00				pCi/g
16-06043-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/16/2016	16-06043	Cesium-137	LANL ER-130 Modified	8.69E+01	3.48E+00				pCi/g
16-06043-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/16/2016	16-06043	Cobalt-60	LANL ER-130 Modified	1.45E+02	1.01E+01	1.25E+01	1.44E+00	1.69E+00	pCi/g
16-06043-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/16/2016	16-06043	Cesium-137	LANL ER-130 Modified	8.96E+01	8.61E+00	9.76E+00	1.97E+00	9.77E-01	pCi/g
16-06043-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06043	Actinium-228	LANL ER-130 Modified	1.47E-01	1.51E-01	1.51E-01	3.12E-01	1.38E-01	pCi/g
16-06043-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06043	Bismuth-214	LANL ER-130 Modified	1.28E-01	8.57E-02	8.59E-02	1.27E-01	5.65E-02	pCi/g
16-06043-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06043	Potassium-40	LANL ER-130 Modified	1.11E-01	4.42E-01	4.42E-01	8.46E-01	3.51E-01	pCi/g
16-06043-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06043	Protactinium-231	LANL ER-130 Modified	-4.75E-01	1.13E+00	1.13E+00	1.70E+00	7.75E-01	pCi/g
16-06043-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-210	LANL ER-130 Modified	2.85E-02	3.09E-01	3.09E-01	4.85E-01	2.31E-01	pCi/g
16-06043-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-212	LANL ER-130 Modified	2.28E-02	6.03E-02	6.03E-02	9.93E-02	4.66E-02	pCi/g
16-06043-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-214	LANL ER-130 Modified	1.85E-02	8.40E-02	8.40E-02	1.40E-01	6.48E-02	pCi/g
16-06043-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06043	Thallium-208	LANL ER-130 Modified	1.73E-01	9.84E-02	9.88E-02	2.18E-01	9.82E-02	pCi/g
16-06043-03	DUP	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Actinium-228	LANL ER-130 Modified	2.01E-01	1.21E-01	1.22E-01	2.23E-01	1.05E-01	pCi/g
16-06043-03	DUP	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Bismuth-214	LANL ER-130 Modified	1.03E+00	1.26E-01	1.37E-01	1.41E-01	6.75E-02	pCi/g
16-06043-03	DUP	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Potassium-40	LANL ER-130 Modified	4.14E+00	7.90E-01	8.18E-01	7.83E-01	3.65E-01	pCi/g
16-06043-03	DUP	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Protactinium-231	LANL ER-130 Modified	3.97E-01	8.77E-01	8.78E-01	1.49E+00	7.07E-01	pCi/g
16-06043-03	DUP	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-210	LANL ER-130 Modified	1.36E+00	9.52E-01	9.54E-01	1.55E+00	7.56E-01	pCi/g
16-06043-03	DUP	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-212	LANL ER-130 Modified	2.29E-01	6.39E-02	6.50E-02	1.75E-01	8.56E-02	pCi/g
16-06043-03	DUP	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-214	LANL ER-130 Modified	1.10E+00	1.27E-01	1.39E-01	1.58E-01	7.65E-02	pCi/g
16-06043-03	DUP	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Thallium-208	LANL ER-130 Modified	2.16E-01	7.21E-02	7.29E-02	7.87E-02	8.91E-02	pCi/g
16-06043-04	DO	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Actinium-228	LANL ER-130 Modified	2.52E-01	1.16E-01	1.17E-01	2.26E-01	1.06E-01	pCi/g
16-06043-04	DO	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Bismuth-214	LANL ER-130 Modified	9.95E-01	1.17E-01	1.27E-01	1.26E-01	6.01E-02	pCi/g
16-06043-04	DO	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Potassium-40	LANL ER-130 Modified	3.94E+00	7.35E-01	7.62E-01	6.63E-01	3.05E-01	pCi/g
16-06043-04	DO	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Protactinium-231	LANL ER-130 Modified	8.79E-01	8.43E-01	8.44E-01	1.49E+00	7.10E-01	pCi/g
16-06043-04	DO	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-210	LANL ER-130 Modified	1.24E+00	8.75E-01	8.78E-01	1.43E+00	6.93E-01	pCi/g
16-06043-04	DO	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-212	LANL ER-130 Modified	2.06E-01	5.71E-02	5.81E-02	1.73E-01	8.47E-02	pCi/g
16-06043-04	DO	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-214	LANL ER-130 Modified	1.15E+00	1.07E-01	1.22E-01	2.10E-01	1.02E-01	pCi/g
16-06043-04	DO	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Thallium-208	LANL ER-130 Modified	2.15E-01	9.57E-02	9.63E-02	1.76E-01	8.36E-02	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 Analytical
Final Report of Analysis

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

Work Order Details:
SDG: 16-06043
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
16-06043-05	TRG	CP-5031 02-05	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Actinium-228	LANL ER-130 Modified	8.30E-01	3.97E-01	4.00E-01	7.76E-01	3.64E-01	pCi/g
16-06043-05	TRG	CP-5031 02-05	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Bismuth-214	LANL ER-130 Modified	9.51E-01	3.01E-01	3.05E-01	5.17E-01	2.49E-01	pCi/g
16-06043-05	TRG	CP-5031 02-05	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Potassium-40	LANL ER-130 Modified	2.07E+01	3.37E+00	3.53E+00	1.09E+00	4.49E-01	pCi/g
16-06043-05	TRG	CP-5031 02-05	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Protactinium-231	LANL ER-130 Modified	1.42E-01	1.19E+00	1.19E+00	4.61E+00	2.20E+00	pCi/g
16-06043-05	TRG	CP-5031 02-05	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-210	LANL ER-130 Modified	2.80E-01	8.02E-01	8.02E-01	1.25E+00	6.07E-01	pCi/g
16-06043-05	TRG	CP-5031 02-05	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-212	LANL ER-130 Modified	1.12E+00	2.77E-01	2.83E-01	3.85E-01	1.88E-01	pCi/g
16-06043-05	TRG	CP-5031 02-05	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-214	LANL ER-130 Modified	1.01E+00	3.36E-01	3.40E-01	4.86E-01	2.36E-01	pCi/g
16-06043-05	TRG	CP-5031 02-05	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Thallium-208	LANL ER-130 Modified	8.35E-01	2.54E-01	2.58E-01	4.45E-01	2.22E-01	pCi/g
16-06043-06	TRG	CP-5031 05-10	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Actinium-228	LANL ER-130 Modified	1.96E+00	3.91E-01	4.04E-01	5.37E-01	2.52E-01	pCi/g
16-06043-06	TRG	CP-5031 05-10	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Bismuth-214	LANL ER-130 Modified	1.35E+00	2.36E-01	2.46E-01	3.16E-01	1.51E-01	pCi/g
16-06043-06	TRG	CP-5031 05-10	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Potassium-40	LANL ER-130 Modified	2.53E+01	3.18E+00	3.44E+00	1.45E+00	6.61E-01	pCi/g
16-06043-06	TRG	CP-5031 05-10	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Protactinium-231	LANL ER-130 Modified	-3.86E+00	3.21E+00	3.21E+00	3.21E+00	1.52E+00	pCi/g
16-06043-06	TRG	CP-5031 05-10	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-210	LANL ER-130 Modified	1.90E+00	1.38E+00	1.39E+00	2.23E+00	1.08E+00	pCi/g
16-06043-06	TRG	CP-5031 05-10	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-212	LANL ER-130 Modified	1.70E+00	2.85E-01	2.98E-01	1.97E-01	9.46E-02	pCi/g
16-06043-06	TRG	CP-5031 05-10	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-214	LANL ER-130 Modified	1.19E+00	2.19E-01	2.27E-01	3.39E-01	1.63E-01	pCi/g
16-06043-06	TRG	CP-5031 05-10	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Thallium-208	LANL ER-130 Modified	1.36E+00	2.42E-01	2.51E-01	2.82E-01	1.77E-01	pCi/g
16-06043-07	TRG	CP-5031 10-15	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Actinium-228	LANL ER-130 Modified	2.31E+00	3.85E-01	4.03E-01	6.50E-01	3.05E-01	pCi/g
16-06043-07	TRG	CP-5031 10-15	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Bismuth-214	LANL ER-130 Modified	1.32E+00	2.55E-01	2.64E-01	3.90E-01	1.86E-01	pCi/g
16-06043-07	TRG	CP-5031 10-15	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Potassium-40	LANL ER-130 Modified	2.72E+01	3.30E+00	3.59E+00	1.03E+00	4.40E-01	pCi/g
16-06043-07	TRG	CP-5031 10-15	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Protactinium-231	LANL ER-130 Modified	5.26E+00	2.89E+00	2.90E+00	4.74E+00	2.28E+00	pCi/g
16-06043-07	TRG	CP-5031 10-15	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-210	LANL ER-130 Modified	3.04E+00	2.22E+00	2.22E+00	3.63E+00	1.77E+00	pCi/g
16-06043-07	TRG	CP-5031 10-15	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-212	LANL ER-130 Modified	2.06E+00	2.41E-01	2.63E-01	3.33E-01	1.63E-01	pCi/g
16-06043-07	TRG	CP-5031 10-15	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-214	LANL ER-130 Modified	1.33E+00	2.25E-01	2.35E-01	4.24E-01	2.05E-01	pCi/g
16-06043-07	TRG	CP-5031 10-15	06/01/16 00:00	6/9/2016	6/16/2016	16-06043	Thallium-208	LANL ER-130 Modified	1.41E+00	2.71E-01	2.81E-01	2.05E-01	2.39E-01	pCi/g
16-06043-08	TRG	CP-5010 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Actinium-228	LANL ER-130 Modified	1.82E+00	4.14E-01	4.25E-01	1.10E+00	7.35E-01	pCi/g
16-06043-08	TRG	CP-5010 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Bismuth-214	LANL ER-130 Modified	1.78E+00	3.16E-01	3.29E-01	3.96E-01	1.87E-01	pCi/g
16-06043-08	TRG	CP-5010 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Potassium-40	LANL ER-130 Modified	1.81E+01	3.30E+00	3.43E+00	2.22E+00	1.01E+00	pCi/g
16-06043-08	TRG	CP-5010 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Protactinium-231	LANL ER-130 Modified	-5.56E-01	2.15E+00	2.15E+00	5.41E+00	2.60E+00	pCi/g
16-06043-08	TRG	CP-5010 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-210	LANL ER-130 Modified	-1.03E-01	9.93E-01	9.93E-01	1.50E+00	7.35E-01	pCi/g
16-06043-08	TRG	CP-5010 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-212	LANL ER-130 Modified	1.64E+00	2.79E-01	2.92E-01	4.36E-01	2.13E-01	pCi/g
16-06043-08	TRG	CP-5010 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-214	LANL ER-130 Modified	1.77E+00	3.56E-01	3.68E-01	5.35E-01	2.60E-01	pCi/g
16-06043-08	TRG	CP-5010 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Thallium-208	LANL ER-130 Modified	1.13E+00	4.15E-01	4.19E-01	5.80E-01	2.75E-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

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: 16-06043
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
16-06043-09	TRG	CP-5010 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Actinium-228	LANL ER-130 Modified	1.31E+00	2.55E-01	2.64E-01	4.39E-01	2.08E-01	pCi/g
16-06043-09	TRG	CP-5010 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Bismuth-214	LANL ER-130 Modified	1.72E+00	2.30E-01	2.46E-01	2.03E-01	9.62E-02	pCi/g
16-06043-09	TRG	CP-5010 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Potassium-40	LANL ER-130 Modified	1.80E+01	2.27E+00	2.45E+00	1.09E+00	5.01E-01	pCi/g
16-06043-09	TRG	CP-5010 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Protactinium-231	LANL ER-130 Modified	1.79E+00	1.17E+00	1.17E+00	3.71E+00	1.80E+00	pCi/g
16-06043-09	TRG	CP-5010 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-210	LANL ER-130 Modified	2.92E+00	1.57E+00	1.58E+00	2.52E+00	1.23E+00	pCi/g
16-06043-09	TRG	CP-5010 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-212	LANL ER-130 Modified	1.27E+00	2.06E-01	2.16E-01	2.44E-01	1.20E-01	pCi/g
16-06043-09	TRG	CP-5010 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-214	LANL ER-130 Modified	1.80E+00	2.66E-01	2.82E-01	2.34E-01	1.13E-01	pCi/g
16-06043-09	TRG	CP-5010 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Thallium-208	LANL ER-130 Modified	1.08E+00	1.88E-01	1.96E-01	1.07E-01	1.83E-01	pCi/g
16-06043-10	TRG	CP-5010 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Actinium-228	LANL ER-130 Modified	1.87E+00	4.10E-01	4.21E-01	8.08E-01	3.85E-01	pCi/g
16-06043-10	TRG	CP-5010 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Bismuth-214	LANL ER-130 Modified	1.34E+00	2.17E-01	2.28E-01	3.00E-01	1.42E-01	pCi/g
16-06043-10	TRG	CP-5010 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Potassium-40	LANL ER-130 Modified	2.60E+01	3.19E+00	3.46E+00	1.36E+00	6.07E-01	pCi/g
16-06043-10	TRG	CP-5010 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Protactinium-231	LANL ER-130 Modified	4.45E-01	1.12E+00	1.12E+00	4.48E+00	2.15E+00	pCi/g
16-06043-10	TRG	CP-5010 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-210	LANL ER-130 Modified	2.28E+00	2.44E+00	2.44E+00	4.06E+00	1.99E+00	pCi/g
16-06043-10	TRG	CP-5010 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-212	LANL ER-130 Modified	2.24E+00	2.48E-01	2.73E-01	3.49E-01	1.71E-01	pCi/g
16-06043-10	TRG	CP-5010 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-214	LANL ER-130 Modified	1.33E+00	2.05E-01	2.16E-01	3.95E-01	1.91E-01	pCi/g
16-06043-10	TRG	CP-5010 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Thallium-208	LANL ER-130 Modified	1.75E+00	3.09E-01	3.22E-01	2.03E-01	2.91E-01	pCi/g
16-06043-11	TRG	CP-5010 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Actinium-228	LANL ER-130 Modified	2.35E+00	3.34E-01	3.55E-01	6.65E-01	3.16E-01	pCi/g
16-06043-11	TRG	CP-5010 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Bismuth-214	LANL ER-130 Modified	1.53E+00	2.82E-01	2.93E-01	3.31E-01	1.58E-01	pCi/g
16-06043-11	TRG	CP-5010 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Potassium-40	LANL ER-130 Modified	3.08E+01	3.55E+00	3.88E+00	1.39E+00	6.32E-01	pCi/g
16-06043-11	TRG	CP-5010 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Protactinium-231	LANL ER-130 Modified	2.10E+00	2.29E+00	2.29E+00	3.86E+00	1.84E+00	pCi/g
16-06043-11	TRG	CP-5010 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-210	LANL ER-130 Modified	3.40E+00	2.17E+00	2.17E+00	3.51E+00	1.71E+00	pCi/g
16-06043-11	TRG	CP-5010 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-212	LANL ER-130 Modified	1.75E+00	2.62E-01	2.77E-01	4.26E-01	2.09E-01	pCi/g
16-06043-11	TRG	CP-5010 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-214	LANL ER-130 Modified	1.54E+00	2.59E-01	2.71E-01	4.16E-01	2.02E-01	pCi/g
16-06043-11	TRG	CP-5010 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Thallium-208	LANL ER-130 Modified	1.66E+00	2.48E-01	2.62E-01	1.82E-01	1.79E-01	pCi/g
16-06043-12	TRG	CP-5012 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Actinium-228	LANL ER-130 Modified	1.28E+00	2.11E-01	2.21E-01	3.24E-01	1.51E-01	pCi/g
16-06043-12	TRG	CP-5012 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Bismuth-214	LANL ER-130 Modified	1.29E+00	1.82E-01	1.94E-01	2.35E-01	1.13E-01	pCi/g
16-06043-12	TRG	CP-5012 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Potassium-40	LANL ER-130 Modified	1.70E+01	2.17E+00	2.34E+00	1.11E+00	5.10E-01	pCi/g
16-06043-12	TRG	CP-5012 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Protactinium-231	LANL ER-130 Modified	-3.29E-01	9.36E-01	9.36E-01	2.37E+00	1.12E+00	pCi/g
16-06043-12	TRG	CP-5012 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-210	LANL ER-130 Modified	9.11E-01	9.51E-01	9.52E-01	1.58E+00	7.63E-01	pCi/g
16-06043-12	TRG	CP-5012 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-212	LANL ER-130 Modified	1.19E+00	1.97E-01	2.06E-01	2.25E-01	1.10E-01	pCi/g
16-06043-12	TRG	CP-5012 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-214	LANL ER-130 Modified	1.35E+00	2.03E-01	2.15E-01	2.13E-01	1.03E-01	pCi/g
16-06043-12	TRG	CP-5012 00-02	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Thallium-208	LANL ER-130 Modified	9.15E-01	1.71E-01	1.77E-01	1.05E-01	1.67E-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

Eberline Analytical
Final Report of Analysis

Report To:
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Auxier & Associates, Inc.
9821 Cogdill Road, Suite 1
Knoxville, TN 37932

Work Order Details:
SDG: 16-06043
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
16-06043-13	TRG	CP-5012 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Actinium-228	LANL ER-130 Modified	1.54E+00	2.78E-01	2.89E-01	4.64E-01	2.19E-01	pCi/g
16-06043-13	TRG	CP-5012 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Bismuth-214	LANL ER-130 Modified	8.62E-01	1.65E-01	1.71E-01	2.37E-01	1.13E-01	pCi/g
16-06043-13	TRG	CP-5012 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Potassium-40	LANL ER-130 Modified	1.81E+01	2.26E+00	2.44E+00	9.44E-01	4.21E-01	pCi/g
16-06043-13	TRG	CP-5012 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Protactinium-231	LANL ER-130 Modified	2.09E+00	2.10E+00	2.10E+00	3.25E+00	1.56E+00	pCi/g
16-06043-13	TRG	CP-5012 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-210	LANL ER-130 Modified	1.84E+00	1.53E+00	1.53E+00	2.10E+00	1.02E+00	pCi/g
16-06043-13	TRG	CP-5012 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-212	LANL ER-130 Modified	1.51E+00	1.79E-01	1.95E-01	2.73E-01	1.34E-01	pCi/g
16-06043-13	TRG	CP-5012 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-214	LANL ER-130 Modified	8.43E-01	1.48E-01	1.54E-01	2.03E-01	9.71E-02	pCi/g
16-06043-13	TRG	CP-5012 02-05	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Thallium-208	LANL ER-130 Modified	9.62E-01	2.05E-01	2.11E-01	2.19E-01	2.22E-01	pCi/g
16-06043-14	TRG	CP-5012 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Actinium-228	LANL ER-130 Modified	2.31E+00	3.44E-01	3.64E-01	4.97E-01	2.31E-01	pCi/g
16-06043-14	TRG	CP-5012 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Bismuth-214	LANL ER-130 Modified	1.35E+00	2.45E-01	2.54E-01	3.32E-01	1.58E-01	pCi/g
16-06043-14	TRG	CP-5012 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Potassium-40	LANL ER-130 Modified	3.19E+01	3.77E+00	4.11E+00	1.61E+00	7.37E-01	pCi/g
16-06043-14	TRG	CP-5012 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Protactinium-231	LANL ER-130 Modified	3.28E+00	2.38E+00	2.39E+00	4.20E+00	2.01E+00	pCi/g
16-06043-14	TRG	CP-5012 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-210	LANL ER-130 Modified	2.48E+00	2.30E+00	2.31E+00	3.81E+00	1.86E+00	pCi/g
16-06043-14	TRG	CP-5012 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-212	LANL ER-130 Modified	1.91E+00	2.77E-01	2.94E-01	4.53E-01	2.22E-01	pCi/g
16-06043-14	TRG	CP-5012 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-214	LANL ER-130 Modified	1.60E+00	2.05E-01	2.21E-01	8.45E-01	4.16E-01	pCi/g
16-06043-14	TRG	CP-5012 05-09	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Thallium-208	LANL ER-130 Modified	1.66E+00	3.05E-01	3.17E-01	3.59E-01	2.88E-01	pCi/g
16-06043-15	TRG	CP-5012 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Actinium-228	LANL ER-130 Modified	2.13E+00	4.33E-01	4.46E-01	6.37E-01	2.98E-01	pCi/g
16-06043-15	TRG	CP-5012 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Bismuth-214	LANL ER-130 Modified	1.23E+00	2.55E-01	2.62E-01	1.18E-01	2.12E-01	pCi/g
16-06043-15	TRG	CP-5012 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Potassium-40	LANL ER-130 Modified	3.11E+01	3.91E+00	4.22E+00	1.68E+00	7.62E-01	pCi/g
16-06043-15	TRG	CP-5012 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Protactinium-231	LANL ER-130 Modified	-8.32E-01	3.42E+00	3.42E+00	4.11E+00	1.95E+00	pCi/g
16-06043-15	TRG	CP-5012 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-210	LANL ER-130 Modified	3.62E+00	1.54E+00	1.55E+00	2.66E+00	1.28E+00	pCi/g
16-06043-15	TRG	CP-5012 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-212	LANL ER-130 Modified	2.12E+00	3.96E-01	4.11E-01	3.83E-01	1.87E-01	pCi/g
16-06043-15	TRG	CP-5012 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Lead-214	LANL ER-130 Modified	1.39E+00	2.69E-01	2.79E-01	3.63E-01	1.74E-01	pCi/g
16-06043-15	TRG	CP-5012 09-15	06/07/16 00:00	6/9/2016	6/16/2016	16-06043	Thallium-208	LANL ER-130 Modified	1.63E+00	2.91E-01	3.03E-01	1.89E-01	2.55E-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

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: 16-06043
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
16-06043-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	5.40E+00	1.46E-01				pCi/g
16-06043-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	6.40E+00	9.66E-01	1.25E+00	6.32E-02	7.37E-02	pCi/g
16-06043-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	7.17E-02	5.85E-02	5.91E-02	6.82E-02	6.48E-02	pCi/g
16-06043-03	DUP	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	1.00E+00	3.69E-01	3.90E-01	1.27E-01	1.25E-01	pCi/g
16-06043-04	DO	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	1.14E+00	4.01E-01	4.25E-01	1.60E-01	1.48E-01	pCi/g
16-06043-05	TRG	CP-5031 02-05	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	8.38E-01	2.15E-01	2.39E-01	5.39E-02	5.34E-02	pCi/g
16-06043-06	TRG	CP-5031 05-10	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	1.08E+00	2.62E-01	2.94E-01	7.33E-02	6.82E-02	pCi/g
16-06043-07	TRG	CP-5031 10-15	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	2.32E+00	4.57E-01	5.40E-01	4.49E-02	4.91E-02	pCi/g
16-06043-08	TRG	CP-5010 00-02	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	1.33E+00	3.03E-01	3.45E-01	3.66E-02	4.74E-02	pCi/g
16-06043-09	TRG	CP-5010 02-05	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	2.02E+00	4.79E-01	5.40E-01	5.56E-02	6.48E-02	pCi/g
16-06043-10	TRG	CP-5010 05-09	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	1.28E+00	3.17E-01	3.55E-01	5.39E-02	5.90E-02	pCi/g
16-06043-11	TRG	CP-5010 09-15	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	1.38E+00	3.13E-01	3.56E-01	5.04E-02	5.28E-02	pCi/g
16-06043-12	TRG	CP-5012 00-02	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	1.25E+00	2.96E-01	3.34E-01	3.89E-02	5.01E-02	pCi/g
16-06043-13	TRG	CP-5012 02-05	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	1.35E+00	3.31E-01	3.70E-01	6.48E-02	6.42E-02	pCi/g
16-06043-14	TRG	CP-5012 05-09	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	1.25E+00	3.07E-01	3.44E-01	4.09E-02	5.27E-02	pCi/g
16-06043-15	TRG	CP-5012 09-15	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-230	EML Th-01 Modified	1.75E+00	4.07E-01	4.61E-01	5.50E-02	6.02E-02	pCi/g
16-06043-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	4.77E+00	1.72E-01				pCi/g
16-06043-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	5.69E+00	8.77E-01	1.01E+00	5.51E-02	3.35E-03	pCi/g
16-06043-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	1.10E-02	2.75E-02	2.76E-02	5.73E-02	8.93E-03	pCi/g
16-06043-03	DUP	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	3.40E-01	1.86E-01	1.89E-01	1.26E-01	2.21E-02	pCi/g
16-06043-04	DO	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	1.94E-01	1.35E-01	1.36E-01	1.22E-01	2.14E-02	pCi/g
16-06043-05	TRG	CP-5031 02-05	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	6.39E-01	1.78E-01	1.87E-01	3.57E-02	2.16E-03	pCi/g
16-06043-06	TRG	CP-5031 05-10	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	1.17E+00	2.78E-01	2.96E-01	6.35E-02	1.44E-02	pCi/g
16-06043-07	TRG	CP-5031 10-15	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	1.53E+00	3.29E-01	3.56E-01	4.08E-02	3.62E-03	pCi/g
16-06043-08	TRG	CP-5010 00-02	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	8.44E-01	2.18E-01	2.30E-01	4.94E-02	6.69E-03	pCi/g
16-06043-09	TRG	CP-5010 02-05	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	1.17E+00	3.14E-01	3.31E-01	6.09E-02	6.89E-03	pCi/g
16-06043-10	TRG	CP-5010 05-09	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	1.49E+00	3.55E-01	3.78E-01	4.28E-02	2.60E-03	pCi/g
16-06043-11	TRG	CP-5010 09-15	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	1.06E+00	2.58E-01	2.74E-01	5.35E-02	7.43E-04	pCi/g
16-06043-12	TRG	CP-5012 00-02	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	1.19E+00	2.86E-01	3.04E-01	4.88E-02	5.50E-03	pCi/g
16-06043-13	TRG	CP-5012 02-05	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	9.80E-01	2.61E-01	2.75E-01	5.39E-02	6.09E-03	pCi/g
16-06043-14	TRG	CP-5012 05-09	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	1.20E+00	2.97E-01	3.15E-01	4.67E-02	4.12E-03	pCi/g
16-06043-15	TRG	CP-5012 09-15	06/07/16 00:00	6/9/2016	6/24/2016	16-06043	Thorium-232	EML Th-01 Modified	1.39E+00	3.41E-01	3.62E-01	5.49E-02	6.21E-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 Analytical
Final Report of Analysis

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

Work Order Details:
SDG: 16-06043
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
16-06043-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/24/2016	16-06043	Uranium-234	EML U-02 Modified	8.12E+00	2.92E-01				pCi/g
16-06043-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/24/2016	16-06043	Uranium-234	EML U-02 Modified	7.05E+00	9.51E-01	1.08E+00	6.86E-02	1.47E-02	pCi/g
16-06043-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/24/2016	16-06043	Uranium-234	EML U-02 Modified	1.63E-01	8.14E-02	8.22E-02	6.81E-02	2.23E-02	pCi/g
16-06043-03	DUP	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Uranium-234	EML U-02 Modified	1.17E+00	2.86E-01	2.98E-01	7.89E-02	8.08E-03	pCi/g
16-06043-04	DO	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Uranium-234	EML U-02 Modified	1.12E+00	2.43E-01	2.56E-01	4.20E-02	7.86E-03	pCi/g
16-06043-05	TRG	CP-5031 02-05	06/01/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-234	EML U-02 Modified	8.50E-01	1.99E-01	2.08E-01	3.91E-02	7.33E-03	pCi/g
16-06043-06	TRG	CP-5031 05-10	06/01/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-234	EML U-02 Modified	9.43E-01	2.65E-01	2.73E-01	7.08E-02	1.41E-02	pCi/g
16-06043-07	TRG	CP-5031 10-15	06/01/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-234	EML U-02 Modified	9.28E-01	2.34E-01	2.43E-01	5.64E-02	1.12E-02	pCi/g
16-06043-08	TRG	CP-5010 00-02	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-234	EML U-02 Modified	1.57E+00	4.78E-01	4.91E-01	1.34E-01	2.87E-02	pCi/g
16-06043-09	TRG	CP-5010 02-05	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-234	EML U-02 Modified	1.73E+00	4.23E-01	4.40E-01	8.37E-02	1.66E-02	pCi/g
16-06043-10	TRG	CP-5010 05-09	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-234	EML U-02 Modified	9.11E-01	2.34E-01	2.43E-01	7.16E-02	1.75E-02	pCi/g
16-06043-11	TRG	CP-5010 09-15	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-234	EML U-02 Modified	1.18E+00	2.24E-01	2.39E-01	6.67E-02	2.59E-02	pCi/g
16-06043-12	TRG	CP-5012 00-02	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-234	EML U-02 Modified	1.09E+00	2.34E-01	2.47E-01	3.97E-02	7.44E-03	pCi/g
16-06043-13	TRG	CP-5012 02-05	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-234	EML U-02 Modified	1.11E+00	2.36E-01	2.49E-01	6.01E-02	1.56E-02	pCi/g
16-06043-14	TRG	CP-5012 05-09	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-234	EML U-02 Modified	9.79E-01	2.79E-01	2.88E-01	7.59E-02	1.51E-02	pCi/g
16-06043-15	TRG	CP-5012 09-15	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-234	EML U-02 Modified	8.25E-01	2.26E-01	2.34E-01	7.58E-02	1.85E-02	pCi/g
16-06043-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/24/2016	16-06043	Uranium-235	EML U-02 Modified	4.65E-01	1.77E-01	1.80E-01	6.73E-02	3.87E-03	pCi/g
16-06043-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/24/2016	16-06043	Uranium-235	EML U-02 Modified	2.39E-02	3.87E-02	3.87E-02	6.65E-02	8.75E-03	pCi/g
16-06043-03	DUP	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Uranium-235	EML U-02 Modified	4.59E-02	5.57E-02	5.58E-02	6.77E-02	3.91E-03	pCi/g
16-06043-04	DO	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Uranium-235	EML U-02 Modified	6.21E-02	6.00E-02	6.02E-02	7.44E-02	1.27E-03	pCi/g
16-06043-05	TRG	CP-5031 02-05	06/01/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-235	EML U-02 Modified	2.06E-01	9.88E-02	9.98E-02	4.82E-02	2.78E-03	pCi/g
16-06043-06	TRG	CP-5031 05-10	06/01/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-235	EML U-02 Modified	1.40E-01	1.03E-01	1.04E-01	8.74E-02	6.91E-03	pCi/g
16-06043-07	TRG	CP-5031 10-15	06/01/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-235	EML U-02 Modified	1.58E-01	9.66E-02	9.73E-02	6.08E-02	3.49E-03	pCi/g
16-06043-08	TRG	CP-5010 00-02	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-235	EML U-02 Modified	3.10E-01	2.03E-01	2.04E-01	1.32E-01	7.58E-03	pCi/g
16-06043-09	TRG	CP-5010 02-05	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-235	EML U-02 Modified	1.87E-01	1.30E-01	1.31E-01	1.03E-01	8.13E-03	pCi/g
16-06043-10	TRG	CP-5010 05-09	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-235	EML U-02 Modified	8.85E-02	7.73E-02	7.75E-02	8.85E-02	1.51E-03	pCi/g
16-06043-11	TRG	CP-5010 09-15	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-235	EML U-02 Modified	7.80E-02	6.09E-02	6.11E-02	7.26E-02	1.55E-02	pCi/g
16-06043-12	TRG	CP-5012 00-02	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-235	EML U-02 Modified	2.35E-02	4.00E-02	4.00E-02	7.04E-02	1.20E-03	pCi/g
16-06043-13	TRG	CP-5012 02-05	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-235	EML U-02 Modified	7.61E-02	6.68E-02	6.70E-02	8.37E-02	1.58E-02	pCi/g
16-06043-14	TRG	CP-5012 05-09	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-235	EML U-02 Modified	1.34E-01	1.03E-01	1.04E-01	8.17E-02	4.70E-03	pCi/g
16-06043-15	TRG	CP-5012 09-15	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-235	EML U-02 Modified	2.06E-02	4.46E-02	4.46E-02	8.81E-02	1.02E-02	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 Analytical
Final Report of Analysis

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

Work Order Details:
SDG: 16-06043
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
16-06043-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/24/2016	16-06043	Uranium-238	EML U-02 Modified	7.87E+00	2.83E-01				pCi/g
16-06043-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/24/2016	16-06043	Uranium-238	EML U-02 Modified	7.10E+00	9.55E-01	1.08E+00	8.20E-02	2.15E-02	pCi/g
16-06043-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/24/2016	16-06043	Uranium-238	EML U-02 Modified	1.04E-01	6.48E-02	6.53E-02	6.14E-02	1.78E-02	pCi/g
16-06043-03	DUP	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Uranium-238	EML U-02 Modified	1.29E+00	3.04E-01	3.18E-01	5.47E-02	1.05E-02	pCi/g
16-06043-04	DO	CP-5031 00-02	06/01/16 00:00	6/9/2016	6/24/2016	16-06043	Uranium-238	EML U-02 Modified	1.07E+00	2.36E-01	2.48E-01	5.65E-02	1.31E-02	pCi/g
16-06043-05	TRG	CP-5031 02-05	06/01/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-238	EML U-02 Modified	6.38E-01	1.67E-01	1.73E-01	4.89E-02	1.06E-02	pCi/g
16-06043-06	TRG	CP-5031 05-10	06/01/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-238	EML U-02 Modified	9.10E-01	2.59E-01	2.67E-01	7.05E-02	1.43E-02	pCi/g
16-06043-07	TRG	CP-5031 10-15	06/01/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-238	EML U-02 Modified	7.85E-01	2.11E-01	2.18E-01	4.90E-02	9.35E-03	pCi/g
16-06043-08	TRG	CP-5010 00-02	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-238	EML U-02 Modified	1.57E+00	4.77E-01	4.90E-01	1.06E-01	2.03E-02	pCi/g
16-06043-09	TRG	CP-5010 02-05	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-238	EML U-02 Modified	1.78E+00	4.31E-01	4.50E-01	1.04E-01	1.09E-02	pCi/g
16-06043-10	TRG	CP-5010 05-09	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-238	EML U-02 Modified	8.14E-01	2.18E-01	2.25E-01	6.72E-02	1.56E-02	pCi/g
16-06043-11	TRG	CP-5010 09-15	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-238	EML U-02 Modified	1.28E+00	2.36E-01	2.53E-01	5.10E-02	1.41E-02	pCi/g
16-06043-12	TRG	CP-5012 00-02	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-238	EML U-02 Modified	1.09E+00	2.34E-01	2.47E-01	5.68E-02	5.94E-03	pCi/g
16-06043-13	TRG	CP-5012 02-05	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-238	EML U-02 Modified	9.32E-01	2.15E-01	2.25E-01	9.26E-02	4.32E-02	pCi/g
16-06043-14	TRG	CP-5012 05-09	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-238	EML U-02 Modified	1.03E+00	2.89E-01	2.98E-01	8.29E-02	1.80E-02	pCi/g
16-06043-15	TRG	CP-5012 09-15	06/07/16 00:00	6/9/2016	6/25/2016	16-06043	Uranium-238	EML U-02 Modified	7.25E-01	2.09E-01	2.15E-01	6.61E-02	1.44E-02	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

SECTION V

ANALYTICAL STANDARD

QA/QC REVIEWED
Date 1/16/95 Initials LA

U-8

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Radionuclide:	U-238NAT	Customer:	TMA EBERLINE
Half Life:	(4.468 ± 0.005) x 10^9 years	P.O.No.:	OR2778
Catalog No.:	7338	Reference Date:	January 1 1995 12:00 PST.
Source No.:	479-50	Contained Radioactivity:	(Total U) 8.016 μCi
		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 μCi/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).

ERIC ALLAS
QUALITY CONTROL

29 DECEMBER 1994
Date Signed

ISOTOPE PRODUCTS LABORATORIES
3017 N. SAN FERNANDO BLVD.
BURBANK, CALIFORNIA 91504
818·843·7000 FAX 818·843·6168

EBERLINE SERVICES

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

CURRENT DATE: 10/1/2015 0:00

SOLUTION REFERENCE #: IPL 479-50 SOLUTION #: U-8

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

Radionuclide: $^{234, 235, 238}U$ Reference Date: 1/1/1995 0:00

Certified Activity: 8.016E+00 µCi

Certified Concentration: µCi 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 HNO_3

Dilution Instructions: Dilution Solvent Used: 1M HNO_3

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 _____ Date: 10/1/2015 0:00

QC Approval _____ Date: 10/1/15

EBERLINE SERVICES

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

	MP-009	Date	10/1/2015 0:00
Solution Reference #	IPL 479-50	Solution #	U-8a

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

Radionuclide of Interest: $^{234, 235, 238}U$
Parent Solution Conc.: 1.7796E+04 dpm/ml

Reference Date: 1/1/1995 0:00

Chemical Composition of Standard Solution
Uranly Nitrate in 1M HNO_3

Dilution Instructions:

Dilution Solvent Used: 1M HNO_3

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		5.35[illegible] grams
	Volume of solution		5.035 millilitres
	Total activity of U-232		3.61E+04 becquerels
	which is equivalent to		9.76E-01 microcuries

Method of measurement (see reverse of this certificate)

Accuracy Random uncertainty is: ± 0.7% Systematic uncertainty: ± 0.5%
Overall uncertainty in the radioactive concentration quoted above: ± 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.**

EBERLINE SERVICES

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

CURRENT DATE 10/27/2015 0:00

SOLUTION REFERENCE # AEA/Amersham 92/232/67 **SOLUTION #** U-10

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

Radionuclide ^{232}U **Reference Date** 3/1/2000 0:00

Certified Activity 9.760E-01 µCi

Certified Concentration µCi 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

$^{232}U(NO_3)_6$ in 2M HNO_3

Dilution Instructions: **Dilution Solvent Used** 2M HNO_3

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

EBERLINE SERVICES

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

	MP-009	Date	10/27/2015 0:00
Solution Reference #	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
Parent Solution Conc.: 2.167E+03 dpm/ml

Reference Date: 3/1/2000 0:00

Chemical Composition of Standard Solution
$^{232}U(NO_3)_6$ in 2M HNO_3

Dilution Instructions:

Dilution Solvent Used: 2M HNO_3

SECONDARY VOLUMETRIC DILUTION

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

Final Activity Concentration: 2.1670E+01 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.

NOTES:

Expiration Date: October 26, 2016

Verified & Approved By _____ Date: 10/27/2015 0:00

QC Approval _____ Date: 10/28/15

Th-8

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Radionuclide:	Th-232	Customer:	TMA EBERLINE
Half Life:	(1.405 ± 0.006) x 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 μCi.
		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(NO3)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 μCi/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).

Anna U. Khan
QUALITY CONTROL

Nov. 8, 1993
Date Signed

ISOTOPE PRODUCTS LABORATORIES
1800 North Keystone Street
Burbank, California 91504
(818) 843 - 7000

EBERLINE SERVICES

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

CURRENT DATE 9/29/2015 0:00

SOLUTION REFERENCE # IPL 435-104-2 **SOLUTION #** Th-8

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

Radionuclide $^{232\&228}Th$
Reference Date 11/1/1993 0:00
Certified Activity 9.330E-02 µCi
Certified Concentration µCi 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
$Th(NO_3)_4$ 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 _____ Date: 9/29/2015 0:00

QC Approval _____ Date: 9/30/15

EBERLINE SERVICES

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
$^{226\ \&\ 232}Th$	1.405E+10	5.132E+12

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

Chemical Composition of Standard Solution

$Th(NO_3)_4$ in 1% HNO_3

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 MT 10/14/91 MT

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Received
OCT 14 1991
TMA/Eberline
Oak Ridge Lab

Radionuclide	Th-230	Customer:	TMA EBERLINE
Half Life:	(7.54 ± 0.03) x 10^4 years	P.O.No.:	TT4944
Catalog No.:	7230	Reference Date:	November 1 1991 12:00 PST.
Source No.:	388-116	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 µCi/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:	±2.0%
b. Random uncertainty in assay:	±0.5%
c. Random uncertainty in weighing(s):	±0.2%
d. Total uncertainty at the 99% confidence level:	±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)

QUALITY CONTROL

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EBERLINE SERVICES

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

CURRENT DATE 4/15/2015 0:00

SOLUTION REFERENCE # IPL 388-116 **SOLUTION #** Th-1

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

Radionuclide ^{230}Thorium
Certified Activity 1.036E+00 µCi
Certified Concentration µCi per gram

Reference Date 11/1/1991 0:00

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
$^{230}Th(NO_3)_4$ in 0.1N HNO_3

Dilution Instructions: **Dilution Solvent Used** 0.1N HNO_3

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 _____ Date: 4/15/2015 0:00

QC Approval _____ Date: 4/15/15

EBERLINE SERVICES

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

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

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

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

Chemical Composition of Standard Solution
$^{230}Th(NO_3)_4$ in 0.1N HNO_3

Dilution Instructions: **Dilution Solvent Used** 0.1N HNO_3

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 _____ Date: 4/15/2015 0:00

QC Approval _____ Date: 4/15/15

Th-18

Isotope Products Laboratories
An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

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:** (Th-229 only)	1.013 µCi 37.48 kBq

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.

Quality Control

9-Jan-02
Date Signed

IPL Ref. No.: 867-54

EBERLINE SERVICES

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

CURRENT DATE 9/29/2015 0:00

SOLUTION REFERENCE # IPL 867-54 **SOLUTION #** Th-18

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

Radionuclide ^{229}Th
Certified Activity 1.013E+00 µCi
Certified Concentration µCi per gram

Reference Date 1/15/2002 0:00

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
$^{229}Th(NO_3)_4$ in 0.1M HNO_3

Dilution Instructions:

Dilution Solvent Used 0.1 M HNO_3

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 _____ Date: 9/29/2015 0:00

QC Approval _____ Date: 9/30/15

EBERLINE SERVICES

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

	MP-009	Date	9/29/2015 0:00
Solution Reference #	IPL 867-54	Solution #	Th-18a

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

Radionuclide of Interest: ^{229}Th
Parent Solution Conc.: 2.25E+03 dpm/ml

Reference Date: 1/15/2002 0:00

Chemical Composition of Standard Solution
$Th(NO_3)_4$ in 0.1M HNO_3

Dilution Instructions:

Dilution Solvent Used: 0.1M HNO_3

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 10.0000 ml
Total Activity: 2.2490E+04 dpm
Final Volume: 1000.00 ml

Final Activity Concentration: 2.2490E+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: 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* γps/gram	This Source γps	Uncertainty* , % Type u_A	u_B	U	Calibration Method*
Am-241	59.5	1.580E+05	———	2.030E+03	0.1	1.8	3.6	4π 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	2.675E+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: 4π 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. —

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

: 00040

SECTION VI

QUALITY CONTROL SAMPLE RESULTS SUMMARY

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06043	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		86.88%	15.26%	100.00%	3.60%	8.12E+00	2.92E-01	7.05E+00	1.08E+00	U-8a	3.20E+01	3.60E+00	5.63E-01
U-238		90.20%	15.23%	100.00%	3.60%	7.87E+00	2.83E-01	7.10E+00	1.08E+00	U-8a	3.10E+01	3.60E+00	5.63E-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

Analyte	*Normalized Difference*	*RPD*	*Original Result*	*Original CSU*	*Replicate Result*	*Replicate CSU*
U-234	0.28	4.84	1.12E+00	2.56E-01	1.17E+00	2.98E-01
U-238	1.11	19.41	1.07E+00	2.48E-01	1.29E+00	3.18E-01
U-235	0.39	29.91	6.21E-02	6.02E-02	4.59E-02	5.58E-02

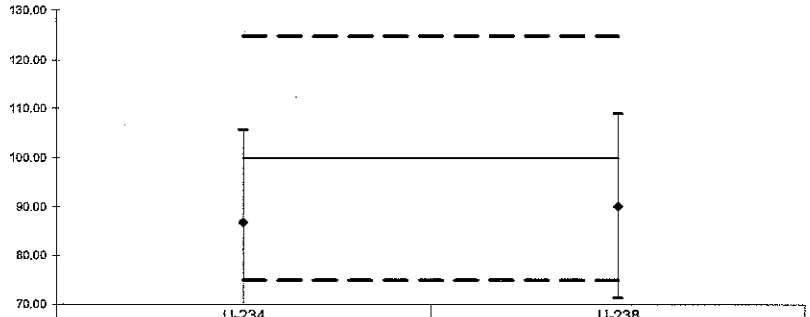
QC Summary

LCS Relative Bias	*LCS % R*		*MS % R*	*MS ND*	*Rep RPD*	*Rep ND*
0.87	OK				OK	OK
0.90	OK				OK	OK
	OK				NA	OK

Version

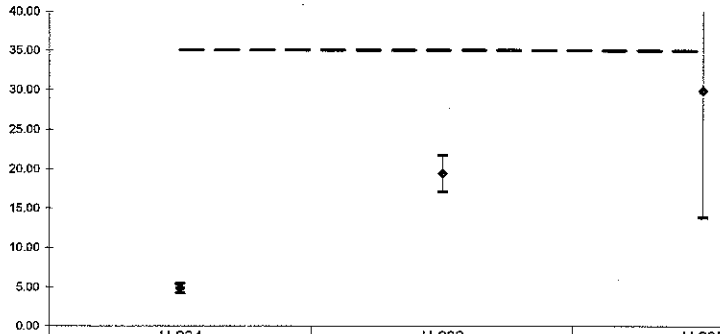
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06043	UUISO	1	pCi	g	Auxier & Associates, Inc.

LCS % Recovery



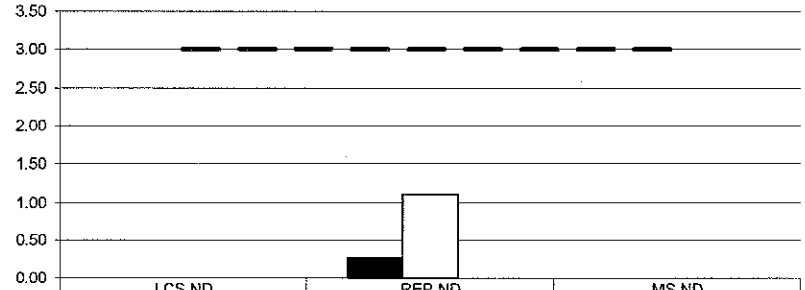
	U-234	U-238
Lower Error	68.02	71.37
Upper Error	105.73	109.04
%R	86.88	90.20
LCL	75	75
Mean	100	100
UCL	125	125

Replicate Sample RPD



	U-234	U-238	U-235
Lower Error	5.43	21.74	45.97
Upper Error	4.25	17.08	13.86
RPD	4.84	19.41	29.91
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
U-234	0.00	0.28	0.00
U-238	0.00	1.11	0.00
	0.00	0.00	0.00
UCL	3	3	3

No Matrix Spike

Version

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06043	ThISO	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)
TH-228		121.37%	18.03%	100.00%	3.60%	4.77E+00	1.72E-01	5.79E+00	1.04E+00	Th-8b	1.04E+02	3.60E+00	1.02E-01
TH-230		118.54%	19.51%	100.00%	2.70%	5.40E+00	1.46E-01	6.40E+00	1.25E+00	Th-1b	2.35E+01	2.70E+00	5.09E-01
TH-232		119.18%	17.75%	100.00%	3.60%	4.77E+00	1.72E-01	5.69E+00	1.01E+00	Th-8b	1.04E+02	3.60E+00	1.02E-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

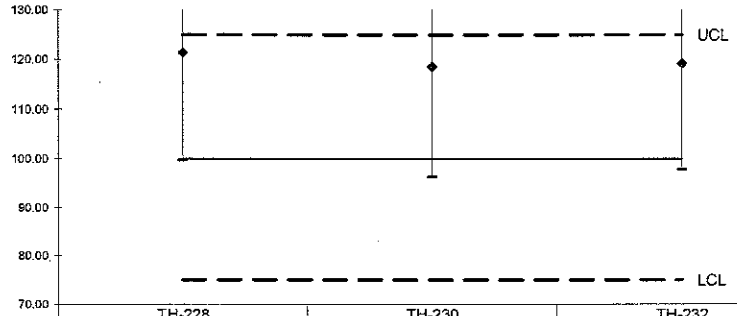
Analyte	*Normalized Difference*	*RPD*	*Original Result*	*Original CSU*	*Replicate Result*	*Replicate CSU*
TH-228	0.56	40.73	1.58E-01	1.38E-01	1.04E-01	1.28E-01
TH-230	0.47	12.77	1.14E+00	4.25E-01	1.00E+00	3.90E-01
TH-232	1.24	54.87	1.94E-01	1.36E-01	3.40E-01	1.89E-01

QC Summary

LCS Relative Bias	*LCS % R*		*MS % R*	*MS ND*	*Rep RPD*	*Rep ND*
1.21	OK				INV	OK
1.19	OK				OK	OK
1.19	OK				INV	OK

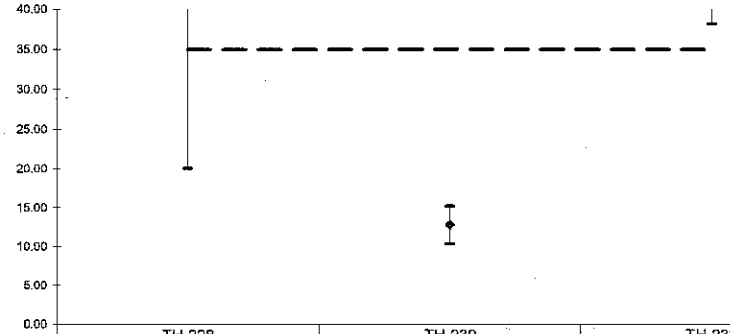
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06043	ThISO	1	pCi	g	Auxier & Associates, Inc.

LCS % Recovery



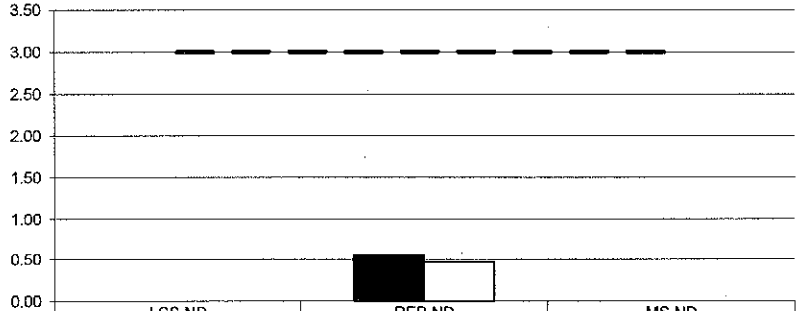
	TH-228	TH-230	TH-232
Lower Error	99.75	96.33	97.83
Upper Error	143.00	140.76	140.54
%R	121.37	118.54	119.18
LCL	75	75	75
Mean	100	100	100
UCL	125	125	125

Replicate Sample RPD



	TH-228	TH-230	TH-232
Lower Error	61.38	15.19	71.54
Upper Error	20.08	10.34	38.19
RPD	40.73	12.77	54.87
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
TH-228	0.00	0.56	0.00
TH-230	0.00	0.47	0.00
UCL	3	3	3

No Matrix Spike

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06043	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		105.94%	8.63%	100.00%	4.00%	1.37E+02	5.48E+00	1.45E+02	1.25E+01	GAS-1302	1.37E+02	5.48E+00	7.36E+02
CS-137		103.07%	10.89%	100.00%	4.00%	8.69E+01	3.48E+00	8.96E+01	9.76E+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

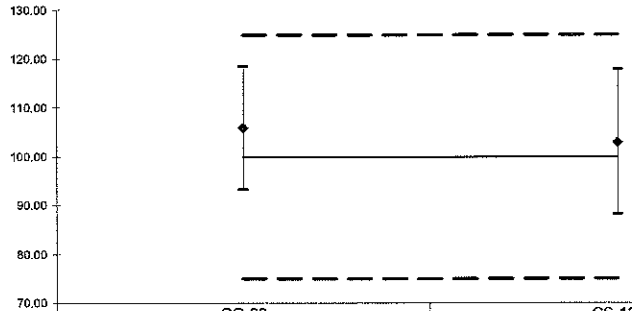
Analyte	*Normalized Difference*	*RPD*	*Original Result*	*Original CSU*	*Replicate Result*	*Replicate CSU*
AC-228	0.59	22.40	2.52E-01	1.17E-01	2.01E-01	1.22E-01
BI-214	0.40	3.74	9.95E-01	1.27E-01	1.03E+00	1.37E-01
K-40	0.35	4.89	3.94E+00	7.62E-01	4.14E+00	8.18E-01

QC Summary

LCS Relative Bias	*LCS % R*		*MS % R*	*MS ND*	*Rep RPD*	*Rep ND*
1.06	OK		<CS-137	AC-228>	OK	
1.03	OK		<CO-60	BI-214>	OK	OK
				K-40>	OK	OK

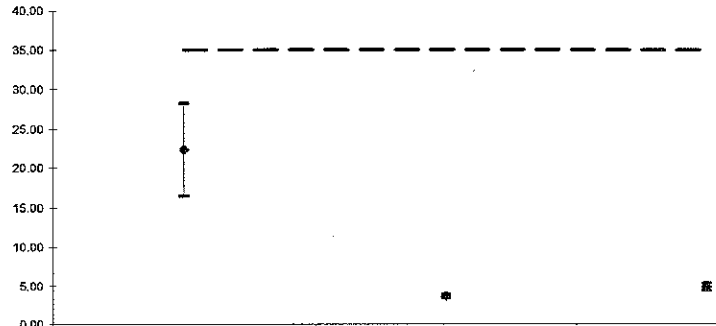
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06043	**Gamma**	**1**	**pCi**	**g**	**Auxier & Associates, Inc.**

LCS % Recovery



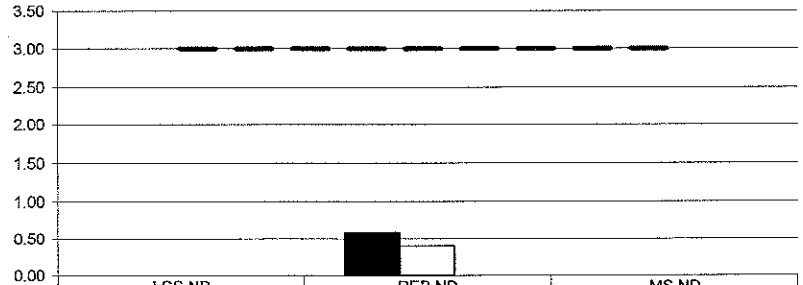
	CO-60	CS-137
Lower Error	93.32	88.18
Upper Error	118.57	117.97
%R	105.94	103.07
LCL	75	75
Mean	100	100
UCL	125	125

Replicate Sample RPD



	AC-228	Bi-214	K-40
Lower Error	28.30	3.98	5.37
Upper Error	16.50	3.50	4.41
RPD	22.40	3.74	4.89
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
CO-60	0.00	0.59	0.00
CS-137	0.00	0.40	0.00
	0.00	0.00	0.00
UCL	3	3	3

No Matrix Spike

Version

SECTION VII

LABORATORY TECHNICIAN'S NOTES & RUN LOGS

ISO U NOTES

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	16-06043
Analysis Code	UUISO
Run Number	1

#	Date	Dept	User	Notes
1	06/16/16 14:55	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.

Packed 6-16-16

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	16-06043
Analysis Code	UUISO
Run Number	1

#	Date	Dept	User	Notes
1	06/16/16 14:55	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	06/23/16 18:20	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.

6/23/16

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	16-06043
Analysis Code	UUISO
Run Number	1

#	Date	Dept	User	Notes
1	06/16/16 14:55	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	06/23/16 18:20	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	06/24/16 05:09	CHEM	TSMITH	Followed steps 12.1.7 to 12.4.5 in AP-005 . (Preciptiated and filtered samples for Uranium)

6-24-16 JM

EBERLINE SERVICES

Reagents Used in an Analysis

Internal Work Order	
16-06043	
Analysis Code	Run
UUISO	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	6/23/2016
017726S	HCl - HF	6.5N - 0.04N	JDEMELAS	6/23/2016
017728S	Hydrochloric Acid	6.5N	JDEMELAS	6/23/2016
017739S	Hydrochloric Acid	8N	JDEMELAS	6/23/2016
017518P	Hydrochloric Acid	Reagent Grade	JDEMELAS	6/23/2016
017744S	HCl - NH4I	8N - 0.1M	JDEMELAS	6/23/2016
017518D05	Hydrochloric Acid	0.5N	JDEMELAS	6/23/2016
017713S	Carbon substrate	Solution	TSMITH	6/24/2016
017559P	Hydrofluoric Acid	Reagent Grade	TSMITH	6/24/2016
017340S	Neodymium Carrier	1 mg/ml	TSMITH	6/24/2016
017649P	Reagent Alcohol	Reagent Grade	TSMITH	6/24/2016
016606P	Titanous Chloride	Reagent Grade	TSMITH	6/24/2016

Alpha 3

Date	Sample #	Client	Time In	Counting	Analyst	Check
6/23/16	160604 91 A (1-4)	UCOR	1544	2hr 50 –	Ra6	KB
6/23/16	160604 20A (1-6)	Accutest	1720	2hr 50 –	Ra6	KB
6/24/16	Daily Pulser	Lab	0547	10 min	NA	AG
6/24/16	Eff Check (33-48)	Lab	0616	2½ hr	"	AG
6/24/16	160604 91A (1-4)	UCOR	0852	2hr 50 –	Am^{241}	KB
6/24/16	160604 91A (1-4)	UCOR	0853	2hr 50 –	Am^{243}	KB
6/24/16	160604 91A (1-4)	UCOR	0854	2hr 00 –	U U	KB
6/24/16	160604 91A (1-3)	UCOR	0854	2hr 50 –	Th^{229}	KB
6/24/16	Eff Check (49-60)	Lab	0856	2½ hrs	"	KB
6/24/16	160604 91A (4)	UCOR	1129	2hr 50 –	Th^{229}	KB
6/24/16	160604 91A (1-4)	UCOR	1129	2hr 50 –	Np	KB
6/24/16	160604 25B (1-4)	UCOR	1130	2hr 50 –	Am^{241}	KB
6/24/16	160604 43A (8-9)	Auxin	1131	2hr 50 –	ISO-Th	KB
6/24/16	160604 43A (10-15)	Auxin	1157	2hr 50 –	ISO-Th	KB
6/24/16	160604 28A (1-5)	NW Anabaly	1157	2hr 50 –	ISO-Th	KB
6/24/16	160604 43A (1-4)	Auxin	1158	2hr 50 –	U U	KB
6/24/16	System BKgd	Lab	1509	16.40 hr	"	KB
6/25/16	Daily Pulser	Lab	0822	10 mins	NA	KB
6/25/16	160604 43A (5-15)	Auxin	0839	2hr 50 –	U U	KB

ISO-TH NOTES

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	16-06043
Analysis Code	ThISO
Run Number	1

#	Date	Dept	User	Notes
1	06/16/16 14:54	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 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	16-06043
Analysis Code	ThISO
Run Number	1

#	Date	Dept	User	Notes
1	06/16/16 14:54	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	06/23/16 16:21	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.

6/23/16

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	16-06043
Analysis Code	ThISO
Run Number	1

#	Date	Dept	User	Notes
1	06/16/16 14:54	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	06/23/16 18:21	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 deiononized water, bringing volume to ~15ml. Set samples aside for later precipitation and filtering.
3	06/24/16 05:14	CHEM	TSMITH	Followed steps 12.2.5 to 12.4.5 in AP-005 . (Preciptiated and filtered samples for Thorium)

6-24-16 JM

EBERLINE SERVICES

Reagents Used in an Analysis

Internal Work Order: 16-06043

Analysis Code: ThISO

Run: 1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
017344P	Anion Exchange Resin	Reagent Grade	JDEMELAS	6/23/2016
017739S	Hydrochloric Acid	8N	JDEMELAS	6/23/2016
017518P	Hydrochloric Acid	Reagent Grade	JDEMELAS	6/23/2016
017738S	Nitric Acid	8N	JDEMELAS	6/23/2016
017534P	Nitric Acid	Reagent Grade	JDEMELAS	6/23/2016
017713S	Carbon substrate	Solution	TSMITH	6/24/2016
017559P	Hydrofluoric Acid	Reagent Grade	TSMITH	6/24/2016
017649P	Reagent Alcohol	Reagent Grade	TSMITH	6/24/2016
017730S	Cerrium Carrier	0.1mg/ml	TSMITH	6/24/2016

Alpha #1

Date	Sample #	Client	Load time	C Time	Analyzed	Tech
6/14/16	1606034A(3)	ucon	0859	2h5—	Th230	—
6/14/16	1605132A(3)	ucon	0859	2h5—	Th229	—
6/14/16	1606034A(1-4)	ucon	0900	2h5—	Th228	—
6/14/16	1606044A(1)	USA	0900	2h5—	U/Th230	—
6/14/16	1605123A(1-7)	Renova	1349	2hr50m	Ra226	KB
6/15	Daily P	LAB	0522	1m	NA	—
6/15	1606025A(2-4)	ucon	0810	2h5—	Th230	—
~~6/16~~ 6/16	Daily Pulser	LAB	0520	1—	NA	—
6/16	1606057A(1-4)	Parsons	0818	2h5—	Am241	—
6/16	1606057A(1-3)	Parsons	0819	2h5—	Pu230	—
6/16/16	1606025A(2-4)	UCOR	1127	2hr50m	Th229	KB
6/16/16	1606025A(1-4)	UCOR	1128	2hr50m	Np	KB
6/17	Daily Pulser	LAB	0459	1m	NA	—
6/17	SEC CAL(3-15)	LAB	1106	2h5—	NA	—
6/17	1606059A(1-7)	USA	0805	2h5—	Th230	—
6/17/16	System Bkgd	Lab	1619	16.40 hrs	—	KB
6/19/16	Daily Pulser	Lab	1027	10min	NA	AG
6/19/16	1606059A(1-7)	USA	1058	2hr 50min	Ra-226	AG
6/20/16	Daily Pulser	Lab	0631	10min	NA	AG
6/20/16	1606002A(1-5)	Minion Tech.	0853	2hr50m	U/U	KB
6/20/16	1606015A(1-2)	Minion Tech	0853	2hr50m	U/U	KB
6/20/16	1606025A(1)	UCOR	1256	2hr50m	Am241	KB
6/20/16	1606025A(1)	UCOR	1257	2hr50m	Am243	KB
6/21/16	Daily Pulser	Lab	0604	10min	NA	AG
6/21/16	1606029A(1-7)	TN Dept of Health	1057	16 hrs	U/U	KB
6/22/16	Daily Pulser	Lab	0622	10min	NA	AG
6/22/16	1606040A(1-7)	Auxier	0845	2hr50m	Iso-Th	KB
6/22/16	1606040A(8-14)	Auxier	1158	2hr50m	Iso-Th	KB
6/23/16	Daily Pulser	Lab	0622	10min	NA	AG
6/23/16	1606041A(1-7)	Auxier	0828	2hr50m	Iso-Th	KB
6/24/16	Daily Pulser	Lab	0547	10min	NA	AG
6/24/16	1606043A(1-7)	Auxier	0931	2hr50m	Iso-Th	KB

Alpha-3

Date	Sample #	Client	Time In	Counting	Analyst	Peer
6/23/16	160609 1A (1-4)	UCOR	1547	2hr 50m	Ra6	KB
6/23/16	160620A (1-6)	Accutest	1720	2hr 50m	Ra6	KB
6/24/16	Daily Pulser	Lab	0547	10min	NA	AG
6/24/16	Eff Check (33-48)	Lab	0616	2½ hr	α	AG
6/24/16	160609 1A (1-4)	UCOR	0852	2hr 50m	Am^{241}	KB
6/24/16	160609 1A (1-4)	UCOR	0853	2hr 50m	Am^{243}	KB
6/24/16	160609 1A (1-4)	UCOR	0854	2hr 50m	U U	KB
6/24/16	160609 1A (1-3)	UCOR	0854	2hr 50m	Th^{229}	KB
6/24/16	Eff Check (49-60)	Lab	0856	2½ hrs	α	KB
6/24/16	160609 1A (4)	UCOR	1129	2hr 50m	Th^{229}	KB
6/24/16	160609 1A (1-4)	UCOR	1129	2hr 50m	Np	KB
6/24/16	160625B (1-4)	UCOR	1130	2hr 50m	Am^{241}	KB
6/24/16	160643A (8-9)	Auxin	1131	2hr 50m	Iso-Th	KB
6/24/16	160643A (10-15)	Auxin	1157	2hr 50m	Iso-Th	KB
6/24/16	160628A (1-5)	NW Autobody	1157	2hr 50m	Iso-Th	KB
6/24/16	160643A (1-4)	Auxin	1158	2hr 50m	U U	KB

GAMMA NOTES

GC 1

DATE	SAMPLE #	Client	Load Time	Ct. Time	Analysis	Tech
6/15	CAL14	LAB	0601	15	✓	"
6/15	1606060-07	USA	0734	"	✓	"
6/15	1606060-11	USA	0836	"	✓	"
6/15	1606060-15	USA	0939	"	✓	"
6/15	1606061-03	USA	1112	"	✓	"
6/15	1606061-04	USA	1213	"	✓	"
6/15	1606033-07	Texcon	1040	15	Ba	—
6/15	1606033-08	Texcon	1015	15	Ba	—
6/15/16	1606061-09	USA	1315	1h	✓	ICB
6/15/16	1606061-12	USA	1416	1h	✓	ICB
6/15/16	1606061-15	USA	1518	1h	✓	ICB
6/15/16	1606040-05	Auxier	1618	1h	✓	ICB
6/15/16	1606040-07	Auxier	1719	1h	✓	ICB
6/15/16	1606040-11	Auxier	1819	1h	✓	ICB
6/16	CAL14	LAB	0524	15	✓	"
6/16	Dri'4B	LAB	0548	15	✓	"
6/16	CAL14	LAB	0607	15	✓	"
6/16	1606041-07	Auxier	0728	"	✓	"
6/16	1606041-10	Auxier	0830	"	✓	"
6/16	1606041-14	Auxier	0930	"	✓	"
6/16	1606041-01	Auxier	1031	"	✓	"
6/16	1606047-03	Texcon	1103	15	Ba	—
6/16/16	1606047-05	Texcon	1119	15+	Ba	ICB
6/16/16	1606047-10	Texcon	1135	15+	Ba	ICB
6/16	1606043-03	Auxier	1151	1h	✓	"
6/16	1606043-04	Auxier	1252	1h	✓	"
6/16/16	1606043-11	Auxier	1353	1h	✓	ICB
6/16/16	1606043-14	Auxier	1453	1hr	✓	ICB

GE 2

DATE	SAmple #	Client	Load Time	Ct. Time	Analysis	Tech
6/14/16	1606059-15	USA	1546	1 hr	✓	KB
6/14/16	1606059-11	USA	1647	1 hr	✓	KB
6/14/16	1606059-14	USA	1749	1 hr	✓	KB
6/15	GFS1401	LAB	0520	15	✓	[illegible]
6/15	Daily	LAB	0544	15	✓	[illegible]
6/15	1606060-03	USA	0606	1h	✓	
6/15	1606060-04	USA	0707	1h	✓	[illegible]
6/15	1606060-09	USA	0812	1h	✓	
6/15	1606060-13	USA	0913	1h	✓	[illegible]
6/15	1606060-17	USA	1015	1h	✓	[illegible]
6/15	~~1606060~~ 1606061-06	USA	1116	1h	✓	[illegible]
6/15/16	1606061-07	USA	1217	1 hr	✓	KB
6/15/16	1606061-11	USA	1318	1 hr	✓	KB
6/15/16	1606061-13	USA	1419	1 hr	✓	KB
6/15/16	1606061-16	USA	1519	1 hr	✓	KB
6/15/16	1606040-06	Auxier	1620	1 hr	✓	KB
6/15/16	1606040-08	Auxier	1720	1 hr	✓	KB
6/15/16	1606040-12	Auxier	1821	1 hr	✓	KB
6/16	GFS 1401	LAB	0524	15	✓	[illegible]
6/16	Daily	LAB	0548	15	✓	[illegible]
6/16	1606040-14	Auxier	0608	1h	✓	[illegible]
6/16	1606041-03	Auxier	0716	1h	✓	[illegible]
6/16	1606041-04	Auxier	0827	1h	✓	[illegible]
6/16	1606041-11	Auxier	0925	1h	✓	[illegible]
6/16	1606041-02	Auxier	1026	1h	✓	[illegible]
6/16/16	1606047-07	Texcom	1127	15	Ba	KB
6/16	1606047-12	Texcom	1146	15	Ba	[illegible]
6/16/16	1606043-06	Auxier	1203	1 hr	✓	KB
6/16	1606043-09	Auxier	1304	1h	✓	[illegible]
6/16/16	1606043-12	Auxier	1406	1 hr	✓	KB
6/16/16	1606043-15	Auxier	1507	1 hr	✓	KB

GE 3

DATE	Sample #	Client	Load Time	CT-Time	Analysis	Tech
6/16/16	1606041-05	Auxier	0716	1h	γ	C
6/16/16	1606041-08	Auxier	0827	1h	γ	C
6/16/16	1606041-12	Auxier	0925	1h	γ	C
6/16	1606041-15	Auxier	1026	1h	γ	C
6/16	1606047-08	~~Auxier~~ Texas	1127	15	Be	—
6/16	1606047-13	Texas	1146	15	Be	—
6/16/16	1606043-07	Auxier	1204	1h	γ	KB
6/16/16	1606043-08	Auxier	1253	1h	γ	C
6/16/16	1606043-10	Auxier	1304	1h	γ	C
6/16/16	1606043-13	Auxier	1400	1h	γ	KB

GC4

DATE	sample #	Client	Load Time	CT. time	Analysis	Tech
6/16	1606043-05	Aux	1151	1h	✓	C
6/16/16	1606043-01	Aux	1354	30mins	Y	KB
6/16/16	1606043-02	Aux	1426	1h	Y	KB
6/16/16						

SECTION VIII

ANALYTICAL DATA (ISOTOPIC URANIUM)

16-06043
UUISO
Run 1

Work Order	16-06043
Analysis Code	UUISO
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-5031 00-02	46	06/01/16 00:00	1.5391E+00
04	DO	CP-5031 00-02	46	06/01/16 00:00	1.5429E+00
05	TRG	CP-5031 02-05	39	06/01/16 00:00	1.5446E+00
06	TRG	CP-5031 05-10	52	06/01/16 00:00	1.5551E+00
07	TRG	CP-5031 10-15	46	06/01/16 00:00	1.5026E+00
08	TRG	CP-5010 00-02	53	06/07/16 00:00	1.5258E+00
09	TRG	CP-5010 02-05	43	06/07/16 00:00	1.5427E+00
10	TRG	CP-5010 05-09	35	06/07/16 00:00	1.5255E+00
11	TRG	CP-5010 09-15	41	06/07/16 00:00	1.5256E+00
12	TRG	CP-5012 00-02	47	06/07/16 00:00	1.5748E+00
13	TRG	CP-5012 02-05	50	06/07/16 00:00	1.5117E+00
14	TRG	CP-5012 05-09	38	06/07/16 00:00	1.5283E+00
15	TRG	CP-5012 09-15	37	06/07/16 00:00	1.5196E+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	0.6731	12.5		0.00								
02	MBL	0.6636	12.3		0.00								
03	DUP	0.6634	12.3		0.00								
04	DO	0.6768	12.5		0.00								
05	TRG	0.6652	12.3		0.00								
06	TRG	0.6657	12.3		0.00								
07	TRG	0.6659	12.3		0.00								
08	TRG	0.6645	12.3		0.00								
09	TRG	0.6644	12.3		0.00								
10	TRG	0.6653	12.3		0.00								
11	TRG	0.6655	12.3		0.00								
12	TRG	0.6697	12.4		0.00								
13	TRG	0.6637	12.3		0.00								
14	TRG	0.6759	12.5		0.00								
15	TRG	0.6686	12.4		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 14:34	JPACHELLA				
02	MBL			06/16/16 14:34	JPACHELLA				
03	DUP			06/16/16 14:34	JPACHELLA				
04	DO	06/16/16 06:58	KSALLINGS	06/16/16 14:34	JPACHELLA				
05	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:34	JPACHELLA				
06	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:34	JPACHELLA				
07	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:34	JPACHELLA				
08	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:34	JPACHELLA				
09	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:34	JPACHELLA				
10	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:34	JPACHELLA				
11	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:34	JPACHELLA				
12	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:34	JPACHELLA				
13	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:34	JPACHELLA				
14	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:34	JPACHELLA				
15	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:34	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.

Preliminary Data Report & Analytical Calculations

Work Order: 16-06043-UUISO-1

Run	Analysis Code	Eberline Analytical Work Order	Client
1	UUISO	16-06043	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	7.05E+00	9.51E-01	6.86E-02	8.12E+00	86.88	OK		OK	
02	U-234	MBL	BLANK	pCi/g	1.63E-01	8.14E-02	6.81E-02					OK	OK
03	U-234	DUP	CP-5031 00-02	pCi/g	1.17E+00	2.86E-01	7.89E-02				OK	OK	
04	U-234	DO	CP-5031 00-02	pCi/g	1.12E+00	2.43E-01	4.20E-02					OK	
05	U-234	TRG	CP-5031 02-05	pCi/g	8.50E-01	1.99E-01	3.91E-02					OK	
06	U-234	TRG	CP-5031 05-10	pCi/g	9.43E-01	2.65E-01	7.08E-02					OK	
07	U-234	TRG	CP-5031 10-15	pCi/g	9.28E-01	2.34E-01	5.64E-02					OK	
08	U-234	TRG	CP-5010 00-02	pCi/g	1.57E+00	4.78E-01	1.34E-01					OK	
09	U-234	TRG	CP-5010 02-05	pCi/g	1.73E+00	4.23E-01	8.37E-02					OK	
10	U-234	TRG	CP-5010 05-09	pCi/g	9.11E-01	2.34E-01	7.16E-02					OK	
11	U-234	TRG	CP-5010 09-15	pCi/g	1.18E+00	2.24E-01	6.67E-02					OK	
12	U-234	TRG	CP-5012 00-02	pCi/g	1.09E+00	2.34E-01	3.97E-02					OK	
13	U-234	TRG	CP-5012 02-05	pCi/g	1.11E+00	2.36E-01	6.01E-02					OK	
14	U-234	TRG	CP-5012 05-09	pCi/g	9.79E-01	2.79E-01	7.59E-02					OK	
15	U-234	TRG	CP-5012 09-15	pCi/g	8.25E-01	2.26E-01	7.58E-02					OK	

Preliminary Data Report & Analytical Calculations

Work Order: 16-06043-UUISO-1

Run	Analysis Code	Eberline Analytical Work Order	Client
1	UUISO	16-06043	Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	U-234	LCS	06/09/16 00:00	1.00E+00	118.77	0.00	0.00			
02	U-234	MBL	06/09/16 00:00	1.50E+00	108.95	0.00	0.00			
03	U-234	DUP	06/01/16 00:00	1.54E+00	76.92	0.00	0.00			
04	U-234	DO	06/01/16 00:00	1.54E+00	97.35	0.00	0.00			
05	U-234	TRG	06/01/16 00:00	1.54E+00	104.22	0.00	0.00			
06	U-234	TRG	06/01/16 00:00	1.56E+00	65.03	0.00	0.00			
07	U-234	TRG	06/01/16 00:00	1.50E+00	95.03	0.00	0.00			
08	U-234	TRG	06/07/16 00:00	1.53E+00	36.37	0.00	0.00			
09	U-234	TRG	06/07/16 00:00	1.54E+00	59.79	0.00	0.00			
10	U-234	TRG	06/07/16 00:00	1.53E+00	90.90	0.00	0.00			
11	U-234	TRG	06/07/16 00:00	1.53E+00	120.26	0.00	0.00			
12	U-234	TRG	06/07/16 00:00	1.57E+00	95.88	0.00	0.00			
13	U-234	TRG	06/07/16 00:00	1.51E+00	96.90	0.00	0.00			
14	U-234	TRG	06/07/16 00:00	1.53E+00	61.19	0.00	0.00			
15	U-234	TRG	06/07/16 00:00	1.52E+00	73.02	0.00	0.00			

Run	Analysis Code	Eberline Analytical Work Order	Client
1	UUISO	16-06043	Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-234	LCS	06/24/16 11:58		A_Spec	Alpha_045	170	5.39 E+02	3.00 E-03	17.1
02	U-234	MBL	06/24/16 11:58		A_Spec	Alpha_046	170	1.81 E+01	1.10 E-02	18.1
03	U-234	DUP	06/24/16 11:58		A_Spec	Alpha_047	170	8.90 E+01	0.00 E+00	17
04	U-234	DO	06/24/16 11:58		A_Spec	Alpha_048	170	1.11 E+02	1.00 E-03	17.6
05	U-234	TRG	06/25/16 08:38		A_Spec	Alpha_033	170	9.08 E+01	1.00 E-03	17.6
06	U-234	TRG	06/25/16 08:38		A_Spec	Alpha_034	170	6.37 E+01	2.00 E-03	17.7
07	U-234	TRG	06/25/16 08:38		A_Spec	Alpha_035	170	7.87 E+01	2.00 E-03	15.8
08	U-234	TRG	06/25/16 08:38		A_Spec	Alpha_036	170	6.15 E+01	3.00 E-03	18.7
09	U-234	TRG	06/25/16 08:38		A_Spec	Alpha_037	170	9.87 E+01	2.00 E-03	16.5
10	U-234	TRG	06/25/16 08:38		A_Spec	Alpha_038	170	7.62 E+01	5.00 E-03	16
11	U-234	TRG	06/25/16 08:38		A_Spec	Alpha_039	170	1.51 E+02	1.60 E-02	18.6
12	U-234	TRG	06/25/16 08:38		A_Spec	Alpha_040	170	1.15 E+02	1.00 E-03	18.5
13	U-234	TRG	06/25/16 08:38		A_Spec	Alpha_041	170	1.16 E+02	6.00 E-03	19
14	U-234	TRG	06/25/16 08:38		A_Spec	Alpha_042	170	6.17 E+01	2.00 E-03	17.9
15	U-234	TRG	06/25/16 08:38		A_Spec	Alpha_043	170	6.52 E+01	5.00 E-03	18.9

Preliminary Data Report & Analytical Calculations

Work Order: 16-06043-UUISO-1

Run	1
Analysis Code	UUISO
Eberline Analytical Work Order	16-06043
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	7.10E+00	9.55E-01	8.20E-02	7.87E+00	90.20	OK		OK	
02	U-238	MBL	BLANK	pCi/g	1.04E-01	6.48E-02	6.14E-02					OK	OK
03	U-238	DUP	CP-5031 00-02	pCi/g	1.29E+00	3.04E-01	5.47E-02				OK	OK	
04	U-238	DO	CP-5031 00-02	pCi/g	1.07E+00	2.36E-01	5.65E-02					OK	
05	U-238	TRG	CP-5031 02-05	pCi/g	6.38E-01	1.67E-01	4.89E-02					OK	
06	U-238	TRG	CP-5031 05-10	pCi/g	9.10E-01	2.59E-01	7.05E-02					OK	
07	U-238	TRG	CP-5031 10-15	pCi/g	7.85E-01	2.11E-01	4.90E-02					OK	
08	U-238	TRG	CP-5010 00-02	pCi/g	1.57E+00	4.77E-01	1.06E-01					OK	
09	U-238	TRG	CP-5010 02-05	pCi/g	1.78E+00	4.31E-01	1.04E-01					OK	
10	U-238	TRG	CP-5010 05-09	pCi/g	8.14E-01	2.18E-01	6.72E-02					OK	
11	U-238	TRG	CP-5010 09-15	pCi/g	1.28E+00	2.36E-01	5.10E-02					OK	
12	U-238	TRG	CP-5012 00-02	pCi/g	1.09E+00	2.34E-01	5.68E-02					OK	
13	U-238	TRG	CP-5012 02-05	pCi/g	9.32E-01	2.15E-01	9.26E-02					OK	
14	U-238	TRG	CP-5012 05-09	pCi/g	1.03E+00	2.89E-01	8.29E-02					OK	
15	U-238	TRG	CP-5012 09-15	pCi/g	7.25E-01	2.09E-01	6.61E-02					OK	

Run	Analysis Code	Eberline Analytical Work Order	Client
1	UUISO	16-06043	Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	U-238	LCS	06/09/16 00:00	1.00E+00	118.77	0.00	0.00			
02	U-238	MBL	06/09/16 00:00	1.50E+00	108.95	0.00	0.00			
03	U-238	DUP	06/01/16 00:00	1.54E+00	76.92	0.00	0.00			
04	U-238	DO	06/01/16 00:00	1.54E+00	97.35	0.00	0.00			
05	U-238	TRG	06/01/16 00:00	1.54E+00	104.22	0.00	0.00			
06	U-238	TRG	06/01/16 00:00	1.56E+00	65.03	0.00	0.00			
07	U-238	TRG	06/01/16 00:00	1.50E+00	95.03	0.00	0.00			
08	U-238	TRG	06/07/16 00:00	1.53E+00	36.37	0.00	0.00			
09	U-238	TRG	06/07/16 00:00	1.54E+00	59.79	0.00	0.00			
10	U-238	TRG	06/07/16 00:00	1.53E+00	90.90	0.00	0.00			
11	U-238	TRG	06/07/16 00:00	1.53E+00	120.26	0.00	0.00			
12	U-238	TRG	06/07/16 00:00	1.57E+00	95.88	0.00	0.00			
13	U-238	TRG	06/07/16 00:00	1.51E+00	96.90	0.00	0.00			
14	U-238	TRG	06/07/16 00:00	1.53E+00	61.19	0.00	0.00			
15	U-238	TRG	06/07/16 00:00	1.52E+00	73.02	0.00	0.00			

Client	Eberline Analytical Work Order	Analysis Code	Run
Auxier & Associates, Inc.	16-06043	UUISO	1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-238	LCS	06/24/16 11:58		A_Spec	Alpha_045	170	5.45 E+02	6.00 E-03	17.1
02	U-238	MBL	06/24/16 11:58		A_Spec	Alpha_046	170	1.16 E+01	8.00 E-03	18.1
03	U-238	DUP	06/24/16 11:58		A_Spec	Alpha_047	170	9.88 E+01	1.00 E-03	17
04	U-238	DO	06/24/16 11:58		A_Spec	Alpha_048	170	1.06 E+02	4.00 E-03	17.6
05	U-238	TRG	06/25/16 08:38		A_Spec	Alpha_033	170	6.85 E+01	3.00 E-03	17.6
06	U-238	TRG	06/25/16 08:38		A_Spec	Alpha_034	170	6.17 E+01	2.00 E-03	17.7
07	U-238	TRG	06/25/16 08:38		A_Spec	Alpha_035	170	6.68 E+01	1.00 E-03	15.8
08	U-238	TRG	06/25/16 08:38		A_Spec	Alpha_036	170	6.18 E+01	1.00 E-03	18.7
09	U-238	TRG	06/25/16 08:38		A_Spec	Alpha_037	170	1.02 E+02	0.00 E+00	16.5
10	U-238	TRG	06/25/16 08:38		A_Spec	Alpha_038	170	6.83 E+01	4.00 E-03	16
11	U-238	TRG	06/25/16 08:38		A_Spec	Alpha_039	170	1.66 E+02	7.00 E-03	18.6
12	U-238	TRG	06/25/16 08:38		A_Spec	Alpha_040	170	1.15 E+02	0.00 E+00	18.5
13	U-238	TRG	06/25/16 08:38		A_Spec	Alpha_041	170	9.81 E+01	2.30 E-02	19
14	U-238	TRG	06/25/16 08:38		A_Spec	Alpha_042	170	6.55 E+01	3.00 E-03	17.9
15	U-238	TRG	06/25/16 08:38		A_Spec	Alpha_043	170	5.75 E+01	3.00 E-03	18.9

Preliminary Data Report & Analytical Calculations

Work Order: 16-06043-UUISO-1

Run	Analysis Code	Eberline Analytical Work Order	Client
1	UUISO	16-06043	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	4.65E-01	1.77E-01	6.73E-02					OK	
02	U-235	MBL	BLANK	pCi/g	2.39E-02	3.87E-02	6.65E-02					OK	OK
03	U-235	DUP	CP-5031 00-02	pCi/g	4.59E-02	5.57E-02	6.77E-02				NA	OK	
04	U-235	DO	CP-5031 00-02	pCi/g	6.21E-02	6.00E-02	7.44E-02					OK	
05	U-235	TRG	CP-5031 02-05	pCi/g	2.06E-01	9.88E-02	4.82E-02					OK	
06	U-235	TRG	CP-5031 05-10	pCi/g	1.40E-01	1.03E-01	8.74E-02					OK	
07	U-235	TRG	CP-5031 10-15	pCi/g	1.58E-01	9.66E-02	6.08E-02					OK	
08	U-235	TRG	CP-5010 00-02	pCi/g	3.10E-01	2.03E-01	1.32E-01					OK	
09	U-235	TRG	CP-5010 02-05	pCi/g	1.87E-01	1.30E-01	1.03E-01					OK	
10	U-235	TRG	CP-5010 05-09	pCi/g	8.85E-02	7.73E-02	8.85E-02					OK	
11	U-235	TRG	CP-5010 09-15	pCi/g	7.80E-02	6.09E-02	7.26E-02					OK	
12	U-235	TRG	CP-5012 00-02	pCi/g	2.35E-02	4.00E-02	7.04E-02					OK	
13	U-235	TRG	CP-5012 02-05	pCi/g	7.61E-02	6.68E-02	8.37E-02					OK	
14	U-235	TRG	CP-5012 05-09	pCi/g	1.34E-01	1.03E-01	8.17E-02					OK	
15	U-235	TRG	CP-5012 09-15	pCi/g	2.06E-02	4.46E-02	8.81E-02					OK	

Run: 1
Analysis Code: UUISO
Eberline Analytical Work Order: 16-06043
Client: Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	U-235	LCS	06/09/16 00:00	1.00E+00	118.77	0.00	0.00			
02	U-235	MBL	06/09/16 00:00	1.50E+00	108.95	0.00	0.00			
03	U-235	DUP	06/01/16 00:00	1.54E+00	76.92	0.00	0.00			
04	U-235	DO	06/01/16 00:00	1.54E+00	97.35	0.00	0.00			
05	U-235	TRG	06/01/16 00:00	1.54E+00	104.22	0.00	0.00			
06	U-235	TRG	06/01/16 00:00	1.56E+00	65.03	0.00	0.00			
07	U-235	TRG	06/01/16 00:00	1.50E+00	95.03	0.00	0.00			
08	U-235	TRG	06/07/16 00:00	1.53E+00	36.37	0.00	0.00			
09	U-235	TRG	06/07/16 00:00	1.54E+00	59.79	0.00	0.00			
10	U-235	TRG	06/07/16 00:00	1.53E+00	90.90	0.00	0.00			
11	U-235	TRG	06/07/16 00:00	1.53E+00	120.26	0.00	0.00			
12	U-235	TRG	06/07/16 00:00	1.57E+00	95.88	0.00	0.00			
13	U-235	TRG	06/07/16 00:00	1.51E+00	96.90	0.00	0.00			
14	U-235	TRG	06/07/16 00:00	1.53E+00	61.19	0.00	0.00			
15	U-235	TRG	06/07/16 00:00	1.52E+00	73.02	0.00	0.00			

Client: Auxier & Associates, Inc.
Eberline Analytical Work Order: 16-06043
Analysis Code: UUISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-235	LCS	06/24/16 11:58		A_Spec	Alpha_045	170	2.88 E+01	1.00 E-03	17.1
02	U-235	MBL	06/24/16 11:58		A_Spec	Alpha_046	170	2.15 E+00	5.00 E-03	18.1
03	U-235	DUP	06/24/16 11:58		A_Spec	Alpha_047	170	2.83 E+00	1.00 E-03	17
04	U-235	DO	06/24/16 11:58		A_Spec	Alpha_048	170	5.00 E+00	0.00 E+00	17.6
05	U-235	TRG	06/25/16 08:38		A_Spec	Alpha_033	170	1.78 E+01	1.00 E-03	17.6
06	U-235	TRG	06/25/16 08:38		A_Spec	Alpha_034	170	7.66 E+00	2.00 E-03	17.7
07	U-235	TRG	06/25/16 08:38		A_Spec	Alpha_035	170	1.08 E+01	1.00 E-03	15.8
08	U-235	TRG	06/25/16 08:38		A_Spec	Alpha_036	170	9.83 E+00	1.00 E-03	18.7
09	U-235	TRG	06/25/16 08:38		A_Spec	Alpha_037	170	8.66 E+00	2.00 E-03	16.5
10	U-235	TRG	06/25/16 08:38		A_Spec	Alpha_038	170	6.00 E+00	0.00 E+00	16
11	U-235	TRG	06/25/16 08:38		A_Spec	Alpha_039	170	8.13 E+00	1.10 E-02	18.6
12	U-235	TRG	06/25/16 08:38		A_Spec	Alpha_040	170	2.00 E+00	0.00 E+00	18.5
13	U-235	TRG	06/25/16 08:38		A_Spec	Alpha_041	170	6.47 E+00	9.00 E-03	19
14	U-235	TRG	06/25/16 08:38		A_Spec	Alpha_042	170	6.83 E+00	1.00 E-03	17.9
15	U-235	TRG	06/25/16 08:38		A_Spec	Alpha_043	170	1.32 E+00	4.00 E-03	18.9

Count Room Report
Client: Auxier Associates, Inc.

16-06043-UUISO-1 (pCi/g) in SO
Tracer ID: U-10a

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	0.6731	12.4658		0.00		
02	MBL	BLANK	06/09/16 00:00	1.5000	0.6636	12.2899		0.00		
03	DUP	CP-5031 00-02	06/01/16 00:00	1.5391	0.6634	12.2862		0.00		
04	DO	CP-5031 00-02	06/01/16 00:00	1.5429	0.6768	12.5343		0.00		
05	TRG	CP-5031 02-05	06/01/16 00:00	1.5446	0.6652	12.3195		0.00		
06	TRG	CP-5031 05-10	06/01/16 00:00	1.5551	0.6657	12.3288		0.00		
07	TRG	CP-5031 10-15	06/01/16 00:00	1.5026	0.6659	12.3325		0.00		
08	TRG	CP-5010 00-02	06/07/16 00:00	1.5258	0.6645	12.3065		0.00		
09	TRG	CP-5010 02-05	06/07/16 00:00	1.5427	0.6644	12.3047		0.00		
10	TRG	CP-5010 05-09	06/07/16 00:00	1.5255	0.6653	12.3214		0.00		
11	TRG	CP-5010 09-15	06/07/16 00:00	1.5256	0.6655	12.3251		0.00		
12	TRG	CP-5012 00-02	06/07/16 00:00	1.5748	0.6697	12.4028		0.00		
13	TRG	CP-5012 02-05	06/07/16 00:00	1.5117	0.6637	12.2917		0.00		
14	TRG	CP-5012 05-09	06/07/16 00:00	1.5283	0.6759	12.5177		0.00		
15	TRG	CP-5012 09-15	06/07/16 00:00	1.5196	0.6686	12.3825		0.00		

#53-43

Spike and Tracer Worksheet

Internal Work Order	Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials
16-06043	1	UUISO	6/16/2016 14:26	JPACHELLA		

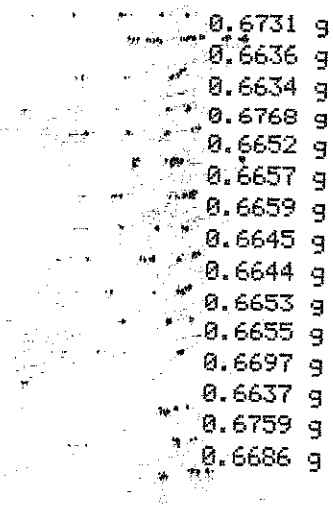
LCS & Matrix Spikes					LCS	MS	LCSD	MSD	LCS		MS		LCSD		MSD	
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	Volume Used (g)	Volume Used (g)	Volume Used (g)	Volume Used (g)	Known pCi	Error Estimate	Added pCi	Error Estimate	Known pCi	Error Estimate	Added pCi	Error Estimate
U-234	U-8a	32.000	6/16/2016	0.550	0.5633				8.12	0.292	0.00	0.000	0.00	0.000	0.00	0.000
U-238	U-8a	31.000	6/16/2016	0.550	0.5633				7.87	0.283	0.00	0.000	0.00	0.000	0.00	0.000
Tc-99 MS	Tc-2a	22043.636	7/5/2014	0.1												

Tracers

fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition
01	U-232	U-10a	18.520	6/16/2016	0.6731	0.6500
02	U-232	U-10a	18.520	6/16/2016	0.6636	0.6500
03	U-232	U-10a	18.520	6/16/2016	0.6634	0.6500
04	U-232	U-10a	18.520	6/16/2016	0.6768	0.6500
05	U-232	U-10a	18.520	6/16/2016	0.6652	0.6500
06	U-232	U-10a	18.520	6/16/2016	0.6657	0.6500
07	U-232	U-10a	18.520	6/16/2016	0.6659	0.6500
08	U-232	U-10a	18.520	6/16/2016	0.6645	0.6500
09	U-232	U-10a	18.520	6/16/2016	0.6644	0.6500
10	U-232	U-10a	18.520	6/16/2016	0.6653	0.6500
11	U-232	U-10a	18.520	6/16/2016	0.6655	0.6500
12	U-232	U-10a	18.520	6/16/2016	0.6697	0.6500
13	U-232	U-10a	18.520	6/16/2016	0.6637	0.6500
14	U-232	U-10a	18.520	6/16/2016	0.6759	0.6500
15	U-232	U-10a	18.520	6/16/2016	0.6686	0.6500

Balance Printer Tapes

Tracer



LCS

Matrix Spike

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Printed: 6/16/2016 1:59 PM

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
16-06043	1	UUISO	grams	6/29/2016	JPACHELLA

Lab Fraction	Auxier & Associates, Inc. Client ID	Sample Type	Muffle Data	Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			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-5031 00-02	DUP					1.5391E+00	1.5391E+00				
04	CP-5031 00-02	DO					1.5429E+00	1.5429E+00				
05	CP-5031 02-05	TRG					1.5446E+00	1.5446E+00				
06	CP-5031 05-10	TRG					1.5551E+00	1.5551E+00				
07	CP-5031 10-15	TRG					1.5026E+00	1.5026E+00				
08	CP-5010 00-02	TRG					1.5258E+00	1.5258E+00				
09	CP-5010 02-05	TRG					1.5427E+00	1.5427E+00				
10	CP-5010 05-09	TRG					1.5255E+00	1.5255E+00				
11	CP-5010 09-15	TRG					1.5256E+00	1.5256E+00				
12	CP-5012 00-02	TRG					1.5748E+00	1.5748E+00				
13	CP-5012 02-05	TRG					1.5117E+00	1.5117E+00				
14	CP-5012 05-09	TRG					1.5283E+00	1.5283E+00				
15	CP-5012 09-15	TRG					1.5196E+00	1.5196E+00				

Comments	

Technician: JPachella Date: 6/16/16

Eberline Services - Oak Ridge
Prep Logbook
Version 2.0 8/1999

Rough Sample Preparation Log Book

Printed: 6/16/2016 6:58 AM

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
16-06043	6/29/2016	6/15/2016	6/16/2016	6/17/2016	KSALLINGS

Eberline	Auxier & Associates, Inc.	Tare (g)	Gross (g)		Net (g)		Percent		Gamma		Special
Fraction	Client ID	Pan Wt	Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	Info
04	CP-5031 00-02	14.5500	838.6800	801.2600	824.1300	786.7100	4.54%	95.46%	0.0000	0.0000	
05	CP-5031 02-05	14.5300	761.5000	660.0900	746.9700	645.5600	13.58%	86.42%	0.0000	0.0000	
06	CP-5031 05-10	14.5800	526.5000	430.0300	511.9200	415.4500	18.84%	81.16%	0.0000	0.0000	
07	CP-5031 10-15	14.5500	584.7000	464.4400	570.1500	449.8900	21.09%	78.91%	0.0000	0.0000	
08	CP-5010 00-02	14.5100	719.7000	613.6600	705.1900	599.1500	15.04%	84.96%	0.0000	0.0000	
09	CP-5010 02-05	14.4900	706.1000	579.1800	691.6100	564.6900	18.35%	81.65%	0.0000	0.0000	
10	CP-5010 05-09	14.5700	572.5500	458.7700	557.9800	444.2000	20.39%	79.61%	0.0000	0.0000	
11	CP-5010 09-15	14.5200	490.0200	379.0600	475.5000	364.5400	23.34%	76.66%	0.0000	0.0000	
12	CP-5012 00-02	14.5300	718.9100	603.2200	704.3800	588.6900	16.42%	83.58%	0.0000	0.0000	
13	CP-5012 02-05	14.4700	989.4400	800.3200	974.9700	785.8500	19.40%	80.60%	0.0000	0.0000	
14	CP-5012 05-09	14.5600	451.8900	351.9500	437.3300	337.3900	22.85%	77.15%	0.0000	0.0000	
15	CP-5012 09-15	14.6200	456.9500	355.7800	442.3300	341.1600	22.87%	77.13%	0.0000	0.0000	

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

Technician: Kenny Sallings Date: **Analysis: Rough Prep Logbook**

Apex-Alpha™

Sample Description: SPIKE
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 01
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_045
Chamber Serial Number: 04026482A
Detector Serial Number: 91131
Env. Background: System Bkgd 157591
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/24/2016 6:54:17 AM
Acquisition Date/Time: 6/24/2016 11:58:10 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.673 mL
Effective Efficiency: 0.2031 +/- 0.0109
Counting Efficiency: 0.1710 +/- 0.0030 on 12/11/2015 8:21:05 AM
Chem. Recovery Factor: 1.1877 +/- 0.0670

Control Certificate Name: NatU_U-8A
Chem. Recov. of Control: U-238 0.793539 +/- 0.059454
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	5.280	427.32	9.49	0.68	0.00E+000	27.2
U-234		4.734	539.49	8.44	0.51	0.00E+000	20.3
U-235		4.385	28.83	36.63	0.17	0.00E+000	6.0
U-238		4.153	544.98	8.41	1.02	0.00E+000	23.0

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*	5.59E+000 +/- 5.87E-001	7.38E-002 +/- 7.75E-003
U-234	0.995	4761.50*	7.05E+000 +/- 9.51E-001	6.86E-002 +/- 7.21E-003
U-235	1.000	4385.50*	4.65E-001 +/- 1.77E-001	6.73E-002 +/- 7.07E-003
U-238	0.993	4184.40*	7.10E+000 +/- 9.55E-001	8.20E-002 +/- 8.62E-003

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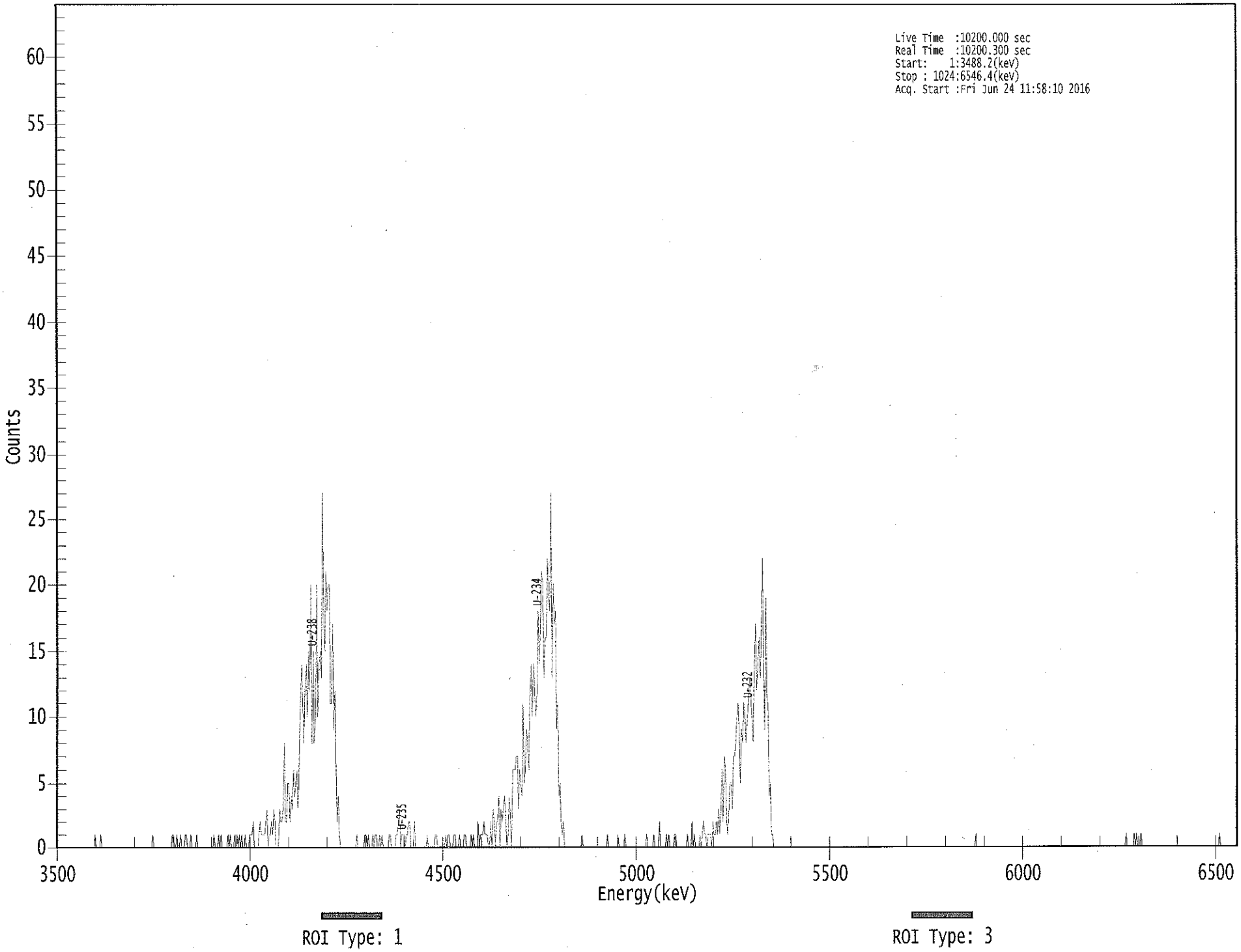
6/27/16

0000155330.CNF



****
***** 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	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	0	0	0	0	0	0	0
33:	0	1	0	0	0	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	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	1	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	1	1	0	0
105:	1	0	0	1	0	0	0	1
113:	1	0	0	0	1	0	0	0
121:	0	1	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	1	0	0	0	1	0	1	0
145:	0	0	0	0	1	0	1	0
153:	0	0	1	0	1	0	1	0
161:	1	0	0	1	0	0	0	1
169:	1	1	2	0	0	0	0	1
177:	2	1	1	1	1	2	3	0
185:	1	1	2	1	3	2	0	0
193:	0	3	2	2	3	8	2	2
201:	5	5	2	4	3	6	4	5
209:	6	3	6	11	14	11	8	12
217:	14	10	15	12	20	8	15	8
225:	10	20	10	14	15	13	27	18
233:	15	21	18	20	20	11	11	17
241:	9	12	6	2	4	1	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	1	0	0	0
265:	0	0	0	1	1	0	1	0
273:	0	0	1	0	1	1	0	0
281:	1	0	1	0	0	0	0	0
289:	1	1	0	0	0	0	1	1
297:	2	3	0	1	1	1	0	1
305:	1	2	2	0	0	0	2	0
313:	0	0	0	0	0	0	0	0
321:	0	1	0	0	0	0	0	0
329:	1	1	0	0	0	0	0	0
337:	0	1	0	1	1	0	0	0
345:	1	1	0	0	0	1	0	0
353:	0	1	1	0	0	0	0	1
361:	0	1	0	0	0	2	0	1

369:	1	1	2	1	1	1	0	0

Sample Title: 01

Channel								
377:	2	0	3	2	0	2	2	4
385:	0	3	2	3	4	2	0	1
393:	4	2	0	6	6	6	7	7
401:	3	6	5	4	11	5	6	9
409:	8	6	12	14	10	14	12	10
417:	11	18	14	17	21	20	13	16
425:	16	22	19	18	27	13	20	17
433:	18	9	11	4	5	2	1	2
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	1
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	0	0	0	1	0
489:	0	0	0	0	1	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	1
513:	0	0	0	0	0	1	0	0
521:	0	0	2	0	0	0	0	0
529:	1	0	1	0	0	0	0	1
537:	1	0	0	0	0	0	0	0
545:	0	0	1	0	0	0	2	0
553:	1	0	0	0	0	1	0	1
561:	2	1	1	0	1	1	1	0
569:	2	1	1	2	1	3	1	3
577:	6	2	7	6	2	1	3	5
585:	5	3	7	7	8	10	11	9
593:	5	9	8	11	10	8	10	11
601:	13	11	10	8	14	17	12	14
609:	16	13	16	22	14	9	19	11
617:	11	4	5	1	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	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	1	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	1	0
929:	0	0	0	0	0	1	0	1
937:	0	0	0	1	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	1
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

6/27

Sample Description: BLANK
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 02
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_046
Chamber Serial Number: 04026482B
Detector Serial Number: 58762
Env. Background: System Bkgd 157592
Reagent Blank: <not performed>

Sample Size: 1.500E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/24/2016 6:54:17 AM
Acquisition Date/Time: 6/24/2016 11:58:13 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.664 mL
Effective Efficiency: 0.1967 +/- 0.0108
Counting Efficiency: 0.1806 +/- 0.0032 on 12/11/2015 8:21:03 AM
Chem. Recovery Factor: 1.0895 +/- 0.0626

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	408.13	9.73	1.87	0.00E+000	11.1
U-234		4.734	18.13	48.73	1.87	0.00E+000	4.5
U-235		4.358	2.15	161.66	0.85	0.00E+000	3.0
U-238		4.127	11.64	61.25	1.36	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	0.995	5302.50*	3.67E+000 +/- 3.94E-001	6.81E-002 +/- 7.31E-003
U-234	0.994	4761.50*	1.63E-001 +/- 8.14E-002	6.81E-002 +/- 7.31E-003
U-235	0.995	4385.50*	2.39E-002 +/- 3.87E-002	6.65E-002 +/- 7.13E-003
U-238	0.977	4184.40*	1.04E-001 +/- 6.48E-002	6.14E-002 +/- 6.59E-003

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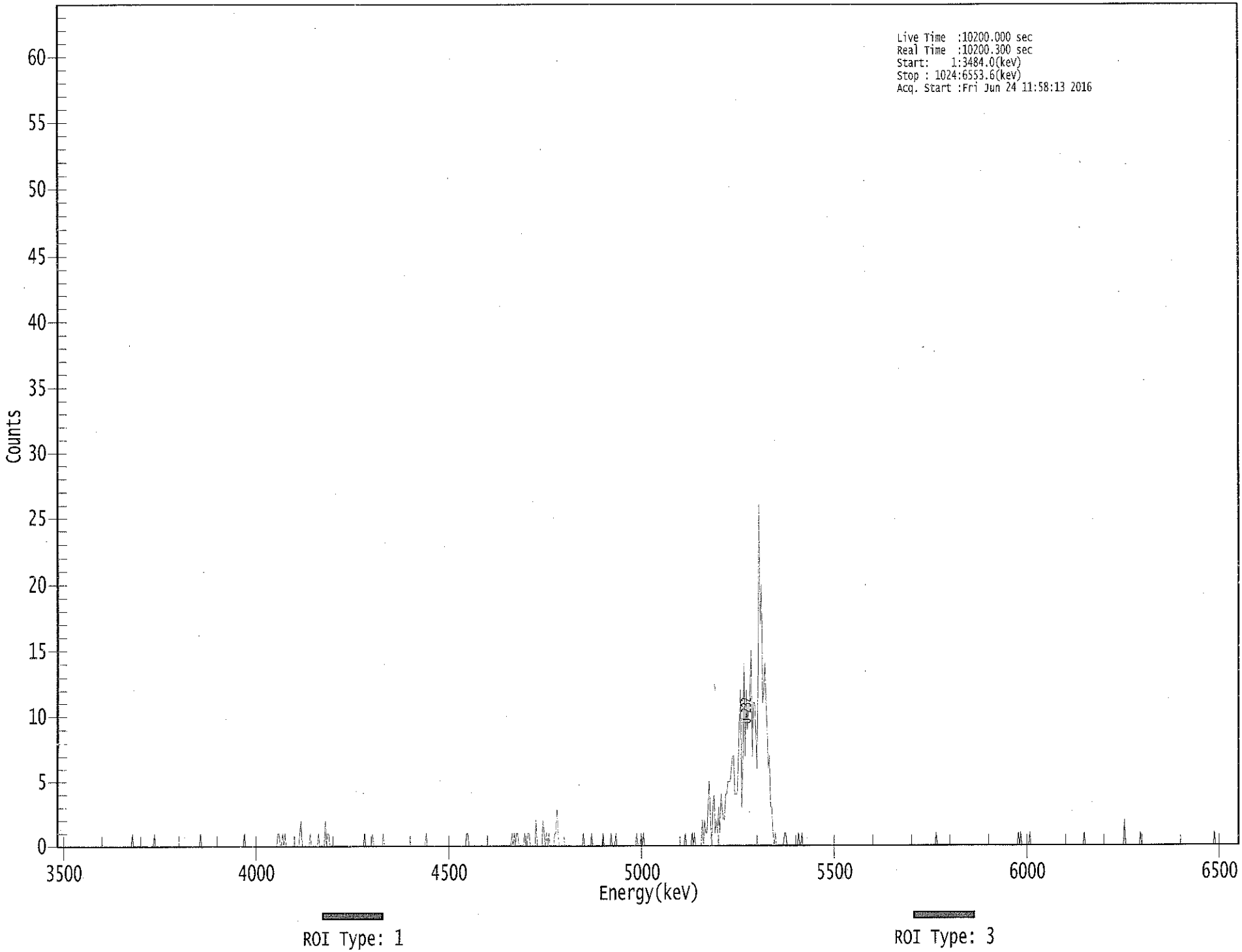
6/27/16

0000155331.CNF



****
***** 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:	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	1	0	0	0	0	0	0
73:	0	0	0	0	0	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	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	1	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	1	0	0	0	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	1
193:	1	0	0	1	0	1	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	1	2	0	0	0	0
217:	0	0	0	1	0	0	0	0
225:	0	0	1	0	0	0	0	0
233:	2	0	1	1	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	1	0	0	0	0	0
273:	0	1	0	0	0	0	0	0
281:	0	0	1	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	1
321:	0	0	0	0	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	1	1	0	0	0	0
361:	0	0	0	0	0	0	0	0

369:	0	0	0	0	0	0	0	0

Sample Title: 02

Channel								
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	1	0	1	0	1	1	0
401:	0	0	0	0	1	0	0	1
409:	1	0	0	0	0	0	2	0
417:	0	0	0	0	2	1	0	1
425:	0	1	0	0	0	0	1	1
433:	3	1	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	1
457:	0	0	0	0	0	0	1	0
465:	0	0	0	0	0	0	0	0
473:	1	0	0	0	0	0	0	1
481:	0	0	0	1	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	1	0	0
505:	0	1	0	1	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	0	0	0	0	0	1
545:	0	0	0	0	0	1	0	1
553:	0	0	0	0	0	0	2	0
561:	2	1	1	3	5	2	0	3
569:	4	1	2	1	3	1	4	3
577:	2	2	4	4	5	5	5	6
585:	7	7	4	4	4	6	10	12
593:	3	6	14	7	12	9	11	11
601:	15	7	11	11	9	6	12	26
609:	17	20	11	12	14	11	9	6
617:	7	3	3	1	0	1	0	0
625:	0	0	0	0	0	1	1	0
633:	0	0	0	0	0	0	0	0
641:	0	1	0	0	1	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:	1	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	1
833:	0	1	0	0	0	0	0	0
841:	0	1	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:	1	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	2	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	1	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	1	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™

Sample Description: CP-5031 00-02 DUP
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 03
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_047
Chamber Serial Number: 02030596A
Detector Serial Number: 91086
Env. Background: System Bkgd 157593
Reagent Blank: <not performed>

Sample Size: 1.539E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/1/2016 6:54:17 AM
Acquisition Date/Time: 6/24/2016 11:58:04 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: 0.1311 +/- 0.0085
Counting Efficiency: 0.1705 +/- 0.0030 on 12/11/2015 8:21:02 AM
Chem. Recovery Factor: 0.7692 +/- 0.0518

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	272.00	11.91	0.00	0.00E+000	24.8
U-234		4.721	89.00	20.89	0.00	0.00E+000	5.9
U-235		4.396	2.83	120.53	0.17	0.00E+000	3.0
U-238		4.143	98.83	19.74	0.17	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	0.991	5302.50*	3.58E+000 +/- 4.56E-001	7.89E-002 +/- 1.00E-002
U-234	0.989	4761.50*	1.17E+000 +/- 2.86E-001	7.89E-002 +/- 1.00E-002
U-235	0.999	4385.50*	4.59E-002 +/- 5.57E-002	6.77E-002 +/- 8.62E-003
U-238	0.988	4184.40*	1.29E+000 +/- 3.04E-001	5.47E-002 +/- 6.96E-003

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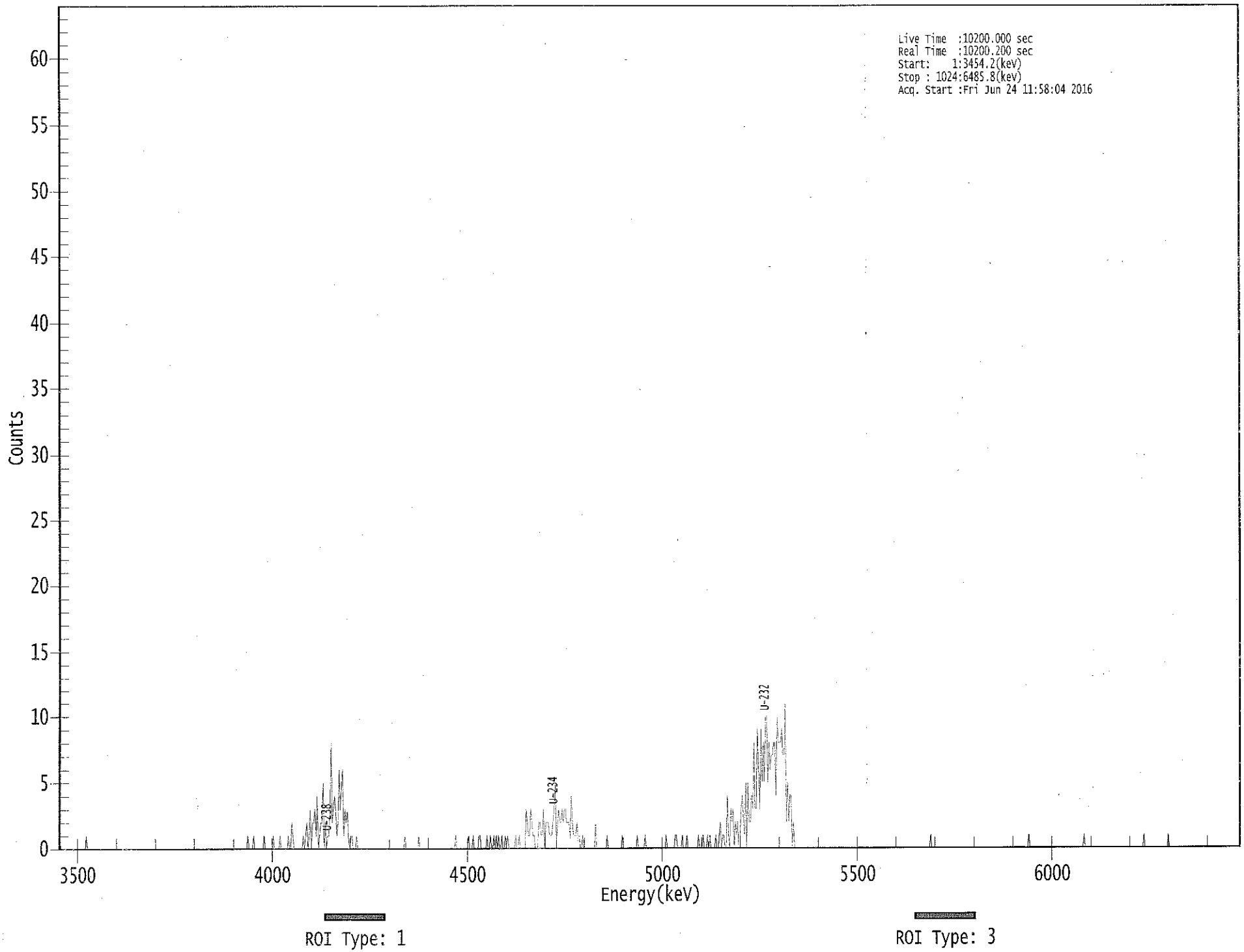
6/27/16

0000155332.CNF



****
***** 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:	1	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	1
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	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	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	1	0	0	0	0
169:	1	0	0	0	0	0	0	0
177:	0	1	0	0	0	0	0	0
185:	0	1	0	0	0	0	0	1
193:	0	0	0	0	0	0	1	0
201:	0	2	1	0	0	0	0	0
209:	0	0	0	1	0	1	2	0
217:	1	3	0	2	2	3	1	4
225:	0	1	2	2	5	0	2	0
233:	1	1	3	8	2	3	4	3
241:	1	2	6	3	5	6	1	3
249:	2	3	1	0	1	1	0	0
257:	0	1	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	1	0	0	0	0
305:	0	0	0	0	0	0	0	1
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	0	0
337:	0	0	0	0	0	0	0	1
345:	0	0	0	0	0	0	0	0
353:	0	0	1	0	0	0	1	0
361:	0	0	0	1	1	0	0	0

369:	0	0	1	0	0	1	0	0

Sample Title: 03

Channel								
377:	1	0	1	0	1	0	0	1
385:	0	0	1	0	1	0	0	0
393:	0	0	0	1	0	0	1	0
401:	0	0	0	0	3	2	1	1
409:	3	2	1	1	0	0	0	2
417:	2	1	1	3	0	2	2	2
425:	1	1	1	2	3	5	0	2
433:	3	2	2	3	2	3	3	2
441:	2	2	1	4	2	1	1	1
449:	2	1	1	0	0	1	0	0
457:	0	0	0	0	0	0	0	0
465:	2	0	0	0	0	0	0	0
473:	0	0	1	0	0	0	0	0
481:	0	0	0	0	0	0	0	1
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	1	0	0	0
505:	0	0	0	1	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	1	0	0
529:	0	0	0	0	0	1	1	0
537:	0	0	0	1	0	0	0	1
545:	0	0	0	0	0	0	0	0
553:	0	1	0	0	0	1	0	0
561:	0	1	0	1	0	0	0	0
569:	1	0	0	1	2	0	1	1
577:	0	0	4	1	0	3	2	3
585:	0	2	1	2	0	0	3	4
593:	2	1	5	0	5	2	2	4
601:	3	8	3	3	9	6	3	9
609:	5	8	5	10	10	5	8	6
617:	7	7	8	8	4	10	8	8
625:	8	9	7	7	11	2	5	2
633:	4	4	0	2	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	1	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	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	1
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	1
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	1	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	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™

6/24

Sample Description: CP-5031 00-02
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 04
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_048
Chamber Serial Number: 02030596B
Detector Serial Number: 83111
Env. Background: System Bkgd 157594
Reagent Blank: <not performed>

Sample Size: 1.543E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/1/2016 6:54:17 AM
Acquisition Date/Time: 6/24/2016 11:58:07 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.677 mL
Effective Efficiency: 0.1710 +/- 0.0098
Counting Efficiency: 0.1756 +/- 0.0031 on 12/11/2015 8:21:00 AM
Chem. Recovery Factor: 0.9735 +/- 0.0585

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	5.281	361.81	10.32	1.19	0.00E+000	22.3
U-234		4.731	110.83	18.63	0.17	0.00E+000	3.8
U-235		4.437	5.00	96.02	0.00	0.00E+000	3.0
U-238		4.149	106.32	19.08	0.68	0.00E+000	3.6

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	3.64E+000 +/- 4.11E-001	6.63E-002 +/- 7.47E-003
U-234	0.994	4761.50*	1.12E+000 +/- 2.43E-001	4.20E-002 +/- 4.73E-003
U-235	0.981	4385.50*	6.21E-002 +/- 6.00E-002	7.44E-002 +/- 8.39E-003
U-238	0.991	4184.40*	1.07E+000 +/- 2.36E-001	5.65E-002 +/- 6.37E-003

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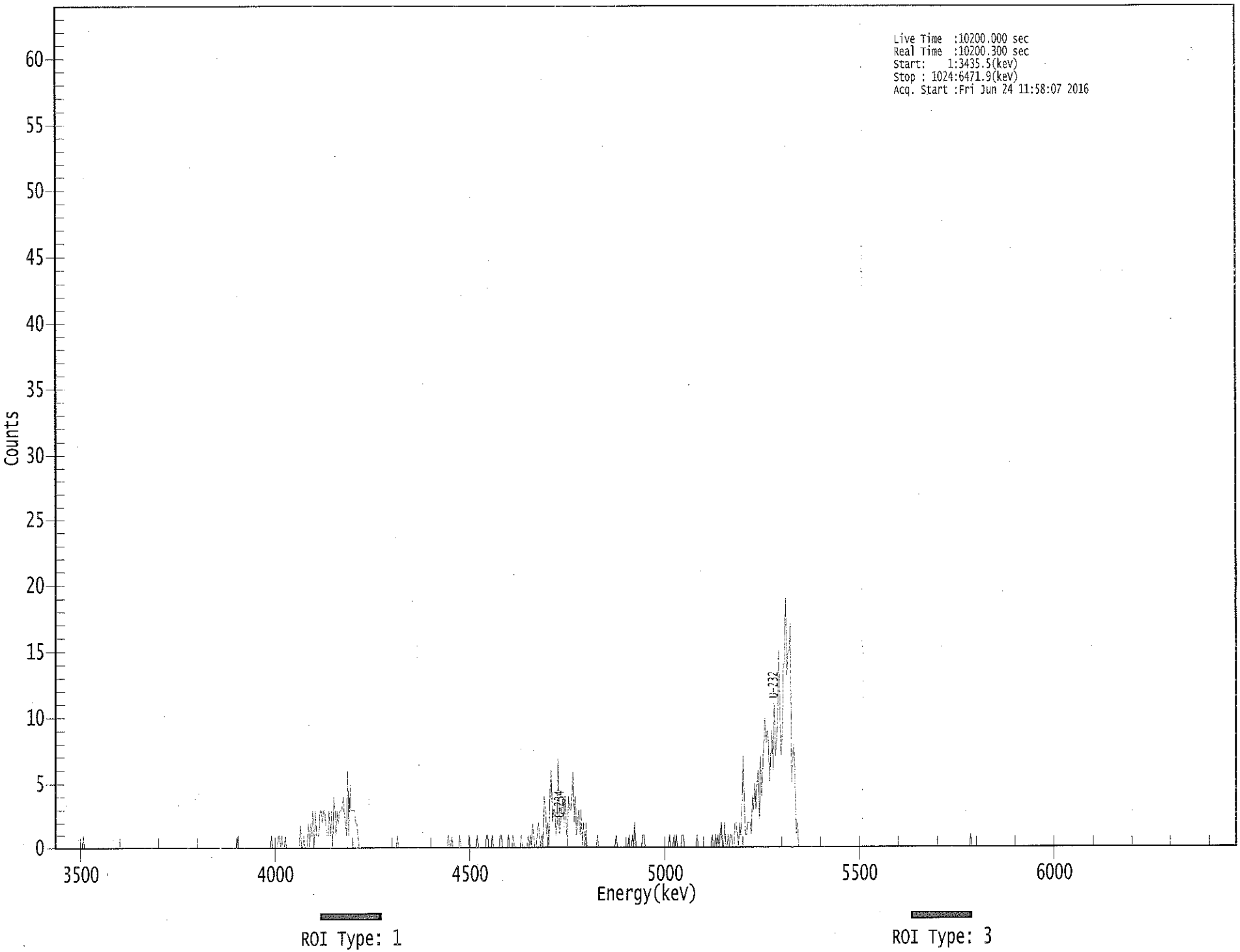
6/27/16

0000155333.CNF



****
***** 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:	1	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	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	1	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	1	0	0	0	0
193:	0	1	1	0	1	0	0	1
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	2	0	0	1
217:	0	0	0	2	0	2	1	3
225:	0	3	1	1	1	3	3	2
233:	3	3	2	1	1	3	1	3
241:	0	4	3	1	3	2	3	3
249:	3	4	3	2	1	6	1	5
257:	3	3	3	3	2	2	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:	1	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	0	0
337:	0	0	0	0	1	0	0	1
345:	0	0	0	0	0	0	1	0
353:	0	0	0	0	0	0	1	0
361:	0	0	0	0	0	1	0	0

369:	0	0	0	0	0	1	1	0

Sample Title: 04

Channel								
377:	0	0	1	0	0	0	0	0
385:	0	1	1	0	0	0	0	0
393:	1	0	0	0	1	0	0	0
401:	0	0	0	1	0	0	0	0
409:	0	1	0	1	0	2	1	0
417:	0	1	2	1	0	1	0	4
425:	3	1	2	0	5	6	2	3
433:	3	1	2	7	1	2	3	4
441:	2	4	2	0	4	3	3	4
449:	6	2	4	1	2	3	1	3
457:	0	2	0	2	0	0	0	0
465:	0	0	0	0	0	1	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	1	0	0
489:	0	0	0	0	0	0	0	0
497:	1	0	0	1	0	2	0	0
505:	0	0	0	0	1	1	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	1	0	0	0	1
537:	0	1	0	0	0	0	1	1
545:	0	0	0	0	0	0	0	0
553:	0	0	0	1	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	1	0	0	1	0	1	0	1
577:	2	0	0	2	0	0	1	0
585:	1	1	0	0	2	2	1	0
593:	2	1	3	7	4	1	1	2
601:	2	2	1	4	3	5	3	5
609:	6	2	7	4	6	8	10	8
617:	9	8	5	7	9	6	11	7
625:	8	10	15	10	7	9	14	14
633:	19	13	15	15	17	5	7	8
641:	5	1	2	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:	1	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

Apex-Alpha™

6/27

Sample Description: CP-5031 02-05
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 05
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_033
Chamber Serial Number: 04026479A
Detector Serial Number: 91132
Env. Background: System Bkgd 157579
Reagent Blank: <not performed>

Sample Size: 1.545E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/1/2016 6:54:17 AM
Acquisition Date/Time: 6/25/2016 8:38:19 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.665 mL
Effective Efficiency: 0.1836 +/- 0.0103
Counting Efficiency: 0.1762 +/- 0.0031 on 12/11/2015 8:20:59 AM
Chem. Recovery Factor: 1.0422 +/- 0.0613

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	5.277	381.83	10.03	0.17	0.00E+000	20.1
U-234		4.741	90.83	20.59	0.17	0.00E+000	16.7
U-235		4.415	17.83	46.68	0.17	0.00E+000	6.0
U-238		4.147	68.49	23.79	0.51	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	0.995	5302.50*	3.58E+000 +/- 3.94E-001	3.91E-002 +/- 4.30E-003
U-234	0.997	4761.50*	8.50E-001 +/- 1.99E-001	3.91E-002 +/- 4.30E-003
U-235	0.994	4385.50*	2.06E-001 +/- 9.88E-002	4.82E-002 +/- 5.30E-003
U-238	0.990	4184.40*	6.38E-001 +/- 1.67E-001	4.89E-002 +/- 5.38E-003

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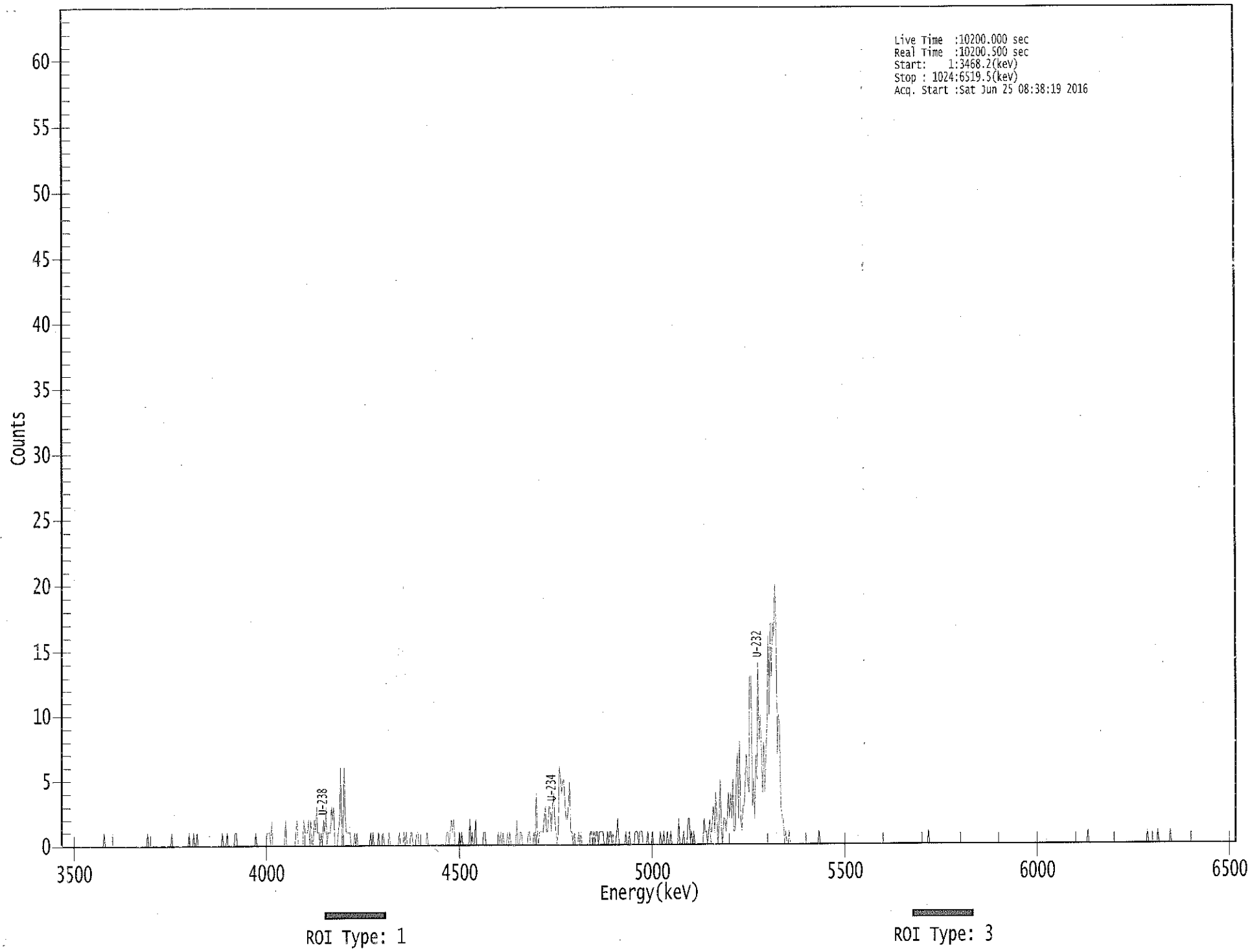
6/27/16

0000155390.CNF



****
***** 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: 10201

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	0	0	0	0	0	0	0
33:	0	0	0	0	0	1	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	1	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	1	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	1
113:	0	0	0	1	0	0	1	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	1	0	0	0
145:	1	0	0	0	0	0	0	1
153:	1	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	1	0	0	0	0	0	0
177:	0	0	0	1	1	1	0	2
185:	0	0	0	0	0	0	0	0
193:	0	0	0	2	0	0	0	0
201:	0	0	0	0	1	2	0	0
209:	0	0	0	2	1	1	1	2
217:	0	2	0	0	2	1	3	1
225:	1	0	1	0	2	1	3	0
233:	1	1	1	3	2	3	0	0
241:	0	1	2	6	0	1	6	2
249:	1	1	1	1	0	0	0	1
257:	0	1	0	0	0	0	0	0
265:	0	0	0	0	0	1	0	1
273:	0	0	0	0	1	0	0	0
281:	1	0	0	0	0	1	0	0
289:	0	0	0	0	0	0	1	0
297:	0	0	1	0	1	0	0	0
305:	1	1	0	0	0	1	1	0
313:	0	0	0	0	0	0	1	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	1
337:	1	0	1	2	1	2	0	0
345:	0	0	1	0	1	0	0	0
353:	0	0	0	2	0	1	0	0
361:	2	0	0	0	0	0	0	1

369:	1	0	0	0	0	0	0	0

Sample Title: 05

Channel								
377:	0	0	0	0	1	0	1	0
385:	1	0	0	0	1	0	1	0
393:	0	0	0	0	2	0	0	1
401:	1	0	0	0	0	0	1	1
409:	0	0	0	1	0	4	1	0
417:	1	1	1	1	2	3	1	1
425:	3	3	1	3	4	2	1	0
433:	1	6	5	4	5	5	3	2
441:	2	3	5	1	1	0	1	0
449:	0	0	1	0	1	0	0	0
457:	0	0	0	0	1	1	0	1
465:	0	1	1	0	1	1	1	1
473:	0	0	0	1	0	1	1	0
481:	0	0	0	1	2	0	0	0
489:	0	0	0	1	0	0	1	0
497:	0	0	0	1	1	1	0	1
505:	1	1	0	0	0	0	1	0
513:	0	0	1	0	0	0	0	0
521:	0	1	0	0	1	0	0	1
529:	0	0	1	0	0	0	0	0
537:	0	2	0	0	0	1	0	0
545:	0	2	2	0	1	0	1	0
553:	0	0	0	0	0	0	0	2
561:	1	1	0	1	2	0	2	3
569:	1	4	2	0	2	5	1	0
577:	2	2	1	2	4	2	4	2
585:	5	1	1	5	7	2	8	2
593:	1	3	3	5	7	5	4	13
601:	13	3	5	2	7	5	14	8
609:	10	7	4	8	4	7	9	16
617:	10	17	13	17	16	20	18	7
625:	10	9	3	2	2	0	1	0
633:	0	1	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	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	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	1	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: 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	1	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	0	0	0	0	0	0
953:	0	0	1	0	0	0	0	0
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

Apex-Alpha™

6024

Sample Description: CP-5031 05-10
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 06
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_034
Chamber Serial Number: 04026479B
Detector Serial Number: 91136
Env. Background: System Bkgd 157580
Reagent Blank: <not performed>

Sample Size: 1.555E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/1/2016 6:54:17 AM
Acquisition Date/Time: 6/25/2016 8:38:20 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: 0.1152 +/- 0.0079
Counting Efficiency: 0.1772 +/- 0.0031 on 12/11/2015 8:20:57 AM
Chem. Recovery Factor: 0.6503 +/- 0.0460

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	5.264	239.83	12.66	0.17	0.00E+000	22.1
U-234		4.719	63.66	24.64	0.34	0.00E+000	5.0
U-235		4.394	7.66	72.63	0.34	0.00E+000	3.0
U-238		4.141	61.66	25.04	0.34	0.00E+000	6.5

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.989	5302.50*	3.56E+000 +/- 4.78E-001	6.19E-002 +/- 8.32E-003
U-234	0.987	4761.50*	9.43E-001 +/- 2.65E-001	7.08E-002 +/- 9.52E-003
U-235	0.999	4385.50*	1.40E-001 +/- 1.03E-001	8.74E-002 +/- 1.17E-002
U-238	0.987	4184.40*	9.10E-001 +/- 2.59E-001	7.05E-002 +/- 9.48E-003

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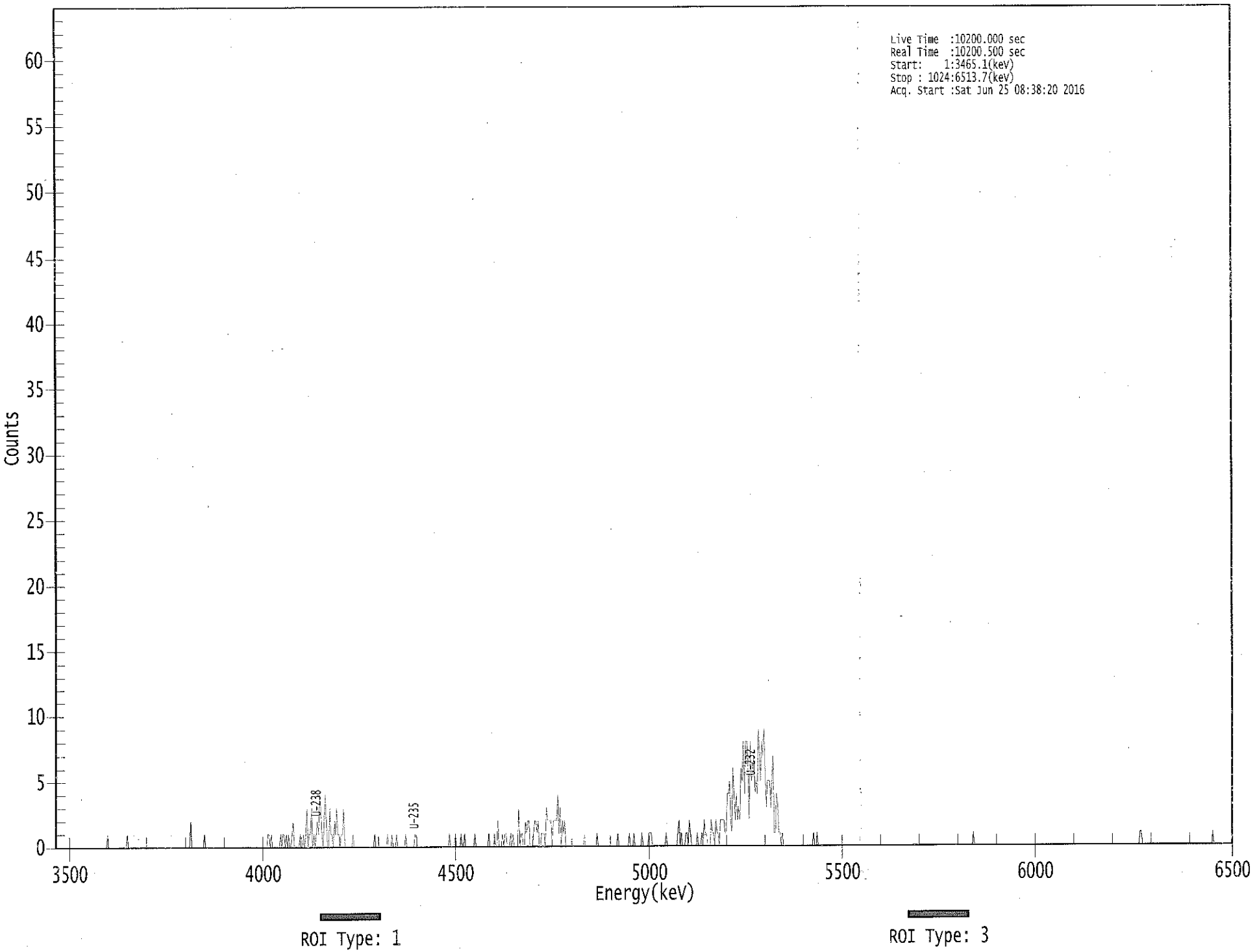
6/27/16

0000155391.CNF



****
***** 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: 10201

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	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	1	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	1	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	2	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	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	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	1	1	0	1	0	0	0	0
193:	0	0	0	1	0	1	1	0
201:	1	0	1	0	0	1	2	0
209:	0	0	0	0	1	0	0	1
217:	0	1	3	0	1	1	3	0
225:	1	0	1	2	1	4	3	1
233:	0	2	4	2	0	0	3	1
241:	1	0	2	1	3	1	1	0
249:	1	1	3	0	0	0	0	0
257:	0	0	1	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	1	0	0
281:	0	0	0	0	0	0	0	0
289:	1	0	0	0	1	0	0	0
297:	1	0	0	0	0	0	0	0
305:	1	0	0	0	0	0	0	0
313:	1	1	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	1	0
345:	0	0	0	1	0	0	0	0
353:	1	0	0	1	0	0	0	0
361:	0	0	0	0	1	0	0	0

369:	0	0	0	0	0	0	0	0

Sample Title: 06

Channel								
377:	1	0	0	0	0	1	0	0
385:	2	0	0	0	1	0	1	1
393:	0	0	0	1	0	1	0	0
401:	0	0	3	0	1	1	0	0
409:	2	1	2	2	0	0	0	1
417:	2	2	1	2	0	0	1	1
425:	1	0	3	2	2	2	2	0
433:	2	2	2	2	4	1	3	0
441:	2	1	2	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	1	0	0	0	0
465:	0	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:	1	0	0	0	0	0	0	0
497:	0	0	1	0	0	0	1	0
505:	0	0	0	0	0	1	0	0
513:	0	0	0	1	1	1	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	1	0	0	0	0	0
537:	0	0	0	0	1	2	0	1
545:	0	0	0	1	1	0	2	1
553:	0	0	0	0	0	1	0	0
561:	0	1	0	2	1	1	0	0
569:	0	2	1	1	0	2	1	1
577:	0	2	2	2	2	1	1	4
585:	4	5	2	1	6	4	2	4
593:	2	3	2	6	5	8	4	8
601:	8	6	2	8	5	6	7	4
609:	5	4	9	7	5	8	7	9
617:	6	3	5	5	5	3	5	7
625:	1	1	4	3	1	1	0	1
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	1	0	0	1	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	1	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	1	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:	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	1	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

6/27

Sample Description: CP-5031 10-15
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 07
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_035
Chamber Serial Number: 04026477A
Detector Serial Number: 58771
Env. Background: System Bkgd 157581
Reagent Blank: <not performed>

Sample Size: 1.503E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/1/2016 6:54:17 AM
Acquisition Date/Time: 6/25/2016 8:38:22 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: 0.1497 +/- 0.0092
Counting Efficiency: 0.1575 +/- 0.0028 on 12/11/2015 8:20:56 AM
Chem. Recovery Factor: 0.9503 +/- 0.0606

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	311.66	11.11	0.34	0.00E+000	4.9
U-234		4.717	78.66	22.16	0.34	0.00E+000	3.7
U-235		4.362	10.83	60.10	0.17	0.00E+000	3.0
U-238		4.148	66.83	24.01	0.17	0.00E+000	5.5

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.991	5302.50*	3.68E+000 +/- 4.41E-001	5.65E-002 +/- 6.77E-003
U-234	0.986	4761.50*	9.28E-001 +/- 2.34E-001	5.64E-002 +/- 6.77E-003
U-235	0.996	4385.50*	1.58E-001 +/- 9.66E-002	6.08E-002 +/- 7.29E-003
U-238	0.991	4184.40*	7.85E-001 +/- 2.11E-001	4.90E-002 +/- 5.88E-003

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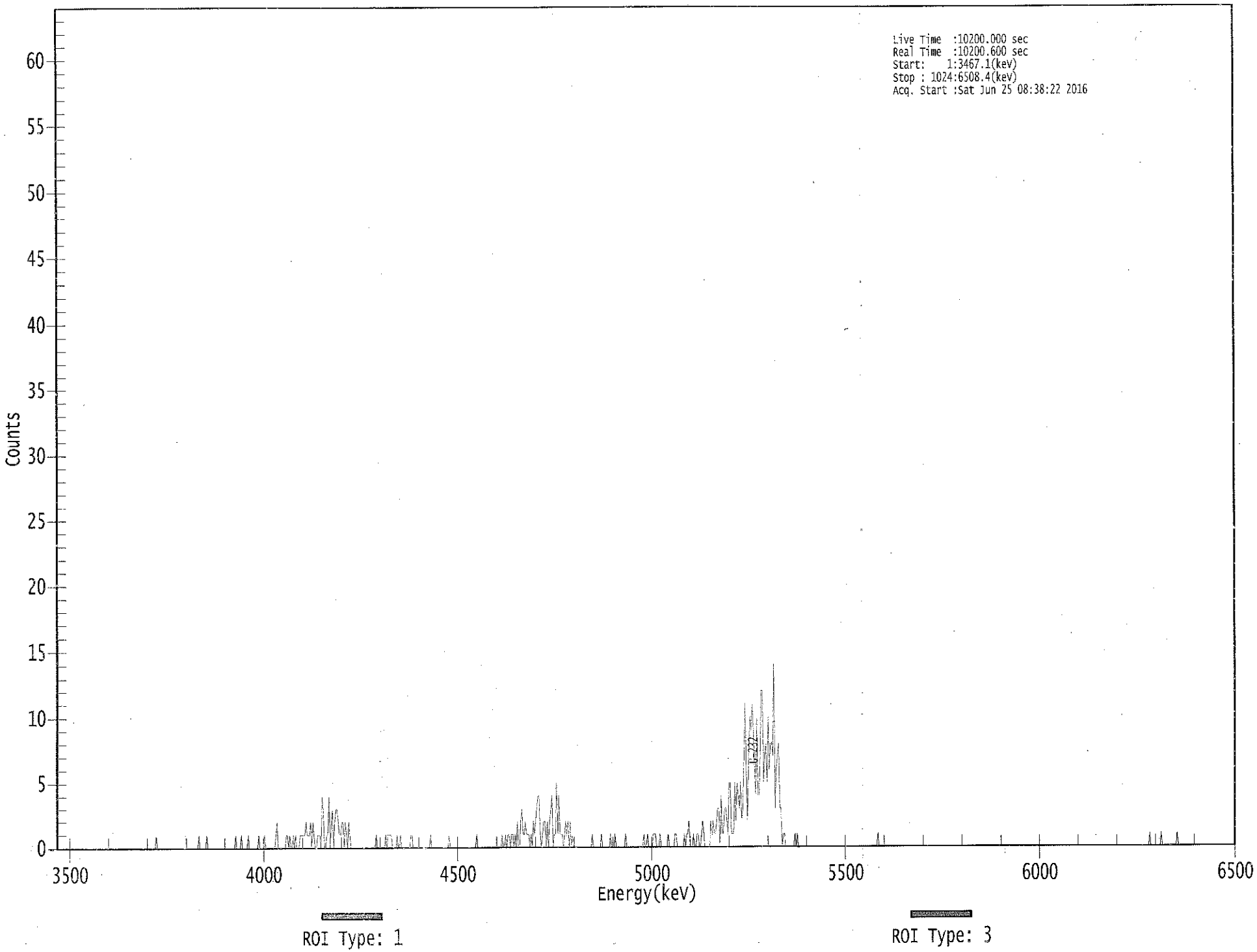
6/27/16

0000155392.CNF



****
***** 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: 10201

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	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	1	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	1	0	0	0	0
129:	0	0	1	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	1	0	0	0	0
161:	1	0	0	0	0	0	1	0
169:	0	0	0	0	0	0	0	1
177:	0	0	0	0	1	0	0	0
185:	0	0	0	0	0	0	1	2
193:	0	0	0	0	0	0	0	1
201:	1	0	1	0	0	1	0	1
209:	0	0	0	1	1	1	1	1
217:	2	1	1	1	2	0	2	1
225:	0	0	1	1	1	0	4	3
233:	0	0	1	1	4	0	2	3
241:	0	2	3	3	2	1	1	2
249:	2	0	2	1	0	2	1	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	1	0	0
281:	0	0	0	0	0	1	0	1
289:	1	1	1	0	0	0	0	1
297:	0	0	1	0	0	0	0	0
305:	0	0	0	1	1	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	1	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	1	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	1	0	0	0

369:	0	0	0	0	0	0	0	0

Sample Title: 07

Channel								
377:	0	0	0	0	0	0	0	0
385:	0	0	1	0	0	1	0	1
393:	1	0	1	1	0	1	0	2
401:	0	0	2	3	1	1	2	1
409:	1	1	0	1	0	2	1	2
417:	3	4	4	1	0	1	2	2
425:	0	2	0	2	3	4	0	1
433:	1	5	1	4	1	1	1	0
441:	1	2	1	2	0	2	0	1
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	1	0	0	0	0	0	0	0
473:	1	0	0	0	0	0	0	0
481:	1	0	0	0	1	0	0	0
489:	0	0	0	0	0	1	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	1	0	0
513:	1	0	0	0	0	1	1	1
521:	0	0	0	1	0	0	0	0
529:	0	0	1	0	0	0	0	0
537:	1	1	0	0	0	0	0	0
545:	1	0	1	1	2	0	0	0
553:	1	0	0	1	1	0	0	1
561:	2	1	0	0	0	0	0	2
569:	1	2	1	1	2	3	3	0
577:	4	1	1	3	3	2	1	5
585:	5	1	1	1	5	2	5	4
593:	3	5	2	3	7	11	5	2
601:	7	10	9	11	9	6	4	10
609:	4	4	7	12	12	5	7	8
617:	5	10	6	8	8	7	14	3
625:	6	7	8	3	3	0	1	1
633:	0	0	0	0	0	0	0	0
641:	1	0	1	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:	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	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: 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	0	0	0
945:	0	0	0	0	1	0	0	0
953:	0	0	0	0	0	0	1	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	1	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™

6117

Sample Description: CP-5010 00-02
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 08
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_036
Chamber Serial Number: 04026477B
Detector Serial Number: 84167
Env. Background: System Bkgd 157582
Reagent Blank: <not performed>

Sample Size: 1.526E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 6:54:17 AM
Acquisition Date/Time: 6/25/2016 8:38:24 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.664 mL
Effective Efficiency: 0.0680 +/- 0.0059
Counting Efficiency: 0.1870 +/- 0.0033 on 12/11/2015 8:20:54 AM
Chem. Recovery Factor: 0.3637 +/- 0.0324

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	5.256	141.32	16.53	0.68	0.00E+000	4.4
U-234		4.713	61.49	25.12	0.51	0.00E+000	4.4
U-235		4.443	9.83	63.14	0.17	0.00E+000	3.0
U-238		4.130	61.83	24.97	0.17	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)
U-232	0.985	5302.50*	3.62E+000 +/- 6.20E-001	1.44E-001 +/- 2.47E-002
U-234	0.983	4761.50*	1.57E+000 +/- 4.78E-001	1.34E-001 +/- 2.30E-002
U-235	0.977	4385.50*	3.10E-001 +/- 2.03E-001	1.32E-001 +/- 2.26E-002
U-238	0.979	4184.40*	1.57E+000 +/- 4.77E-001	1.06E-001 +/- 1.82E-002

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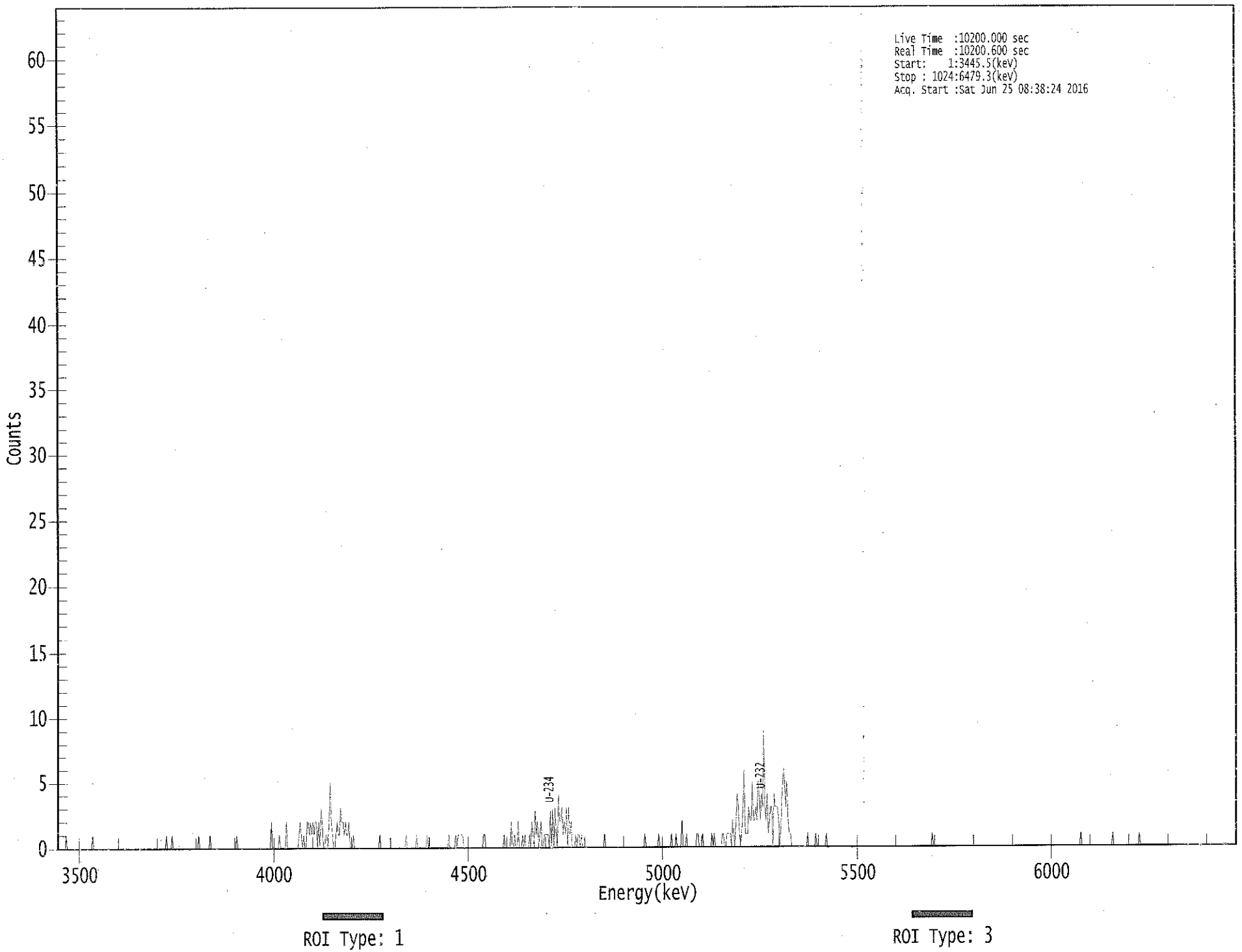
6/27/16

0000155393.CNF



****
***** 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: 10201

Channel								
1:	0	0	0	0	0	0	0	1
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	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	1	0
97:	0	0	0	1	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	1	0	0	0	0	0
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	1	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	2	0	0	0	0	0	0
193:	1	0	0	0	0	0	2	0
201:	0	0	0	0	0	0	0	0
209:	0	1	2	1	0	1	0	0
217:	2	2	1	2	1	2	1	2
225:	2	0	2	0	3	2	0	0
233:	1	1	0	2	5	2	1	0
241:	0	1	2	1	1	3	2	2
249:	1	2	1	1	2	0	0	0
257:	1	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	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	0	0	0	0	0	1	0
305:	0	0	0	0	0	0	0	1
313:	0	0	0	0	0	0	0	0
321:	1	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	1	0	0	0	0
345:	0	1	0	1	1	1	1	1
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369:	0	1	1	0	0	0	0	0

Sample Title: 08

Channel								
377:	0	0	0	0	0	0	0	0
385:	0	0	0	1	0	0	0	0
393:	0	2	0	0	1	0	0	2
401:	0	0	0	1	0	1	0	0
409:	0	1	0	2	1	0	3	1
417:	2	0	1	2	0	0	1	1
425:	1	1	0	3	0	3	0	3
433:	1	0	4	2	2	3	1	2
441:	1	3	0	3	1	2	0	0
449:	0	1	0	1	1	0	1	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	1	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	1	0	0
513:	0	0	0	0	0	0	0	0
521:	0	1	0	0	0	0	0	0
529:	0	0	0	0	1	0	0	0
537:	1	0	0	0	0	2	0	0
545:	0	1	0	0	0	0	0	0
553:	0	0	1	1	0	0	0	1
561:	0	0	0	0	0	0	0	1
569:	0	1	0	0	0	0	0	0
577:	1	1	0	0	1	1	1	1
585:	0	2	1	0	2	4	3	1
593:	0	1	3	6	1	1	1	3
601:	2	2	5	2	2	3	2	5
609:	4	2	4	3	9	3	2	4
617:	1	2	3	3	0	4	3	3
625:	3	2	0	2	4	6	5	3
633:	5	2	1	1	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	1	0	0	0	0	0
657:	0	1	0	0	0	0	0	0
665:	0	0	1	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	1	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: 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	1
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	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	1	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™

C
6/27

Sample Description: CP-5010 02-05
Spectrum File: \\OR-ALPHA1\Camberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 09
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_037
Chamber Serial Number: 04026478A
Detector Serial Number: 91133
Env. Background: System Bkgd 157583
Reagent Blank: <not performed>

Sample Size: 1.543E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 6:54:17 AM
Acquisition Date/Time: 6/25/2016 8:38:26 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.664 mL
Effective Efficiency: 0.0984 +/- 0.0073
Counting Efficiency: 0.1645 +/- 0.0029 on 12/11/2015 8:20:53 AM
Chem. Recovery Factor: 0.5979 +/- 0.0454

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	5.291	204.32	13.74	0.68	0.00E+000	3.5
U-234		4.750	98.66	19.77	0.34	0.00E+000	7.5
U-235		4.411	8.66	68.12	0.34	0.00E+000	4.5
U-238		4.165	102.00	19.50	0.00	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	0.999	5302.50*	3.58E+000 +/- 5.17E-001	9.87E-002 +/- 1.43E-002
U-234	0.999	4761.50*	1.73E+000 +/- 4.23E-001	8.37E-002 +/- 1.21E-002
U-235	0.995	4385.50*	1.87E-001 +/- 1.30E-001	1.03E-001 +/- 1.49E-002
U-238	0.997	4184.40*	1.78E+000 +/- 4.31E-001	1.04E-001 +/- 1.51E-002

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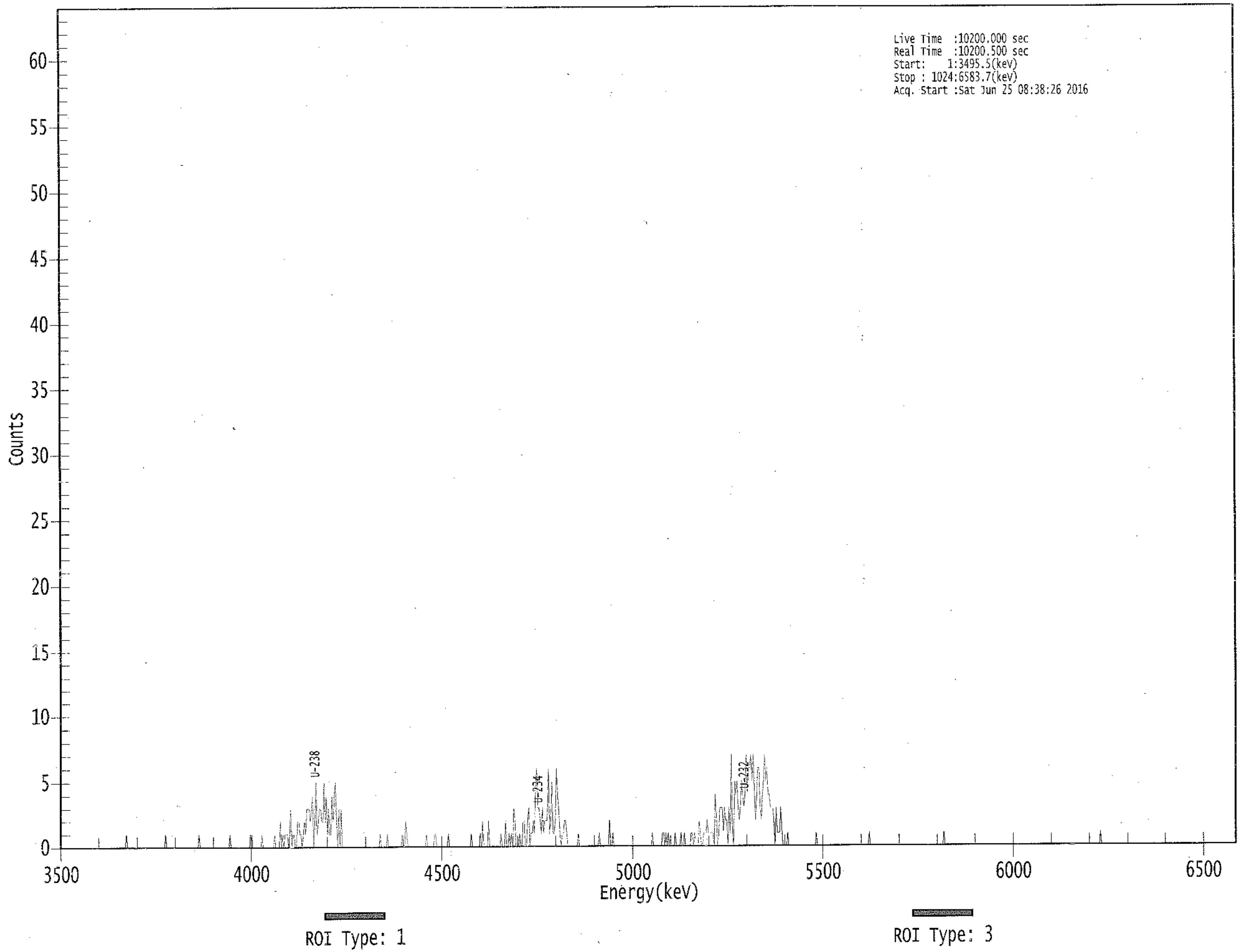
6/27/16

0000155385.CNF



****
***** 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: 10201

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	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	1	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	1	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:	1	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	1	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	1	1	0
169:	0	0	0	0	0	0	0	1
177:	0	0	0	0	0	0	0	0
185:	0	0	1	0	0	0	0	2
193:	0	1	0	1	1	1	0	1
201:	3	0	1	1	0	0	2	2
209:	1	1	0	1	2	1	3	3
217:	3	2	3	4	0	2	5	1
225:	2	3	3	2	2	5	2	4
233:	1	3	1	1	4	2	4	5
241:	2	0	3	0	3	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	1	0
281:	0	0	0	0	1	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	1	0	0	2	1	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	1	0
321:	0	0	0	0	0	1	1	0
329:	0	0	0	0	0	0	0	0
337:	0	1	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	1	0	0
361:	0	0	0	0	0	1	0	2

369:	0	0	0	0	2	0	0	0

Sample Title: 09

Channel								
377:	0	0	0	0	0	0	0	1
385:	0	0	0	2	0	0	1	0
393:	1	0	3	2	0	0	0	1
401:	0	0	2	2	0	0	2	3
409:	0	1	1	2	1	5	6	3
417:	3	2	1	3	1	2	2	2
425:	6	1	2	5	1	1	2	6
433:	4	3	1	0	1	1	2	2
441:	1	0	0	0	0	0	0	0
449:	0	0	1	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	1	0	0	0
473:	0	0	0	0	0	2	0	0
481:	1	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	1	0	0	0	0	0
521:	0	0	0	1	1	0	1	0
529:	1	0	0	0	0	0	1	0
537:	0	0	0	1	0	0	1	0
545:	0	0	0	0	1	1	0	1
553:	0	0	0	2	1	0	0	1
561:	1	1	2	1	1	1	1	1
569:	0	4	2	0	1	3	3	3
577:	1	3	2	2	0	3	1	7
585:	1	0	5	4	5	3	2	3
593:	5	4	3	4	7	4	6	6
601:	7	5	7	4	2	4	6	6
609:	3	2	4	5	7	5	6	4
617:	4	3	3	3	2	0	3	1
625:	1	1	3	1	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	1	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	1
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:	1	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: 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:	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	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™

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UU

Sample Description: CP-5010 05-09
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 10
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_038
Chamber Serial Number: 04026478B
Detector Serial Number: 91134
Env. Background: System Bkgd 157584
Reagent Blank: <not performed>

Sample Size: 1.526E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 6:54:17 AM
Acquisition Date/Time: 6/25/2016 8:38:28 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.665 mL
Effective Efficiency: 0.1455 +/- 0.0090
Counting Efficiency: 0.1601 +/- 0.0028 on 12/11/2015 8:20:51 AM
Chem. Recovery Factor: 0.9090 +/- 0.0586

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	302.66	11.27	0.34	0.00E+000	44.9
U-234		4.721	76.15	22.61	0.85	0.00E+000	5.2
U-235		4.372	6.00	86.43	0.00	0.00E+000	3.0
U-238		4.137	68.32	23.85	0.68	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*	3.62E+000 +/- 4.40E-001	5.72E-002 +/- 6.95E-003
U-234	0.988	4761.50*	9.11E-001 +/- 2.34E-001	7.16E-002 +/- 8.70E-003
U-235	0.999	4385.50*	8.85E-002 +/- 7.73E-002	8.85E-002 +/- 1.07E-002
U-238	0.984	4184.40*	8.14E-001 +/- 2.18E-001	6.72E-002 +/- 8.16E-003

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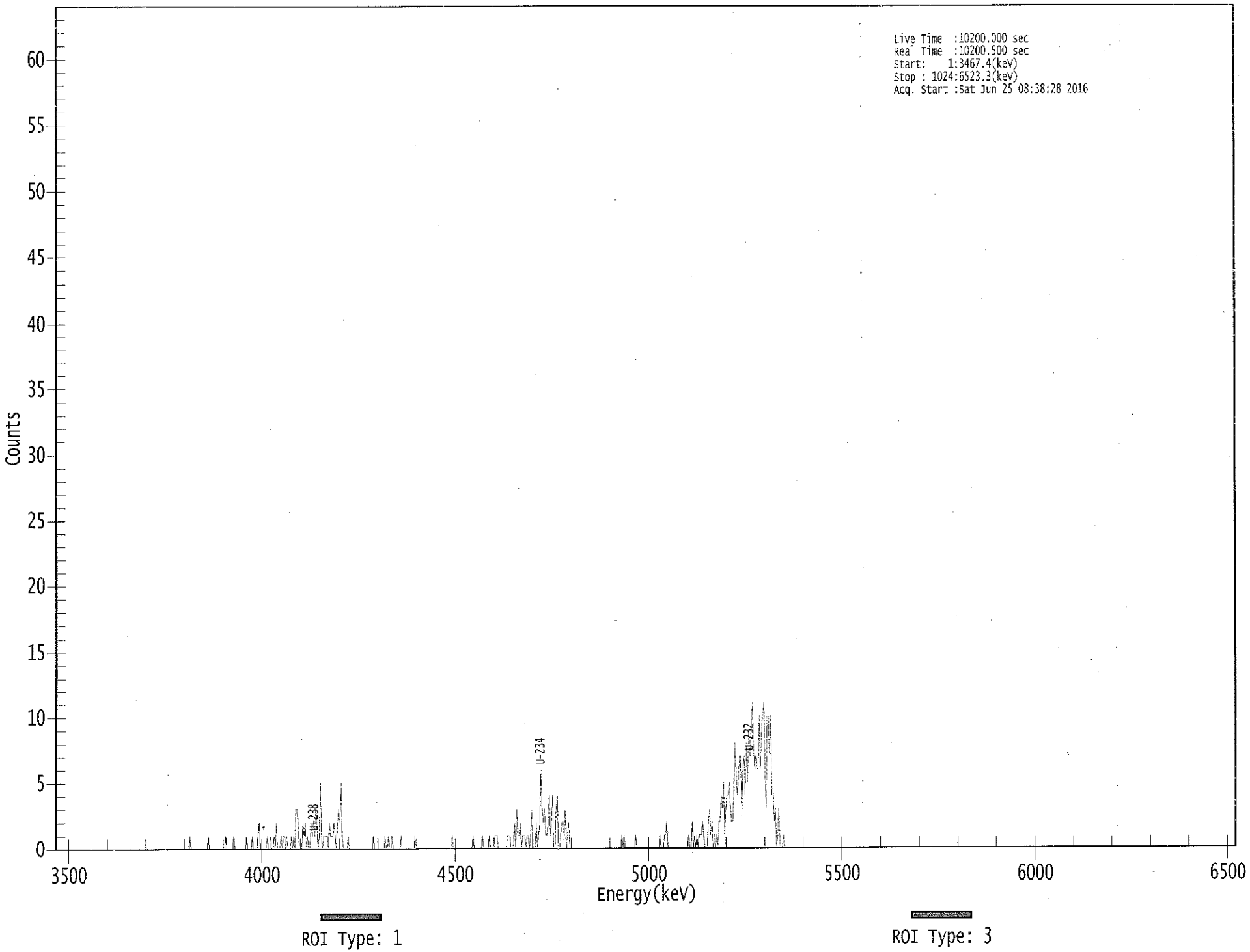

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 10

Elapsed Live time: 10200
Elapsed Real Time: 10201

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	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	1	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	1	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	1	0	0	0	0
153:	0	0	1	0	0	0	0	0
161:	0	0	0	0	0	1	0	0
169:	0	0	1	0	0	0	0	1
177:	2	0	0	0	0	0	0	1
185:	0	0	1	0	0	1	0	2
193:	0	0	0	1	0	1	1	0
201:	1	0	0	0	1	0	1	0
209:	3	3	2	0	0	0	2	1
217:	2	0	1	0	0	2	1	2
225:	1	3	2	0	1	5	1	0
233:	1	1	1	1	0	2	1	1
241:	1	2	1	0	2	3	2	5
249:	1	0	0	0	0	1	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	0	0	1	0	0
289:	1	0	0	1	0	0	0	0
297:	0	0	0	1	0	0	0	0
305:	0	0	0	0	0	0	0	1
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	0	0
337:	0	0	0	0	0	0	0	1
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	1	0	0	0	0	0	0

369:	0	1	0	0	0	0	0	1

Sample Title: 10

Channel								
377:	0	0	0	0	1	1	1	0
385:	0	0	0	0	0	0	0	1
393:	1	1	0	0	0	2	0	3
401:	1	1	2	0	1	1	1	0
409:	1	1	0	1	3	0	0	0
417:	2	0	1	2	6	3	2	3
425:	1	1	2	4	1	2	4	0
433:	0	3	4	0	0	1	2	2
441:	1	3	0	1	2	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	1	0	1	0	0	0
497:	0	0	0	0	0	0	1	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	1
529:	1	2	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	1	0	0	2
553:	0	1	0	1	0	1	1	1
561:	2	1	0	0	0	2	3	1
569:	2	0	1	0	1	0	2	2
577:	4	3	5	1	3	4	4	5
585:	3	2	2	4	8	6	4	5
593:	7	7	2	6	7	4	8	5
601:	9	7	9	11	8	6	7	6
609:	6	10	6	9	10	11	6	3
617:	10	10	7	10	4	5	2	3
625:	0	1	3	0	0	0	1	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	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	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™

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Sample Description: CP-5010 09-15
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 11
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_039
Chamber Serial Number: 06027396A
Detector Serial Number: 83109
Env. Background: System Bkgd 157585
Reagent Blank: <not performed>

Sample Size: 1.526E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 6:54:17 AM
Acquisition Date/Time: 6/25/2016 8:38:29 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.665 mL
Effective Efficiency: 0.2239 +/- 0.0116
Counting Efficiency: 0.1862 +/- 0.0032 on 12/11/2015 8:20:49 AM
Chem. Recovery Factor: 1.2026 +/- 0.0658

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	5.282	465.79	9.11	2.21	0.00E+000	30.9
U-234		4.731	151.28	16.10	2.72	0.00E+000	15.0
U-235		4.417	8.13	77.44	1.87	0.00E+000	3.0
U-238		4.155	165.81	15.29	1.19	0.00E+000	7.5

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	3.62E+000 +/- 3.68E-001	6.22E-002 +/- 6.32E-003
U-234	0.993	4761.50*	1.18E+000 +/- 2.24E-001	6.67E-002 +/- 6.77E-003
U-235	0.993	4385.50*	7.80E-002 +/- 6.09E-002	7.26E-002 +/- 7.38E-003
U-238	0.994	4184.40*	1.28E+000 +/- 2.36E-001	5.10E-002 +/- 5.18E-003

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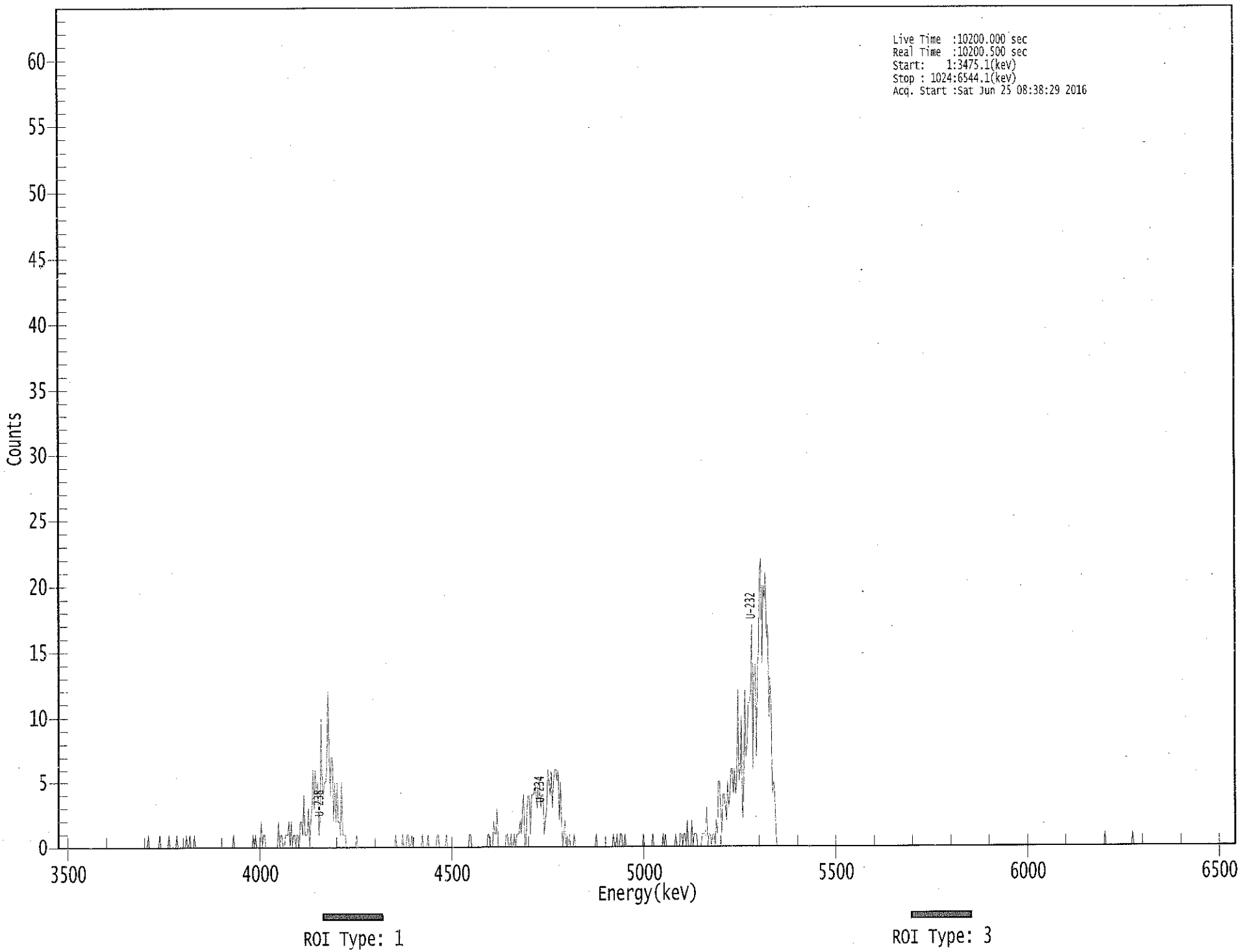

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 11

Elapsed Live time: 10200
Elapsed Real Time: 10201

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	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	1	0
81:	0	0	0	0	0	0	0	0
89:	1	0	0	0	0	0	0	0
97:	1	0	0	0	0	0	0	1
105:	0	0	0	0	0	0	0	1
113:	0	0	1	0	0	0	1	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:	1	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	1	0	1	0	0	0	0
177:	2	0	1	1	0	0	0	0
185:	0	0	0	0	0	0	0	2
193:	0	1	1	0	0	1	1	1
201:	2	0	2	0	1	1	0	1
209:	1	0	2	2	1	4	1	1
217:	1	3	0	2	3	6	3	6
225:	4	5	1	2	10	5	4	5
233:	5	6	12	8	4	7	7	2
241:	5	2	5	2	2	1	5	1
249:	1	1	0	0	0	0	0	0
257:	0	0	0	1	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	1	0	0
297:	0	0	0	1	0	0	0	1
305:	1	0	0	1	0	0	0	0
313:	0	0	0	0	1	0	0	0
321:	0	1	0	0	0	0	0	0
329:	0	1	1	0	0	0	0	0
337:	0	1	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	1	1	0
361:	0	0	0	0	0	0	0	0

369:	0	0	0	0	0	1	1	0

Sample Title: 11

Channel								
377:	0	0	2	1	1	3	0	0
385:	0	0	0	0	0	1	1	0
393:	0	1	0	0	1	0	1	1
401:	1	2	1	3	4	0	0	3
409:	4	4	1	4	4	4	5	4
417:	3	5	5	3	4	4	1	2
425:	3	6	5	4	6	3	5	6
433:	6	5	6	2	5	2	0	1
441:	2	0	0	0	1	0	0	0
449:	1	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	1	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	1	0	0	1	0	0
489:	1	1	0	0	1	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	1	0	0	0
513:	0	0	0	0	1	0	0	0
521:	0	0	0	0	0	1	0	1
529:	0	0	0	0	0	0	0	0
537:	1	0	0	0	1	1	0	1
545:	1	0	2	0	0	0	2	0
553:	1	1	1	0	0	0	0	1
561:	1	1	1	3	0	1	1	0
569:	1	1	0	2	1	5	5	3
577:	1	4	4	3	2	5	3	4
585:	6	6	4	6	4	5	12	5
593:	6	10	2	4	12	7	8	11
601:	11	12	17	6	14	14	7	14
609:	15	21	22	14	20	19	21	16
617:	17	10	13	10	4	5	4	1
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	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: 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	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	1	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	1	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™

Sample Description: CP-5012 00-02
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 12
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_040
Chamber Serial Number: 06027396B
Detector Serial Number: 91135
Env. Background: System Bkgd 157586
Reagent Blank: <not performed>

Sample Size: 1.575E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 6:54:17 AM
Acquisition Date/Time: 6/25/2016 8:38:31 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.670 mL
Effective Efficiency: 0.1771 +/- 0.0101
Counting Efficiency: 0.1847 +/- 0.0032 on 12/11/2015 8:20:48 AM
Chem. Recovery Factor: 0.9588 +/- 0.0570

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	370.81	10.20	1.19	0.00E+000	7.1
U-234		4.724	114.83	18.31	0.17	0.00E+000	19.0
U-235		4.372	2.00	169.74	0.00	0.00E+000	3.0
U-238		4.151	115.00	18.36	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)
U-232	0.998	5302.50*	3.53E+000 +/- 3.94E-001	6.27E-002 +/- 7.00E-003
U-234	0.990	4761.50*	1.09E+000 +/- 2.34E-001	3.97E-002 +/- 4.43E-003
U-235	0.999	4385.50*	2.35E-002 +/- 4.00E-002	7.04E-002 +/- 7.85E-003
U-238	0.992	4184.40*	1.09E+000 +/- 2.34E-001	5.68E-002 +/- 6.34E-003

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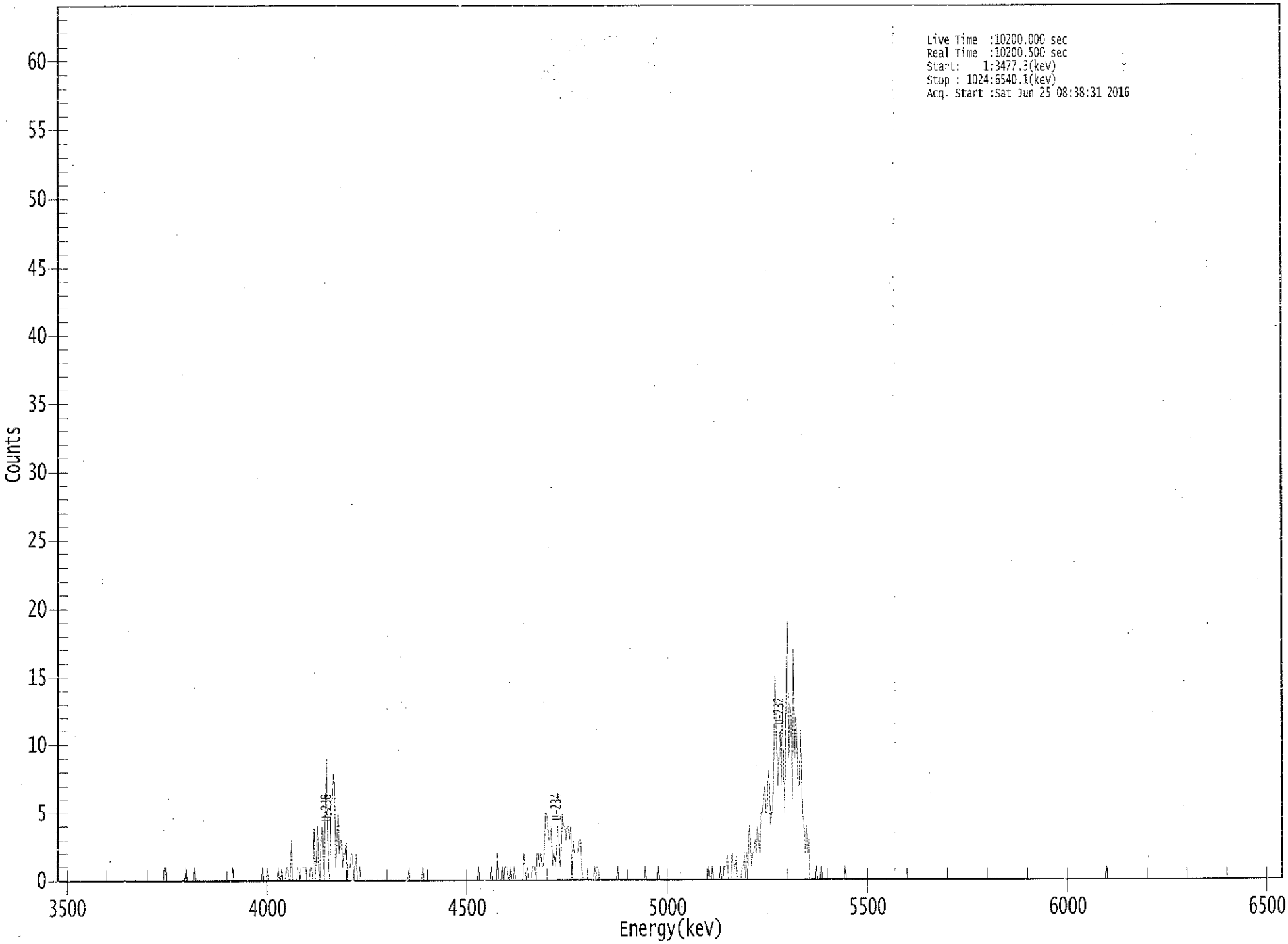

****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 12

Elapsed Live time: 10200
Elapsed Real Time: 10201

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	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	1	1	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	1	0	0	0	0
113:	0	0	1	0	0	0	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	1	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	1	0	0	0	1
177:	0	0	0	0	0	0	0	0
185:	1	0	0	1	0	0	0	1
193:	1	0	0	3	0	0	0	0
201:	1	1	0	1	1	1	1	1
209:	0	0	0	1	1	0	4	0
217:	2	4	1	0	3	4	0	4
225:	9	4	1	0	6	6	8	7
233:	1	3	5	2	3	3	1	2
241:	2	3	0	1	1	2	2	0
249:	1	2	0	0	1	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	1	0	0
297:	0	0	0	0	0	0	0	0
305:	0	1	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	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	1
353:	0	0	0	0	0	0	0	0
361:	0	0	1	0	0	0	0	2

369:	0	0	0	1	0	1	1	1

Sample Title: 12

Channel								
377:	0	0	1	0	0	1	0	0
385:	0	0	0	0	0	2	1	0
393:	1	0	0	0	1	1	1	0
401:	2	2	1	2	1	1	2	5
409:	5	4	3	3	4	1	2	1
417:	2	4	4	1	2	5	4	4
425:	3	4	4	3	4	0	3	2
433:	2	2	2	3	3	1	0	0
441:	0	0	0	0	0	0	0	0
449:	1	0	1	1	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	1	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	1	0	0	0	0	0
497:	0	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	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	1
545:	0	0	1	0	0	0	0	0
553:	0	1	0	0	1	1	1	2
561:	0	0	0	2	1	1	2	0
569:	0	0	0	1	1	2	0	2
577:	1	4	3	1	2	2	3	2
585:	4	3	2	5	5	6	7	5
593:	5	8	7	4	5	5	11	15
601:	10	7	9	11	7	13	8	5
609:	13	19	9	13	12	6	17	9
617:	12	10	7	7	11	7	5	4
625:	2	4	2	3	0	0	0	0
633:	0	1	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	1	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	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	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™

Sample Description: CP-5012 02-05
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 13
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_041
Chamber Serial Number: 05026930A
Detector Serial Number: 91087
Env. Background: System Bkgd 157587
Reagent Blank: <not performed>

Sample Size: 1.512E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 6:54:17 AM
Acquisition Date/Time: 6/25/2016 8:38:33 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.664 mL
Effective Efficiency: 0.1841 +/- 0.0103
Counting Efficiency: 0.1900 +/- 0.0033 on 12/11/2015 8:21:11 AM
Chem. Recovery Factor: 0.9690 +/- 0.0570

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	381.98	10.04	1.02	0.00E+000	9.4
U-234		4.723	115.98	18.29	1.02	0.00E+000	4.7
U-235		4.372	6.47	87.07	1.53	0.00E+000	3.0
U-238		4.150	98.09	20.25	3.91	0.00E+000	9.8

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.65E+000 +/- 4.01E-001	6.01E-002 +/- 6.62E-003
U-234	0.990	4761.50*	1.11E+000 +/- 2.36E-001	6.01E-002 +/- 6.62E-003
U-235	0.999	4385.50*	7.61E-002 +/- 6.68E-002	8.37E-002 +/- 9.21E-003
U-238	0.992	4184.40*	9.32E-001 +/- 2.15E-001	9.26E-002 +/- 1.02E-002

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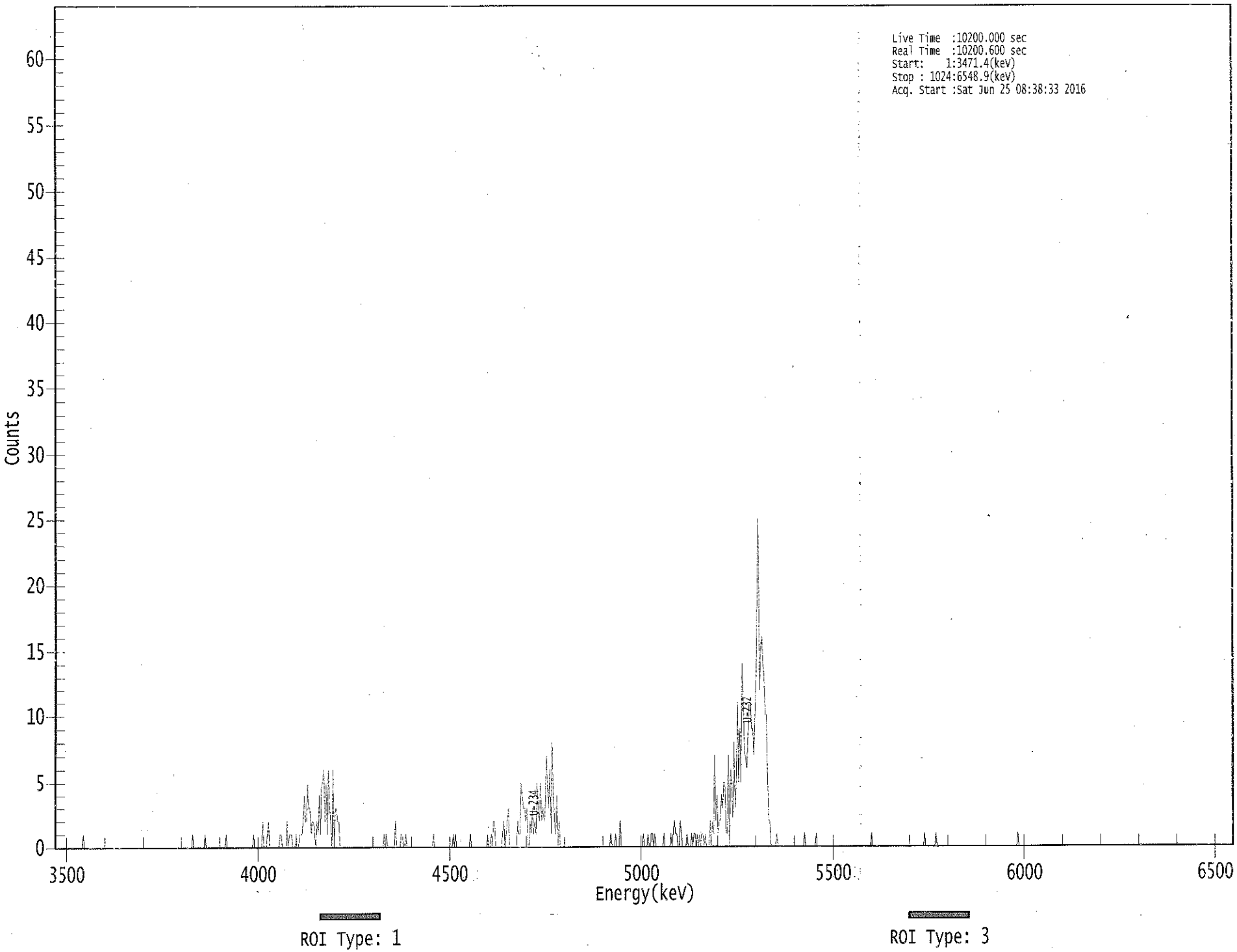
6/27/16

0000155387.CNF



****
***** 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: 10201

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	1
121:	0	0	0	0	0	0	0	0
129:	0	0	1	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:	0	0	0	0	0	0	0	0
169:	0	0	0	0	1	0	0	0
177:	0	0	0	0	2	0	0	0
185:	1	2	0	0	0	0	0	0
193:	0	0	0	1	1	0	0	0
201:	0	2	0	1	1	1	0	0
209:	0	1	0	0	1	1	1	2
217:	4	2	2	5	3	3	1	2
225:	2	1	0	2	1	4	1	5
233:	5	6	2	5	1	6	3	2
241:	0	6	0	3	3	2	2	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	1	0	1
289:	0	0	0	0	0	0	0	2
297:	0	0	0	0	1	1	0	0
305:	1	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:	1	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	1	0	1	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	1	0	0	0	0	0	0	0

369:	0	0	0	0	0	0	0	1

Sample Title: 13

Channel								
377:	0	0	1	0	2	2	0	0
385:	0	0	0	0	1	2	0	1
393:	2	3	0	0	0	0	0	0
401:	0	2	1	1	5	4	3	3
409:	2	3	0	0	2	1	3	1
417:	2	1	5	3	2	5	2	3
425:	2	3	7	5	3	6	1	8
433:	4	2	1	4	0	2	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	1	0	0	0	1	0
489:	0	0	2	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	1	0
513:	0	0	1	0	0	1	1	0
521:	1	0	0	0	0	0	0	0
529:	1	0	0	0	0	0	1	0
537:	1	2	1	1	0	0	2	1
545:	0	0	0	0	1	0	0	0
553:	1	0	1	1	0	1	0	1
561:	0	1	1	0	1	0	0	0
569:	2	0	2	1	7	2	4	1
577:	2	2	4	3	5	5	1	1
585:	7	0	6	5	2	8	3	5
593:	11	5	9	5	14	11	7	7
601:	6	9	11	11	9	9	7	10
609:	13	20	25	12	15	16	14	13
617:	10	10	6	2	2	0	0	0
625:	0	0	1	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	1	0	0	0	0	0
657:	0	0	0	0	1	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	1	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	1	0	0	0	0	0
761:	0	0	0	0	1	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	1	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™

Sample Description: CP-5012 05-09
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 14
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_042
Chamber Serial Number: 05026930B
Detector Serial Number: 84185
Env. Background: System Bkgd 157588
Reagent Blank: <not performed>

Sample Size: 1.528E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 6:54:17 AM
Acquisition Date/Time: 6/25/2016 8:38:35 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.676 mL
Effective Efficiency: 0.1095 +/- 0.0076
Counting Efficiency: 0.1789 +/- 0.0031 on 12/11/2015 8:21:10 AM
Chem. Recovery Factor: 0.6119 +/- 0.0440

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	231.32	12.91	0.68	0.00E+000	7.7
U-234		4.718	61.66	25.04	0.34	0.00E+000	3.8
U-235		4.372	6.83	76.08	0.17	0.00E+000	6.0
U-238		4.138	65.49	24.33	0.51	0.00E+000	4.5

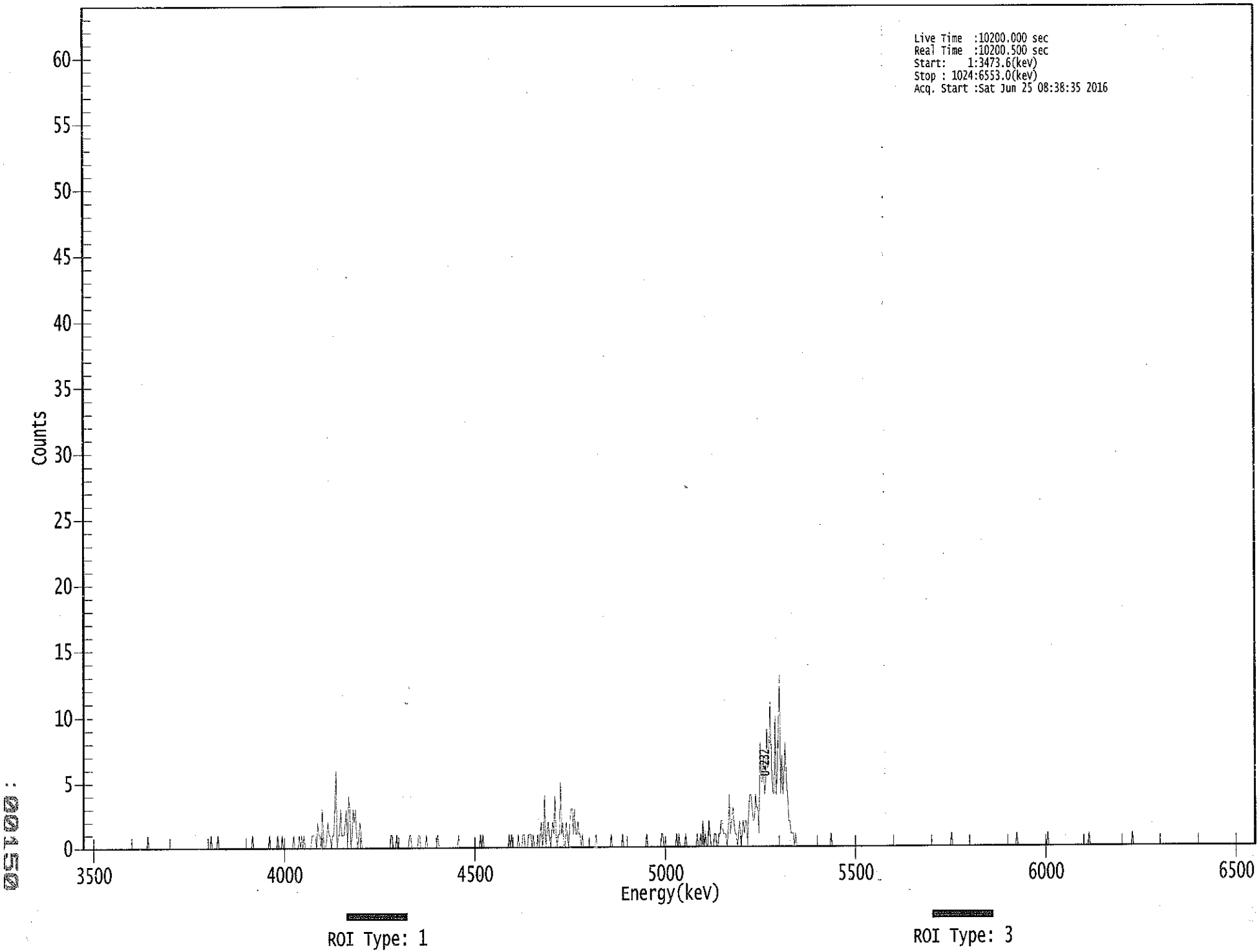
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.990	5302.50*	3.67E+000 +/- 5.02E-001	8.96E-002 +/- 1.22E-002
U-234	0.986	4761.50*	9.79E-001 +/- 2.79E-001	7.59E-002 +/- 1.04E-002
U-235	0.999	4385.50*	1.34E-001 +/- 1.03E-001	8.17E-002 +/- 1.12E-002
U-238	0.985	4184.40*	1.03E+000 +/- 2.89E-001	8.29E-002 +/- 1.13E-002

AG
6/27/16

0000155388.CNF



****
***** 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: 10201

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	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:	1	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	1
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	1	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	1	0	0	0	0	0
169:	0	1	0	0	0	1	0	0
177:	0	0	0	0	0	0	0	1
185:	0	0	0	0	1	0	1	0
193:	1	0	0	0	0	0	0	1
201:	1	1	1	0	2	1	1	0
209:	3	1	0	0	1	2	1	1
217:	0	1	1	3	6	0	1	1
225:	3	1	1	1	2	3	0	4
233:	3	0	1	3	2	3	1	0
241:	1	2	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	0	1	1	0	0
273:	0	1	0	0	0	0	0	0
281:	0	0	0	0	1	1	0	0
289:	0	0	0	0	1	1	0	0
297:	0	0	0	1	0	0	0	0
305:	0	0	0	0	0	1	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	1
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	1	0	1	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	1	0	1	0	0

Sample Title: 14

Channel								
377:	0	0	0	1	0	0	0	1
385:	1	0	0	0	1	1	1	0
393:	1	0	0	0	1	0	1	2
401:	0	1	4	0	1	2	1	0
409:	1	2	1	4	1	0	1	1
417:	5	1	2	0	0	2	1	0
425:	2	3	3	1	3	1	1	2
433:	1	1	0	1	0	0	0	0
441:	0	0	0	0	0	0	0	1
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	1	0	0	0
465:	0	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	1	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	1	1	0	0	0	0	0	0
513:	0	0	0	0	0	1	0	1
521:	0	0	0	0	0	1	0	0
529:	0	0	0	0	0	0	0	1
537:	0	0	1	0	2	0	1	0
545:	0	2	1	0	0	0	1	1
553:	0	0	1	1	2	2	1	1
561:	1	0	1	4	1	2	3	2
569:	1	1	0	1	2	0	1	2
577:	1	2	2	0	3	4	4	3
585:	2	2	4	3	3	1	8	5
593:	5	7	4	5	9	6	8	11
601:	6	4	4	10	4	6	9	13
609:	4	7	4	6	8	5	4	2
617:	2	1	1	1	0	1	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	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	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	1	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: 14

Channel								
809:	0	0	0	0	0	0	1	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	1	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	1	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	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	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™

6124

Sample Description: CP-5012 09-15
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-UU
Sample Identification: 15
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_043
Chamber Serial Number: 04026481A
Detector Serial Number: 91088
Env. Background: System Bkgd 157589
Reagent Blank: <not performed>

Sample Size: 1.520E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 6:54:17 AM
Acquisition Date/Time: 6/25/2016 8:38:37 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.669 mL
Effective Efficiency: 0.1380 +/- 0.0087
Counting Efficiency: 0.1890 +/- 0.0033 on 12/11/2015 8:21:08 AM
Chem. Recovery Factor: 0.7302 +/- 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	5.265	288.49	11.55	0.51	0.00E+000	4.2
U-234		4.714	65.15	24.47	0.85	0.00E+000	7.5
U-235		4.443	1.32	215.97	0.68	0.00E+000	3.0
U-238		4.132	57.49	25.98	0.51	0.00E+000	3.5

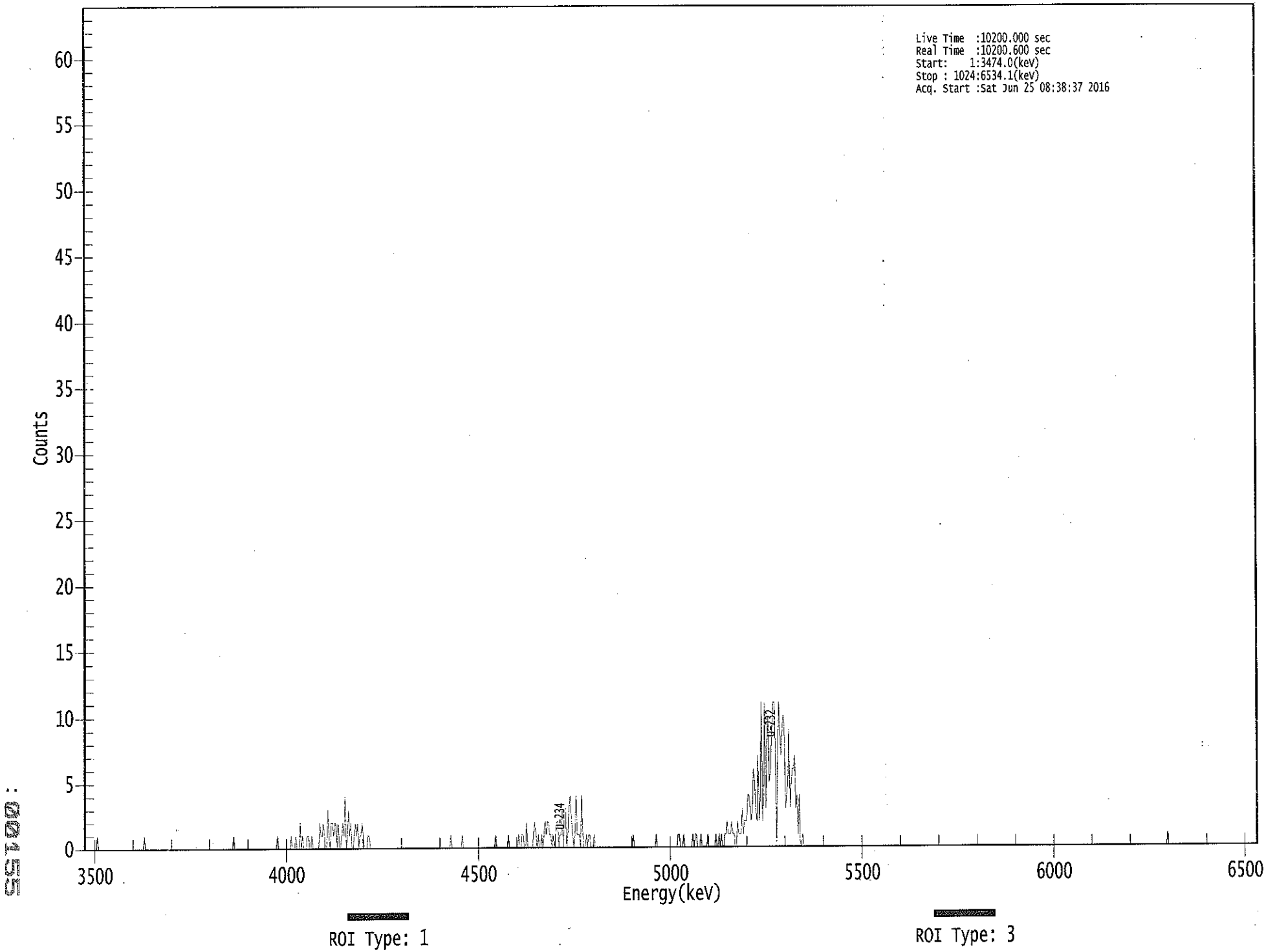
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.990	5302.50*	3.65E+000 +/- 4.53E-001	6.65E-002 +/- 8.24E-003
U-234	0.984	4761.50*	8.25E-001 +/- 2.26E-001	7.58E-002 +/- 9.40E-003
U-235	0.977	4385.50*	2.06E-002 +/- 4.46E-002	8.81E-002 +/- 1.09E-002
U-238	0.981	4184.40*	7.25E-001 +/- 2.09E-001	6.61E-002 +/- 8.20E-003

AG
6/27/16

0000155389.CNF



****
***** SPECTRAL DATA REPORT *****
****

Sample Title: 15

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	1	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	1	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	0	1	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	0	0	0
169:	1	0	0	0	0	0	0	0
177:	0	0	0	0	1	0	0	0
185:	1	0	0	0	2	0	1	0
193:	0	0	1	1	0	0	1	0
201:	0	0	0	0	0	2	1	1
209:	2	1	0	0	3	1	0	2
217:	2	1	2	2	0	2	0	0
225:	1	2	1	4	0	1	3	1
233:	2	0	0	1	2	1	2	0
241:	1	1	2	1	0	0	0	1
249:	1	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	1
321:	0	0	0	0	0	0	0	0
329:	0	1	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	1	0
361:	0	0	0	0	0	0	0	0

369:	0	1	0	0	0	0	0	0

Sample Title: 15

Channel								
377:	0	0	1	0	0	1	1	0
385:	0	2	0	0	0	0	0	1
393:	2	1	0	1	0	0	1	0
401:	1	2	1	2	2	1	1	0
409:	1	0	1	2	2	0	1	1
417:	3	0	3	3	0	1	3	4
425:	2	1	0	1	4	1	1	1
433:	0	4	1	0	0	1	0	1
441:	1	0	0	0	1	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	1	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	1	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	1	1	0
521:	0	0	1	0	0	0	0	0
529:	0	0	1	0	1	1	0	0
537:	0	1	0	0	0	0	0	1
545:	0	0	0	0	0	0	1	0
553:	0	1	0	1	0	0	1	1
561:	2	1	1	1	2	1	1	0
569:	0	2	1	1	1	3	1	2
577:	2	2	4	4	3	2	3	6
585:	5	3	2	7	2	4	11	2
593:	4	11	3	8	10	5	6	8
601:	11	11	8	0	6	11	9	7
609:	9	10	9	3	4	5	9	3
617:	5	6	6	7	3	4	1	4
625:	0	0	1	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	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: 15

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:	1	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

6/24/2016 6:01:47 AM

Apex-Alpha™

QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 6/24/2016
Time : 6:01:47 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_001	21f	ALL	Not Done	
Alpha_002	21f	ALL	Not Done	
Alpha_003	21f	ALL	Passed	6/24/2016 5:46:14 AM
Alpha_004	21f	ALL	Passed	6/24/2016 5:46:15 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	6/24/2016 5:46:16 AM
Alpha_011	21f	ALL	Passed	6/24/2016 5:46:17 AM
Alpha_012	21f	ALL	Passed	6/24/2016 5:46:17 AM
Alpha_013	21f	ALL	Not Done	
Alpha_014	21f	ALL	Passed	6/24/2016 5:46:18 AM
Alpha_015	21f	Peak Energy	Action	6/24/2016 5:46:19 AM
Alpha_016	21f	ALL	Not Done	
Alpha_033	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:20 AM
Alpha_034	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:22 AM
Alpha_035	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:24 AM
Alpha_036	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:26 AM
Alpha_037	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:28 AM
Alpha_038	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:30 AM
Alpha_039	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:32 AM
Alpha_040	Alpha Analyst100DC	Peak FWHM	Action	6/24/2016 5:46:35 AM
Alpha_041	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:37 AM
Alpha_042	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:39 AM
Alpha_043	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:42 AM
Alpha_044	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:44 AM
Alpha_045	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:47 AM
Alpha_046	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:49 AM
Alpha_047	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:52 AM
Alpha_048	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:55 AM
Alpha_049	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:57 AM
Alpha_050	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:00 AM
Alpha_051	Alpha Analyst100DC	ALL	Not Done	
Alpha_052	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:03 AM
Alpha_053	Alpha Analyst100DC	Peak FWHM	Action	6/24/2016 5:47:06 AM
Alpha_054	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:09 AM
Alpha_055	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:12 AM
Alpha_056	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:15 AM
Alpha_057	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:18 AM
Alpha_058	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:21 AM

6/24/2016 6:01:47 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_059	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:23 AM
Alpha_060	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:26 AM

APPROVED BY: AG

APPROVAL DATE: 6/24/16

6/25/2016 8:34:31 AM

Apex-Alpha™

QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 6/25/2016
Time : 8:34:31 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_033	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:21:45 AM
Alpha_034	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:21:47 AM
Alpha_035	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:21:48 AM
Alpha_036	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:21:50 AM
Alpha_037	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:21:52 AM
Alpha_038	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:21:53 AM
Alpha_039	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:21:55 AM
Alpha_040	Alpha Analyst100DC	Peak FWHM	Action OK	6/25/2016 8:21:57 AM
Alpha_041	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:21:58 AM
Alpha_042	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:22:00 AM
Alpha_043	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:22:02 AM
Alpha_044	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:22:04 AM
Alpha_045	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:22:06 AM
Alpha_046	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:22:08 AM
Alpha_047	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:22:09 AM
Alpha_048	Alpha Analyst100DC	ALL	Passed	6/25/2016 8:22:11 AM
Alpha_049	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:57 AM
Alpha_050	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:00 AM
Alpha_051	Alpha Analyst100DC	ALL	Not Done	
Alpha_052	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:03 AM
Alpha_053	Alpha Analyst100DC	Peak FWHM	Action	6/24/2016 5:47:06 AM
Alpha_054	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:09 AM
Alpha_055	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:12 AM
Alpha_056	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:15 AM
Alpha_057	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:18 AM
Alpha_058	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:21 AM
Alpha_059	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:23 AM
Alpha_060	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:26 AM

APPROVED BY: KB

APPROVAL DATE: 6/25/16

****
***** L I B R A R Y L I S T I N G R E P O R T *****
****

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)

16-06043
ThISO
Run 1

Work Order	16-06043
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-5031 00-02	46	06/01/16 00:00	1.5401E+00
04	DO	CP-5031 00-02	46	06/01/16 00:00	1.5117E+00
05	TRG	CP-5031 02-05	39	06/01/16 00:00	1.5398E+00
06	TRG	CP-5031 05-10	52	06/01/16 00:00	1.5406E+00
07	TRG	CP-5031 10-15	46	06/01/16 00:00	1.5285E+00
08	TRG	CP-5010 00-02	53	06/07/16 00:00	1.5334E+00
09	TRG	CP-5010 02-05	43	06/07/16 00:00	1.5800E+00
10	TRG	CP-5010 05-09	35	06/07/16 00:00	1.5413E+00
11	TRG	CP-5010 09-15	41	06/07/16 00:00	1.5085E+00
12	TRG	CP-5012 00-02	47	06/07/16 00:00	1.5439E+00
13	TRG	CP-5012 02-05	50	06/07/16 00:00	1.5603E+00
14	TRG	CP-5012 05-09	38	06/07/16 00:00	1.5969E+00
15	TRG	CP-5012 09-15	37	06/07/16 00:00	1.6081E+00

hSTD9 :

* 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	0.4521	10.2		0.00								
02	MBL	0.2243	5.0		0.00								
03	DUP	0.2253	5.1		0.00								
04	DO	0.2239	5.0		0.00								
05	TRG	0.2249	5.1		0.00								
06	TRG	0.2367	5.3		0.00								
07	TRG	0.2385	5.4		0.00								
08	TRG	0.2266	5.1		0.00								
09	TRG	0.2292	5.1		0.00								
10	TRG	0.2256	5.1		0.00								
11	TRG	0.2255	5.1		0.00								
12	TRG	0.2265	5.1		0.00								
13	TRG	0.2258	5.1		0.00								
14	TRG	0.2263	5.1		0.00								
15	TRG	0.2338	5.3		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 14:48	JPACHELLA				
02	MBL			06/16/16 14:48	JPACHELLA				
03	DUP			06/16/16 14:48	JPACHELLA				
04	DO	06/16/16 06:58	KSALLINGS	06/16/16 14:48	JPACHELLA				
05	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:48	JPACHELLA				
06	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:48	JPACHELLA				
07	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:48	JPACHELLA				
08	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:48	JPACHELLA				
09	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:48	JPACHELLA				
10	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:48	JPACHELLA				
11	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:48	JPACHELLA				
12	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:48	JPACHELLA				
13	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:48	JPACHELLA				
14	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:48	JPACHELLA				
15	TRG	06/16/16 06:58	KSALLINGS	06/16/16 14:48	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.

Preliminary Data Report & Analytical Calculations

Work Order: 16-06043-ThISO-1

Client: Auxier & Associates, Inc.
Eberline Analytical Work Order: 16-06043
Analysis Code: ThISO
Run: 1

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-228	LCS	LCS	pCi/g	5.79E+00	8.90E-01	9.39E-02	4.77E+00	121.37	OK		OK	
02	TH-228	MBL	BLANK	pCi/g	-6.52E-03	1.99E-02	5.41E-02					OK	OK
03	TH-228	DUP	CP-5031 00-02	pCi/g	1.04E-01	1.28E-01	2.00E-01				INV	OK	
04	TH-228	DO	CP-5031 00-02	pCi/g	1.58E-01	1.37E-01	1.78E-01					OK	
05	TH-228	TRG	CP-5031 02-05	pCi/g	6.54E-01	1.84E-01	6.99E-02					OK	
06	TH-228	TRG	CP-5031 05-10	pCi/g	1.26E+00	2.95E-01	8.62E-02					OK	
07	TH-228	TRG	CP-5031 10-15	pCi/g	1.93E+00	3.95E-01	4.93E-02					OK	
08	TH-228	TRG	CP-5010 00-02	pCi/g	5.29E-01	1.60E-01	5.03E-02					OK	
09	TH-228	TRG	CP-5010 02-05	pCi/g	1.27E+00	3.36E-01	6.66E-02					OK	
10	TH-228	TRG	CP-5010 05-09	pCi/g	1.64E+00	3.85E-01	6.58E-02					OK	
11	TH-228	TRG	CP-5010 09-15	pCi/g	1.29E+00	2.99E-01	5.44E-02					OK	
12	TH-228	TRG	CP-5012 00-02	pCi/g	1.02E+00	2.57E-01	5.34E-02					OK	
13	TH-228	TRG	CP-5012 02-05	pCi/g	1.14E+00	2.95E-01	7.42E-02					OK	
14	TH-228	TRG	CP-5012 05-09	pCi/g	9.52E-01	2.52E-01	4.76E-02					OK	
15	TH-228	TRG	CP-5012 09-15	pCi/g	1.61E+00	3.84E-01	8.07E-02					OK	

Preliminary Data Report & Analytical Calculations

Work Order: 16-06043-ThISO-1

Run	Analysis Code	Eberline Analytical Work Order	Client
1	ThISO	16-06043	Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	TH-228	LCS	06/09/16 00:00	1.00E+00	124.48	0.00	0.00			
02	TH-228	MBL	06/09/16 00:00	1.50E+00	98.18	0.00	0.00			
03	TH-228	DUP	06/01/16 00:00	1.54E+00	45.26	0.00	0.00			
04	TH-228	DO	06/01/16 00:00	1.51E+00	45.37	0.00	0.00			
05	TH-228	TRG	06/01/16 00:00	1.54E+00	104.94	0.00	0.00			
06	TH-228	TRG	06/01/16 00:00	1.54E+00	105.61	0.00	0.00			
07	TH-228	TRG	06/01/16 00:00	1.53E+00	88.53	0.00	0.00			
08	TH-228	TRG	06/07/16 00:00	1.53E+00	114.69	0.00	0.00			
09	TH-228	TRG	06/07/16 00:00	1.58E+00	94.96	0.00	0.00			
10	TH-228	TRG	06/07/16 00:00	1.54E+00	95.11	0.00	0.00			
11	TH-228	TRG	06/07/16 00:00	1.51E+00	111.10	0.00	0.00			
12	TH-228	TRG	06/07/16 00:00	1.54E+00	117.19	0.00	0.00			
13	TH-228	TRG	06/07/16 00:00	1.56E+00	88.47	0.00	0.00			
14	TH-228	TRG	06/07/16 00:00	1.60E+00	103.18	0.00	0.00			
15	TH-228	TRG	06/07/16 00:00	1.61E+00	98.32	0.00	0.00			

Work Order: 16-06043-ThISO-1

Run	Analysis Code	Eberline Analytical Work Order	Client
1	ThISO	16-06043	Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-228	LCS	06/24/16 08:31		A_Spec	Alpha_003	170.02	4.38 E+02	9.00 E-03	16.1
02	TH-228	MBL	06/24/16 08:31		A_Spec	Alpha_004	170.02	-6.80 E-01	4.00 E-03	18.8
03	TH-228	DUP	06/24/16 08:31		A_Spec	Alpha_010	170.02	5.09 E+00	2.30 E-02	19
04	TH-228	DO	06/24/16 08:31		A_Spec	Alpha_011	170.02	7.94 E+00	1.80 E-02	19.9
05	TH-228	TRG	06/24/16 08:31		A_Spec	Alpha_012	170.02	7.48 E+01	1.30 E-02	19.2
06	TH-228	TRG	06/24/16 08:31		A_Spec	Alpha_014	170	1.37 E+02	2.10 E-02	18.2
07	TH-228	TRG	06/24/16 08:31		A_Spec	Alpha_015	170.02	2.20 E+02	4.00 E-03	22.9
08	TH-228	TRG	06/24/16 11:30		A_Spec	Alpha_059	170	5.93 E+01	4.00 E-03	17.2
09	TH-228	TRG	06/24/16 11:30		A_Spec	Alpha_060	170	1.07 E+02	4.00 E-03	15.2
10	TH-228	TRG	06/24/16 11:56		A_Spec	Alpha_033	170	1.57 E+02	6.00 E-03	17.6
11	TH-228	TRG	06/24/16 11:56		A_Spec	Alpha_034	170	1.42 E+02	5.00 E-03	17.7
12	TH-228	TRG	06/24/16 11:56		A_Spec	Alpha_035	170	1.07 E+02	4.00 E-03	15.8
13	TH-228	TRG	06/24/16 11:56		A_Spec	Alpha_036	170	1.09 E+02	9.00 E-03	18.7
14	TH-228	TRG	06/24/16 11:56		A_Spec	Alpha_037	170	9.57 E+01	2.00 E-03	16.5
15	TH-228	TRG	06/24/16 11:56		A_Spec	Alpha_038	170	1.51 E+02	1.10 E-02	16

Preliminary Data Report & Analytical Calculations

Work Order: 16-06043-ThISO-1

Run: 1
Analysis Code: ThISO
Eberline Analytical Work Order: 16-06043
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-230	LCS	LCS	pCi/g	6.40E+00	9.66E-01	6.32E-02	5.40E+00	118.54	OK		OK	
02	TH-230	MBL	BLANK	pCi/g	7.17E-02	5.85E-02	6.82E-02					OK	OK
03	TH-230	DUP	CP-5031 00-02	pCi/g	1.00E+00	3.69E-01	1.27E-01				OK	OK	
04	TH-230	DO	CP-5031 00-02	pCi/g	1.14E+00	4.01E-01	1.60E-01					OK	
05	TH-230	TRG	CP-5031 02-05	pCi/g	8.38E-01	2.15E-01	5.39E-02					OK	
06	TH-230	TRG	CP-5031 05-10	pCi/g	1.08E+00	2.62E-01	7.33E-02					OK	
07	TH-230	TRG	CP-5031 10-15	pCi/g	2.32E+00	4.57E-01	4.49E-02					OK	
08	TH-230	TRG	CP-5010 00-02	pCi/g	1.33E+00	3.03E-01	3.66E-02					OK	
09	TH-230	TRG	CP-5010 02-05	pCi/g	2.02E+00	4.79E-01	5.56E-02					OK	
10	TH-230	TRG	CP-5010 05-09	pCi/g	1.28E+00	3.17E-01	5.39E-02					OK	
11	TH-230	TRG	CP-5010 09-15	pCi/g	1.38E+00	3.13E-01	5.04E-02					OK	
12	TH-230	TRG	CP-5012 00-02	pCi/g	1.25E+00	2.96E-01	3.89E-02					OK	
13	TH-230	TRG	CP-5012 02-05	pCi/g	1.35E+00	3.31E-01	6.48E-02					OK	
14	TH-230	TRG	CP-5012 05-09	pCi/g	1.25E+00	3.07E-01	4.09E-02					OK	
15	TH-230	TRG	CP-5012 09-15	pCi/g	1.75E+00	4.07E-01	5.50E-02					OK	

Client: Auxier & Associates, Inc.
Eberline Analytical Work Order: 16-06043
Analysis Code: ThISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	TH-230	LCS	06/09/16 00:00	1.00E+00	124.48	0.00	0.00			
02	TH-230	MBL	06/09/16 00:00	1.50E+00	98.18	0.00	0.00			
03	TH-230	DUP	06/01/16 00:00	1.54E+00	45.26	0.00	0.00			
04	TH-230	DO	06/01/16 00:00	1.51E+00	45.37	0.00	0.00			
05	TH-230	TRG	06/01/16 00:00	1.54E+00	104.94	0.00	0.00			
06	TH-230	TRG	06/01/16 00:00	1.54E+00	105.61	0.00	0.00			
07	TH-230	TRG	06/01/16 00:00	1.53E+00	88.53	0.00	0.00			
08	TH-230	TRG	06/07/16 00:00	1.53E+00	114.69	0.00	0.00			
09	TH-230	TRG	06/07/16 00:00	1.58E+00	94.96	0.00	0.00			
10	TH-230	TRG	06/07/16 00:00	1.54E+00	95.11	0.00	0.00			
11	TH-230	TRG	06/07/16 00:00	1.51E+00	111.10	0.00	0.00			
12	TH-230	TRG	06/07/16 00:00	1.54E+00	117.19	0.00	0.00			
13	TH-230	TRG	06/07/16 00:00	1.56E+00	88.47	0.00	0.00			
14	TH-230	TRG	06/07/16 00:00	1.60E+00	103.18	0.00	0.00			
15	TH-230	TRG	06/07/16 00:00	1.61E+00	98.32	0.00	0.00			

Run	Analysis Code	Eberline Analytical Work Order	Client
1	ThISO	16-06043	Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-230	LCS	06/24/16 08:31		A_Spec	Alpha_003	170.02	4.84 E+02	2.00 E-03	16.1
02	TH-230	MBL	06/24/16 08:31		A_Spec	Alpha_004	170.02	7.47 E+00	9.00 E-03	18.8
03	TH-230	DUP	06/24/16 08:31		A_Spec	Alpha_010	170.02	5.00 E+01	6.00 E-03	19
04	TH-230	DO	06/24/16 08:31		A_Spec	Alpha_011	170.02	5.86 E+01	1.40 E-02	19.9
05	TH-230	TRG	06/24/16 08:31		A_Spec	Alpha_012	170.02	9.80 E+01	6.00 E-03	19.2
06	TH-230	TRG	06/24/16 08:31		A_Spec	Alpha_014	170	1.21 E+02	1.40 E-02	18.2
07	TH-230	TRG	06/24/16 08:31		A_Spec	Alpha_015	170.02	2.71 E+02	3.00 E-03	22.9
08	TH-230	TRG	06/24/16 11:30		A_Spec	Alpha_059	170	1.52 E+02	1.00 E-03	17.2
09	TH-230	TRG	06/24/16 11:30		A_Spec	Alpha_060	170	1.74 E+02	2.00 E-03	15.2
10	TH-230	TRG	06/24/16 11:56		A_Spec	Alpha_033	170	1.24 E+02	3.00 E-03	17.6
11	TH-230	TRG	06/24/16 11:56		A_Spec	Alpha_034	170	1.54 E+02	4.00 E-03	17.7
12	TH-230	TRG	06/24/16 11:56		A_Spec	Alpha_035	170	1.34 E+02	1.00 E-03	15.8
13	TH-230	TRG	06/24/16 11:56		A_Spec	Alpha_036	170	1.31 E+02	6.00 E-03	18.7
14	TH-230	TRG	06/24/16 11:56		A_Spec	Alpha_037	170	1.28 E+02	1.00 E-03	16.5
15	TH-230	TRG	06/24/16 11:56		A_Spec	Alpha_038	170	1.66 E+02	3.00 E-03	16

Preliminary Data Report & Analytical Calculations

Work Order: 16-06043-ThISO-1

Client: Auxier & Associates, Inc.
Eberline Analytical Work Order: 16-06043
Analysis Code: ThISO
Run: 1

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	5.69E+00	8.77E-01	5.51E-02	4.77E+00	119.18	OK		OK	
02	TH-232	MBL	BLANK	pCi/g	1.10E-02	2.75E-02	5.73E-02					OK	OK
03	TH-232	DUP	CP-5031 00-02	pCi/g	3.40E-01	1.86E-01	1.26E-01				INV	OK	
04	TH-232	DO	CP-5031 00-02	pCi/g	1.94E-01	1.35E-01	1.22E-01					OK	
05	TH-232	TRG	CP-5031 02-05	pCi/g	6.39E-01	1.78E-01	3.57E-02					OK	
06	TH-232	TRG	CP-5031 05-10	pCi/g	1.17E+00	2.78E-01	6.35E-02					OK	
07	TH-232	TRG	CP-5031 10-15	pCi/g	1.53E+00	3.29E-01	4.08E-02					OK	
08	TH-232	TRG	CP-5010 00-02	pCi/g	8.44E-01	2.18E-01	4.94E-02					OK	
09	TH-232	TRG	CP-5010 02-05	pCi/g	1.17E+00	3.14E-01	6.09E-02					OK	
10	TH-232	TRG	CP-5010 05-09	pCi/g	1.49E+00	3.55E-01	4.28E-02					OK	
11	TH-232	TRG	CP-5010 09-15	pCi/g	1.06E+00	2.58E-01	5.35E-02					OK	
12	TH-232	TRG	CP-5012 00-02	pCi/g	1.19E+00	2.86E-01	4.88E-02					OK	
13	TH-232	TRG	CP-5012 02-05	pCi/g	9.80E-01	2.61E-01	5.39E-02					OK	
14	TH-232	TRG	CP-5012 05-09	pCi/g	1.20E+00	2.97E-01	4.67E-02					OK	
15	TH-232	TRG	CP-5012 09-15	pCi/g	1.39E+00	3.41E-01	5.49E-02					OK	

Client: Auxier & Associates, Inc.
Eberline Analytical Work Order: 16-06043
Analysis Code: ThISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	TH-232	LCS	06/09/16 00:00	1.00E+00	124.48	0.00	0.00			
02	TH-232	MBL	06/09/16 00:00	1.50E+00	98.18	0.00	0.00			
03	TH-232	DUP	06/01/16 00:00	1.54E+00	45.26	0.00	0.00			
04	TH-232	DO	06/01/16 00:00	1.51E+00	45.37	0.00	0.00			
05	TH-232	TRG	06/01/16 00:00	1.54E+00	104.94	0.00	0.00			
06	TH-232	TRG	06/01/16 00:00	1.54E+00	105.61	0.00	0.00			
07	TH-232	TRG	06/01/16 00:00	1.53E+00	88.53	0.00	0.00			
08	TH-232	TRG	06/07/16 00:00	1.53E+00	114.69	0.00	0.00			
09	TH-232	TRG	06/07/16 00:00	1.58E+00	94.96	0.00	0.00			
10	TH-232	TRG	06/07/16 00:00	1.54E+00	95.11	0.00	0.00			
11	TH-232	TRG	06/07/16 00:00	1.51E+00	111.10	0.00	0.00			
12	TH-232	TRG	06/07/16 00:00	1.54E+00	117.19	0.00	0.00			
13	TH-232	TRG	06/07/16 00:00	1.56E+00	88.47	0.00	0.00			
14	TH-232	TRG	06/07/16 00:00	1.60E+00	103.18	0.00	0.00			
15	TH-232	TRG	06/07/16 00:00	1.61E+00	98.32	0.00	0.00			

Run	Analysis Code	Eberline Analytical Work Order	Client
1	ThISO	16-06043	Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-232	LCS	06/24/16 08:31		A_Spec	Alpha_003	170.02	4.31 E+02	1.00 E-03	16.1
02	TH-232	MBL	06/24/16 08:31		A_Spec	Alpha_004	170.02	1.15 E+00	5.00 E-03	18.8
03	TH-232	DUP	06/24/16 08:31		A_Spec	Alpha_010	170.02	1.70 E+01	6.00 E-03	19
04	TH-232	DO	06/24/16 08:31		A_Spec	Alpha_011	170.02	9.98 E+00	6.00 E-03	19.9
05	TH-232	TRG	06/24/16 08:31		A_Spec	Alpha_012	170.02	7.48 E+01	1.00 E-03	19.2
06	TH-232	TRG	06/24/16 08:31		A_Spec	Alpha_014	170	1.31 E+02	9.00 E-03	18.2
07	TH-232	TRG	06/24/16 08:31		A_Spec	Alpha_015	170.02	1.80 E+02	2.00 E-03	22.9
08	TH-232	TRG	06/24/16 11:30		A_Spec	Alpha_059	170	9.63 E+01	4.00 E-03	17.2
09	TH-232	TRG	06/24/16 11:30		A_Spec	Alpha_060	170	1.00 E+02	3.00 E-03	15.2
10	TH-232	TRG	06/24/16 11:56		A_Spec	Alpha_033	170	1.45 E+02	1.00 E-03	17.6
11	TH-232	TRG	06/24/16 11:56		A_Spec	Alpha_034	170	1.19 E+02	0.00 E+00	17.7
12	TH-232	TRG	06/24/16 11:56		A_Spec	Alpha_035	170	1.27 E+02	3.00 E-03	15.8
13	TH-232	TRG	06/24/16 11:56		A_Spec	Alpha_036	170	9.55 E+01	3.00 E-03	18.7
14	TH-232	TRG	06/24/16 11:56		A_Spec	Alpha_037	170	1.23 E+02	2.00 E-03	16.5
15	TH-232	TRG	06/24/16 11:56		A_Spec	Alpha_038	170	1.32 E+02	3.00 E-03	16

Count Room Report
Client: Auxier Associates, Inc.

16-06043-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	0.4521	10.1542		0.00		
02	MBL	BLANK	06/09/16 00:00	1.5000	0.2243	5.0378		0.00		
03	DUP	CP-5031 00-02	06/01/16 00:00	1.5401	0.2253	5.0602		0.00		
04	DO	CP-5031 00-02	06/01/16 00:00	1.5117	0.2239	5.0288		0.00		
05	TRG	CP-5031 02-05	06/01/16 00:00	1.5398	0.2249	5.0513		0.00		
06	TRG	CP-5031 05-10	06/01/16 00:00	1.5406	0.2367	5.3163		0.00		
07	TRG	CP-5031 10-15	06/01/16 00:00	1.5285	0.2385	5.3567		0.00		
08	TRG	CP-5010 00-02	06/07/16 00:00	1.5334	0.2266	5.0894		0.00		
09	TRG	CP-5010 02-05	06/07/16 00:00	1.5800	0.2292	5.1478		0.00		
10	TRG	CP-5010 05-09	06/07/16 00:00	1.5413	0.2256	5.0670		0.00		
11	TRG	CP-5010 09-15	06/07/16 00:00	1.5085	0.2255	5.0647		0.00		
12	TRG	CP-5012 00-02	06/07/16 00:00	1.5439	0.2265	5.0872		0.00		
13	TRG	CP-5012 02-05	06/07/16 00:00	1.5603	0.2258	5.0715		0.00		
14	TRG	CP-5012 05-09	06/07/16 00:00	1.5969	0.2263	5.0827		0.00		
15	TRG	CP-5012 09-15	06/07/16 00:00	1.6081	0.2338	5.2511		0.00		

Eberline Services
Oak Ridge Laboratory

Spike and Tracer Worksheet

Internal Work Order	Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials
16-06043	1	ThISO	6/16/2016 14:38	JPACHELLA	JPM	

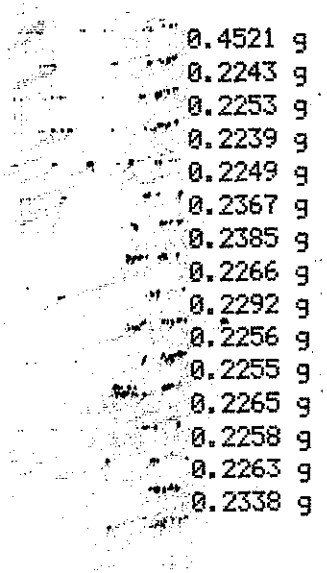
LCS & Matrix Spikes					LCS	MS	LCSD	MSD	LCS		MS		LCSD		MSD	
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	Volume Used (g)	Volume Used (g)	Volume Used (g)	Volume Used (g)	Known pCi	Error Estimate	Added pCi	Error Estimate	Known pCi	Error Estimate	Added pCi	Error Estimate
Th-228	Th-8b	103.560	6/16/2016	0.100	0.1023				4.77	0.172	0.00	0.000	0.00	0.000	0.00	0.000
Th-230	Th-1b	23.520	6/16/2016	0.500	0.5093				5.40	0.146	0.00	0.000	0.00	0.000	0.00	0.000
Th-232	Th-8b	103.560	6/16/2016	0.100	0.1023				4.77	0.172	0.00	0.000	0.00	0.000	0.00	0.000
Tc-99 MS	Tc-2a	22043.636	7/5/2014	0.1												

Tracers

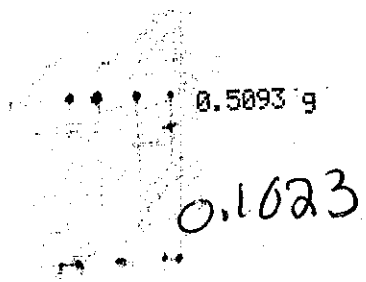
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition
01	Th-229	Th-18a	22.460	6/16/2016	0.4521	0.2200
02	Th-229	Th-18a	22.460	6/16/2016	0.2243	0.2200
03	Th-229	Th-18a	22.460	6/16/2016	0.2253	0.2200
04	Th-229	Th-18a	22.460	6/16/2016	0.2239	0.2200
05	Th-229	Th-18a	22.460	6/16/2016	0.2249	0.2200
06	Th-229	Th-18a	22.460	6/16/2016	0.2367	0.2200
07	Th-229	Th-18a	22.460	6/16/2016	0.2385	0.2200
08	Th-229	Th-18a	22.460	6/16/2016	0.2266	0.2200
09	Th-229	Th-18a	22.460	6/16/2016	0.2292	0.2200
10	Th-229	Th-18a	22.460	6/16/2016	0.2256	0.2200
11	Th-229	Th-18a	22.460	6/16/2016	0.2255	0.2200
12	Th-229	Th-18a	22.460	6/16/2016	0.2265	0.2200
13	Th-229	Th-18a	22.460	6/16/2016	0.2258	0.2200
14	Th-229	Th-18a	22.460	6/16/2016	0.2263	0.2200
15	Th-229	Th-18a	22.460	6/16/2016	0.2338	0.2200

Balance Printer Tapes

Tracer



LCS



Matrix Spike

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
16-06043	1	ThISO	grams	6/29/2016	JPACHELLA

Lab Fraction	Auxier & Associates, Inc. Client ID	Sample Type	Muffle Data Ratio Post/Pre	Dilution Data No of Dils	Dil Factor	Ratio	Aliquot Data Aliquot	Net Equiv	MS Aliquot Data Aliquot	Net Equiv	H-3 Solids Only 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-5031 00-02	DUP					1.5401E+00	1.5401E+00				
04	CP-5031 00-02	DO					1.5117E+00	1.5117E+00				
05	CP-5031 02-05	TRG					1.5398E+00	1.5398E+00				
06	CP-5031 05-10	TRG					1.5406E+00	1.5406E+00				
07	CP-5031 10-15	TRG					1.5285E+00	1.5285E+00				
08	CP-5010 00-02	TRG					1.5334E+00	1.5334E+00				
09	CP-5010 02-05	TRG					1.5800E+00	1.5800E+00				
10	CP-5010 05-09	TRG					1.5413E+00	1.5413E+00				
11	CP-5010 09-15	TRG					1.5085E+00	1.5085E+00				
12	CP-5012 00-02	TRG					1.5439E+00	1.5439E+00				
13	CP-5012 02-05	TRG					1.5603E+00	1.5603E+00				
14	CP-5012 05-09	TRG					1.5969E+00	1.5969E+00				
15	CP-5012 09-15	TRG					1.6081E+00	1.6081E+00				

Comments	

: 00178

Technician: JPachella Date: 6/16/16

Eberline Services - Oak Ridge
Prep Logbook
Version 2.0 8/1999

Rough Sample Preparation Log Book

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
16-06043	6/29/2016	6/15/2016	6/16/2016	6/17/2016	KSALLINGS

Eberline	Auxier & Associates, Inc.	Tare (g)	Gross (g)		Net (g)		Percent		Gamma		Special Info
Fraction	Client ID	Pan Wt	Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	
04	CP-5031 00-02	14.5500	838.6800	801.2600	824.1300	786.7100	4.54%	95.46%	0.0000	0.0000	
05	CP-5031 02-05	14.5300	761.5000	660.0900	746.9700	645.5600	13.58%	86.42%	0.0000	0.0000	
06	CP-5031 05-10	14.5800	526.5000	430.0300	511.9200	415.4500	18.84%	81.16%	0.0000	0.0000	
07	CP-5031 10-15	14.5500	584.7000	464.4400	570.1500	449.8900	21.09%	78.91%	0.0000	0.0000	
08	CP-5010 00-02	14.5100	719.7000	613.6600	705.1900	599.1500	15.04%	84.96%	0.0000	0.0000	
09	CP-5010 02-05	14.4900	706.1000	579.1800	691.6100	564.6900	18.35%	81.65%	0.0000	0.0000	
10	CP-5010 05-09	14.5700	572.5500	458.7700	557.9800	444.2000	20.39%	79.61%	0.0000	0.0000	
11	CP-5010 09-15	14.5200	490.0200	379.0600	475.5000	364.5400	23.34%	76.66%	0.0000	0.0000	
12	CP-5012 00-02	14.5300	718.9100	603.2200	704.3800	588.6900	16.42%	83.58%	0.0000	0.0000	
13	CP-5012 02-05	14.4700	989.4400	800.3200	974.9700	785.8500	19.40%	80.60%	0.0000	0.0000	
14	CP-5012 05-09	14.5600	451.8900	351.9500	437.3300	337.3900	22.85%	77.15%	0.0000	0.0000	
15	CP-5012 09-15	14.6200	456.9500	355.7800	442.3300	341.1600	22.87%	77.13%	0.0000	0.0000	

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

:00179

Technician: Kerry Seely Date:**Analysis: Rough Prep Logbook** **Analysis: ThISO Page No. 9697**

Apex-Alpha™

Sample Description: SPIKE
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001554
Batch Identification: 1606043A-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: 6/24/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 8:31:33 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.452 mL
Effective Efficiency: 0.2007 +/- 0.0125
Counting Efficiency: 0.1612 +/- 0.0029 on 12/11/2015 2:46:09 PM
Chem. Recovery Factor: 1.2448 +/- 0.0805

Control Certificate Name: NatTh_Th-8
Chem. Recov. of Control: TH-232 0.239391 +/- 0.020149
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		5.812	6.47	87.07	1.53	0.00E+000	3.0
TH-228		5.372	438.47	9.38	1.53	0.00E+000	23.0
TH-229	T	4.867	346.47	10.56	1.53	0.00E+000	10.3
TH-230		4.632	483.66	8.92	0.34	0.00E+000	23.3
TH-232		3.960	430.83	9.45	0.17	0.00E+000	54.7

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.993	5850.00*	8.76E-002 +/- 7.70E-002	9.62E-002 +/- 1.17E-002
TH-228	0.996	5400.00*	5.79E+000 +/- 8.90E-001	9.39E-002 +/- 1.14E-002
TH-229	1.000	4872.00*	4.60E+000 +/- 5.60E-001	9.43E-002 +/- 1.15E-002
TH-230	0.991	4672.00*	6.40E+000 +/- 9.66E-001	6.32E-002 +/- 7.70E-003
TH-232	0.993	3997.00*	5.69E+000 +/- 8.77E-001	5.51E-002 +/- 6.71E-003

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6/27/16

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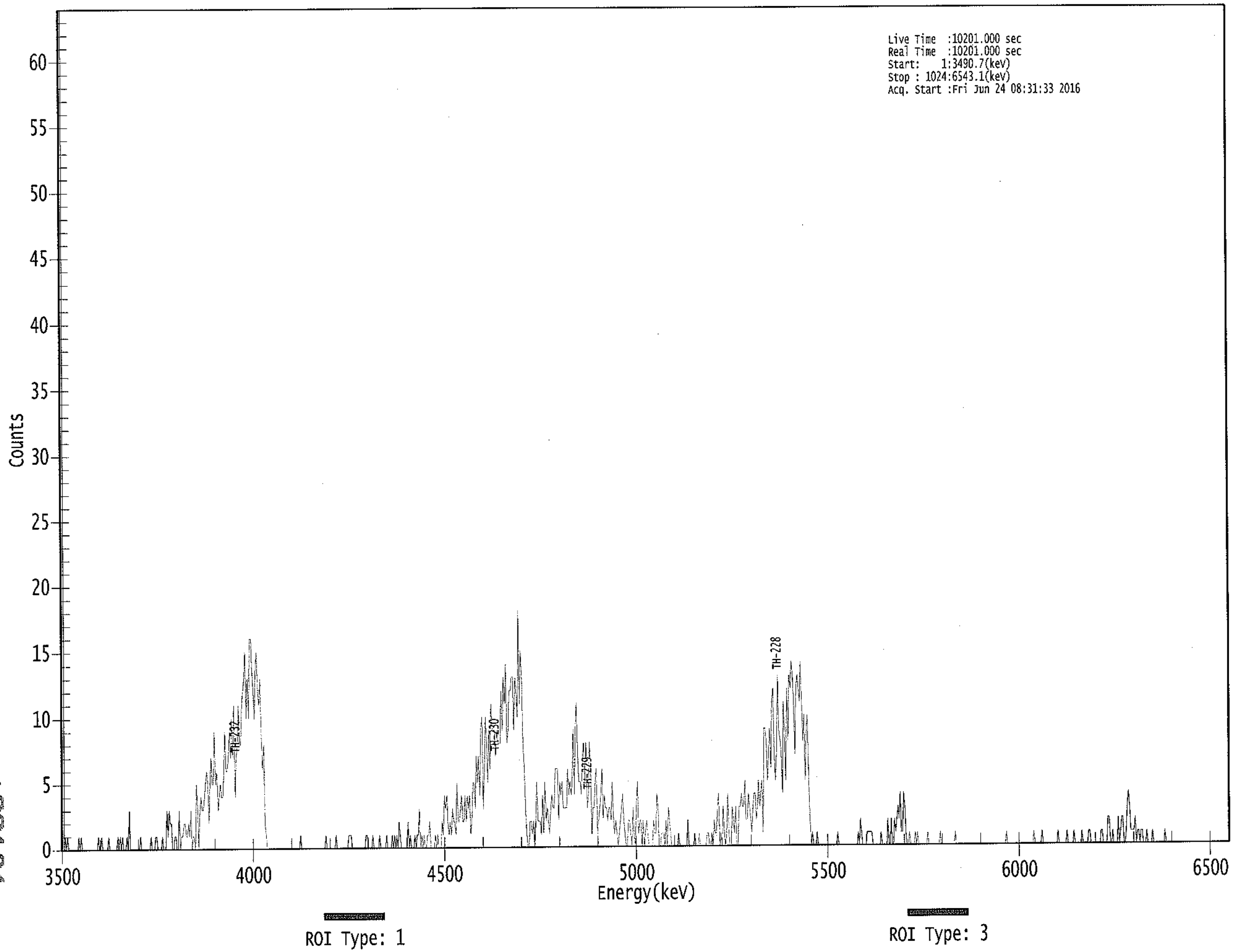

: 00181

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

Sample Title: 01

Elapsed Live time: 10201
Elapsed Real Time: 10201

Channel								
1:	10201	10201	0	1	0	1	0	0
9:	0	0	0	0	0	0	0	1
17:	0	1	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	1	0	0	1	0	0	0	0
41:	0	1	0	0	0	0	0	0
49:	0	1	0	1	0	1	0	0
57:	0	1	0	3	0	0	0	0
65:	0	0	0	0	0	1	0	0
73:	0	0	0	0	0	0	1	0
81:	0	0	1	1	0	0	0	0
89:	1	0	0	0	3	1	3	2
97:	2	0	0	1	1	0	0	3
105:	0	1	1	2	2	1	1	2
113:	1	3	0	1	1	0	5	3
121:	0	3	4	3	3	4	5	6
129:	5	2	5	7	5	5	9	5
137:	6	3	4	5	4	4	6	9
145:	6	6	7	9	7	10	7	11
153:	4	7	8	11	8	8	11	12
161:	13	15	10	13	10	16	16	14
169:	12	10	14	15	12	11	13	9
177:	6	8	2	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	1	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	1
233:	0	0	0	0	0	0	0	0
241:	1	0	0	0	0	0	0	0
249:	0	0	0	1	1	1	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	1	1	0	0	0	0
273:	1	0	0	0	0	0	1	0
281:	0	0	0	0	1	0	0	0
289:	0	1	0	1	0	1	0	2
297:	1	0	0	0	0	0	0	2
305:	0	1	0	0	0	1	0	1
313:	1	3	0	1	0	1	0	0
321:	1	1	2	0	0	0	0	1
329:	0	1	0	0	0	2	1	4
337:	3	4	2	1	2	1	3	2
345:	2	1	5	2	2	3	4	2
353:	2	4	2	4	3	4	1	2
361:	5	5	3	7	5	7	4	9

369:	10	3	6	10	8	5	9	6

Sample Title: 01

Channel								
377:	11	9	9	9	7	9	8	8
385:	8	12	9	13	11	14	8	9
393:	12	12	13	13	9	13	12	10
401:	18	11	15	13	8	6	3	1
409:	0	0	2	2	1	2	0	2
417:	5	2	2	2	1	4	1	5
425:	2	3	2	1	3	4	3	3
433:	6	6	6	2	5	4	5	3
441:	3	3	3	6	4	5	4	5
449:	9	4	9	11	7	5	5	4
457:	7	8	5	8	3	4	8	6
465:	1	3	3	5	6	1	2	3
473:	4	6	2	4	3	3	2	3
481:	3	2	5	2	1	2	1	0
489:	1	2	3	4	2	1	0	0
497:	2	2	1	0	3	1	0	3
505:	5	1	2	2	0	2	0	1
513:	2	1	0	0	0	0	2	1
521:	1	4	3	0	0	1	1	1
529:	0	2	0	3	2	1	0	0
537:	0	0	0	0	1	0	0	0
545:	0	0	0	0	2	0	0	0
553:	0	0	1	0	0	0	1	0
561:	0	0	0	0	0	1	1	0
569:	0	1	0	2	1	1	3	4
577:	0	1	0	3	1	0	1	4
585:	1	0	0	3	2	1	3	0
593:	0	3	3	4	3	3	5	2
601:	2	4	3	2	1	3	4	4
609:	2	3	5	3	4	5	1	9
617:	9	8	5	7	9	6	11	12
625:	7	5	7	13	9	8	7	4
633:	11	8	5	12	8	13	12	14
641:	13	11	7	12	13	12	11	14
649:	11	8	10	5	9	10	4	2
657:	0	1	0	0	0	1	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	1
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	1	0	2	1	0	0	0
705:	0	1	1	1	1	1	0	0
713:	0	0	0	0	0	1	0	0
721:	0	0	0	2	0	0	2	0
729:	0	2	1	2	3	2	4	1
737:	1	4	3	1	0	0	1	0
745:	0	0	0	1	0	1	0	0
753:	0	0	0	0	0	0	1	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	1	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	1	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	1	0	0	0	0
857:	0	0	1	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	1	0	0	0	0	0	0	0
881:	1	0	0	0	0	0	1	0
889:	0	0	0	0	0	1	0	0
897:	0	0	0	1	1	0	0	0
905:	0	0	0	0	0	0	1	1
913:	0	0	0	0	2	2	0	0
921:	1	0	0	0	0	2	0	1
929:	2	2	0	0	1	3	4	3
937:	1	1	1	1	2	0	1	1
945:	0	1	1	0	0	0	1	0
953:	0	0	0	1	0	0	0	0
961:	0	0	0	0	0	0	1	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

TCB 6/24/16

Apex-Alpha™

Sample Description: BLANK
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001552
Batch Identification: 1606043A-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: 6/24/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 8:31:34 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: 0.1845 +/- 0.0158
Counting Efficiency: 0.1879 +/- 0.0033 on 12/11/2015 2:46:10 PM
Chem. Recovery Factor: 0.9818 +/- 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		5.882	3.32	119.77	0.68	0.00E+000	2.9
TH-228		5.298	-0.68	304.42	0.68	0.00E+000	0.0
TH-229	T	4.885	157.98	15.65	1.02	0.00E+000	8.8
TH-230		4.614	7.47	79.85	1.53	0.00E+000	2.9
TH-232		3.958	1.15	249.60	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	0.995	5850.00*	3.26E-002 +/- 3.94E-002	5.54E-002 +/- 9.30E-003
TH-228	0.947	5400.00*	-6.52E-003 +/- 1.99E-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	0.982	4672.00*	7.17E-002 +/- 5.85E-002	6.82E-002 +/- 1.14E-002
TH-232	0.992	3997.00*	1.10E-002 +/- 2.75E-002	5.73E-002 +/- 9.63E-003

AG 6/27/16

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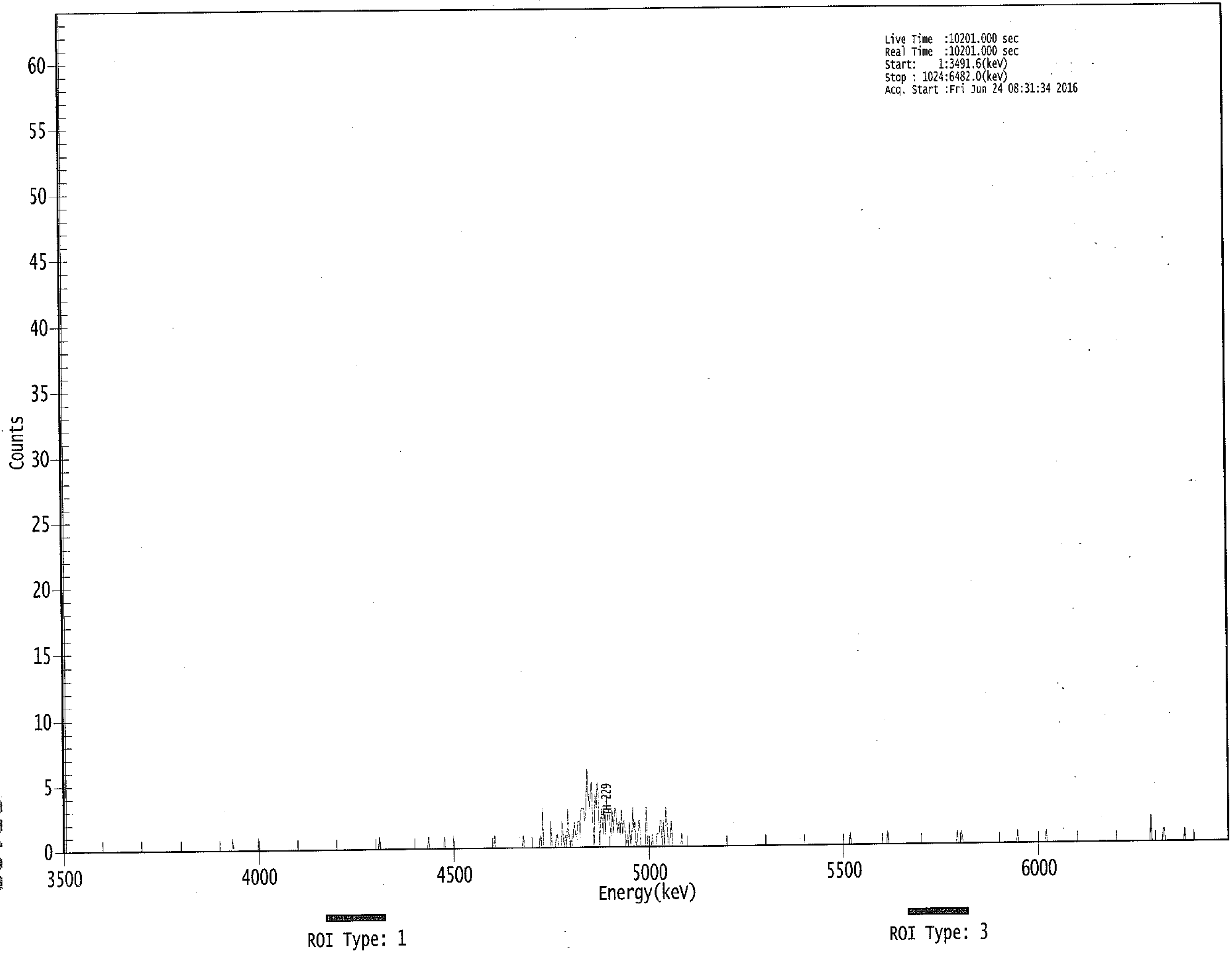


****
***** S P E C T R A L D A T A R E P O R T *****
****

Sample Title: 02

Elapsed Live time: 10201
Elapsed Real Time: 10201

Channel								
1:	10201	10201	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	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	0	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:	0	0	0	0	0	0	0	0
169:	0	0	0	1	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	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	1	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:	1	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	1	0
337:	0	0	0	0	0	0	1	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	0	0

Sample Title: 02

Channel								
377:	0	0	1	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	1	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	1	0	3	0	0	0
425:	0	0	0	2	0	0	0	0
433:	1	1	0	0	0	2	1	0
441:	1	0	3	1	0	1	0	1
449:	2	1	1	2	2	1	3	3
457:	3	2	3	6	4	3	4	5
465:	2	0	4	3	5	4	0	2
473:	3	1	3	1	4	2	3	2
481:	1	3	1	3	3	2	1	2
489:	1	3	1	2	2	0	1	0
497:	2	0	1	3	1	2	0	0
505:	2	2	0	0	0	0	0	3
513:	0	0	0	0	1	0	0	0
521:	1	1	1	2	2	0	2	0
529:	3	2	0	0	1	2	0	0
537:	0	0	0	0	0	0	1	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	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:	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	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	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	1	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:	1	0	0	0	1	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	1	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	1	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	2	0	0	0	0	0
961:	0	0	0	0	0	1	1	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	1	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

VCP 6/24/16

Apex-Alpha™

Sample Description: CP-5031 00-02 DUP
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001552
Batch Identification: 1606043A-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: 1.540E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/1/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 8:31:35 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: 0.0858 +/- 0.0104
Counting Efficiency: 0.1895 +/- 0.0033 on 12/11/2015 2:46:10 PM
Chem. Recovery Factor: 0.4526 +/- 0.0556

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		5.816	10.47	65.55	1.53	0.00E+000	4.4
TH-228		5.354	5.09	119.72	3.91	0.00E+000	2.9
TH-229	T	4.886	73.81	23.03	1.19	0.00E+000	8.0
TH-230		4.638	49.98	28.05	1.02	0.00E+000	3.4
TH-232		3.925	16.98	49.21	1.02	0.00E+000	2.9

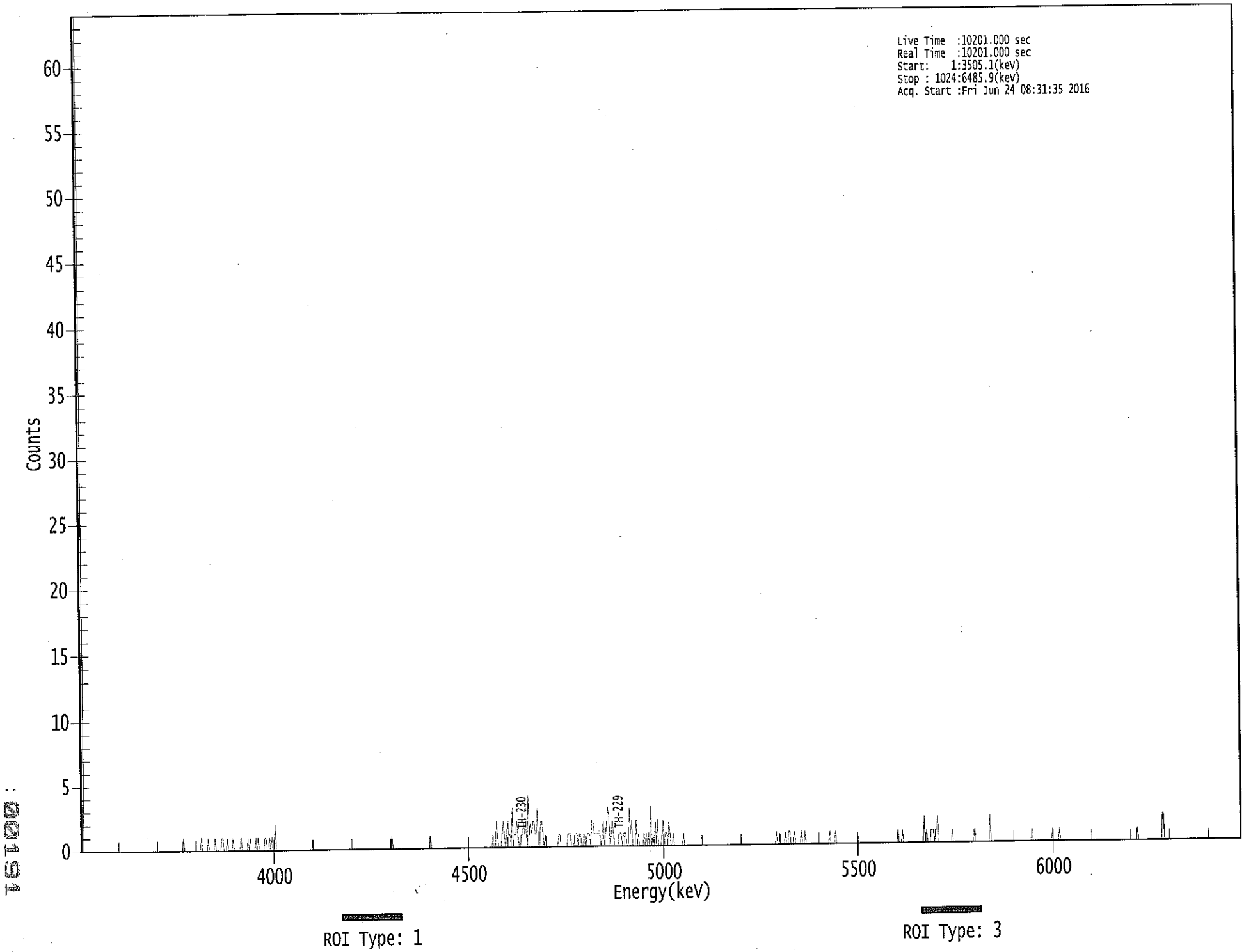
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.994	5850.00*	2.16E-001 +/- 1.50E-001	1.46E-001 +/- 3.49E-002
TH-228	0.989	5400.00*	1.04E-001 +/- 1.28E-001	2.00E-001 +/- 4.76E-002
TH-229	0.999	4872.00*	1.49E+000 +/- 3.54E-001	1.33E-001 +/- 3.16E-002
TH-230	0.994	4672.00*	1.00E+000 +/- 3.69E-001	1.27E-001 +/- 3.01E-002
TH-232	0.974	3997.00*	3.40E-001 +/- 1.86E-001	1.26E-001 +/- 3.01E-002

AG 6/27/16

0000155265.CNF



16709:

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

Sample Title: 03

Elapsed Live time: 10201
Elapsed Real Time: 10201

Channel								
1:	10201	10201	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	1	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	1	0	0	0	0	0
113:	1	0	0	0	0	0	1	0
121:	0	0	0	0	1	1	0	0
129:	0	1	0	0	0	0	1	0
137:	0	0	0	0	0	1	0	0
145:	0	0	0	1	0	1	0	0
153:	0	0	1	0	1	0	0	0
161:	0	0	1	1	0	0	1	0
169:	1	0	0	2	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	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	1	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	1	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	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	1	0	0	2	1

369:	0	0	0	1	2	1	0	1

Sample Title: 03

Channel								
377:	2	1	1	0	3	0	1	1
385:	2	1	0	0	1	1	2	1
393:	2	0	4	1	2	1	2	2
401:	1	1	3	0	0	2	2	1
409:	0	1	0	0	0	0	0	0
417:	0	0	0	0	0	1	1	0
425:	0	0	0	0	0	1	1	1
433:	0	0	0	1	1	1	0	1
441:	1	0	0	1	0	0	1	1
449:	1	0	2	2	1	1	1	1
457:	1	1	0	1	2	0	1	2
465:	3	2	0	1	2	1	0	0
473:	0	0	1	1	1	0	1	1
481:	1	0	0	3	1	2	0	0
489:	0	2	0	1	0	0	0	0
497:	1	0	1	0	1	0	3	0
505:	1	0	2	0	2	0	0	0
513:	1	2	0	1	1	0	2	1
521:	0	0	1	0	0	0	0	0
529:	0	0	0	1	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	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	1	0	0
617:	0	0	0	0	0	1	0	0
625:	1	1	0	0	0	1	0	0
633:	0	0	0	1	0	0	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	1	0	0	0
665:	0	1	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:	1	0	0	0	1	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	2
745:	0	1	0	0	0	1	1	1
753:	0	1	1	2	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	1	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	1	1	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	2	0	0	0	0	0	0

Sample Title: 03

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	1	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	1	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	1	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	2	2	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

KB 6/24/16

Apex-Alpha™

Sample Description: CP-5031 00-02
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001552
Batch Identification: 1606043A-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: 1.512E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/1/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 8:31:36 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: 0.0902 +/- 0.0108
Counting Efficiency: 0.1989 +/- 0.0034 on 12/11/2015 2:46:14 PM
Chem. Recovery Factor: 0.4537 +/- 0.0548

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		5.866	2.11	217.71	2.89	0.00E+000	2.6
TH-228		5.373	7.94	83.79	3.06	0.00E+000	2.6
TH-229	T	4.889	77.13	22.63	1.87	0.00E+000	5.3
TH-230		4.650	58.62	26.20	2.38	0.00E+000	5.3
TH-232		3.980	9.98	65.65	1.02	0.00E+000	2.6

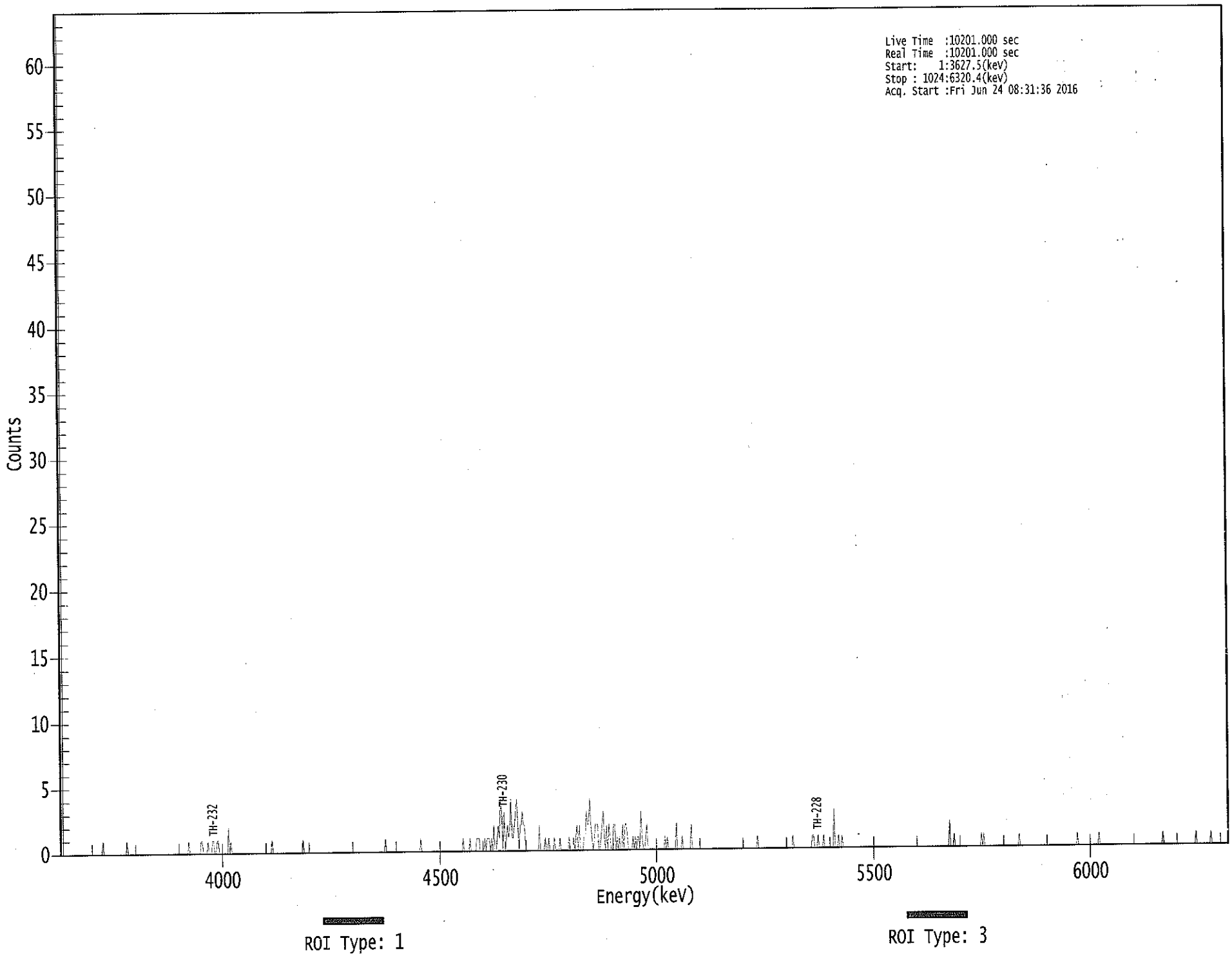
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	4.21E-002 +/- 9.22E-002	1.75E-001 +/- 4.10E-002
TH-228	0.996	5400.00*	1.58E-001 +/- 1.37E-001	1.78E-001 +/- 4.16E-002
TH-229	0.999	4872.00*	1.51E+000 +/- 3.53E-001	1.48E-001 +/- 3.46E-002
TH-230	0.997	4672.00*	1.14E+000 +/- 4.01E-001	1.60E-001 +/- 3.74E-002
TH-232	0.998	3997.00*	1.94E-001 +/- 1.35E-001	1.22E-001 +/- 2.87E-002

AG 6/27/16

0000155266.CNF



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

Sample Title: 04

Elapsed Live time: 10201
Elapsed Real Time: 10201

Channel								
1:	10201	10201	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	1	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	1	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:	1	0	0	0	0	0	0	0
121:	0	0	0	1	1	0	0	0
129:	0	1	0	0	0	1	1	0
137:	0	1	1	0	0	0	0	0
145:	0	0	0	2	0	1	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	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	1	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	1	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	1	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	1	0	0	0	0
321:	0	0	0	0	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:	1	0	0	0	0	0	1	0
361:	0	0	0	0	1	1	1	0

369:	0	0	0	1	0	1	1	1

Sample Title: 04

Channel								
377:	0	1	0	2	0	0	1	2
385:	1	4	3	0	3	0	1	2
393:	1	2	4	1	1	2	3	4
401:	2	0	2	2	3	2	2	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	2	0	0	0	0
425:	1	0	0	1	0	0	0	0
433:	1	0	0	0	0	1	0	0
441:	0	0	0	0	0	1	0	0
449:	0	1	0	1	2	0	2	0
457:	0	0	1	1	3	2	2	4
465:	2	1	0	1	2	2	2	0
473:	0	1	2	3	1	0	2	0
481:	2	1	0	0	2	2	0	1
489:	0	1	0	0	2	0	2	2
497:	1	0	0	0	0	1	0	1
505:	0	1	1	0	3	1	0	0
513:	1	2	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	1	0	1	0	0	0	0
537:	0	0	0	2	0	0	0	0
545:	1	0	0	0	0	0	0	0
553:	2	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	1	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	0	0	0
641:	0	1	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	1	1	0	0	0	1
665:	0	0	0	0	1	0	0	0
673:	0	0	0	0	0	3	0	0
681:	0	1	0	0	1	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	2	0	0	0	1	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	1	0

Sample Title: 04

Channel								
809:	1	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	1
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	1	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	1	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	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	1	0	0	0	0	0
1001:	0	0	0	0	0	0	0	1
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KB 6/24/16

Apex-Alpha™

Sample Description: CP-5031 02-05
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001552
Batch Identification: 1606043A-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: 1.540E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/1/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 8:31:37 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: 0.2014 +/- 0.0166
Counting Efficiency: 0.1919 +/- 0.0033 on 12/11/2015 2:46:15 PM
Chem. Recovery Factor: 1.0494 +/- 0.0883

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		5.855	4.13	119.29	1.87	0.00E+000	3.0
TH-228		5.395	74.79	23.05	2.21	0.00E+000	7.0
TH-229	T	4.888	172.98	14.95	1.02	0.00E+000	6.7
TH-230		4.643	97.98	19.92	1.02	0.00E+000	7.0
TH-232		3.973	74.83	22.69	0.17	0.00E+000	4.7

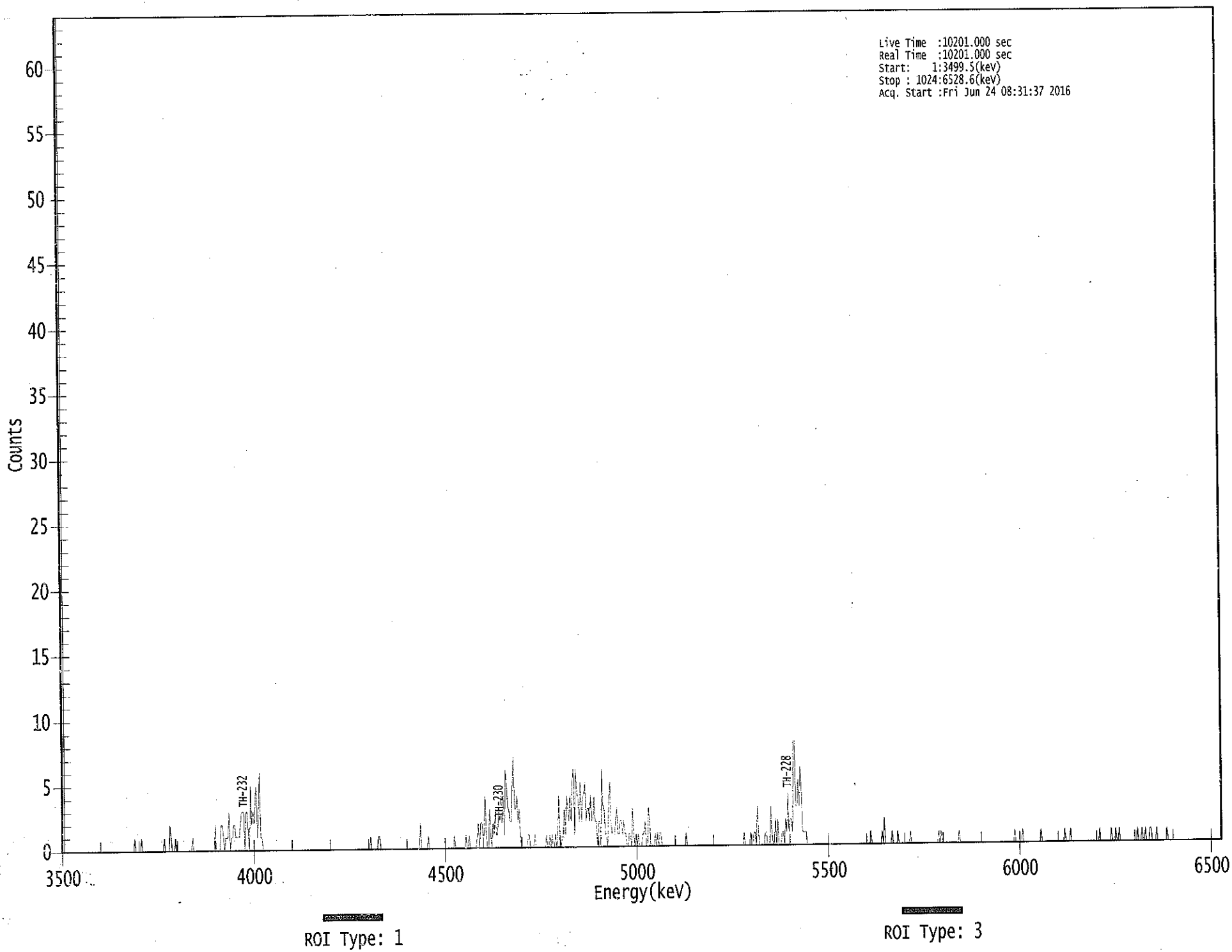
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	3.63E-002 +/- 4.36E-002	6.65E-002 +/- 1.07E-002
TH-228	1.000	5400.00*	6.54E-001 +/- 1.84E-001	6.99E-002 +/- 1.13E-002
TH-229	0.999	4872.00*	1.48E+000 +/- 2.40E-001	5.41E-002 +/- 8.73E-003
TH-230	0.996	4672.00*	8.38E-001 +/- 2.15E-001	5.39E-002 +/- 8.70E-003
TH-232	0.997	3997.00*	6.39E-001 +/- 1.78E-001	3.57E-002 +/- 5.75E-003

AG 6/27/16

0000155267.CNF



10200 :

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

Sample Title: 05

Elapsed Live time: 10201
Elapsed Real Time: 10201

Channel								
1:	10201	10201	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:	1	0	0	0	0	0	1	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	1	0	0	0	0	2
97:	1	0	0	0	1	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	1	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	2
137:	0	0	0	0	2	2	1	0
145:	1	1	1	3	0	1	1	2
153:	2	1	1	1	1	2	3	3
161:	3	0	3	3	1	0	5	2
169:	3	2	4	5	1	3	6	1
177:	1	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	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:	1	0	0	0	0	0	0	1
281:	1	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	2	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	1	0	0	0	0	0
353:	0	0	0	0	1	0	0	1
361:	0	0	0	0	0	0	1	2

369:	0	2	2	1	1	4	1	0

Sample Title: 05

Channel								
377:	0	3	1	0	2	1	3	1
385:	1	3	2	4	2	4	1	6
393:	5	3	3	2	2	5	7	3
401:	3	4	2	3	1	0	0	0
409:	0	0	0	1	1	0	0	0
417:	0	1	0	0	0	0	0	0
425:	0	0	0	1	0	0	1	0
433:	1	0	0	1	0	1	4	1
441:	0	1	1	3	1	4	3	2
449:	4	2	5	6	1	6	4	4
457:	2	5	2	4	4	5	2	3
465:	3	2	4	2	2	4	2	2
473:	0	2	2	0	6	3	3	1
481:	1	0	3	5	2	1	1	1
489:	2	3	1	1	2	2	1	2
497:	1	1	0	0	1	1	0	3
505:	1	0	1	0	1	0	0	0
513:	1	1	2	0	0	3	2	0
521:	0	0	0	1	0	1	0	1
529:	1	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	1	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	1	0	0	0	0	0	1
609:	0	0	1	1	0	3	1	0
617:	0	0	0	0	1	1	0	0
625:	0	3	1	0	0	2	0	2
633:	0	0	0	1	1	0	2	1
641:	4	1	2	2	1	8	8	3
649:	3	5	3	6	4	1	1	1
657:	1	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	1	0	0	0	0	0	0
721:	0	0	0	1	0	2	0	0
729:	0	0	0	0	1	0	0	0
737:	0	1	0	0	0	0	0	0
745:	0	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	0	0	0	0	1	0	1
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

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:	1	0	0	0	0	0	0	1
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	1
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	1	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	1	0	0	0	0
921:	0	0	0	0	0	1	0	0
929:	0	1	0	0	1	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	1	0	0	0
953:	1	0	0	1	0	0	0	1
961:	1	0	0	0	0	1	0	0
969:	0	0	0	0	0	0	1	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™

XB 6/24/16

Sample Description: CP-5031 05-10
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001552
Batch Identification: 1606043A-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: 1.541E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/1/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 8:31:38 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.237 mL
Effective Efficiency: 0.1926 +/- 0.0160
Counting Efficiency: 0.1824 +/- 0.0032 on 12/11/2015 2:46:16 PM
Chem. Recovery Factor: 1.0561 +/- 0.0894

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		5.827	10.47	65.55	1.53	0.00E+000	4.4
TH-228		5.381	137.43	16.97	3.57	0.00E+000	10.7
TH-229	T	4.874	174.09	15.05	3.91	0.00E+000	5.1
TH-230		4.646	120.62	18.05	2.38	0.00E+000	15.8
TH-232		3.963	131.47	17.21	1.53	0.00E+000	4.5

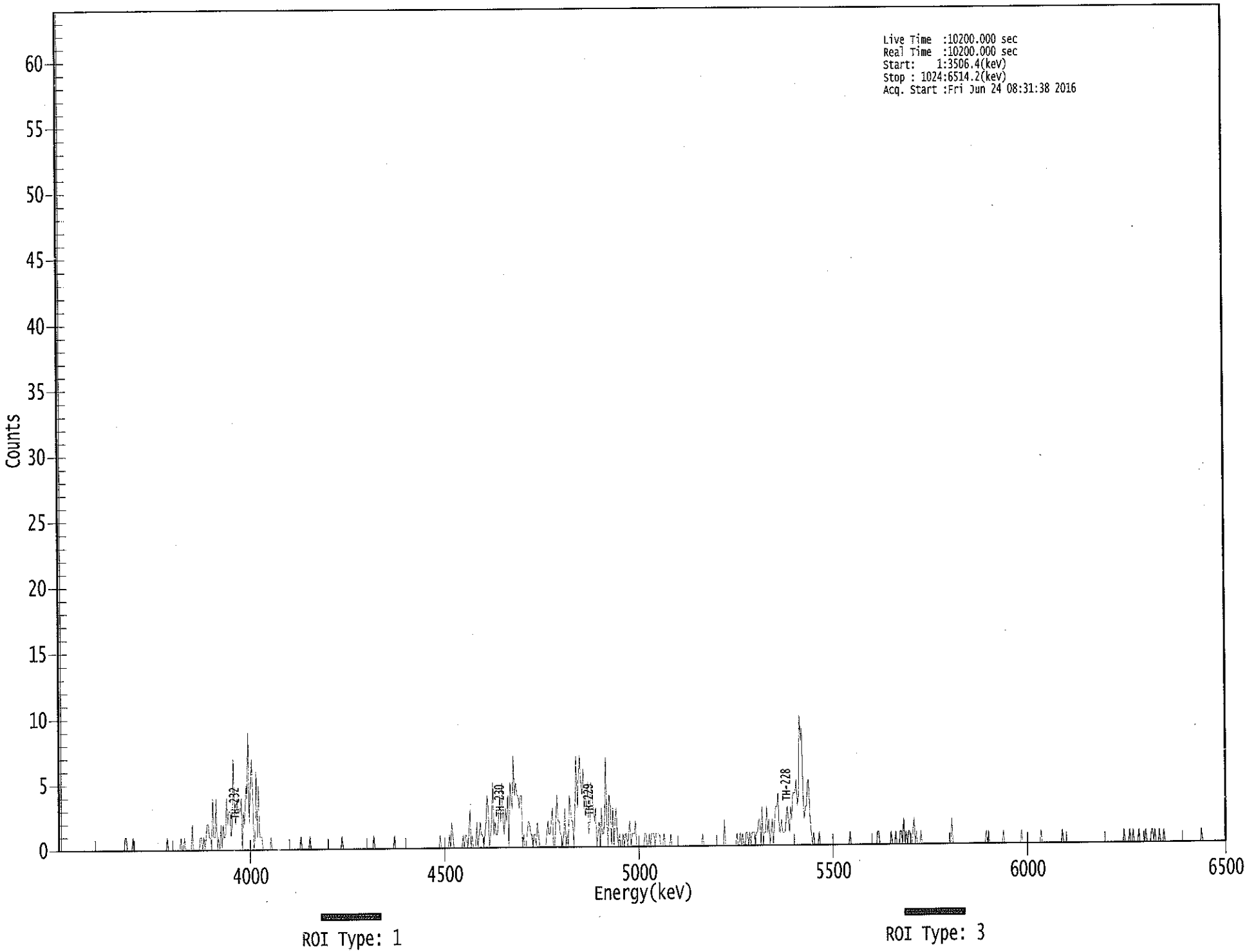
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.997	5850.00*	9.61E-002 +/- 6.49E-002	6.52E-002 +/- 1.06E-002
TH-228	0.998	5400.00*	1.26E+000 +/- 2.95E-001	8.62E-002 +/- 1.40E-002
TH-229	1.000	4872.00*	1.56E+000 +/- 2.53E-001	8.74E-002 +/- 1.42E-002
TH-230	0.996	4672.00*	1.08E+000 +/- 2.62E-001	7.33E-002 +/- 1.19E-002
TH-232	0.994	3997.00*	1.17E+000 +/- 2.78E-001	6.35E-002 +/- 1.03E-002

AG 6/27/16

0000155268.CNF



002200 :

****
***** 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	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	1	1	0	0	0	0
65:	0	1	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	1
97:	0	0	0	0	0	0	0	0
105:	0	0	0	1	0	0	1	0
113:	0	0	0	0	0	2	0	0
121:	0	0	0	0	1	1	0	1
129:	0	1	2	2	1	1	0	4
137:	1	1	4	0	1	0	2	0
145:	2	1	1	4	2	3	3	1
153:	2	7	3	2	4	3	3	3
161:	4	0	3	2	5	4	9	2
169:	5	7	4	0	1	6	1	5
177:	1	1	1	0	0	0	0	0
185:	0	0	1	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	1	0	0	0
217:	0	0	0	0	1	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:	1	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	1	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	1	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	1	0
345:	2	1	0	0	0	0	0	0
353:	0	0	1	0	1	1	0	1
361:	3	0	1	0	0	0	2	0

369:	1	2	1	1	0	1	2	4

Sample Title: 06

Channel								
377:	3	0	1	2	5	1	2	1
385:	1	2	4	2	5	2	1	3
393:	2	4	0	5	4	3	7	4
401:	5	4	4	3	4	4	0	1
409:	0	0	1	2	2	1	1	0
417:	1	1	0	2	1	0	0	0
425:	0	0	0	1	2	1	1	2
433:	3	0	0	2	4	2	2	1
441:	1	0	1	3	0	1	0	4
449:	3	2	2	0	3	7	3	5
457:	7	5	4	6	3	4	3	5
465:	1	2	5	4	3	2	3	0
473:	1	2	0	3	1	1	2	7
481:	2	0	4	3	0	3	0	2
489:	3	1	0	1	0	0	1	0
497:	1	1	0	1	2	0	1	1
505:	1	2	0	0	0	0	0	0
513:	0	1	1	0	0	1	0	1
521:	1	1	0	1	1	1	1	0
529:	0	0	1	0	0	0	0	0
537:	1	0	0	0	0	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	1	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	2
585:	0	0	0	0	0	0	0	0
593:	0	0	1	0	0	1	0	1
601:	0	0	1	1	0	1	0	1
609:	1	1	0	1	1	2	2	0
617:	3	0	1	1	3	1	2	0
625:	1	2	0	2	3	3	4	1
633:	1	2	1	1	1	2	3	2
641:	1	3	2	4	4	4	5	3
649:	4	10	8	9	4	2	3	3
657:	5	5	2	1	0	1	0	0
665:	0	0	1	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	1	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	1	1	0
721:	0	0	0	0	0	0	0	0
729:	0	1	0	0	0	1	0	0
737:	0	1	1	0	2	0	1	0
745:	1	1	0	0	1	2	0	1
753:	0	0	0	1	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	2	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	1	0	1	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	1	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	1	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	1	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	1
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	1	0	0
937:	0	0	1	0	0	1	0	0
945:	0	0	1	0	0	0	0	0
953:	1	0	0	0	0	1	1	0
961:	1	0	0	0	1	0	0	0
969:	1	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	1	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KCB 6/24/16

Apex-Alpha™

Sample Description: CP-5031 10-15
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001552
Batch Identification: 1606043A-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: 1.528E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/1/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 8:31:39 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.238 mL
Effective Efficiency: 0.2030 +/- 0.0162
Counting Efficiency: 0.2292 +/- 0.0039 on 12/11/2015 2:46:18 PM
Chem. Recovery Factor: 0.8853 +/- 0.0723

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		5.878	11.64	61.25	1.36	0.00E+000	3.0
TH-228		5.347	220.32	13.23	0.68	0.00E+000	4.7
TH-229	T	4.880	184.83	14.42	0.17	0.00E+000	10.8
TH-230		4.614	271.49	11.91	0.51	0.00E+000	10.0
TH-232		3.937	179.66	14.64	0.34	0.00E+000	3.5

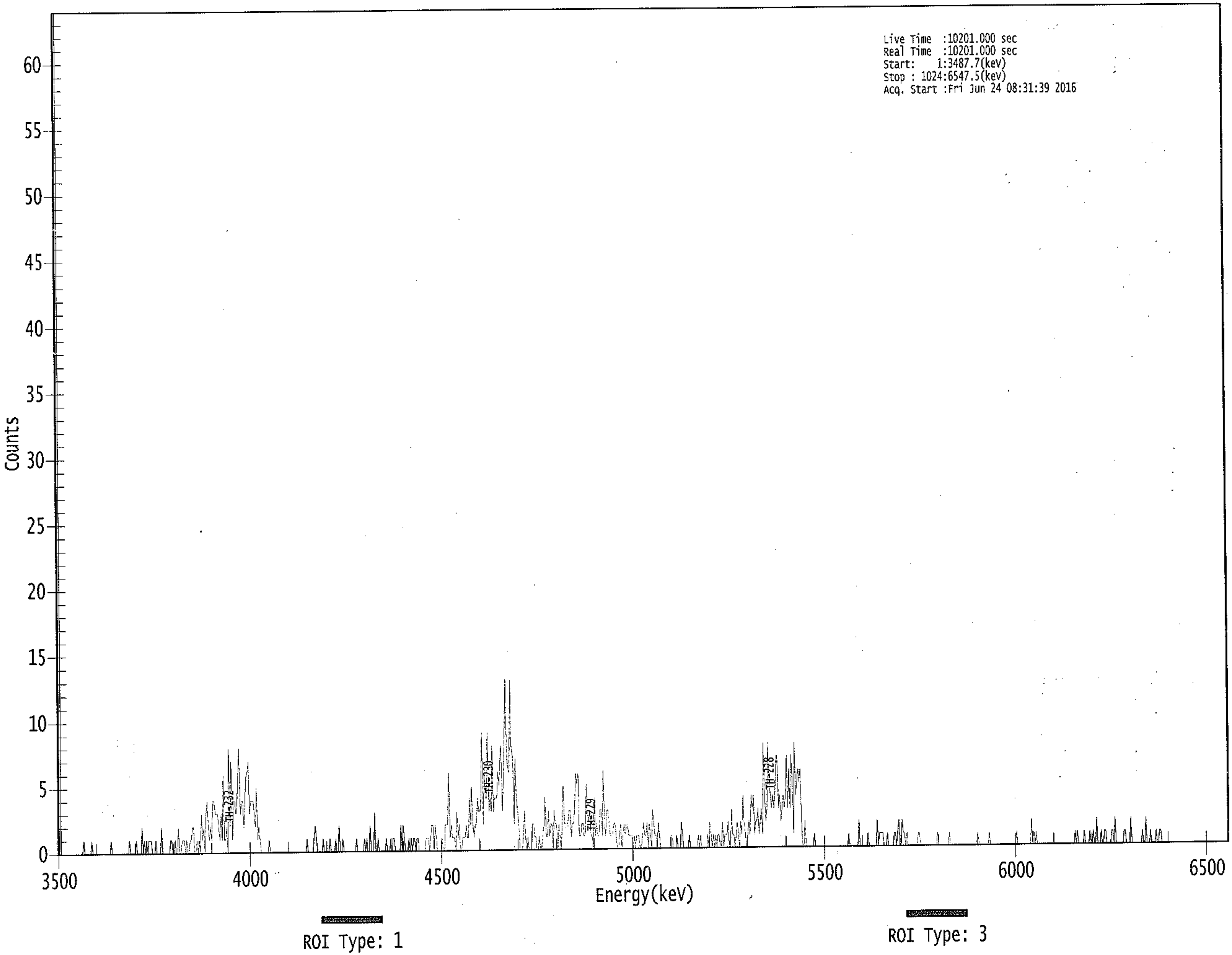
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.996	5850.00*	1.02E-001 +/- 6.46E-002	6.02E-002 +/- 9.42E-003
TH-228	0.986	5400.00*	1.93E+000 +/- 3.95E-001	4.93E-002 +/- 7.72E-003
TH-229	1.000	4872.00*	1.59E+000 +/- 2.48E-001	3.58E-002 +/- 5.61E-003
TH-230	0.983	4672.00*	2.32E+000 +/- 4.57E-001	4.49E-002 +/- 7.03E-003
TH-232	0.981	3997.00*	1.53E+000 +/- 3.29E-001	4.08E-002 +/- 6.39E-003

AG 6/27/16

0000155269.CNF



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

Sample Title: 07

Elapsed Live time: 10201
Elapsed Real Time: 10201

Channel								
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	1	0
25:	0	0	0	0	0	1	0	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	1	0
65:	0	0	0	0	1	0	0	0
73:	0	2	0	1	0	1	0	1
81:	1	1	0	0	0	1	0	0
89:	0	0	2	0	0	0	0	0
97:	0	0	1	1	0	0	1	0
105:	0	2	0	0	1	1	1	0
113:	1	0	0	1	1	2	2	0
121:	0	1	0	1	0	3	1	2
129:	0	3	4	2	1	2	1	4
137:	4	3	3	3	2	1	3	1
145:	6	1	1	2	0	8	2	7
153:	1	4	4	3	4	6	8	3
161:	4	4	2	4	6	6	7	3
169:	4	4	4	3	2	5	1	2
177:	1	0	0	0	0	0	0	0
185:	1	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	1	0	0	0	0	0	1
225:	2	1	0	0	0	0	0	1
233:	0	0	0	0	0	1	0	0
241:	0	0	1	0	0	2	0	0
249:	1	0	0	0	0	0	0	0
257:	0	0	0	0	1	0	0	0
265:	0	0	0	1	0	1	0	0
273:	2	0	0	0	3	0	0	1
281:	0	0	0	0	0	0	1	0
289:	0	0	1	0	1	1	0	0
297:	0	0	0	2	0	2	1	0
305:	0	0	1	0	1	0	1	1
313:	0	1	1	0	0	0	0	0
321:	0	1	1	1	0	1	2	2
329:	0	2	1	0	0	0	0	1
337:	0	0	2	2	2	6	1	2
345:	1	1	1	0	3	1	2	0
353:	0	1	1	1	2	1	1	4
361:	2	5	2	1	2	2	4	3

369:	3	4	9	2	6	4	4	9

Sample Title: 07

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

Sample Title: 07

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	0
833:	0	0	0	0	0	1	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	2	0	1	0	1	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:	1	0	1	0	0	0	0	0
897:	1	0	0	0	0	1	0	0
905:	1	0	0	2	0	0	0	1
913:	0	0	1	1	0	0	0	0
921:	1	1	0	2	0	0	0	0
929:	0	0	0	1	1	0	0	0
937:	0	2	0	0	0	0	0	0
945:	0	0	0	1	0	0	2	0
953:	0	0	1	0	0	0	0	1
961:	0	0	1	1	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™

NB 6/24/16

Sample Description: CP-5010 00-02
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-TH
Sample Identification: 08
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: 1.533E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 11:30:31 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.227 mL
Effective Efficiency: 0.1973 +/- 0.0163
Counting Efficiency: 0.1720 +/- 0.0030 on 12/11/2015 11:36:25 AM
Chem. Recovery Factor: 1.1469 +/- 0.0970

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		5.801	23.32	41.27	0.68	0.00E+000	3.0
TH-228		5.393	59.32	25.62	0.68	0.00E+000	3.0
TH-229	T	4.894	170.66	15.02	0.34	0.00E+000	7.5
TH-230		4.674	151.83	15.92	0.17	0.00E+000	5.2
TH-232		3.993	96.32	20.05	0.68	0.00E+000	12.3

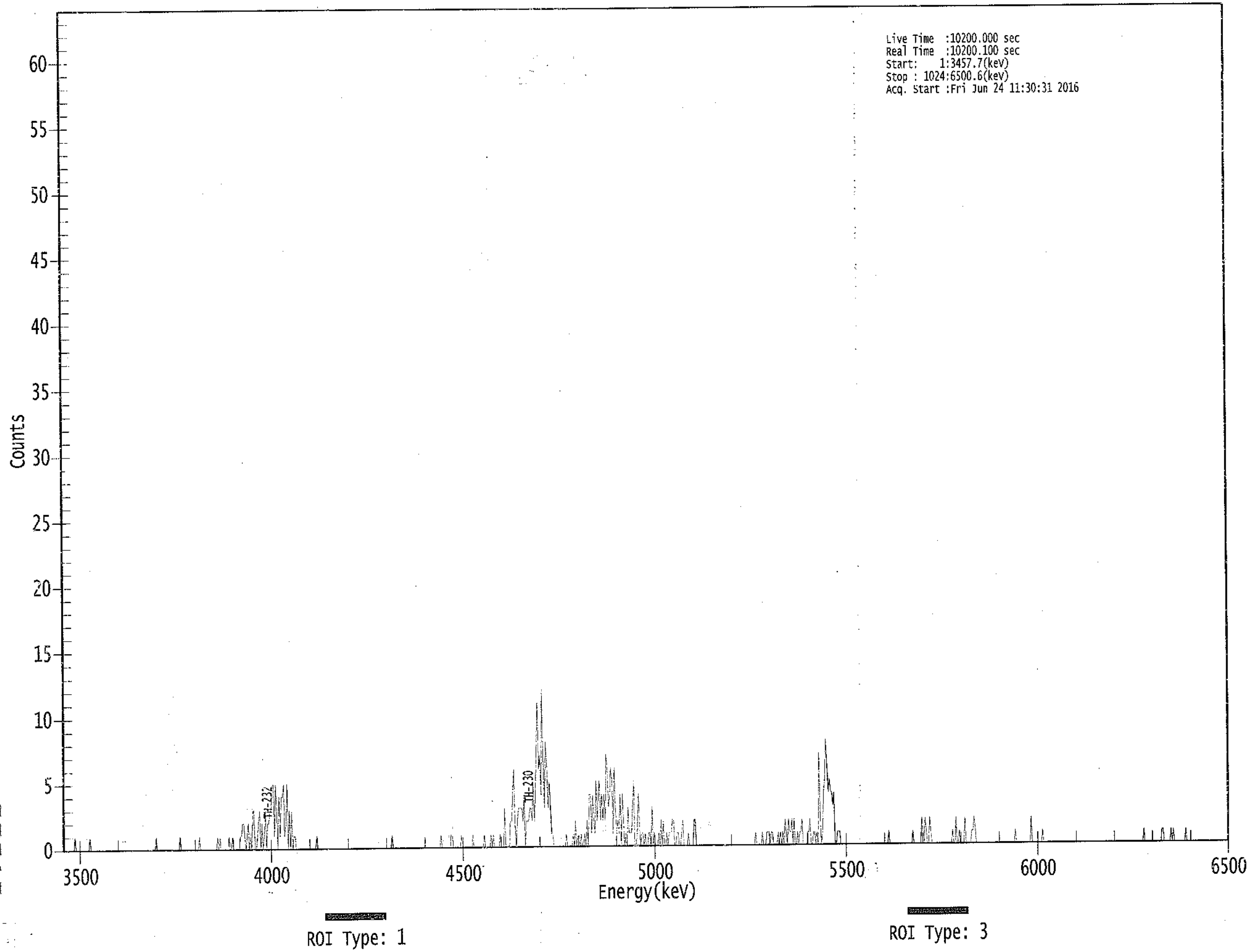
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.988	5850.00*	2.10E-001 +/- 9.30E-002	5.08E-002 +/- 8.22E-003
TH-228	1.000	5400.00*	5.29E-001 +/- 1.60E-001	5.03E-002 +/- 8.15E-003
TH-229	0.998	4872.00*	1.50E+000 +/- 2.43E-001	4.21E-002 +/- 6.82E-003
TH-230	1.000	4672.00*	1.33E+000 +/- 3.03E-001	3.66E-002 +/- 5.93E-003
TH-232	1.000	3997.00*	8.44E-001 +/- 2.18E-001	4.94E-002 +/- 8.01E-003

AG 6/27/16

0000155316.CNF



****
***** 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	0
9:	0	0	1	0	0	0	0	0
17:	0	0	0	0	0	0	0	1
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	1	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	1
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	1
137:	0	1	0	0	0	0	0	0
145:	0	1	0	0	1	0	0	0
153:	0	0	0	1	1	2	2	1
161:	0	1	2	0	1	0	3	3
169:	0	0	1	2	3	0	2	0
177:	1	3	0	2	2	3	3	5
185:	5	1	5	3	0	4	1	4
193:	4	5	1	2	5	0	3	0
201:	3	0	1	1	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	1	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:	1	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	1	0	0	0	0
337:	0	0	0	0	1	1	0	0
345:	0	0	0	0	0	1	0	0
353:	0	0	0	0	0	0	0	1
361:	0	0	0	0	0	0	0	0

369:	0	1	0	0	0	0	0	1

Sample Title: 08

Channel								
377:	0	1	0	0	0	0	0	1
385:	0	0	0	3	0	0	0	0
393:	2	2	4	6	2	0	2	3
401:	3	3	3	2	4	0	2	2
409:	2	3	3	2	5	2	4	8
417:	11	6	7	4	12	6	3	8
425:	6	3	5	3	1	1	0	0
433:	0	0	0	0	0	0	0	0
441:	0	1	0	0	0	0	0	1
449:	0	2	0	1	1	0	1	0
457:	0	1	0	2	0	4	4	1
465:	4	2	1	5	2	4	5	2
473:	4	2	4	2	7	6	3	4
481:	6	5	1	6	3	1	2	1
489:	4	0	4	2	0	1	0	3
497:	1	1	1	3	5	0	0	1
505:	4	2	0	1	1	0	1	0
513:	0	1	1	0	3	0	1	0
521:	0	0	1	0	2	0	2	0
529:	0	1	0	1	1	1	2	2
537:	0	0	1	1	0	0	1	2
545:	0	0	0	0	1	0	0	0
553:	0	2	2	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	1
609:	0	0	0	0	0	1	0	0
617:	0	1	1	1	0	1	1	0
625:	0	0	0	1	0	1	0	1
633:	0	2	1	0	2	1	1	2
641:	0	2	0	0	1	0	1	1
649:	2	0	0	0	0	1	1	2
657:	0	0	1	1	0	1	0	7
665:	2	0	1	4	5	8	6	4
673:	5	4	4	3	4	0	0	1
681:	1	1	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	1	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	1	0	0	0	0	0	0
753:	0	2	1	0	2	1	0	0
761:	2	1	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	1	0	0	2
785:	0	0	1	0	0	0	0	2
793:	0	0	0	0	0	1	1	2

801:	1	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	1	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	2	0	0	0	0	0	0
857:	0	0	0	1	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	1	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	1	1	0	0
969:	0	0	0	0	1	0	1	0
977:	0	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

Apex-Alpha™

PB 6/24/16

Sample Description: CP-5010 02-05
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-TH
Sample Identification: 09
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: 1.580E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 11:30:33 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.229 mL
Effective Efficiency: 0.1445 +/- 0.0136
Counting Efficiency: 0.1522 +/- 0.0027 on 12/11/2015 11:36:23 AM
Chem. Recovery Factor: 0.9496 +/- 0.0912

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		5.859	9.81	66.87	1.19	0.00E+000	3.0
TH-228		5.378	107.32	18.99	0.68	0.00E+000	19.7
TH-229	T	4.870	126.49	17.47	0.51	0.00E+000	6.7
TH-230		4.642	173.66	14.89	0.34	0.00E+000	23.0
TH-232		3.977	100.49	19.61	0.51	0.00E+000	7.4

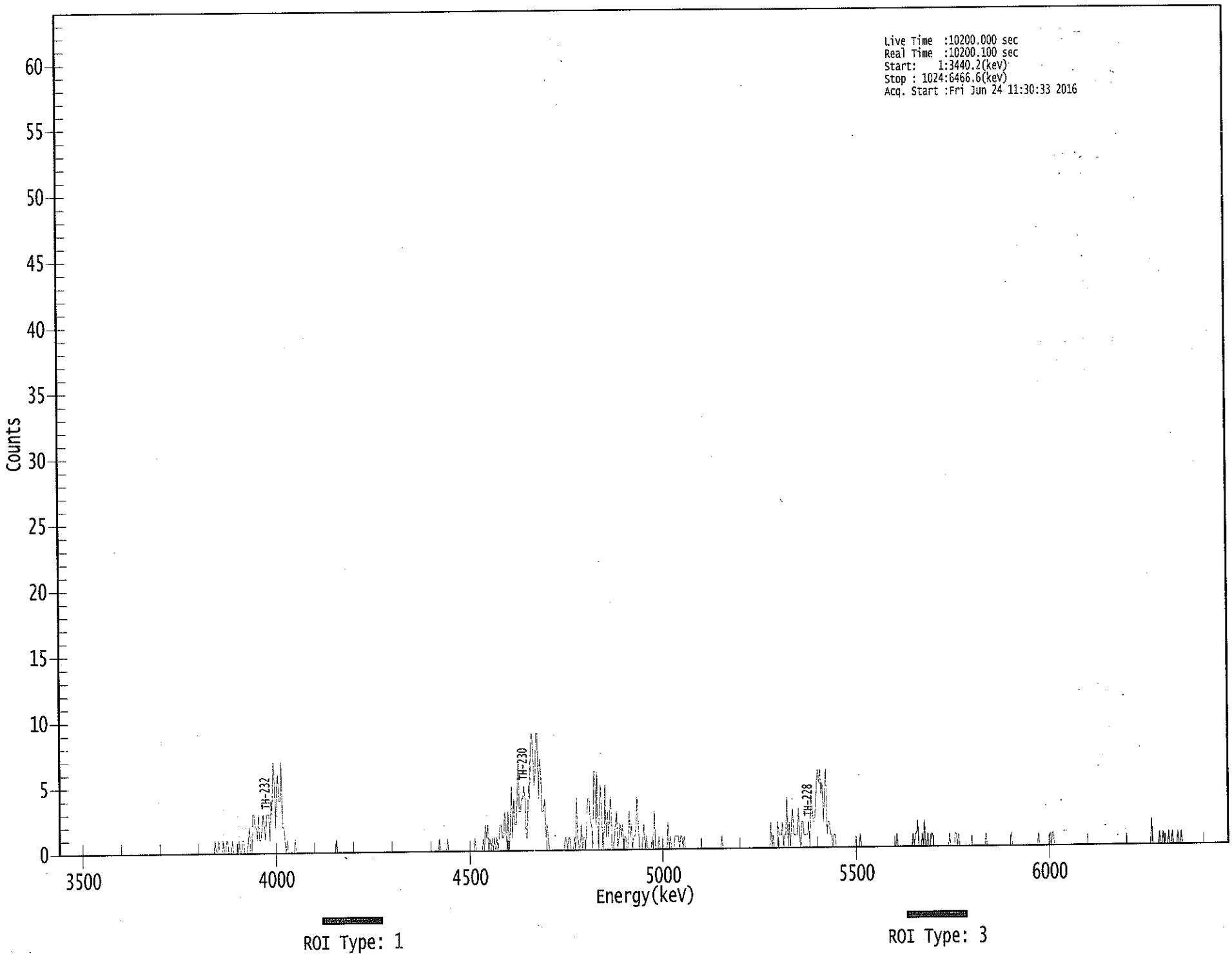
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.17E-001 +/- 8.11E-002	7.85E-002 +/- 1.45E-002
TH-228	0.997	5400.00*	1.27E+000 +/- 3.36E-001	6.66E-002 +/- 1.23E-002
TH-229	1.000	4872.00*	1.47E+000 +/- 2.73E-001	6.12E-002 +/- 1.13E-002
TH-230	0.995	4672.00*	2.02E+000 +/- 4.79E-001	5.56E-002 +/- 1.03E-002
TH-232	0.998	3997.00*	1.17E+000 +/- 3.14E-001	6.09E-002 +/- 1.13E-002

AEG 6/27/16

0000155317.CNF



T2200 :

****
***** SPECTRAL DATA REPORT *****
****

Sample Title: 09

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	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	0	0	0	0	0	0	0
137:	1	0	0	1	0	0	0	1
145:	0	0	1	1	0	0	0	1
153:	0	0	0	0	0	1	0	0
161:	1	1	0	0	0	1	2	0
169:	0	3	3	2	2	1	3	1
177:	1	2	3	2	1	3	3	3
185:	1	4	3	7	6	2	5	6
193:	4	4	7	2	2	1	0	1
201:	0	0	0	0	0	0	1	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	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	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	1	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	0	0	0	0	0
361:	0	0	0	1	0	0	0	0

369:	0	0	1	0	2	1	2	0

Sample Title: 09

Channel								
377:	1	0	1	0	1	0	1	0
385:	1	2	2	1	1	3	2	0
393:	3	0	2	5	1	4	2	2
401:	4	7	3	3	4	4	5	4
409:	1	1	5	4	8	9	8	5
417:	6	9	9	4	7	6	3	3
425:	4	1	2	1	0	0	0	0
433:	0	0	0	0	0	0	0	0
441:	0	0	1	1	0	1	1	0
449:	0	0	1	0	4	1	0	0
457:	2	0	1	1	0	3	4	4
465:	2	2	0	6	6	2	6	0
473:	3	5	3	0	1	5	1	3
481:	1	3	4	0	0	1	2	3
489:	0	1	2	1	2	0	1	1
497:	0	0	3	1	2	0	1	1
505:	2	4	2	0	0	0	1	2
513:	0	1	0	0	0	0	1	0
521:	3	0	0	0	1	0	0	0
529:	0	0	0	0	2	0	1	0
537:	0	0	1	1	1	1	0	1
545:	1	0	1	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	2	0
625:	1	0	0	0	2	1	1	1
633:	2	0	1	1	4	0	2	0
641:	2	3	1	1	1	1	3	1
649:	0	2	2	1	1	1	1	2
657:	0	4	3	2	2	3	5	6
665:	5	6	4	5	2	4	6	1
673:	2	2	1	1	0	1	1	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	1	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	1	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	1	0	1	1	2	0
753:	0	0	1	0	2	0	0	1
761:	0	0	1	1	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	1	0	0	0	0	1
785:	1	0	1	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	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:	1	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	1	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	2	0	0	0	0
961:	0	0	1	0	0	1	0	0
969:	0	0	1	0	0	1	0	0
977:	0	0	1	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

NB 6/24/16

Apex-Alpha™

Sample Description: CP-5010 05-09
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-TH
Sample Identification: 10
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: 1.541E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 11:56:45 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: 0.1675 +/- 0.0149
Counting Efficiency: 0.1762 +/- 0.0031 on 12/11/2015 8:20:59 AM
Chem. Recovery Factor: 0.9511 +/- 0.0863

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		5.897	10.15	64.46	0.85	0.00E+000	3.0
TH-228		5.372	156.98	15.70	1.02	0.00E+000	5.0
TH-229	T	4.881	144.32	16.36	0.68	0.00E+000	5.4
TH-230		4.638	124.49	17.61	0.51	0.00E+000	3.2
TH-232		3.969	144.83	16.30	0.17	0.00E+000	4.2

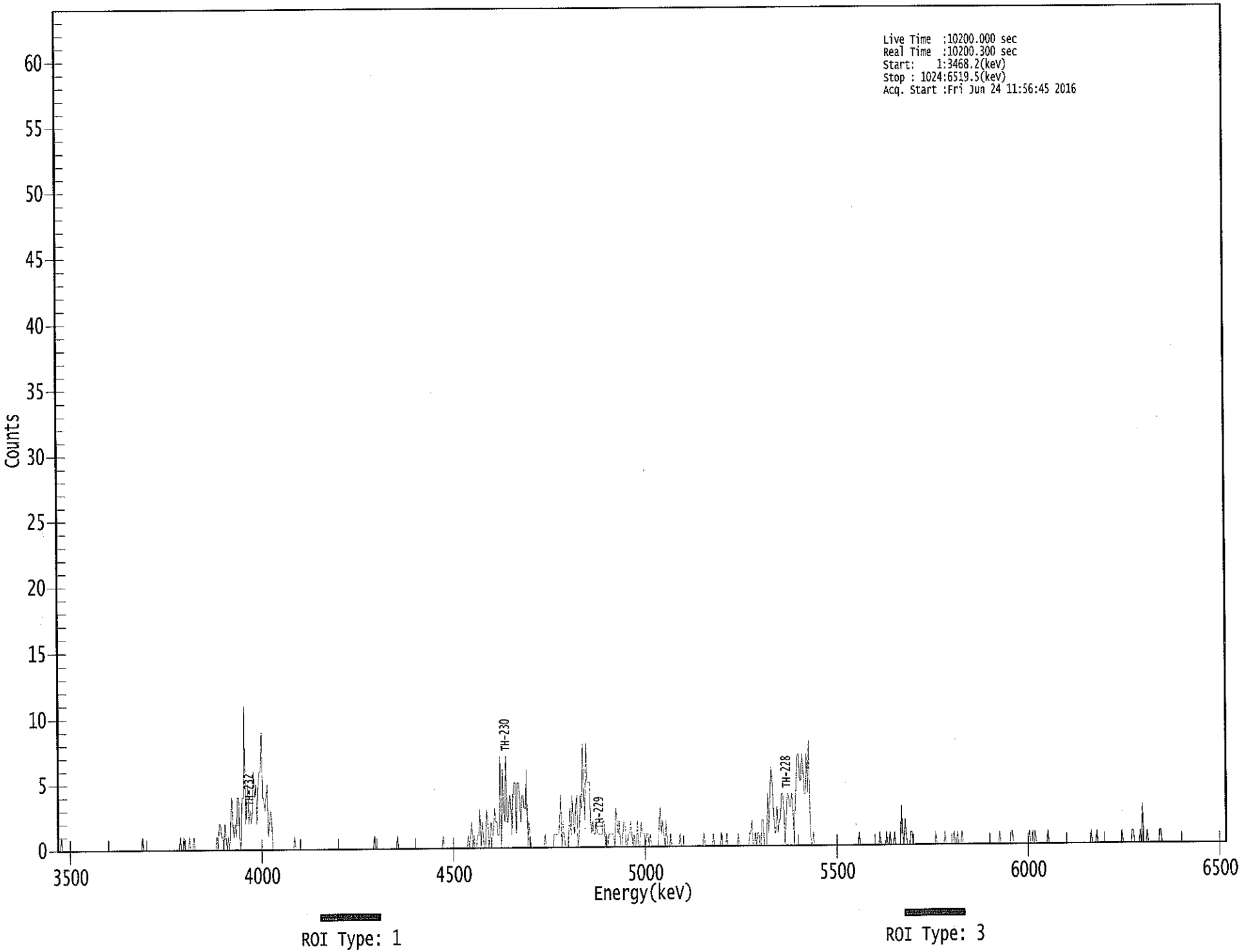
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.989	5850.00*	1.07E-001 +/- 7.14E-002	6.31E-002 +/- 1.10E-002
TH-228	0.996	5400.00*	1.64E+000 +/- 3.85E-001	6.58E-002 +/- 1.15E-002
TH-229	1.000	4872.00*	1.49E+000 +/- 2.60E-001	5.82E-002 +/- 1.01E-002
TH-230	0.994	4672.00*	1.28E+000 +/- 3.17E-001	5.39E-002 +/- 9.41E-003
TH-232	0.996	3997.00*	1.49E+000 +/- 3.55E-001	4.28E-002 +/- 7.47E-003

AG 6/27/16

0000155319.CNF



92200 :

****
***** 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:	0	0	0	1	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	1	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	1	0	0	1	0
113:	0	0	0	1	0	0	0	1
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	1	0	2	2	1
145:	1	0	2	1	0	1	0	2
153:	4	2	1	2	1	4	4	1
161:	0	4	4	11	2	3	5	2
169:	3	2	3	6	4	5	2	5
177:	6	6	9	4	4	3	4	5
185:	1	2	3	2	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	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	1	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	1	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	0	0
337:	0	1	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	1
361:	0	1	2	0	1	0	0	1

369:	1	3	0	2	1	0	0	3

Sample Title: 10

Channel								
377:	2	0	1	2	1	1	3	2
385:	2	1	1	7	0	6	3	2
393:	7	2	2	4	4	1	4	5
401:	5	1	5	5	4	2	4	4
409:	3	3	6	0	2	1	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	1	0	0	0	0	0
433:	0	0	1	1	1	1	1	2
441:	4	0	2	1	0	0	0	1
449:	3	1	4	2	1	3	4	0
457:	1	4	3	8	4	2	8	5
465:	5	5	2	1	2	1	1	2
473:	1	1	1	1	1	2	2	0
481:	1	0	1	1	1	1	1	0
489:	3	2	1	2	0	0	1	2
497:	2	0	0	1	1	2	1	0
505:	1	0	0	2	0	0	2	1
513:	1	1	0	1	1	0	1	0
521:	0	0	0	0	0	0	2	3
529:	1	2	1	0	2	0	0	0
537:	1	0	0	0	0	0	0	0
545:	1	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	1	0	0
569:	0	0	0	0	0	1	0	0
577:	0	0	0	0	1	0	0	0
585:	0	1	0	0	0	0	0	0
593:	0	0	0	1	0	0	0	0
601:	0	0	0	0	0	1	1	2
609:	0	0	1	0	1	1	0	0
617:	2	2	0	0	0	4	1	4
625:	6	5	3	1	1	3	1	2
633:	2	4	4	3	0	2	4	4
641:	3	3	4	3	0	3	5	7
649:	7	5	5	7	6	4	4	7
657:	4	8	2	0	0	1	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	0	0	0	0	0	0	1
721:	0	0	0	0	0	1	0	0
729:	1	0	0	0	1	0	0	0
737:	0	0	3	1	0	2	1	0
745:	0	0	1	1	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	1	0	0	0	0	0	0	0
777:	1	0	0	0	0	0	0	0
785:	1	0	0	1	0	0	0	1
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:	1	0	0	0	0	0	0	0
833:	0	0	1	1	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	1	0	0	1	0	1
857:	0	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	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	1	0	0	0	0	1	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	1	0	0	0	0
937:	0	0	0	0	1	1	0	0
945:	0	0	0	1	0	3	0	0
953:	0	1	0	0	0	0	0	0
961:	0	0	0	0	1	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 6/24/16

Apex-Alpha™

Sample Description: CP-5010 09-15
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-TH
Sample Identification: 11
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: 1.508E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 11:56:47 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: 0.1969 +/- 0.0163
Counting Efficiency: 0.1772 +/- 0.0031 on 12/11/2015 8:20:57 AM
Chem. Recovery Factor: 1.1110 +/- 0.0942

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		5.810	9.49	65.59	0.51	0.00E+000	3.0
TH-228		5.386	142.15	16.50	0.85	0.00E+000	11.9
TH-229	T	4.878	169.49	15.08	0.51	0.00E+000	9.5
TH-230		4.644	154.32	15.82	0.68	0.00E+000	19.5
TH-232		3.969	119.00	18.04	0.00	0.00E+000	5.2

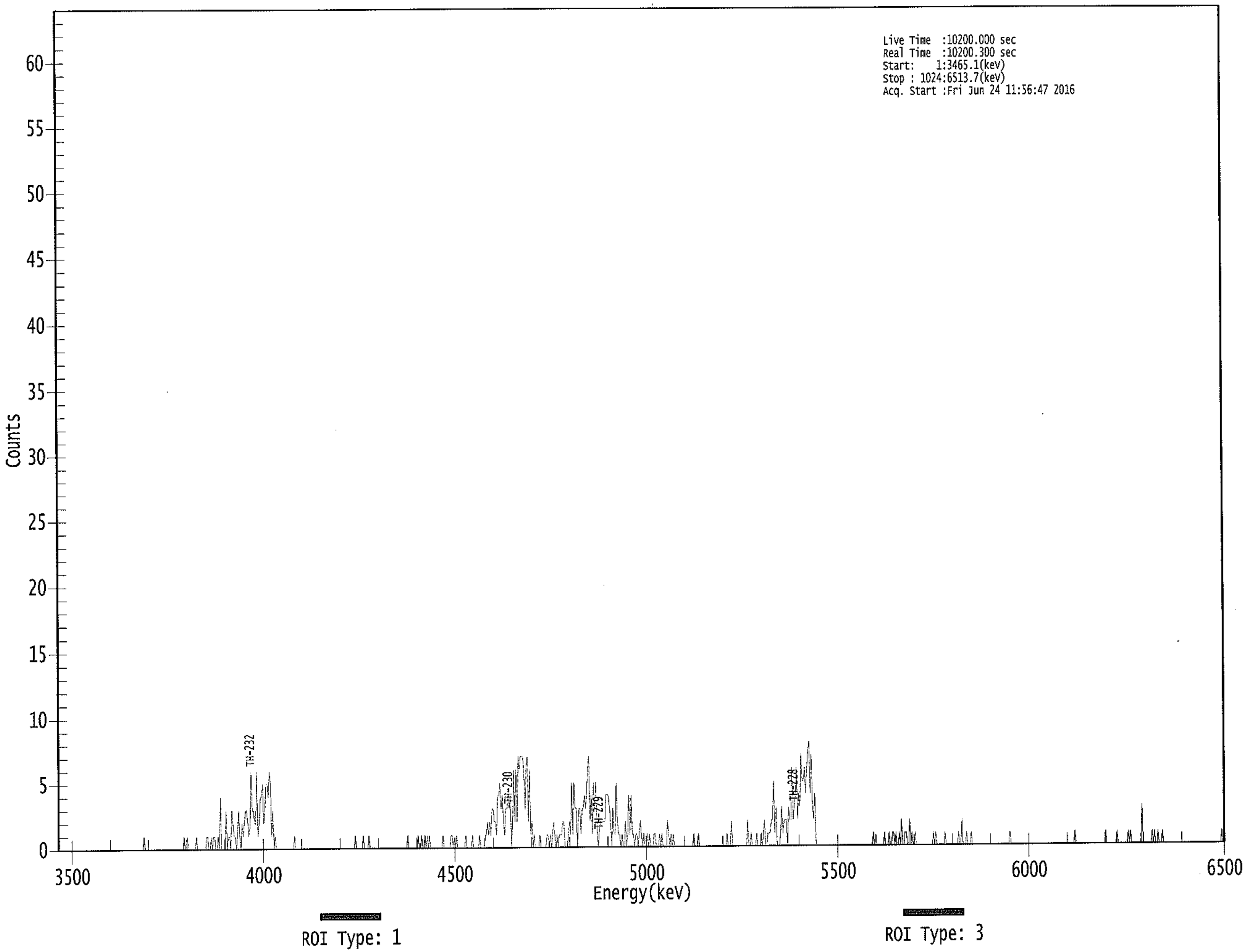
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.991	5850.00*	8.70E-002 +/- 5.88E-002	4.81E-002 +/- 7.82E-003
TH-228	0.999	5400.00*	1.29E+000 +/- 2.99E-001	5.44E-002 +/- 8.84E-003
TH-229	1.000	4872.00*	1.52E+000 +/- 2.47E-001	4.70E-002 +/- 7.65E-003
TH-230	0.996	4672.00*	1.38E+000 +/- 3.13E-001	5.04E-002 +/- 8.20E-003
TH-232	0.996	3997.00*	1.06E+000 +/- 2.58E-001	5.35E-002 +/- 8.70E-003

AG 6/27/16

0000155320.CNF



****
***** 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:	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	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	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	1	0
113:	0	1	0	0	0	0	0	0
121:	0	1	0	0	0	0	0	0
129:	0	0	1	1	0	0	1	0
137:	1	1	0	0	1	0	4	0
145:	0	0	0	3	0	1	1	0
153:	3	2	1	1	0	1	3	1
161:	0	2	1	2	3	3	2	1
169:	2	6	3	3	2	2	6	1
177:	2	4	4	5	2	3	5	5
185:	4	6	5	1	3	0	1	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	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	1	0	0	0
265:	0	0	0	1	0	0	0	0
273:	1	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	1	0	0	1	0
321:	0	1	0	1	0	1	0	0
329:	0	0	0	0	0	0	0	0
337:	0	1	0	0	0	0	0	0
345:	1	1	0	0	0	1	0	0
353:	0	0	0	0	0	1	0	0
361:	0	0	0	1	0	0	0	0

369:	0	1	0	0	0	0	1	1

Sample Title: 11

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

801:	1	0	0	0	0	0	0	0

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	1	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	1	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	1	0
921:	0	0	0	0	0	0	0	0
929:	1	0	0	0	0	0	0	0
937:	0	0	1	0	1	0	0	0
945:	0	0	0	0	0	0	3	0
953:	0	0	0	0	0	0	0	1
961:	0	1	0	0	1	0	0	0
969:	1	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	1	0	0	0

Apex-Alpha™

RB 6/28/16

Sample Description: CP-5012 00-02
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-TH
Sample Identification: 12
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: 1.544E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 11:56:48 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.227 mL
Effective Efficiency: 0.1846 +/- 0.0157
Counting Efficiency: 0.1575 +/- 0.0028 on 12/11/2015 8:20:56 AM
Chem. Recovery Factor: 1.1719 +/- 0.1019

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	12.64	58.50	1.36	0.00E+000	3.0
TH-228		5.389	107.32	18.99	0.68	0.00E+000	7.6
TH-229	T	4.882	159.66	15.53	0.34	0.00E+000	6.9
TH-230		4.646	133.83	16.96	0.17	0.00E+000	12.3
TH-232		3.984	127.49	17.40	0.51	0.00E+000	14.1

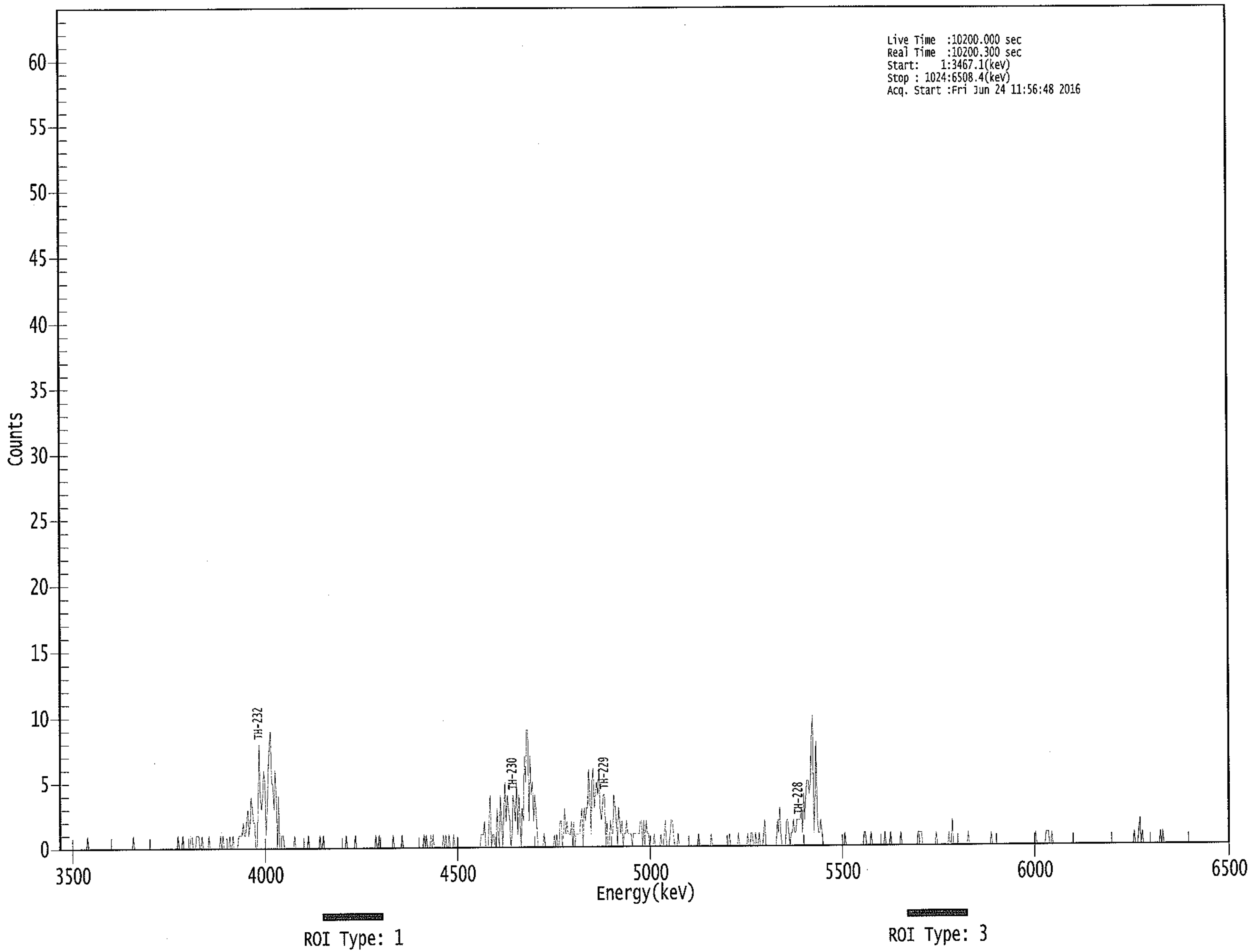
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	1.21E-001 +/- 7.34E-002	6.55E-002 +/- 1.09E-002
TH-228	0.999	5400.00*	1.02E+000 +/- 2.57E-001	5.34E-002 +/- 8.90E-003
TH-229	0.999	4872.00*	1.49E+000 +/- 2.49E-001	4.47E-002 +/- 7.45E-003
TH-230	0.996	4672.00*	1.25E+000 +/- 2.96E-001	3.89E-002 +/- 6.48E-003
TH-232	0.999	3997.00*	1.19E+000 +/- 2.86E-001	4.88E-002 +/- 8.14E-003

AG 6/27/16

0000155323.CNF



****
***** 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:	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:	1	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	1
105:	0	0	0	1	0	0	0	0
113:	0	0	1	1	0	0	0	1
121:	1	1	0	0	1	0	0	0
129:	0	0	1	0	0	0	0	0
137:	0	0	0	0	1	0	1	0
145:	0	0	0	0	1	0	0	1
153:	0	0	0	0	1	1	1	1
161:	2	1	1	2	3	1	2	4
169:	3	2	2	0	0	3	8	4
177:	3	4	6	5	1	3	6	8
185:	9	5	5	3	6	4	0	4
193:	0	0	1	1	0	0	0	0
201:	0	0	0	0	0	1	0	0
209:	0	0	0	0	0	0	0	0
217:	0	1	0	0	0	0	0	0
225:	0	0	0	1	0	0	1	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	1	0	0	0	0	0
257:	0	0	1	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	1	0	0	1
281:	0	0	0	0	0	0	0	0
289:	0	0	0	1	0	0	0	0
297:	0	0	0	1	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	1	0
321:	1	0	0	0	1	0	1	0
329:	0	0	0	0	0	0	0	1
337:	0	1	0	0	1	0	0	0
345:	1	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:	1	1	1	2	0	0	0	2

Sample Title: 12

Channel								
377:	4	0	1	1	0	0	3	1
385:	0	4	2	0	3	5	2	4
393:	3	2	0	1	4	3	2	5
401:	1	4	2	0	3	2	7	5
409:	9	9	2	7	4	5	2	4
417:	3	1	0	0	0	0	0	1
425:	0	0	0	0	0	0	0	0
433:	1	0	1	0	0	2	2	0
441:	1	3	1	2	1	1	1	2
449:	0	2	0	1	1	1	1	2
457:	3	0	3	2	3	3	6	4
465:	1	5	6	3	4	5	4	6
473:	3	2	3	4	4	0	2	0
481:	0	2	1	1	4	3	2	0
489:	3	2	1	2	0	1	1	2
497:	1	1	1	1	0	1	1	1
505:	1	1	1	2	2	0	2	0
513:	2	1	1	0	0	0	0	1
521:	0	0	0	0	0	1	0	0
529:	1	2	0	0	0	1	2	2
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	1	0
561:	0	0	0	0	0	0	0	0
569:	0	1	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	1	0	0	0	0	0	0
593:	0	1	0	0	0	0	0	0
601:	0	1	0	0	1	1	0	0
609:	1	0	0	1	0	0	0	1
617:	2	0	0	0	0	0	0	0
625:	0	0	0	2	1	3	1	0
633:	0	0	0	2	2	1	0	1
641:	1	2	1	1	2	2	2	2
649:	3	1	4	2	4	5	5	4
657:	5	8	10	1	4	8	2	1
665:	1	2	1	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	1	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	1
705:	1	0	0	0	0	1	0	0
713:	0	0	0	0	0	0	0	0
721:	0	1	0	0	0	0	1	0
729:	0	0	0	0	0	0	0	1
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	1	1
753:	1	1	0	0	0	0	0	0
761:	0	0	0	0	0	0	1	0
769:	0	0	0	0	0	0	0	0
777:	0	1	0	0	2	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	1	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	1	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	1	0	0
857:	0	0	0	0	0	0	1	1
865:	1	0	0	1	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	1	0	0	0	1
945:	2	0	1	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	1	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

RD 6/24/16

Apex-Alpha™

Sample Description: CP-5012 02-05
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-TH
Sample Identification: 13
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: 1.560E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 11:56:51 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: 0.1655 +/- 0.0148
Counting Efficiency: 0.1870 +/- 0.0033 on 12/11/2015 8:20:54 AM
Chem. Recovery Factor: 0.8847 +/- 0.0806

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		5.875	10.83	60.10	0.17	0.00E+000	3.0
TH-228		5.349	109.47	18.89	1.53	0.00E+000	17.8
TH-229	T	4.875	142.66	16.43	0.34	0.00E+000	3.3
TH-230		4.596	130.98	17.20	1.02	0.00E+000	5.8
TH-232		3.949	95.49	20.12	0.51	0.00E+000	7.7

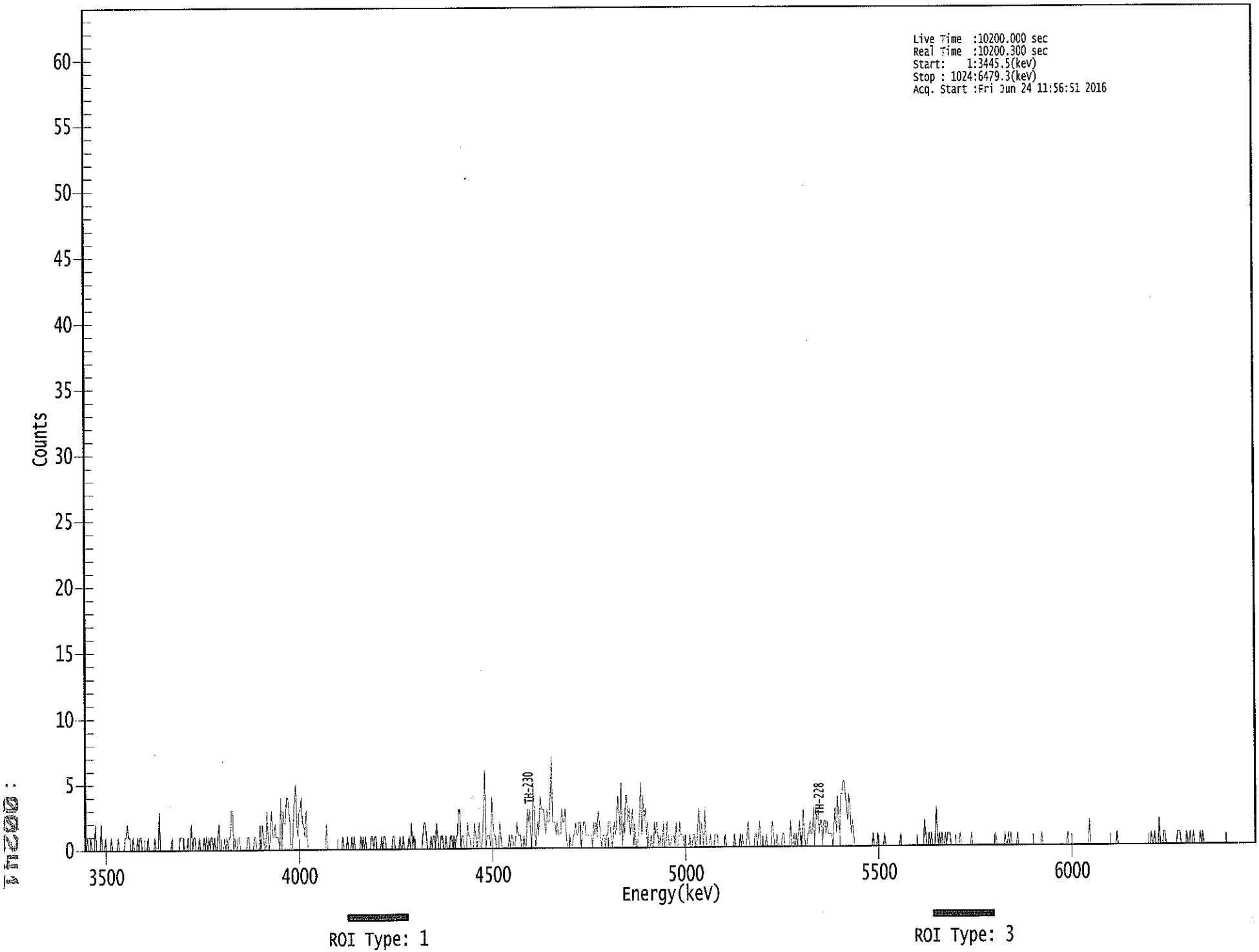
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.997	5850.00*	1.14E-001 +/- 7.15E-002	4.40E-002 +/- 7.71E-003
TH-228	0.987	5400.00*	1.14E+000 +/- 2.95E-001	7.42E-002 +/- 1.30E-002
TH-229	1.000	4872.00*	1.47E+000 +/- 2.58E-001	4.93E-002 +/- 8.64E-003
TH-230	0.970	4672.00*	1.35E+000 +/- 3.31E-001	6.48E-002 +/- 1.13E-002
TH-232	0.988	3997.00*	9.80E-001 +/- 2.61E-001	5.39E-002 +/- 9.43E-003

AG
6/27/16

0000155324.CNF



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

369:	0	0	1	0	1	1	0	0

Sample Title: 13

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

801:	0	0	0	1	0	0	1	0

Sample Title: 13

Channel								
809:	1	0	0	0	0	0	1	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	1	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	1	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	2	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	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	1	0	0	1	0
937:	0	0	2	0	0	0	1	1
945:	0	0	0	0	0	0	0	0
953:	0	0	1	1	1	0	0	0
961:	0	0	1	0	0	1	0	0
969:	1	0	0	0	0	0	1	0
977:	1	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

VCP 6/24/16

Apex-Alpha™

Sample Description: CP-5012 05-09
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-TH
Sample Identification: 14
Sample Geometry: Shelf 2
Procedure Description: Th iso

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

Sample Size: 1.597E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 11:56:54 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: 0.1697 +/- 0.0150
Counting Efficiency: 0.1645 +/- 0.0029 on 12/11/2015 8:20:53 AM
Chem. Recovery Factor: 1.0318 +/- 0.0929

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		5.803	21.83	42.14	0.17	0.00E+000	3.8
TH-228		5.374	95.66	20.08	0.34	0.00E+000	3.0
TH-229	T	4.895	146.66	16.21	0.34	0.00E+000	5.4
TH-230		4.628	127.83	17.35	0.17	0.00E+000	6.3
TH-232		3.971	122.66	17.73	0.34	0.00E+000	9.4

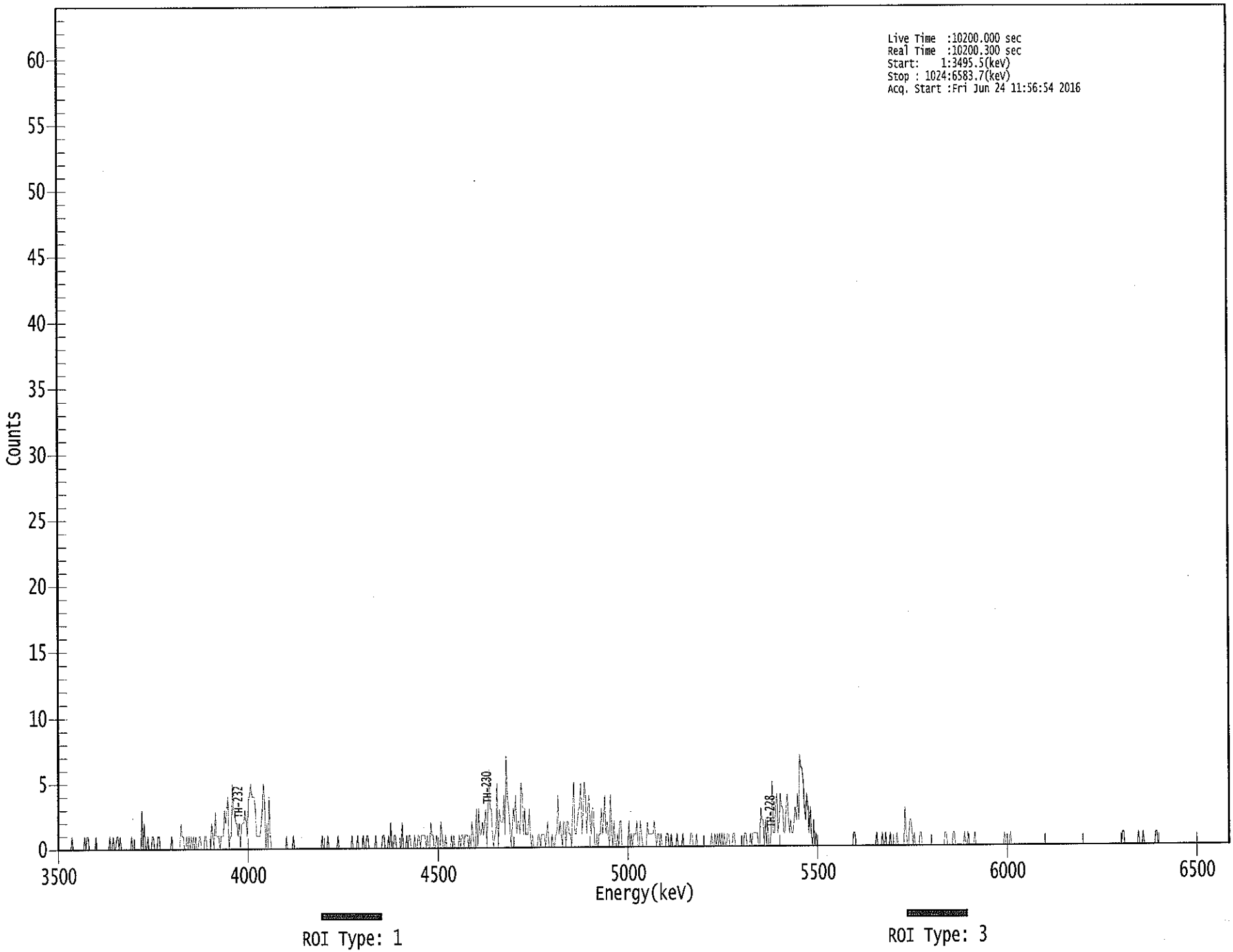
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.988	5850.00*	2.19E-001 +/- 9.99E-002	4.19E-002 +/- 7.25E-003
TH-228	0.996	5400.00*	9.52E-001 +/- 2.52E-001	4.76E-002 +/- 8.23E-003
TH-229	0.997	4872.00*	1.44E+000 +/- 2.49E-001	4.70E-002 +/- 8.13E-003
TH-230	0.990	4672.00*	1.25E+000 +/- 3.07E-001	4.09E-002 +/- 7.07E-003
TH-232	0.996	3997.00*	1.20E+000 +/- 2.97E-001	4.67E-002 +/- 8.09E-003

AG 6/27/16

0000155321.CNF



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

369:	1	1	2	1	2	3	0	3

Sample Title: 14

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

801:	1	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	1	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	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	1	1	0	0	0	0	0
937:	0	0	0	0	0	0	0	1
945:	0	0	0	1	0	0	0	0
953:	0	0	0	0	0	0	1	1
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™

Sample Description: CP-5012 09-15
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001553
Batch Identification: 1606043A-TH
Sample Identification: 15
Sample Geometry: Shelf 2
Procedure Description: Th iso

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

Sample Size: 1.608E+000 +/- 0.000E+000 gram
Sample Date/Time: 6/7/2016 7:03:53 AM
Acquisition Date/Time: 6/24/2016 11:56:57 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: 0.1574 +/- 0.0142
Counting Efficiency: 0.1601 +/- 0.0028 on 12/11/2015 8:20:51 AM
Chem. Recovery Factor: 0.9832 +/- 0.0902

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		5.839	15.32	51.36	0.68	0.00E+000	4.5
TH-228		5.377	151.13	16.06	1.87	0.00E+000	7.6
TH-229	T	4.885	140.49	16.57	0.51	0.00E+000	3.8
TH-230		4.642	166.49	15.22	0.51	0.00E+000	4.9
TH-232		3.972	132.49	17.07	0.51	0.00E+000	6.0

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*	1.65E-001 +/- 8.95E-002	6.07E-002 +/- 1.07E-002
TH-228	0.997	5400.00*	1.61E+000 +/- 3.84E-001	8.07E-002 +/- 1.42E-002
TH-229	0.999	4872.00*	1.48E+000 +/- 2.61E-001	5.52E-002 +/- 9.74E-003
TH-230	0.995	4672.00*	1.75E+000 +/- 4.07E-001	5.50E-002 +/- 9.71E-003
TH-232	0.997	3997.00*	1.39E+000 +/- 3.41E-001	5.49E-002 +/- 9.70E-003

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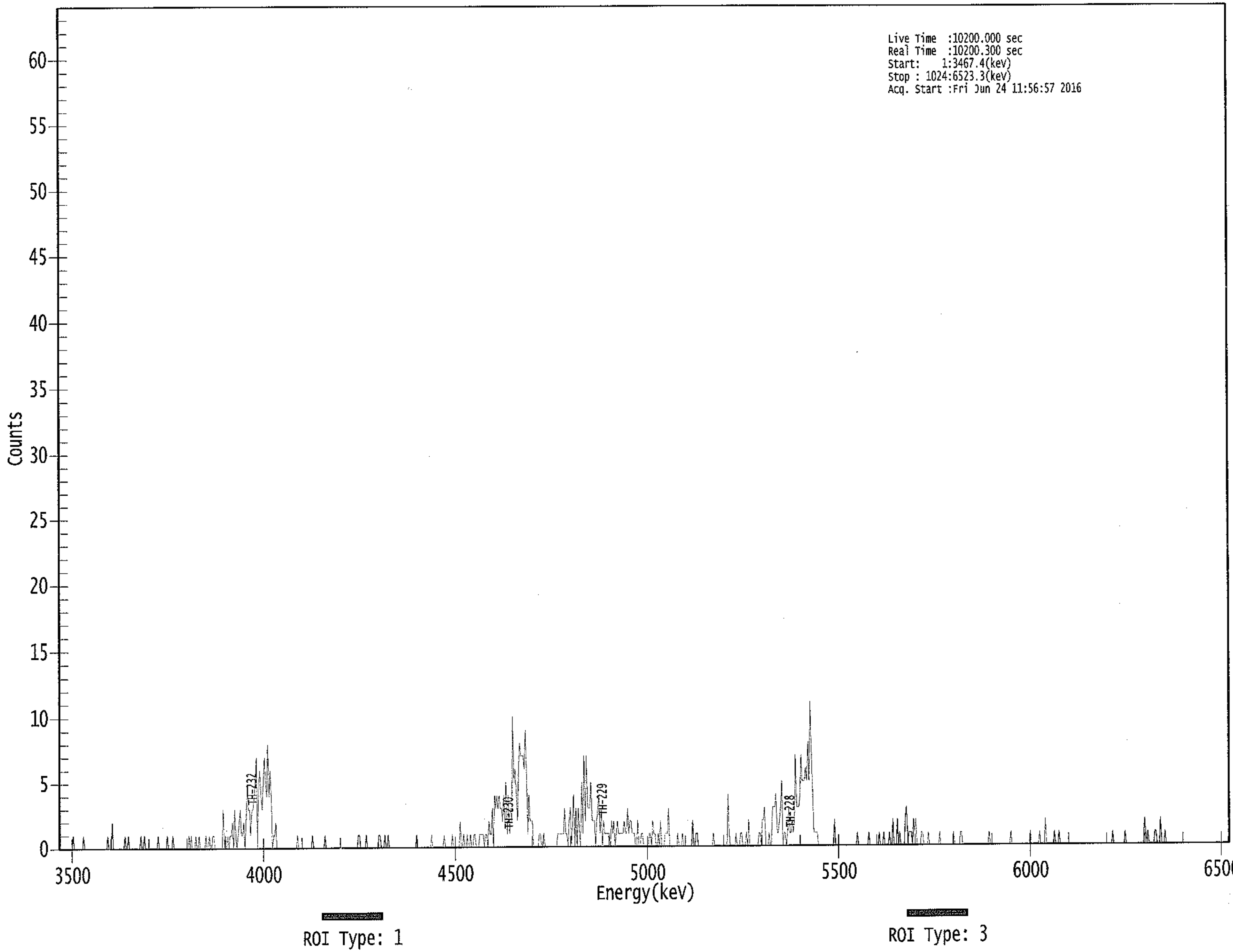
6/27/16

0000155322.CNF



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

369:	1	1	1	0	1	1	0	2

Sample Title: 15

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

801:	0	0	0	0	0	0	0	0

Sample Title: 15

Channel								
809:	0	0	0	0	1	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:	1	0	0	0	0	0	0	0
857:	1	0	0	0	0	2	0	0
865:	0	0	0	0	0	1	0	0
873:	0	1	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:	1	0	0	0	0	0	0	0
929:	0	0	0	1	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	2	1	0	1
953:	0	0	0	0	0	1	1	0
961:	0	0	2	0	0	0	1	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	1	0

6/24/2016 6:01:47 AM

Apex-Alpha™

QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 6/24/2016
Time : 6:01:47 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_001	21f	ALL	Not Done	
Alpha_002	21f	ALL	Not Done	
Alpha_003	21f	ALL	Passed	6/24/2016 5:46:14 AM
Alpha_004	21f	ALL	Passed	6/24/2016 5:46:15 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	6/24/2016 5:46:16 AM
Alpha_011	21f	ALL	Passed	6/24/2016 5:46:17 AM
Alpha_012	21f	ALL	Passed	6/24/2016 5:46:17 AM
Alpha_013	21f	ALL	Not Done	
Alpha_014	21f	ALL	Passed	6/24/2016 5:46:18 AM
Alpha_015	21f	Peak Energy	Action	6/24/2016 5:46:19 AM
Alpha_016	21f	ALL	Not Done	
Alpha_033	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:20 AM
Alpha_034	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:22 AM
Alpha_035	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:24 AM
Alpha_036	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:26 AM
Alpha_037	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:28 AM
Alpha_038	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:30 AM
Alpha_039	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:32 AM
Alpha_040	Alpha Analyst100DC	Peak FWHM	Action	6/24/2016 5:46:35 AM
Alpha_041	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:37 AM
Alpha_042	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:39 AM
Alpha_043	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:42 AM
Alpha_044	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:44 AM
Alpha_045	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:47 AM
Alpha_046	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:49 AM
Alpha_047	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:52 AM
Alpha_048	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:55 AM
Alpha_049	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:46:57 AM
Alpha_050	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:00 AM
Alpha_051	Alpha Analyst100DC	ALL	Not Done	
Alpha_052	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:03 AM
Alpha_053	Alpha Analyst100DC	Peak FWHM	Action	6/24/2016 5:47:06 AM
Alpha_054	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:09 AM
Alpha_055	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:12 AM
Alpha_056	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:15 AM
Alpha_057	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:18 AM
Alpha_058	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:21 AM

6/24/2016 6:01:47 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_059	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:23 AM
Alpha_060	Alpha Analyst100DC	ALL	Passed	6/24/2016 5:47:26 AM

APPROVED BY: AG

APPROVAL DATE: 6/24/16

****
***** L I B R A R Y L I S T I N G R E P O R T *****
****

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)

16-06043
Gamma
Run 1

Work Order	16-06043
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-5031 00-02	46	06/01/16 00:00	7.2596E+02
04	DO	CP-5031 00-02	46	06/01/16 00:00	7.2596E+02
05	TRG	CP-5031 02-05	39	06/01/16 00:00	5.8167E+02
06	TRG	CP-5031 05-10	52	06/01/16 00:00	3.5935E+02
07	TRG	CP-5031 10-15	46	06/01/16 00:00	3.8474E+02
08	TRG	CP-5010 00-02	53	06/07/16 00:00	5.4044E+02
09	TRG	CP-5010 02-05	43	06/07/16 00:00	5.1271E+02
10	TRG	CP-5010 05-09	35	06/07/16 00:00	3.8880E+02
11	TRG	CP-5010 09-15	41	06/07/16 00:00	3.1370E+02
12	TRG	CP-5012 00-02	47	06/07/16 00:00	5.2019E+02
13	TRG	CP-5012 02-05	50	06/07/16 00:00	5.7015E+02
14	TRG	CP-5012 05-09	38	06/07/16 00:00	2.8363E+02
15	TRG	CP-5012 09-15	37	06/07/16 00:00	2.8911E+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.

16-06043
Gamma
Run 1

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.

16-06043
Gamma
Run 1

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	06/16/16 06:58	KSALLINGS						
05	TRG	06/16/16 06:58	KSALLINGS						
06	TRG	06/16/16 06:58	KSALLINGS						
07	TRG	06/16/16 06:58	KSALLINGS						
08	TRG	06/16/16 06:58	KSALLINGS						
09	TRG	06/16/16 06:58	KSALLINGS						
10	TRG	06/16/16 06:58	KSALLINGS						
11	TRG	06/16/16 06:58	KSALLINGS						
12	TRG	06/16/16 06:58	KSALLINGS						
13	TRG	06/16/16 06:58	KSALLINGS						
14	TRG	06/16/16 06:58	KSALLINGS						
15	TRG	06/16/16 06:58	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.

Preliminary Data Report & Analytical Calculations

Work Order: 16-06043-Gamma-1

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	1.45E+02	1.01E+01	1.44E+00	1.37E+02	105.94	OK		06/09/16 00:00	1.00E+00	06/16/16 13:54	YES
01	CS-137	LCS	LCS	pCi/g	8.96E+01	8.61E+00	1.97E+00	8.69E+01	103.07	OK		06/09/16 00:00	1.00E+00	06/16/16 13:54	YES
02	AC-228	MBL	BLANK	pCi/g	1.47E-01	1.51E-01	3.12E-01					06/09/16 00:00	1.00E+00	06/16/16 14:26	NO
02	BI-214	MBL	BLANK	pCi/g	1.28E-01	8.57E-02	1.27E-01					06/09/16 00:00	1.00E+00	06/16/16 14:26	YES
02	K-40	MBL	BLANK	pCi/g	1.11E-01	4.42E-01	8.46E-01					06/09/16 00:00	1.00E+00	06/16/16 14:26	NO
02	PA-231	MBL	BLANK	pCi/g	-4.75E-01	1.13E+00	1.70E+00					06/09/16 00:00	1.00E+00	06/16/16 14:26	NO
02	PB-210	MBL	BLANK	pCi/g	2.85E-02	3.09E-01	4.85E-01					06/09/16 00:00	1.00E+00	06/16/16 14:26	NO
02	PB-212	MBL	BLANK	pCi/g	2.28E-02	6.03E-02	9.93E-02					06/09/16 00:00	1.00E+00	06/16/16 14:26	NO
02	PB-214	MBL	BLANK	pCi/g	1.85E-02	8.40E-02	1.40E-01					06/09/16 00:00	1.00E+00	06/16/16 14:26	NO
02	TL-208	MBL	BLANK	pCi/g	1.73E-01	9.84E-02	2.18E-01					06/09/16 00:00	1.00E+00	06/16/16 14:26	NO
03	AC-228	DUP	CP-5031 00-02	pCi/g	2.01E-01	1.21E-01	2.23E-01				OK	06/01/16 00:00	7.26E+02	06/16/16 11:51	NO
03	BI-214	DUP	CP-5031 00-02	pCi/g	1.03E+00	1.26E-01	1.41E-01				OK	06/01/16 00:00	7.26E+02	06/16/16 11:51	YES
03	K-40	DUP	CP-5031 00-02	pCi/g	4.14E+00	7.90E-01	7.83E-01				OK	06/01/16 00:00	7.26E+02	06/16/16 11:51	YES
03	PA-231	DUP	CP-5031 00-02	pCi/g	3.97E-01	8.77E-01	1.49E+00					06/01/16 00:00	7.26E+02	06/16/16 11:51	NO
03	PB-210	DUP	CP-5031 00-02	pCi/g	1.36E+00	9.52E-01	1.55E+00					06/01/16 00:00	7.26E+02	06/16/16 11:51	YES
03	PB-212	DUP	CP-5031 00-02	pCi/g	2.29E-01	6.39E-02	1.75E-01					06/01/16 00:00	7.26E+02	06/16/16 11:51	YES
03	PB-214	DUP	CP-5031 00-02	pCi/g	1.10E+00	1.27E-01	1.58E-01					06/01/16 00:00	7.26E+02	06/16/16 11:51	YES
03	TL-208	DUP	CP-5031 00-02	pCi/g	2.16E-01	7.21E-02	7.87E-02					06/01/16 00:00	7.26E+02	06/16/16 11:51	YES
04	AC-228	DO	CP-5031 00-02	pCi/g	2.52E-01	1.16E-01	2.26E-01					06/01/16 00:00	7.26E+02	06/16/16 12:52	NO
04	BI-214	DO	CP-5031 00-02	pCi/g	9.95E-01	1.17E-01	1.26E-01					06/01/16 00:00	7.26E+02	06/16/16 12:52	YES
04	K-40	DO	CP-5031 00-02	pCi/g	3.94E+00	7.35E-01	6.63E-01					06/01/16 00:00	7.26E+02	06/16/16 12:52	YES
04	PA-231	DO	CP-5031 00-02	pCi/g	8.79E-01	8.43E-01	1.49E+00					06/01/16 00:00	7.26E+02	06/16/16 12:52	NO
04	PB-210	DO	CP-5031 00-02	pCi/g	1.24E+00	8.75E-01	1.43E+00					06/01/16 00:00	7.26E+02	06/16/16 12:52	YES
04	PB-212	DO	CP-5031 00-02	pCi/g	2.06E-01	5.71E-02	1.73E-01					06/01/16 00:00	7.26E+02	06/16/16 12:52	YES
04	PB-214	DO	CP-5031 00-02	pCi/g	1.15E+00	1.07E-01	2.10E-01					06/01/16 00:00	7.26E+02	06/16/16 12:52	YES
04	TL-208	DO	CP-5031 00-02	pCi/g	2.15E-01	9.57E-02	1.76E-01					06/01/16 00:00	7.26E+02	06/16/16 12:52	NO
05	AC-228	TRG	CP-5031 02-05	pCi/g	8.30E-01	3.97E-01	7.76E-01					06/01/16 00:00	5.82E+02	06/16/16 11:51	YES
05	BI-214	TRG	CP-5031 02-05	pCi/g	9.51E-01	3.01E-01	5.17E-01					06/01/16 00:00	5.82E+02	06/16/16 11:51	YES
05	K-40	TRG	CP-5031 02-05	pCi/g	2.07E+01	3.37E+00	1.09E+00					06/01/16 00:00	5.82E+02	06/16/16 11:51	YES
05	PA-231	TRG	CP-5031 02-05	pCi/g	1.42E-01	1.19E+00	4.61E+00					06/01/16 00:00	5.82E+02	06/16/16 11:51	NO
05	PB-210	TRG	CP-5031 02-05	pCi/g	2.80E-01	8.02E-01	1.25E+00					06/01/16 00:00	5.82E+02	06/16/16 11:51	NO
05	PB-212	TRG	CP-5031 02-05	pCi/g	1.12E+00	2.77E-01	3.85E-01					06/01/16 00:00	5.82E+02	06/16/16 11:51	YES
05	PB-214	TRG	CP-5031 02-05	pCi/g	1.01E+00	3.36E-01	4.86E-01					06/01/16 00:00	5.82E+02	06/16/16 11:51	YES
05	TL-208	TRG	CP-5031 02-05	pCi/g	8.35E-01	2.54E-01	4.45E-01					06/01/16 00:00	5.82E+02	06/16/16 11:51	YES
06	AC-228	TRG	CP-5031 05-10	pCi/g	1.96E+00	3.91E-01	5.37E-01					06/01/16 00:00	3.59E+02	06/16/16 12:03	YES
06	BI-214	TRG	CP-5031 05-10	pCi/g	1.35E+00	2.36E-01	3.16E-01					06/01/16 00:00	3.59E+02	06/16/16 12:03	YES
06	K-40	TRG	CP-5031 05-10	pCi/g	2.53E+01	3.18E+00	1.45E+00					06/01/16 00:00	3.59E+02	06/16/16 12:03	YES
06	PA-231	TRG	CP-5031 05-10	pCi/g	-3.86E+00	3.21E+00	3.21E+00					06/01/16 00:00	3.59E+02	06/16/16 12:03	NO

Work Order: 16-06043-Gamma-1

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-5031 05-10	pCi/g	1.90E+00	1.38E+00	2.23E+00					06/01/16 00:00	3.59E+02	06/16/16 12:03	NO
06	PB-212	TRG	CP-5031 05-10	pCi/g	1.70E+00	2.85E-01	1.97E-01					06/01/16 00:00	3.59E+02	06/16/16 12:03	YES
06	PB-214	TRG	CP-5031 05-10	pCi/g	1.19E+00	2.19E-01	3.39E-01					06/01/16 00:00	3.59E+02	06/16/16 12:03	YES
06	TL-208	TRG	CP-5031 05-10	pCi/g	1.36E+00	2.42E-01	2.82E-01					06/01/16 00:00	3.59E+02	06/16/16 12:03	YES
07	AC-228	TRG	CP-5031 10-15	pCi/g	2.31E+00	3.85E-01	6.50E-01					06/01/16 00:00	3.85E+02	06/16/16 12:04	YES
07	BI-214	TRG	CP-5031 10-15	pCi/g	1.32E+00	2.55E-01	3.90E-01					06/01/16 00:00	3.85E+02	06/16/16 12:04	YES
07	K-40	TRG	CP-5031 10-15	pCi/g	2.72E+01	3.30E+00	1.03E+00					06/01/16 00:00	3.85E+02	06/16/16 12:04	YES
07	PA-231	TRG	CP-5031 10-15	pCi/g	5.26E+00	2.89E+00	4.74E+00					06/01/16 00:00	3.85E+02	06/16/16 12:04	NO
07	PB-210	TRG	CP-5031 10-15	pCi/g	3.04E+00	2.22E+00	3.63E+00					06/01/16 00:00	3.85E+02	06/16/16 12:04	YES
07	PB-212	TRG	CP-5031 10-15	pCi/g	2.06E+00	2.41E-01	3.33E-01					06/01/16 00:00	3.85E+02	06/16/16 12:04	YES
07	PB-214	TRG	CP-5031 10-15	pCi/g	1.33E+00	2.25E-01	4.24E-01					06/01/16 00:00	3.85E+02	06/16/16 12:04	YES
07	TL-208	TRG	CP-5031 10-15	pCi/g	1.41E+00	2.71E-01	2.05E-01					06/01/16 00:00	3.85E+02	06/16/16 12:04	YES
08	AC-228	TRG	CP-5010 00-02	pCi/g	1.82E+00	4.14E-01	1.10E+00					06/07/16 00:00	5.40E+02	06/16/16 12:53	YES
08	BI-214	TRG	CP-5010 00-02	pCi/g	1.78E+00	3.16E-01	3.96E-01					06/07/16 00:00	5.40E+02	06/16/16 12:53	YES
08	K-40	TRG	CP-5010 00-02	pCi/g	1.81E+01	3.30E+00	2.22E+00					06/07/16 00:00	5.40E+02	06/16/16 12:53	YES
08	PA-231	TRG	CP-5010 00-02	pCi/g	-5.56E-01	2.15E+00	5.41E+00					06/07/16 00:00	5.40E+02	06/16/16 12:53	NO
08	PB-210	TRG	CP-5010 00-02	pCi/g	-1.03E-01	9.93E-01	1.50E+00					06/07/16 00:00	5.40E+02	06/16/16 12:53	NO
08	PB-212	TRG	CP-5010 00-02	pCi/g	1.64E+00	2.79E-01	4.36E-01					06/07/16 00:00	5.40E+02	06/16/16 12:53	NO
08	PB-214	TRG	CP-5010 00-02	pCi/g	1.77E+00	3.56E-01	5.35E-01					06/07/16 00:00	5.40E+02	06/16/16 12:53	YES
08	TL-208	TRG	CP-5010 00-02	pCi/g	1.13E+00	4.15E-01	5.80E-01					06/07/16 00:00	5.40E+02	06/16/16 12:53	YES
09	AC-228	TRG	CP-5010 02-05	pCi/g	1.31E+00	2.55E-01	4.39E-01					06/07/16 00:00	5.13E+02	06/16/16 13:04	YES
09	BI-214	TRG	CP-5010 02-05	pCi/g	1.72E+00	2.30E-01	2.03E-01					06/07/16 00:00	5.13E+02	06/16/16 13:04	YES
09	K-40	TRG	CP-5010 02-05	pCi/g	1.80E+01	2.27E+00	1.09E+00					06/07/16 00:00	5.13E+02	06/16/16 13:04	YES
09	PA-231	TRG	CP-5010 02-05	pCi/g	1.79E+00	1.17E+00	3.71E+00					06/07/16 00:00	5.13E+02	06/16/16 13:04	YES
09	PB-210	TRG	CP-5010 02-05	pCi/g	2.92E+00	1.57E+00	2.52E+00					06/07/16 00:00	5.13E+02	06/16/16 13:04	YES
09	PB-212	TRG	CP-5010 02-05	pCi/g	1.27E+00	2.06E-01	2.44E-01					06/07/16 00:00	5.13E+02	06/16/16 13:04	YES
09	PB-214	TRG	CP-5010 02-05	pCi/g	1.80E+00	2.66E-01	2.34E-01					06/07/16 00:00	5.13E+02	06/16/16 13:04	YES
09	TL-208	TRG	CP-5010 02-05	pCi/g	1.08E+00	1.88E-01	1.07E-01					06/07/16 00:00	5.13E+02	06/16/16 13:04	YES
10	AC-228	TRG	CP-5010 05-09	pCi/g	1.87E+00	4.10E-01	8.08E-01					06/07/16 00:00	3.89E+02	06/16/16 13:05	YES
10	BI-214	TRG	CP-5010 05-09	pCi/g	1.34E+00	2.17E-01	3.00E-01					06/07/16 00:00	3.89E+02	06/16/16 13:05	YES
10	K-40	TRG	CP-5010 05-09	pCi/g	2.60E+01	3.19E+00	1.36E+00					06/07/16 00:00	3.89E+02	06/16/16 13:05	YES
10	PA-231	TRG	CP-5010 05-09	pCi/g	4.45E-01	1.12E+00	4.48E+00					06/07/16 00:00	3.89E+02	06/16/16 13:05	NO
10	PB-210	TRG	CP-5010 05-09	pCi/g	2.28E+00	2.44E+00	4.06E+00					06/07/16 00:00	3.89E+02	06/16/16 13:05	YES
10	PB-212	TRG	CP-5010 05-09	pCi/g	2.24E+00	2.48E-01	3.49E-01					06/07/16 00:00	3.89E+02	06/16/16 13:05	YES
10	PB-214	TRG	CP-5010 05-09	pCi/g	1.33E+00	2.05E-01	3.95E-01					06/07/16 00:00	3.89E+02	06/16/16 13:05	YES
10	TL-208	TRG	CP-5010 05-09	pCi/g	1.75E+00	3.09E-01	2.03E-01					06/07/16 00:00	3.89E+02	06/16/16 13:05	YES
11	AC-228	TRG	CP-5010 09-15	pCi/g	2.35E+00	3.34E-01	6.65E-01					06/07/16 00:00	3.14E+02	06/16/16 13:53	YES
11	BI-214	TRG	CP-5010 09-15	pCi/g	1.53E+00	2.82E-01	3.31E-01					06/07/16 00:00	3.14E+02	06/16/16 13:53	YES

Work Order: 16-06043-Gamma-1

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-5010 09-15	pCi/g	3.08E+01	3.55E+00	1.39E+00					06/07/16 00:00	3.14E+02	06/16/16 13:53	YES
11	PA-231	TRG	CP-5010 09-15	pCi/g	2.10E+00	2.29E+00	3.86E+00					06/07/16 00:00	3.14E+02	06/16/16 13:53	NO
11	PB-210	TRG	CP-5010 09-15	pCi/g	3.40E+00	2.17E+00	3.51E+00					06/07/16 00:00	3.14E+02	06/16/16 13:53	YES
11	PB-212	TRG	CP-5010 09-15	pCi/g	1.75E+00	2.62E-01	4.26E-01					06/07/16 00:00	3.14E+02	06/16/16 13:53	NO
11	PB-214	TRG	CP-5010 09-15	pCi/g	1.54E+00	2.59E-01	4.16E-01					06/07/16 00:00	3.14E+02	06/16/16 13:53	YES
11	TL-208	TRG	CP-5010 09-15	pCi/g	1.66E+00	2.48E-01	1.82E-01					06/07/16 00:00	3.14E+02	06/16/16 13:53	YES
12	AC-228	TRG	CP-5012 00-02	pCi/g	1.28E+00	2.11E-01	3.24E-01					06/07/16 00:00	5.20E+02	06/16/16 14:06	YES
12	BI-214	TRG	CP-5012 00-02	pCi/g	1.29E+00	1.82E-01	2.35E-01					06/07/16 00:00	5.20E+02	06/16/16 14:06	YES
12	K-40	TRG	CP-5012 00-02	pCi/g	1.70E+01	2.17E+00	1.11E+00					06/07/16 00:00	5.20E+02	06/16/16 14:06	YES
12	PA-231	TRG	CP-5012 00-02	pCi/g	-3.29E-01	9.36E-01	2.37E+00					06/07/16 00:00	5.20E+02	06/16/16 14:06	NO
12	PB-210	TRG	CP-5012 00-02	pCi/g	9.11E-01	9.51E-01	1.58E+00					06/07/16 00:00	5.20E+02	06/16/16 14:06	YES
12	PB-212	TRG	CP-5012 00-02	pCi/g	1.19E+00	1.97E-01	2.25E-01					06/07/16 00:00	5.20E+02	06/16/16 14:06	YES
12	PB-214	TRG	CP-5012 00-02	pCi/g	1.35E+00	2.03E-01	2.13E-01					06/07/16 00:00	5.20E+02	06/16/16 14:06	YES
12	TL-208	TRG	CP-5012 00-02	pCi/g	9.15E-01	1.71E-01	1.05E-01					06/07/16 00:00	5.20E+02	06/16/16 14:06	YES
13	AC-228	TRG	CP-5012 02-05	pCi/g	1.54E+00	2.78E-01	4.64E-01					06/07/16 00:00	5.70E+02	06/16/16 14:06	YES
13	BI-214	TRG	CP-5012 02-05	pCi/g	8.62E-01	1.65E-01	2.37E-01					06/07/16 00:00	5.70E+02	06/16/16 14:06	YES
13	K-40	TRG	CP-5012 02-05	pCi/g	1.81E+01	2.26E+00	9.44E-01					06/07/16 00:00	5.70E+02	06/16/16 14:06	YES
13	PA-231	TRG	CP-5012 02-05	pCi/g	2.09E+00	2.10E+00	3.25E+00					06/07/16 00:00	5.70E+02	06/16/16 14:06	NO
13	PB-210	TRG	CP-5012 02-05	pCi/g	1.84E+00	1.53E+00	2.10E+00					06/07/16 00:00	5.70E+02	06/16/16 14:06	NO
13	PB-212	TRG	CP-5012 02-05	pCi/g	1.51E+00	1.79E-01	2.73E-01					06/07/16 00:00	5.70E+02	06/16/16 14:06	YES
13	PB-214	TRG	CP-5012 02-05	pCi/g	8.43E-01	1.48E-01	2.03E-01					06/07/16 00:00	5.70E+02	06/16/16 14:06	YES
13	TL-208	TRG	CP-5012 02-05	pCi/g	9.62E-01	2.05E-01	2.19E-01					06/07/16 00:00	5.70E+02	06/16/16 14:06	YES
14	AC-228	TRG	CP-5012 05-09	pCi/g	2.31E+00	3.44E-01	4.97E-01					06/07/16 00:00	2.84E+02	06/16/16 14:53	YES
14	BI-214	TRG	CP-5012 05-09	pCi/g	1.35E+00	2.45E-01	3.32E-01					06/07/16 00:00	2.84E+02	06/16/16 14:53	YES
14	K-40	TRG	CP-5012 05-09	pCi/g	3.19E+01	3.77E+00	1.61E+00					06/07/16 00:00	2.84E+02	06/16/16 14:53	YES
14	PA-231	TRG	CP-5012 05-09	pCi/g	3.28E+00	2.38E+00	4.20E+00					06/07/16 00:00	2.84E+02	06/16/16 14:53	NO
14	PB-210	TRG	CP-5012 05-09	pCi/g	2.48E+00	2.30E+00	3.81E+00					06/07/16 00:00	2.84E+02	06/16/16 14:53	YES
14	PB-212	TRG	CP-5012 05-09	pCi/g	1.91E+00	2.77E-01	4.53E-01					06/07/16 00:00	2.84E+02	06/16/16 14:53	NO
14	PB-214	TRG	CP-5012 05-09	pCi/g	1.60E+00	2.05E-01	8.45E-01					06/07/16 00:00	2.84E+02	06/16/16 14:53	YES
14	TL-208	TRG	CP-5012 05-09	pCi/g	1.66E+00	3.05E-01	3.59E-01					06/07/16 00:00	2.84E+02	06/16/16 14:53	YES
15	AC-228	TRG	CP-5012 09-15	pCi/g	2.13E+00	4.33E-01	6.37E-01					06/07/16 00:00	2.89E+02	06/16/16 15:07	YES
15	BI-214	TRG	CP-5012 09-15	pCi/g	1.23E+00	2.55E-01	1.18E-01					06/07/16 00:00	2.89E+02	06/16/16 15:07	YES
15	K-40	TRG	CP-5012 09-15	pCi/g	3.11E+01	3.91E+00	1.68E+00					06/07/16 00:00	2.89E+02	06/16/16 15:07	YES
15	PA-231	TRG	CP-5012 09-15	pCi/g	-8.32E-01	3.42E+00	4.11E+00					06/07/16 00:00	2.89E+02	06/16/16 15:07	NO
15	PB-210	TRG	CP-5012 09-15	pCi/g	3.62E+00	1.54E+00	2.66E+00					06/07/16 00:00	2.89E+02	06/16/16 15:07	NO
15	PB-212	TRG	CP-5012 09-15	pCi/g	2.12E+00	3.96E-01	3.83E-01					06/07/16 00:00	2.89E+02	06/16/16 15:07	YES
15	PB-214	TRG	CP-5012 09-15	pCi/g	1.39E+00	2.69E-01	3.63E-01					06/07/16 00:00	2.89E+02	06/16/16 15:07	YES
15	TL-208	TRG	CP-5012 09-15	pCi/g	1.63E+00	2.91E-01	1.89E-01					06/07/16 00:00	2.89E+02	06/16/16 15:07	YES

Count Room Report
Client: Auxier Associates, Inc.

16-06043-Gamma-1 (pCi/g) in SO
Tracer ID:

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-5031 00-02	06/01/16 00:00	725.9600				0.00		
04	DO	CP-5031 00-02	06/01/16 00:00	725.9600				0.00		
05	TRG	CP-5031 02-05	06/01/16 00:00	581.6700				0.00		
06	TRG	CP-5031 05-10	06/01/16 00:00	359.3500				0.00		
07	TRG	CP-5031 10-15	06/01/16 00:00	384.7400				0.00		
08	TRG	CP-5010 00-02	06/07/16 00:00	540.4400				0.00		
09	TRG	CP-5010 02-05	06/07/16 00:00	512.7100				0.00		
10	TRG	CP-5010 05-09	06/07/16 00:00	388.8000				0.00		
11	TRG	CP-5010 09-15	06/07/16 00:00	313.7000				0.00		
12	TRG	CP-5012 00-02	06/07/16 00:00	520.1900				0.00		
13	TRG	CP-5012 02-05	06/07/16 00:00	570.1500				0.00		
14	TRG	CP-5012 05-09	06/07/16 00:00	283.6300				0.00		
15	TRG	CP-5012 09-15	06/07/16 00:00	289.1100				0.00		

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Printed: 6/16/2016 10:35 AM

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
16-06043	1	Gamma	grams	6/29/2016	KSALLINGS

Lab Fraction	Auxier & Associates, Inc. Client ID	Sample Type	Muffle Data	Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			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-5031 00-02	DUP					7.2596E+02	7.2596E+02				
04	CP-5031 00-02	DO					7.2596E+02	7.2596E+02				
05	CP-5031 02-05	TRG					5.8167E+02	5.8167E+02				
06	CP-5031 05-10	TRG					3.5935E+02	3.5935E+02				
07	CP-5031 10-15	TRG					3.8474E+02	3.8474E+02				
08	CP-5010 00-02	TRG					5.4044E+02	5.4044E+02				
09	CP-5010 02-05	TRG					5.1271E+02	5.1271E+02				
10	CP-5010 05-09	TRG					3.8880E+02	3.8880E+02				
11	CP-5010 09-15	TRG					3.1370E+02	3.1370E+02				
12	CP-5012 00-02	TRG					5.2019E+02	5.2019E+02				
13	CP-5012 02-05	TRG					5.7015E+02	5.7015E+02				
14	CP-5012 05-09	TRG					2.8363E+02	2.8363E+02				
15	CP-5012 09-15	TRG					2.8911E+02	2.8911E+02				

Comments	

66206

Technician: Kenny Sallings Date: 6/16/16

Eberline Services - Oak Ridge
Prep Logbook
Version 2.0 8/1999

Rough Sample Preparation Log Book

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
16-06043	6/29/2016	6/15/2016	6/16/2016	6/17/2016	KSALLINGS

Eberline	Auxier & Associates, Inc.	Tare (g)	Gross (g)		Net (g)		Percent		Gamma		Special Info
Fraction	Client ID	Pan Wt	Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	
04	CP-5031 00-02	14.5500	838.6800	801.2600	824.1300	786.7100	4.54%	95.46%	0.0000	0.0000	
05	CP-5031 02-05	14.5300	761.5000	660.0900	746.9700	645.5600	13.58%	86.42%	0.0000	0.0000	
06	CP-5031 05-10	14.5800	526.5000	430.0300	511.9200	415.4500	18.84%	81.16%	0.0000	0.0000	
07	CP-5031 10-15	14.5500	584.7000	464.4400	570.1500	449.8900	21.09%	78.91%	0.0000	0.0000	
08	CP-5010 00-02	14.5100	719.7000	613.6600	705.1900	599.1500	15.04%	84.96%	0.0000	0.0000	
09	CP-5010 02-05	14.4900	706.1000	579.1800	691.6100	564.6900	18.35%	81.65%	0.0000	0.0000	
10	CP-5010 05-09	14.5700	572.5500	458.7700	557.9800	444.2000	20.39%	79.61%	0.0000	0.0000	
11	CP-5010 09-15	14.5200	490.0200	379.0600	475.5000	364.5400	23.34%	76.66%	0.0000	0.0000	
12	CP-5012 00-02	14.5300	718.9100	603.2200	704.3800	588.6900	16.42%	83.58%	0.0000	0.0000	
13	CP-5012 02-05	14.4700	989.4400	800.3200	974.9700	785.8500	19.40%	80.60%	0.0000	0.0000	
14	CP-5012 05-09	14.5600	451.8900	351.9500	437.3300	337.3900	22.85%	77.15%	0.0000	0.0000	
15	CP-5012 09-15	14.6200	456.9500	355.7800	442.3300	341.1600	22.87%	77.13%	0.0000	0.0000	

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

Technician: Kenny Saeş (signature) Date:**Analysis: Rough Prep Logbook** **Analysis: Gamma Page No. 9697**

Eckert & Ziegler
Analytics

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www.analyticsinc.com

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* γps/gram	This Source γps	Uncertainty* , % Type u_A	u_B	U	Calibration Method*
Am-241	59.5	1.580E+05	———	2.094E+03	0.1	1.7	3.5	4π 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 Analytics' 8-isotope mixture which is calibrated quarterly.

Calibration Methods: 4π 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)

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

00268

Apex-Gamma

Analysis Report for 1606043-01

GAS 1302

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-01
Sample Description	: GAS 1302
Sample Type	: SOIL
Sample Size	: 7.360E+02 grams
Facility	: Countroom
Sample Taken On	: 7/1/2013 11:07:06AM
Acquisition Started	: 6/16/2016 1:54:05PM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1402
Live Time	: 1800.0 seconds
Real Time	: 1857.1 seconds
Dead Time	: 3.07 %
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	: 39016

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1606043-01

GAS 1302

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 2:25:06PM
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	22.61	21.86	0.0000	0.00
2	32.17	31.42	0.0000	0.00
3	53.81	53.07	0.0000	0.00
4	59.63	58.90	0.0000	0.00
5	67.90	67.17	0.0000	0.00
6	88.10	87.37	0.0000	0.00
7	122.03	121.32	0.0000	0.00
8	136.37	135.66	0.0000	0.00
9	166.44	165.74	0.0000	0.00
10	472.44	471.88	0.0000	0.00
11	661.55	661.08	0.0000	0.00
12	944.44	944.12	0.0000	0.00
13	953.28	952.96	0.0000	0.00
14	1172.87	1172.67	0.0000	0.00
15	1332.00	1331.90	0.0000	0.00
16	1493.22	1493.21	0.0000	0.00
17	1602.97	1603.03	0.0000	0.00
18	1657.83	1657.93	0.0000	0.00
19	1707.31	1707.43	0.0000	0.00
20	1761.94	1762.10	0.0000	0.00
21	1779.41	1779.58	0.0000	0.00
22	1820.89	1821.09	0.0000	0.00
23	1836.20	1836.41	0.0000	0.00
24	1872.93	1873.16	0.0000	0.00
25	2085.62	2086.00	0.0000	0.00
26	2161.79	2162.23	0.0000	0.00
27	2169.86	2170.30	0.0000	0.00
28	2304.54	2305.08	0.0000	0.00
29	2504.38	2505.06	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606043-01

GAS 1302

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 2:25:06PM

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	22.61	20 -	25	21.86	4.22E+04	684.35	5.83E+04	2.23
	2	32.17	29 -	34	31.42	1.11E+03	219.75	8.85E+03	2.27
M	3	53.81	42 -	63	53.07	1.93E+04	938.98	4.64E+04	6.63
m	4	59.63	42 -	63	58.90	5.71E+04	580.59	1.47E+04	2.26
	5	67.90	65 -	72	67.17	4.38E+02	335.53	1.86E+04	5.46
	6	88.10	82 -	93	87.37	1.78E+04	508.35	2.26E+04	2.41
	7	122.03	114 -	126	121.32	3.15E+03	396.75	1.70E+04	2.41
	8	136.37	132 -	139	135.66	4.59E+02	243.87	9.59E+03	2.66
	9	166.44	163 -	169	165.74	2.44E+02	204.44	7.42E+03	2.44
	10	472.44	467 -	475	471.88	1.66E+02	185.38	5.16E+03	5.14
	11	661.55	656 -	667	661.08	1.25E+04	277.98	3.38E+03	2.56
	12	944.44	941 -	947	944.12	1.17E+02	122.74	2.65E+03	4.24
	13	953.28	948 -	959	952.96	1.87E+02	194.75	4.66E+03	7.64
	14	1172.87	1165 -	1180	1172.67	9.81E+03	242.47	1.93E+03	2.72
	15	1332.00	1324 -	1337	1331.90	8.98E+03	196.36	3.15E+02	2.83
	16	1493.22	1490 -	1496	1493.21	1.18E+01	15.96	3.63E+01	1.67
	17	1602.97	1596 -	1611	1603.03	3.83E+01	25.06	4.54E+01	11.55
	18	1657.83	1655 -	1660	1657.93	9.41E+00	10.63	1.52E+01	2.18
	19	1707.31	1704 -	1711	1707.43	1.48E+01	9.17	4.47E+00	5.23
	20	1761.94	1756 -	1768	1762.10	1.68E+01	16.88	2.44E+01	9.28
	21	1779.41	1777 -	1782	1779.58	6.54E+00	9.38	1.29E+01	3.11
	22	1820.89	1818 -	1824	1821.09	6.58E+00	9.21	1.08E+01	1.04
	23	1836.20	1831 -	1842	1836.41	2.58E+01	18.55	3.05E+01	4.73
	24	1872.93	1869 -	1878	1873.16	1.12E+01	12.29	1.56E+01	4.53
	25	2085.62	2083 -	2089	2086.00	9.15E+00	8.75	7.69E+00	4.70
	26	2161.79	2159 -	2164	2162.23	1.06E+01	7.55	2.75E+00	1.61
	27	2169.86	2167 -	2174	2170.30	7.75E+00	7.48	4.50E+00	1.27
	28	2304.54	2300 -	2310	2305.08	1.30E+01	7.21	0.00E+00	7.81
	29	2504.38	2500 -	2509	2505.06	4.70E+01	13.71	0.00E+00	3.53

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 1606043-01

GAS 1302

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 2:25:06PM

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	22.61	20 -	25	4.22E+04	684.35	5.83E+04	4.50E+02
	2	32.17	29 -	34	1.11E+03	219.75	8.85E+03	1.72E+02
M	3	53.81	42 -	63	1.93E+04	938.98	4.64E+04	3.54E+02
m	4	59.63	42 -	63	5.71E+04	580.59	1.47E+04	1.99E+02
	5	67.90	65 -	72	4.38E+02	335.53	1.86E+04	2.74E+02
	6	88.10	82 -	93	1.78E+04	508.35	2.26E+04	3.56E+02
	7	122.03	114 -	126	3.15E+03	396.75	1.70E+04	3.13E+02
	8	136.37	132 -	139	4.59E+02	243.87	9.59E+03	1.97E+02
	9	166.44	163 -	169	2.44E+02	204.44	7.42E+03	1.66E+02
	10	472.44	467 -	475	1.66E+02	185.38	5.16E+03	1.51E+02
	11	661.55	656 -	667	1.25E+04	277.98	3.38E+03	1.36E+02
	12	944.44	941 -	947	1.17E+02	122.74	2.65E+03	9.93E+01
	13	953.28	948 -	959	1.87E+02	194.75	4.66E+03	1.58E+02
	14	1172.87	1165 -	1180	9.81E+03	242.47	1.93E+03	1.15E+02
	15	1332.00	1324 -	1337	8.98E+03	196.36	3.15E+02	4.22E+01
	16	1493.22	1490 -	1496	1.18E+01	15.96	3.63E+01	1.18E+01
	17	1602.97	1596 -	1611	3.83E+01	25.06	4.54E+01	1.79E+01
	18	1657.83	1655 -	1660	9.41E+00	10.63	1.52E+01	7.14E+00
	19	1707.31	1704 -	1711	1.48E+01	9.17	4.47E+00	4.11E+00
	20	1761.94	1756 -	1768	1.68E+01	16.88	2.44E+01	1.21E+01
	21	1779.41	1777 -	1782	6.54E+00	9.38	1.29E+01	6.46E+00
	22	1820.89	1818 -	1824	6.58E+00	9.21	1.08E+01	6.28E+00
	23	1836.20	1831 -	1842	2.58E+01	18.55	3.05E+01	1.28E+01
	24	1872.93	1869 -	1878	1.12E+01	12.29	1.56E+01	8.47E+00
	25	2085.62	2083 -	2089	9.15E+00	8.75	7.69E+00	5.19E+00
	26	2161.79	2159 -	2164	1.06E+01	7.55	2.75E+00	3.13E+00
	27	2169.86	2167 -	2174	7.75E+00	7.48	4.50E+00	4.11E+00
	28	2304.54	2300 -	2310	1.30E+01	7.21	0.00E+00	0.00E+00
	29	2504.38	2500 -	2509	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 2.000sigma

Analysis Report for 1606043-01

GAS 1302

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 2:25:06PM

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	22.61	20 -	25	21.86	4.22E+04	684.35	5.83E+04	.....
	2	32.17	29 -	34	31.42	1.11E+03	219.75	8.85E+03	.....
M	3	53.81	42 -	63	53.07	1.93E+04	938.98	4.64E+04	.....
m	4	59.63	42 -	63	58.90	5.71E+04	580.59	1.47E+04	AM-241
	5	67.90	65 -	72	67.17	4.38E+02	335.53	1.86E+04	TI-44 TA-182 TH-230
	6	88.10	82 -	93	87.37	1.78E+04	508.35	2.26E+04	CD-109 LU-176 SN-126
	7	122.03	114 -	126	121.32	3.15E+03	396.75	1.70E+04	CO-57 EU-152 SE-75
	8	136.37	132 -	139	135.66	4.59E+02	243.87	9.59E+03	CO-57 SE-75
	9	166.44	163 -	169	165.74	2.44E+02	204.44	7.42E+03	CE-139
	10	472.44	467 -	475	471.88	1.66E+02	185.38	5.16E+03	SB-127
	11	661.55	656 -	667	661.08	1.25E+04	277.98	3.38E+03	CS-137
	12	944.44	941 -	947	944.12	1.17E+02	122.74	2.65E+03	.....
	13	953.28	948 -	959	952.96	1.87E+02	194.75	4.66E+03	.....
	14	1172.87	1165 -	1180	1172.67	9.81E+03	242.47	1.93E+03	CO-60
	15	1332.00	1324 -	1337	1331.90	8.98E+03	196.36	3.15E+02	CO-60
	16	1493.22	1490 -	1496	1493.21	1.18E+01	15.96	3.63E+01	.....
	17	1602.97	1596 -	1611	1603.03	3.83E+01	25.06	4.54E+01	.....
	18	1657.83	1655 -	1660	1657.93	9.41E+00	10.63	1.52E+01	.....
	19	1707.31	1704 -	1711	1707.43	1.48E+01	9.17	4.47E+00	.....
	20	1761.94	1756 -	1768	1762.10	1.68E+01	16.88	2.44E+01	.....
	21	1779.41	1777 -	1782	1779.58	6.54E+00	9.38	1.29E+01	.....
	22	1820.89	1818 -	1824	1821.09	6.58E+00	9.21	1.08E+01	.....
	23	1836.20	1831 -	1842	1836.41	2.58E+01	18.55	3.05E+01	Y-88
	24	1872.93	1869 -	1878	1873.16	1.12E+01	12.29	1.56E+01	.....
	25	2085.62	2083 -	2089	2086.00	9.15E+00	8.75	7.69E+00	.....
	26	2161.79	2159 -	2164	2162.23	1.06E+01	7.55	2.75E+00	.....
	27	2169.86	2167 -	2174	2170.30	7.75E+00	7.48	4.50E+00	.....
	28	2304.54	2300 -	2310	2305.08	1.30E+01	7.21	0.00E+00	.....
	29	2504.38	2500 -	2509	2505.06	4.70E+01	13.71	0.00E+00	.....

Analysis Report for 1606043-01

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 EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 2:25:06PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	22.61	4.22E+04	684.35	3.04E-02	1.78E-03
	2	32.17	1.11E+03	219.75	2.90E-02	1.78E-03
M	3	53.81	1.93E+04	938.98	2.49E-02	1.78E-03
m	4	59.63	5.71E+04	580.59	2.39E-02	1.78E-03
	5	67.90	4.38E+02	335.53	2.25E-02	1.74E-03
	6	88.10	1.78E+04	508.35	1.96E-02	1.63E-03
	7	122.03	3.15E+03	396.75	1.60E-02	1.53E-03
	8	136.37	4.59E+02	243.87	1.47E-02	1.42E-03
	9	166.44	2.44E+02	204.44	1.27E-02	1.21E-03
	10	472.44	1.66E+02	185.38	4.98E-03	6.18E-04
	11	661.55	1.25E+04	277.98	3.57E-03	3.40E-04
	12	944.44	1.17E+02	122.74	2.52E-03	2.02E-04
	13	953.28	1.87E+02	194.75	2.50E-03	2.01E-04
	14	1172.87	9.81E+03	242.47	2.05E-03	1.73E-04
	15	1332.00	8.98E+03	196.36	1.83E-03	2.16E-04
	16	1493.22	1.18E+01	15.96	1.65E-03	1.82E-04
	17	1602.97	3.83E+01	25.06	1.55E-03	1.59E-04
	18	1657.83	9.41E+00	10.63	1.51E-03	1.48E-04
	19	1707.31	1.48E+01	9.17	1.47E-03	1.38E-04
	20	1761.94	1.68E+01	16.88	1.44E-03	1.26E-04
	21	1779.41	6.54E+00	9.38	1.42E-03	1.23E-04
	22	1820.89	6.58E+00	9.21	1.40E-03	1.14E-04
	23	1836.20	2.58E+01	18.55	1.39E-03	1.11E-04
	24	1872.93	1.12E+01	12.29	1.37E-03	1.11E-04
	25	2085.62	9.15E+00	8.75	1.26E-03	1.11E-04
	26	2161.79	1.06E+01	7.55	1.22E-03	1.11E-04
	27	2169.86	7.75E+00	7.48	1.22E-03	1.11E-04
	28	2304.54	1.30E+01	7.21	1.17E-03	1.11E-04
	29	2504.38	4.70E+01	13.71	1.10E-03	1.11E-04

Analysis Report for 1606043-01

GAS 1302

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 2:25:06PM

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	22.61	4.22E+04	684.35			4.22E+04	6.84E+02
	2	32.17	1.11E+03	219.75			1.11E+03	2.20E+02
M	3	53.81	1.93E+04	938.98	1.87E+00	1.53E+00	1.93E+04	9.39E+02
m	4	59.63	5.71E+04	580.59			5.71E+04	5.81E+02
	5	67.90	4.38E+02	335.53			4.38E+02	3.36E+02
	6	88.10	1.78E+04	508.35			1.78E+04	5.08E+02
	7	122.03	3.15E+03	396.75			3.15E+03	3.97E+02
	8	136.37	4.59E+02	243.87			4.59E+02	2.44E+02
	9	166.44	2.44E+02	204.44			2.44E+02	2.04E+02
	10	472.44	1.66E+02	185.38			1.66E+02	1.85E+02
	11	661.55	1.25E+04	277.98	9.53E-01	1.28E+00	1.25E+04	2.78E+02
	12	944.44	1.17E+02	122.74			1.17E+02	1.23E+02
	13	953.28	1.87E+02	194.75			1.87E+02	1.95E+02
	14	1172.87	9.81E+03	242.47			9.81E+03	2.42E+02
	15	1332.00	8.98E+03	196.36			8.98E+03	1.96E+02
	16	1493.22	1.18E+01	15.96			1.18E+01	1.60E+01
	17	1602.97	3.83E+01	25.06			3.83E+01	2.51E+01
	18	1657.83	9.41E+00	10.63			9.41E+00	1.06E+01
	19	1707.31	1.48E+01	9.17			1.48E+01	9.17E+00
	20	1761.94	1.68E+01	16.88			1.68E+01	1.69E+01
	21	1779.41	6.54E+00	9.38			6.54E+00	9.38E+00
	22	1820.89	6.58E+00	9.21			6.58E+00	9.21E+00
	23	1836.20	2.58E+01	18.55			2.58E+01	1.85E+01
	24	1872.93	1.12E+01	12.29			1.12E+01	1.23E+01
	25	2085.62	9.15E+00	8.75			9.15E+00	8.75E+00
	26	2161.79	1.06E+01	7.55			1.06E+01	7.55E+00
	27	2169.86	7.75E+00	7.48			7.75E+00	7.48E+00
	28	2304.54	1.30E+01	7.21			1.30E+01	7.21E+00
	29	2504.38	4.70E+01	13.71			4.70E+01	1.37E+01

Analysis Report for 1606043-01

GAS 1302

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 2:25:06PM

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	22.61	4.22E+04	684.35			4.22E+04	6.84E+02
	2	32.17	1.11E+03	219.75			1.11E+03	2.20E+02
M	3	53.81	1.93E+04	938.98	1.87E+00	1.53E+00	1.93E+04	9.39E+02
m	4	59.63	5.71E+04	580.59			5.71E+04	5.81E+02
	5	67.90	4.38E+02	335.53			4.38E+02	3.36E+02
	6	88.10	1.78E+04	508.35			1.78E+04	5.08E+02
	7	122.03	3.15E+03	396.75			3.15E+03	3.97E+02
	8	136.37	4.59E+02	243.87			4.59E+02	2.44E+02
	9	166.44	2.44E+02	204.44			2.44E+02	2.04E+02
	10	472.44	1.66E+02	185.38			1.66E+02	1.85E+02
	11	661.55	1.25E+04	277.98	9.53E-01	1.28E+00	1.25E+04	2.78E+02
	12	944.44	1.17E+02	122.74			1.17E+02	1.23E+02
	13	953.28	1.87E+02	194.75			1.87E+02	1.95E+02
	14	1172.87	9.81E+03	242.47			9.81E+03	2.42E+02
	15	1332.00	8.98E+03	196.36			8.98E+03	1.96E+02
	16	1493.22	1.18E+01	15.96			1.18E+01	1.60E+01
	17	1602.97	3.83E+01	25.06			3.83E+01	2.51E+01
	18	1657.83	9.41E+00	10.63			9.41E+00	1.06E+01
	19	1707.31	1.48E+01	9.17			1.48E+01	9.17E+00
	20	1761.94	1.68E+01	16.88			1.68E+01	1.69E+01
	21	1779.41	6.54E+00	9.38			6.54E+00	9.38E+00
	22	1820.89	6.58E+00	9.21			6.58E+00	9.21E+00
	23	1836.20	2.58E+01	18.55			2.58E+01	1.85E+01
	24	1872.93	1.12E+01	12.29			1.12E+01	1.23E+01
	25	2085.62	9.15E+00	8.75			9.15E+00	8.75E+00
	26	2161.79	1.06E+01	7.55			1.06E+01	7.55E+00
	27	2169.86	7.75E+00	7.48			7.75E+00	7.48E+00
	28	2304.54	1.30E+01	7.21			1.30E+01	7.21E+00
	29	2504.38	4.70E+01	13.71			4.70E+01	1.37E+01

Analysis Report for 1606043-01
GAS 1302

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

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	0.923	122.06	*	85.51	7.49E+01	1.19E+01
		136.48	*	10.60	9.53E+01	5.15E+01
CO-60	0.971	1173.22	*	100.00	1.44E+02	1.26E+01
		1332.49	*	100.00	1.48E+02	1.77E+01
CD-109	0.973	88.03	*	3.72	2.50E+03	2.66E+02
SN-126	0.956	87.57	*	37.00	5.00E+01	4.40E+00
CS-137	0.998	661.65	*	85.12	8.96E+01	8.78E+00
CE-139	0.695	165.85	*	80.35	1.13E+02	9.52E+01
AM-241	0.999	59.54	*	35.90	1.36E+02	1.03E+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 2:25:06PM
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	22.61	2.34301E+01	0.81		

Analysis Report for 1606043-01

GAS 1302

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	32.17	6.16838E-01	9.90		
M	3	53.81	1.07145E+01	2.43		
	5	67.90	2.43313E-01	38.31	Tol.	TA-182 TH-230
	10	472.44	9.22724E-02	55.81	Tol.	SB-127
	12	944.44	6.47837E-02	52.63		
	13	953.28	1.04124E-01	51.96		
	16	1493.22	6.58333E-03	67.35		
	17	1602.97	2.12750E-02	32.72		
	18	1657.83	5.22876E-03	56.47		
	19	1707.31	8.20261E-03	31.04		
	20	1761.94	9.33908E-03	50.21		
	21	1779.41	3.63248E-03	71.74		
	22	1820.89	3.65741E-03	69.92		
	23	1836.20	1.43157E-02	35.99	Tol.	Y-88
	24	1872.93	6.21345E-03	54.94		
	25	2085.62	5.08547E-03	47.77		
	26	2161.79	5.90278E-03	35.53		
	27	2169.86	4.30556E-03	48.28		
	28	2304.54	7.22222E-03	27.74		
	29	2504.38	2.61111E-02	14.59	Sum	

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	0.92	122.06	*	85.51	7.49E+01	1.19E+01
		136.48	*	10.60	9.53E+01	5.15E+01
CO-60	0.97	1173.22	*	100.00	1.44E+02	1.26E+01
		1332.49	*	100.00	1.48E+02	1.77E+01
CD-109	0.97	88.03	*	3.72	2.50E+03	2.66E+02
SN-126	0.95	87.57	*	37.00	5.00E+01	4.40E+00

Analysis Report for 1606043-01

GAS 1302

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CS-137	0.99	661.65	*	85.12	8.96E+01	8.78E+00
CE-139	0.69	165.85	*	80.35	1.13E+02	9.52E+01
AM-241	0.99	59.54	*	35.90	1.36E+02	1.03E+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
	CO-57	0.923	7.59E+01	1.16E+01	
	CO-60	0.971	1.45E+02	1.03E+01	
?	CD-109	0.973	2.50E+03	2.66E+02	
?	SN-126	0.956	5.00E+01	4.40E+00	
	CS-137	0.998	8.96E+01	8.78E+00	
	CE-139	0.695	1.13E+02	9.52E+01	
	AM-241	0.999	1.36E+02	1.03E+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 1606043-01
GAS 1302

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 2:25:06PM
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	22.61	2.34301E+01	0.81		
	2	32.17	6.16838E-01	9.90		
M	3	53.81	1.07145E+01	2.43		
	5	67.90	2.43313E-01	38.31	Tol.	TA-182 TH-230
	10	472.44	9.22724E-02	55.81	Tol.	SB-127
	12	944.44	6.47837E-02	52.63		
	13	953.28	1.04124E-01	51.96		
	16	1493.22	6.58333E-03	67.35		
	17	1602.97	2.12750E-02	32.72		
	18	1657.83	5.22876E-03	56.47		
	19	1707.31	8.20261E-03	31.04		
	20	1761.94	9.33908E-03	50.21		
	21	1779.41	3.63248E-03	71.74		
	22	1820.89	3.65741E-03	69.92		
	23	1836.20	1.43157E-02	35.99	Tol.	Y-88
	24	1872.93	6.21345E-03	54.94		
	25	2085.62	5.08547E-03	47.77		
	26	2161.79	5.90278E-03	35.53		
	27	2169.86	4.30556E-03	48.28		
	28	2304.54	7.22222E-03	27.74		
	29	2504.38	2.61111E-02	14.59	Sum	

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 1606043-01

GAS 1302

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	3.64E+06	1.16E+07	1.16E+07
+		NA-22	1274.54		99.94	8.45E-01	1.48E+00	1.48E+00
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	1.12E-01	3.42E-01	3.42E-01
+		K-40	1460.81		10.67	1.18E+00	3.65E+00	3.65E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	-1.98E+01	4.75E-01	4.75E-01
			78.34		96.00	-2.35E-01		5.18E-01
+		SC-46	889.25		99.98	1.84E+03	1.06E+04	1.08E+04
			1120.51		99.99	2.40E+03		1.06E+04
+	@	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	-4.80E+11	4.16E+12	4.16E+12
+		MN-54	834.83		99.97	7.05E+00	1.39E+01	1.39E+01
+		CO-56	846.75		99.96	-2.24E+03	1.41E+04	1.73E+04
			1037.75		14.03	1.17E+04		1.41E+05
			1238.25		67.00	7.33E+03		1.53E+04
			1771.40		15.51	-1.31E+03		2.66E+04
			2598.48		16.90	3.04E+03		1.41E+04
+		CO-57	122.06	*	85.51	7.49E+01	1.50E+01	1.50E+01
			136.48	*	10.60	9.53E+01		8.25E+01
+		CO-58	810.76		99.40	-1.11E+04	4.68E+04	4.68E+04
+		FE-59	1099.22		56.50	5.98E+06	2.84E+07	5.38E+07
			1291.56		43.20	1.05E+07		2.84E+07
+		CO-60	1173.22	*	100.00	1.44E+02	1.44E+00	3.41E+00
			1332.49	*	100.00	1.48E+02		1.44E+00
+		ZN-65	1115.52		50.75	6.35E+00	6.20E+01	6.20E+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	1.23E+04	4.37E+02	1.77E+03
			136.00		59.20	6.00E+02		4.37E+02
			264.65		59.80	3.84E+01		5.94E+02
			279.53		25.20	-2.86E+01		1.43E+03
			400.65		11.40	-2.50E+02		3.93E+03
+		RB-82	776.52		13.00	8.80E+12	4.75E+13	4.75E+13
+		RB-83	520.41		46.00	-3.80E+03	1.19E+04	1.19E+04
			529.64		30.30	4.49E+03		1.82E+04
			552.65		16.40	1.92E+04		3.29E+04
+		KR-85	513.99		0.43	7.58E+01	2.64E+02	2.64E+02
+		SR-85	513.99		99.27	2.86E+04	9.95E+04	9.95E+04

Analysis Report for 1606043-01

GAS 1302

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		Y-88	898.02		93.40	3.95E+01	5.43E+02	1.74E+03
			1836.01		99.38	4.10E+02		5.43E+02
+		NB-93M	16.57		9.43	-2.49E+02	4.84E+00	4.84E+00
+		NB-94	702.63		100.00	2.86E-01	9.98E-01	9.98E-01
			871.10		100.00	5.88E-01		1.36E+00
+		NB-95	765.79		99.81	7.73E+08	2.10E+09	2.10E+09
+	@	NB-95M	235.69		25.00	1.00E+26	1.00E+26	1.00E+26
+		ZR-95	724.18		43.70	-2.84E+04	2.37E+05	2.82E+05
			756.72		55.30	-2.82E+04		2.37E+05
+	@	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	-3.27E+07	1.92E+08	1.92E+08
+		RU-106	621.84		9.80	3.10E-01	7.46E+01	7.46E+01
+		AG-108M	433.93		89.90	2.15E-01	1.06E+00	1.06E+00
			614.37		90.40	6.32E-02		1.07E+00
			722.95		90.50	-1.69E-02		1.14E+00
+		CD-109	88.03	*	3.72	2.50E+03	1.01E+02	1.01E+02
+		AG-110M	657.75		93.14	-2.59E-01	3.04E+01	5.65E+01
			677.61		10.53	-1.20E+01		1.84E+02
			706.67		16.46	1.75E+01		1.21E+02
			763.93		21.98	3.74E+01		9.93E+01
			884.67		71.63	5.24E+00		3.94E+01
			1384.27		23.94	-4.76E+00		3.04E+01
+		CD-113M	263.70		0.02	1.19E+02	3.42E+03	3.42E+03
+		SN-113	255.12		1.93	-7.03E+03	8.72E+02	2.35E+04
			391.69		64.90	-1.44E+02		8.72E+02
+		TE123M	159.00		84.10	-8.53E+01	3.23E+02	3.23E+02
+		SB-124	602.71		97.87	2.60E+04	1.39E+05	2.49E+05
			645.85		7.26	-1.69E+06		3.48E+06
			722.78		11.10	-2.00E+05		2.32E+06
			1691.02		49.00	1.65E+04		1.39E+05
+		I-125	35.49		6.49	-2.67E+06	1.24E+06	1.24E+06
+		SB-125	176.33		6.89	-4.35E+00	6.52E+00	1.67E+01
			427.89		29.33	-1.10E+00		6.52E+00
			463.38		10.35	9.85E+00		2.06E+01
			600.56		17.80	5.84E+00		1.13E+01
			635.90		11.32	-1.57E+00		1.81E+01
+	@	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	5.00E+01	2.01E+00	2.01E+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	-2.71E+00	6.97E-01	6.97E-01
			33.60		13.20	-9.03E-01		2.28E+00

Analysis Report for 1606043-01

GAS 1302

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
		I-129	39.58		7.52	-1.89E+01	6.97E-01	4.52E+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	-8.33E-01	1.62E+00	1.82E+00
			302.84		17.80	-1.58E+00		4.88E+00
			356.01		60.00	1.01E+00		1.62E+00
+	@	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	5.92E+00	2.64E+00	2.89E+01
			569.32		15.43	6.50E+00		1.60E+01
			604.70		97.60	-1.78E-01		2.64E+00
			795.84		85.40	4.91E-01		3.72E+00
			801.93		8.73	3.84E+00		3.68E+01
+		CS-135	268.24		16.00	-1.49E-01	4.27E+00	4.27E+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	8.96E+01	1.97E+00	1.97E+00
+		LA-138	788.74		34.00	-1.11E+00	5.25E-01	3.33E+00
			1435.80		66.00	1.68E-01		5.25E-01
+		CE-139	165.85	*	80.35	1.13E+02	1.55E+02	1.55E+02
+	@	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	2.40E+09	1.05E+10	1.05E+10
+	@	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	2.46E+00	6.38E+01	6.38E+01
+		PM-144	476.78		42.00	7.34E+00	7.62E+00	1.87E+01

Analysis Report for 1606043-01

GAS 1302

		Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
		PM-144	618.01	98.60	-9.98E-01	7.62E+00	7.62E+00
			696.49	99.49	-2.25E+00		7.82E+00
+		PM-145	36.85	21.70	-5.30E+00	8.84E-01	1.61E+00
			37.36	39.70	-3.95E+00		8.84E-01
			42.30	15.10	-5.27E+00		2.93E+00
			72.40	2.31	6.43E+00		2.24E+01
+		PM-146	453.90	39.94	-9.60E-01	3.58E+00	3.58E+00
			735.90	14.01	3.06E+00		1.08E+01
			747.13	13.10	2.78E+00		1.22E+01
+	@	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	2.25E+01	2.45E+00	3.21E+00
			244.69	5.40	-7.51E-01		1.47E+01
			344.27	19.13	5.75E-01		4.67E+00
			778.89	9.20	6.31E+00		1.43E+01
			964.01	10.40	4.62E+00		1.71E+01
			1085.78	7.22	-7.29E+00		2.40E+01
			1112.02	9.60	1.08E+01		1.84E+01
			1407.95	14.94	-8.21E-01		2.45E+00
+		GD-153	97.43	31.30	-1.98E+01	2.87E+01	2.87E+01
			103.18	22.20	1.30E+01		4.20E+01
+		EU-154	123.07	40.50	1.16E+01	1.77E+00	1.77E+00
			723.30	19.70	-9.66E-02		6.50E+00
			873.19	11.50	-5.87E+00		1.49E+01
			996.32	10.30	7.05E+00		1.81E+01
			1004.76	17.90	-3.27E+00		1.03E+01
			1274.45	35.50	1.36E+00		2.40E+00
+		EU-155	86.50	30.90	9.07E+01	3.09E+00	3.86E+00
			105.30	20.70	9.89E-01		3.09E+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	-2.50E-01	8.04E-01	8.04E-01
			280.45	29.60	1.72E-01		2.35E+00
			410.94	11.10	1.92E+00		7.99E+00
			711.69	54.10	-9.57E-02		1.83E+00
+		TM-171	66.72	0.14	-9.98E+04	8.89E+02	8.89E+02
+		HF-172	81.75	4.52	-1.39E+01	1.48E+01	3.33E+01
			125.81	11.30	2.36E-01		1.48E+01
+	@	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	9.22E+00	1.45E+01	3.53E+01
			272.11	21.20	-2.84E+00		1.45E+01
+		HF-175	343.40	84.00	1.05E+04	4.08E+04	4.08E+04
+		LU-176	88.34	13.30	1.38E+02	7.18E-01	5.88E+00
			201.83	86.00	4.73E-02		7.18E-01

Analysis Report for 1606043-01

GAS 1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-176	306.78	94.00	2.90E-01	7.18E-01	7.75E-01
+	TA-182	67.75	41.20	-3.07E+04	7.35E+02	7.35E+02
		1121.30	34.90	5.82E+02		2.76E+03
		1189.05	16.23	1.77E+02		4.20E+03
		1221.41	26.98	-6.09E+02		2.09E+03
		1231.02	11.44	-1.21E+03		4.57E+03
+	IR-192	308.46	29.68	7.29E+03	5.21E+04	6.09E+04
		468.07	48.10	-5.71E+03		5.21E+04
+	HG-203	279.19	77.30	-1.72E+05	8.63E+06	8.63E+06
+	BI-207	569.67	97.72	4.04E-01	9.93E-01	9.93E-01
		1063.62	74.90	-7.69E-02		2.04E+00
+	TL-208	583.14	30.22	1.40E+00	6.38E-01	3.11E+00
		860.37	4.48	-1.75E+01		2.83E+01
		2614.66	35.85	2.12E-01		6.38E-01
+	BI-210M	262.00	45.00	2.22E-01	1.51E+00	1.51E+00
		300.00	23.00	1.08E+00		3.12E+00
+	PB-210	46.50	4.25	1.89E+01	1.35E+01	1.35E+01
+	PB-211	404.84	2.90	7.98E-01	3.00E+01	3.00E+01
		831.96	2.90	9.84E+00		4.32E+01
+	BI-212	727.17	11.80	2.60E+00	8.80E+00	8.80E+00
		1620.62	2.75	-8.50E-01		1.05E+01
+	PB-212	238.63	44.60	6.39E-02	1.52E+00	1.52E+00
		300.09	3.41	7.25E+00		2.11E+01
+	BI-214	609.31	46.30	-7.62E-02	2.06E+00	2.06E+00
		1120.29	15.10	2.08E+00		9.22E+00
		1764.49	15.80	-1.50E-01		2.34E+00
		2204.22	4.98	-1.56E+00		6.84E+00
+	PB-214	295.21	19.19	3.99E-01	2.10E+00	3.68E+00
		351.92	37.19	-3.87E-01		2.10E+00
+	RN-219	401.80	6.50	-4.58E+00	1.32E+01	1.32E+01
+	RA-223	323.87	3.88	-8.75E-01	1.90E+01	1.90E+01
+	RA-224	240.98	3.95	6.34E+00	1.73E+01	1.73E+01
+	@ RA-225	40.00	31.00	1.00E+26	1.00E+26	1.00E+26
+	RA-226	186.21	3.28	9.21E+00	1.82E+01	1.82E+01
+	TH-227	50.10	8.40	2.06E+01	5.87E+00	7.25E+00
		236.00	11.50	-2.84E-01		5.87E+00
		256.20	6.30	-2.80E+00		1.07E+01
+	AC-228	338.32	11.40	2.68E+00	5.44E+00	6.71E+00
		911.07	27.70	-6.13E-01		5.44E+00
		969.11	16.60	-3.98E+00		8.80E+00
+	TH-230	48.44	16.90	1.07E+01	3.43E+00	3.43E+00
		62.85	4.60	8.97E+02		2.24E+01
		67.67	0.37	-4.89E+03		1.17E+02
+	PA-231	283.67	1.60	-1.38E+01	3.11E+01	4.31E+01
		302.67	2.30	-1.00E+01		3.11E+01
+	TH-231	25.64	14.70	-1.03E+01	5.57E+00	5.57E+00
		84.21	6.40	-9.98E-01		1.05E+01
+	PA-233	311.98	38.60	-4.37E+11	2.13E+12	2.13E+12

Analysis Report for 1606043-01

GAS 1302

	Nuclide Name	Energy (keV)		Yield(%)		Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-234	131.20		20.40		-4.07E-01	2.31E+00	2.31E+00
		733.99		8.80		-2.41E+00		1.18E+01
		946.00		12.00		1.57E+00		1.37E+01
+	PA-234M	1001.03		0.92		8.23E+00	1.59E+02	1.59E+02
+	TH-234	63.29		3.80		6.24E+02	2.36E+01	2.36E+01
+	U-235	143.76		10.50		1.28E+00	4.67E+00	4.67E+00
		163.35		4.70		-9.11E-01		1.13E+01
		205.31		4.70		2.54E+00		1.34E+01
+	NP-237	86.50		12.60		1.47E+02	6.27E+00	6.27E+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		1.36E+02	2.98E+00	2.98E+00
+	AM-243	74.67		66.00		-1.83E-02	7.04E-01	7.04E-01
+	CM-243	209.75		3.29		-1.57E+00	5.32E+00	2.10E+01
		228.14		10.60		2.57E+00		6.93E+00
		277.60		14.00		4.62E-01		5.32E+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	1.16E+07	1.16E+07	3.64E+06	5.73E+06
	NA-22	1274.54	99.94	1.48E+00	1.48E+00	8.45E-01	7.10E-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		1.00E+26	1.00E+20
	AL-26	1808.65	99.76	3.42E-01	3.42E-01	1.12E-01	1.51E-01

Analysis Report for 1606043-01

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	3.65E+00	3.65E+00	1.18E+00	1.67E+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	4.75E-01	4.75E-01	-1.98E+01	2.36E-01
		78.34		96.00	5.18E-01		-2.35E-01	2.58E-01
	SC-46	889.25		99.98	1.08E+04	1.06E+04	1.84E+03	5.34E+03
		1120.51		99.99	1.06E+04		2.40E+03	5.20E+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	4.16E+12	4.16E+12	-4.80E+11	2.06E+12
	MN-54	834.83		99.97	1.39E+01	1.39E+01	7.05E+00	6.84E+00
	CO-56	846.75		99.96	1.73E+04	1.41E+04	-2.24E+03	8.53E+03
		1037.75		14.03	1.41E+05		1.17E+04	6.92E+04
		1238.25		67.00	1.53E+04		7.33E+03	7.37E+03
		1771.40		15.51	2.66E+04		-1.31E+03	1.16E+04
		2598.48		16.90	1.41E+04		3.04E+03	5.00E+03
+	CO-57	122.06	*	85.51	1.50E+01	1.50E+01	7.49E+01	7.44E+00
		136.48	*	10.60	8.25E+01		9.53E+01	4.10E+01
	CO-58	810.76		99.40	4.68E+04	4.68E+04	-1.11E+04	2.30E+04
	FE-59	1099.22		56.50	5.38E+07	2.84E+07	5.98E+06	2.65E+07
		1291.56		43.20	2.84E+07		1.05E+07	1.36E+07
+	CO-60	1173.22	*	100.00	3.41E+00	1.44E+00	1.44E+02	1.69E+00
		1332.49	*	100.00	1.44E+00		1.48E+02	6.96E-01
	ZN-65	1115.52		50.75	6.20E+01	6.20E+01	6.35E+00	3.05E+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	1.77E+03	4.37E+02	1.23E+04	8.79E+02
		136.00		59.20	4.37E+02		6.00E+02	2.17E+02
		264.65		59.80	5.94E+02		3.84E+01	2.94E+02
		279.53		25.20	1.43E+03		-2.86E+01	7.10E+02
		400.65		11.40	3.93E+03		-2.50E+02	1.94E+03
	RB-82	776.52		13.00	4.75E+13	4.75E+13	8.80E+12	2.34E+13
	RB-83	520.41		46.00	1.19E+04	1.19E+04	-3.80E+03	5.89E+03
		529.64		30.30	1.82E+04		4.49E+03	8.99E+03
		552.65		16.40	3.29E+04		1.92E+04	1.62E+04
	KR-85	513.99		0.43	2.64E+02	2.64E+02	7.58E+01	1.30E+02
	SR-85	513.99		99.27	9.95E+04	9.95E+04	2.86E+04	4.91E+04
	Y-88	898.02		93.40	1.74E+03	5.43E+02	3.95E+01	8.57E+02
		1836.01		99.38	5.43E+02		4.10E+02	2.49E+02
	NB-93M	16.57		9.43	4.84E+00	4.84E+00	-2.49E+02	2.41E+00
	NB-94	702.63		100.00	9.98E-01	9.98E-01	2.86E-01	4.91E-01
		871.10		100.00	1.36E+00		5.88E-01	6.71E-01
	NB-95	765.79		99.81	2.10E+09	2.10E+09	7.73E+08	1.03E+09
@	NB-95M	235.69		25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	ZR-95	724.18		43.70	2.82E+05	2.37E+05	-2.84E+04	1.39E+05
		756.72		55.30	2.37E+05		-2.82E+04	1.17E+05
@	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	1.92E+08	1.92E+08	-3.27E+07	9.50E+07
	RU-106	621.84		9.80	7.46E+01	7.46E+01	3.10E-01	3.67E+01
	AG-108M	433.93		89.90	1.06E+00	1.06E+00	2.15E-01	5.22E-01
		614.37		90.40	1.07E+00		6.32E-02	5.28E-01

Analysis Report for 1606043-01

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	1.14E+00	1.06E+00	-1.69E-02	5.60E-01
+	CD-109	88.03	*	3.72	1.01E+02	1.01E+02	2.50E+03	5.01E+01
	AG-110M	657.75		93.14	5.65E+01	3.04E+01	-2.59E-01	2.81E+01
		677.61		10.53	1.84E+02		-1.20E+01	9.03E+01
		706.67		16.46	1.21E+02		1.75E+01	5.94E+01
		763.93		21.98	9.93E+01		3.74E+01	4.88E+01
		884.67		71.63	3.94E+01		5.24E+00	1.94E+01
		1384.27		23.94	3.04E+01		-4.76E+00	1.39E+01
	CD-113M	263.70		0.02	3.42E+03	3.42E+03	1.19E+02	1.69E+03
	SN-113	255.12		1.93	2.35E+04	8.72E+02	-7.03E+03	1.17E+04
		391.69		64.90	8.72E+02		-1.44E+02	4.31E+02
	TE123M	159.00		84.10	3.23E+02	3.23E+02	-8.53E+01	1.60E+02
	SB-124	602.71		97.87	2.49E+05	1.39E+05	2.60E+04	1.22E+05
		645.85		7.26	3.48E+06		-1.69E+06	1.71E+06
		722.78		11.10	2.32E+06		-2.00E+05	1.14E+06
		1691.02		49.00	1.39E+05		1.65E+04	5.99E+04
	I-125	35.49		6.49	1.24E+06	1.24E+06	-2.67E+06	6.14E+05
	SB-125	176.33		6.89	1.67E+01	6.52E+00	-4.35E+00	8.28E+00
		427.89		29.33	6.52E+00		-1.10E+00	3.22E+00
		463.38		10.35	2.06E+01		9.85E+00	1.02E+01
		600.56		17.80	1.13E+01		5.84E+00	5.55E+00
		635.90		11.32	1.81E+01		-1.57E+00	8.90E+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	2.01E+00	2.01E+00	5.00E+01	1.00E+00
@	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	6.97E-01	6.97E-01	-2.71E+00	3.47E-01
		33.60		13.20	2.28E+00		-9.03E-01	1.13E+00
		39.58		7.52	4.52E+00		-1.89E+01	2.25E+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	1.82E+00	1.62E+00	-8.33E-01	9.05E-01
		302.84		17.80	4.88E+00		-1.58E+00	2.42E+00
		356.01		60.00	1.62E+00		1.01E+00	8.03E-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	2.89E+01	2.64E+00	5.92E+00	1.42E+01
		569.32		15.43	1.60E+01		6.50E+00	7.88E+00
		604.70		97.60	2.64E+00		-1.78E-01	1.30E+00
		795.84		85.40	3.72E+00		4.91E-01	1.83E+00
		801.93		8.73	3.68E+01		3.84E+00	1.81E+01
	CS-135	268.24		16.00	4.27E+00	4.27E+00	-1.49E-01	2.12E+00
@	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 1606043-01

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	1.97E+00	1.97E+00	8.96E+01	9.77E-01
	LA-138	788.74		34.00	3.33E+00	5.25E-01	-1.11E+00	1.64E+00
		1435.80		66.00	5.25E-01		1.68E-01	2.38E-01
+	CE-139	165.85	*	80.35	1.55E+02	1.55E+02	1.13E+02	7.69E+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	1.05E+10	1.05E+10	2.40E+09	5.21E+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	6.38E+01	6.38E+01	2.46E+00	3.16E+01
	PM-144	476.78		42.00	1.87E+01	7.62E+00	7.34E+00	9.22E+00
		618.01		98.60	7.62E+00		-9.98E-01	3.75E+00
		696.49		99.49	7.82E+00		-2.25E+00	3.85E+00
	PM-145	36.85		21.70	1.61E+00	8.84E-01	-5.30E+00	8.02E-01
		37.36		39.70	8.84E-01		-3.95E+00	4.39E-01
		42.30		15.10	2.93E+00		-5.27E+00	1.46E+00
		72.40		2.31	2.24E+01		6.43E+00	1.11E+01
	PM-146	453.90		39.94	3.58E+00	3.58E+00	-9.60E-01	1.77E+00
		735.90		14.01	1.08E+01		3.06E+00	5.34E+00
		747.13		13.10	1.22E+01		2.78E+00	6.01E+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	3.21E+00	2.45E+00	2.25E+01	1.60E+00
		244.69		5.40	1.47E+01		-7.51E-01	7.29E+00
		344.27		19.13	4.67E+00		5.75E-01	2.31E+00
		778.89		9.20	1.43E+01		6.31E+00	7.06E+00
		964.01		10.40	1.71E+01		4.62E+00	8.44E+00
		1085.78		7.22	2.40E+01		-7.29E+00	1.18E+01
		1112.02		9.60	1.84E+01		1.08E+01	9.04E+00
		1407.95		14.94	2.45E+00		-8.21E-01	1.10E+00
	GD-153	97.43		31.30	2.87E+01	2.87E+01	-1.98E+01	1.42E+01
		103.18		22.20	4.20E+01		1.30E+01	2.09E+01
	EU-154	123.07		40.50	1.77E+00	1.77E+00	1.16E+01	8.78E-01
		723.30		19.70	6.50E+00		-9.66E-02	3.19E+00
		873.19		11.50	1.49E+01		-5.87E+00	7.32E+00
		996.32		10.30	1.81E+01		7.05E+00	8.89E+00

Analysis Report for 1606043-01

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	1.03E+01	1.77E+00	-3.27E+00	5.07E+00
	1274.45	35.50	2.40E+00		1.36E+00	1.15E+00
EU-155	86.50	30.90	3.86E+00	3.09E+00	9.07E+01	1.93E+00
	105.30	20.70	3.09E+00		9.89E-01	1.54E+00
@ 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	8.04E-01	8.04E-01	-2.50E-01	3.99E-01
	280.45	29.60	2.35E+00		1.72E-01	1.16E+00
	410.94	11.10	7.99E+00		1.92E+00	3.95E+00
	711.69	54.10	1.83E+00		-9.57E-02	8.97E-01
TM-171	66.72	0.14	8.89E+02	8.89E+02	-9.98E+04	4.42E+02
HF-172	81.75	4.52	3.33E+01	1.48E+01	-1.39E+01	1.66E+01
	125.81	11.30	1.48E+01		2.36E-01	7.33E+00
@ LU-172	181.53	20.60	1.00E+26	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	3.53E+01	1.45E+01	9.22E+00	1.75E+01
	272.11	21.20	1.45E+01		-2.84E+00	7.20E+00
HF-175	343.40	84.00	4.08E+04	4.08E+04	1.05E+04	2.02E+04
LU-176	88.34	13.30	5.88E+00	7.18E-01	1.38E+02	2.93E+00
	201.83	86.00	7.18E-01		4.73E-02	3.56E-01
	306.78	94.00	7.75E-01		2.90E-01	3.83E-01
TA-182	67.75	41.20	7.35E+02	7.35E+02	-3.07E+04	3.66E+02
	1121.30	34.90	2.76E+03		5.82E+02	1.35E+03
	1189.05	16.23	4.20E+03		1.77E+02	2.04E+03
	1221.41	26.98	2.09E+03		-6.09E+02	1.01E+03
	1231.02	11.44	4.57E+03		-1.21E+03	2.20E+03
IR-192	308.46	29.68	6.09E+04	5.21E+04	7.29E+03	3.02E+04
	468.07	48.10	5.21E+04		-5.71E+03	2.58E+04
HG-203	279.19	77.30	8.63E+06	8.63E+06	-1.72E+05	4.27E+06
BI-207	569.67	97.72	9.93E-01	9.93E-01	4.04E-01	4.89E-01
	1063.62	74.90	2.04E+00		-7.69E-02	1.00E+00
TL-208	583.14	30.22	3.11E+00	6.38E-01	1.40E+00	1.53E+00
	860.37	4.48	2.83E+01		-1.75E+01	1.40E+01
	2614.66	35.85	6.38E-01		2.12E-01	2.47E-01
BI-210M	262.00	45.00	1.51E+00	1.51E+00	2.22E-01	7.48E-01
	300.00	23.00	3.12E+00		1.08E+00	1.55E+00
PB-210	46.50	4.25	1.35E+01	1.35E+01	1.89E+01	6.71E+00
PB-211	404.84	2.90	3.00E+01	3.00E+01	7.98E-01	1.48E+01
	831.96	2.90	4.32E+01		9.84E+00	2.13E+01
BI-212	727.17	11.80	8.80E+00	8.80E+00	2.60E+00	4.33E+00
	1620.62	2.75	1.05E+01		-8.50E-01	4.62E+00
PB-212	238.63	44.60	1.52E+00	1.52E+00	6.39E-02	7.53E-01
	300.09	3.41	2.11E+01		7.25E+00	1.04E+01
BI-214	609.31	46.30	2.06E+00	2.06E+00	-7.62E-02	1.01E+00
	1120.29	15.10	9.22E+00		2.08E+00	4.52E+00
	1764.49	15.80	2.34E+00		-1.50E-01	1.05E+00
	2204.22	4.98	6.84E+00		-1.56E+00	2.96E+00
PB-214	295.21	19.19	3.68E+00	2.10E+00	3.99E-01	1.82E+00
	351.92	37.19	2.10E+00		-3.87E-01	1.04E+00
RN-219	401.80	6.50	1.32E+01	1.32E+01	-4.58E+00	6.53E+00

Analysis Report for 1606043-01

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	1.90E+01	1.90E+01	-8.75E-01	9.39E+00
	RA-224	240.98		3.95	1.73E+01	1.73E+01	6.34E+00	8.56E+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	1.82E+01	1.82E+01	9.21E+00	9.05E+00
	TH-227	50.10		8.40	7.25E+00	5.87E+00	2.06E+01	3.61E+00
		236.00		11.50	5.87E+00		-2.84E-01	2.91E+00
		256.20		6.30	1.07E+01		-2.80E+00	5.30E+00
	AC-228	338.32		11.40	6.71E+00	5.44E+00	2.68E+00	3.32E+00
		911.07		27.70	5.44E+00		-6.13E-01	2.68E+00
		969.11		16.60	8.80E+00		-3.98E+00	4.33E+00
	TH-230	48.44		16.90	3.43E+00	3.43E+00	1.07E+01	1.71E+00
		62.85		4.60	2.24E+01		8.97E+02	1.12E+01
		67.67		0.37	1.17E+02		-4.89E+03	5.82E+01
	PA-231	283.67		1.60	4.31E+01	3.11E+01	-1.38E+01	2.14E+01
		302.67		2.30	3.11E+01		-1.00E+01	1.54E+01
	TH-231	25.64		14.70	5.57E+00	5.57E+00	-1.03E+01	2.78E+00
		84.21		6.40	1.05E+01		-9.98E-01	5.23E+00
	PA-233	311.98		38.60	2.13E+12	2.13E+12	-4.37E+11	1.05E+12
	PA-234	131.20		20.40	2.31E+00	2.31E+00	-4.07E-01	1.15E+00
		733.99		8.80	1.18E+01		-2.41E+00	5.79E+00
		946.00		12.00	1.37E+01		1.57E+00	6.77E+00
	PA-234M	1001.03		0.92	1.59E+02	1.59E+02	8.23E+00	7.84E+01
	TH-234	63.29		3.80	2.36E+01	2.36E+01	6.24E+02	1.18E+01
	U-235	143.76		10.50	4.67E+00	4.67E+00	1.28E+00	2.32E+00
		163.35		4.70	1.13E+01		-9.11E-01	5.61E+00
		205.31		4.70	1.34E+01		2.54E+00	6.62E+00
	NP-237	86.50		12.60	6.27E+00	6.27E+00	1.47E+02	3.12E+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	2.98E+00	2.98E+00	1.36E+02	1.49E+00
	AM-243	74.67		66.00	7.04E-01	7.04E-01	-1.83E-02	3.50E-01
	CM-243	209.75		3.29	2.10E+01	5.32E+00	-1.57E+00	1.04E+01
		228.14		10.60	6.93E+00		2.57E+00	3.43E+00
		277.60		14.00	5.32E+00		4.62E-01	2.64E+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 1606043-01

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: 1857

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	248	1260
17:	1472	1426	2546	9099	20287	19052	9169	7530
25:	6170	2530	913	639	673	850	1185	1206
33:	875	745	849	940	926	868	968	1077
41:	1190	1347	1516	1656	1828	2046	2429	2922
49:	3435	3588	3560	3433	3572	3765	3925	4259
57:	6733	17185	24606	13796	2907	1037	956	996
65:	1179	1231	1195	1266	1270	1193	1195	1188
73:	1244	1195	1259	1248	1210	1193	1217	1276
81:	1262	1300	1281	1322	1560	3527	7382	6997
89:	2773	824	740	718	677	706	669	644
97:	706	692	678	655	646	706	688	711
105:	672	661	643	686	653	662	650	638
113:	708	665	677	736	729	682	749	1010
121:	1713	1720	1031	670	660	615	634	597
129:	643	596	641	591	631	654	725	778
137:	709	591	573	599	592	580	585	588
145:	595	567	618	561	553	516	560	611
153:	581	615	549	532	580	573	565	558
161:	557	553	504	564	633	620	571	559
169:	505	558	566	535	544	504	527	547
177:	571	525	584	500	536	558	556	592
185:	592	597	590	557	568	644	555	613
193:	587	584	519	586	538	540	539	534
201:	565	543	528	538	590	535	524	525
209:	587	556	561	516	583	585	535	594
217:	576	553	550	576	597	529	572	571
225:	552	561	586	530	525	495	492	536
233:	485	480	479	500	527	504	485	502
241:	476	484	499	451	494	490	449	479
249:	477	422	493	457	429	444	418	427
257:	404	430	427	437	421	423	413	422
265:	402	408	391	412	406	414	398	413
273:	402	382	416	424	397	407	375	363
281:	383	379	356	401	370	376	374	389
289:	372	335	379	361	324	384	398	393
297:	373	315	360	348	352	378	388	381
305:	360	331	350	349	348	370	342	366
313:	337	346	322	343	365	345	329	328
321:	331	320	354	335	335	331	345	315
329:	318	336	309	321	319	333	340	328
337:	328	332	324	343	343	322	323	314
345:	338	307	325	304	293	337	316	323
353:	347	329	324	334	326	340	343	306
361:	318	322	300	311	312	291	300	287

369:	311	267	313	317	296	312	294	294

Sample Title: GAS 1302

Channel								
377:	286	315	298	317	280	299	266	295
385:	278	311	267	283	292	322	330	341
393:	313	292	304	319	304	342	273	323
401:	302	304	273	290	303	327	290	330
409:	322	313	271	314	299	301	327	302
417:	302	280	295	316	278	277	318	341
425:	299	278	297	292	310	289	285	339
433:	319	294	303	310	320	339	286	313
441:	315	300	310	312	303	286	311	344
449:	319	338	272	331	308	310	320	323
457:	305	327	328	328	306	357	350	294
465:	295	320	298	286	312	319	326	320
473:	301	297	285	252	280	267	312	297
481:	243	225	252	243	259	203	214	269
489:	272	221	258	221	246	250	210	218
497:	263	204	223	225	206	243	225	221
505:	214	239	218	209	209	208	254	246
513:	228	213	238	205	228	198	227	223
521:	200	204	181	213	212	212	200	190
529:	214	219	186	204	195	217	187	187
537:	217	187	207	187	186	200	193	181
545:	205	176	185	189	171	200	174	166
553:	161	172	194	179	161	120	164	162
561:	171	184	166	149	159	175	182	182
569:	167	168	148	177	181	178	135	166
577:	157	184	172	172	181	164	184	191
585:	165	182	147	195	142	142	179	153
593:	156	160	169	156	176	162	165	182
601:	181	169	156	177	162	153	154	161
609:	177	160	165	175	161	162	162	159
617:	149	153	182	131	155	175	159	134
625:	177	143	156	163	135	165	170	160
633:	147	145	143	155	166	164	165	171
641:	144	173	146	167	168	148	160	154
649:	157	174	158	170	173	176	161	154
657:	169	194	803	3014	4902	3329	969	238
665:	151	122	125	132	128	154	134	124
673:	141	122	128	134	125	145	146	138
681:	133	119	141	144	143	133	152	132
689:	134	156	138	135	119	149	129	110
697:	147	150	135	133	136	127	147	132
705:	108	144	142	122	126	134	142	101
713:	129	124	132	140	120	129	130	124
721:	115	133	137	141	131	140	130	132
729:	141	126	150	134	133	143	122	120
737:	125	146	149	128	140	118	157	143
745:	152	124	157	140	146	143	152	165
753:	144	147	134	136	119	135	127	127
761:	128	137	136	142	137	140	128	145
769:	135	135	120	134	154	148	145	142
777:	141	153	128	129	152	142	139	121
785:	137	122	158	140	143	139	153	132
793:	143	143	148	151	136	149	160	133

801:	158	147	141	157	132	151	131	162

Sample Title: GAS 1302

Channel								
809:	145	154	116	130	140	143	137	162
817:	144	138	148	143	166	141	168	147
825:	136	164	142	126	148	154	157	166
833:	137	161	157	168	133	158	156	140
841:	152	175	153	145	147	151	139	156
849:	156	158	173	153	157	154	152	144
857:	135	144	167	134	150	158	135	154
865:	141	165	180	151	161	159	160	152
873:	170	171	181	159	147	170	178	174
881:	169	176	161	172	168	179	179	160
889:	171	164	177	171	183	161	175	169
897:	182	152	179	198	175	170	170	156
905:	183	193	177	173	176	182	189	173
913:	197	197	206	184	211	196	185	179
921:	174	174	168	216	193	194	196	199
929:	221	201	214	211	189	197	199	201
937:	209	199	189	195	190	207	221	215
945:	220	211	178	196	212	197	202	222
953:	216	230	231	227	195	193	195	205
961:	170	177	194	165	151	170	150	165
969:	157	143	137	157	159	142	150	161
977:	132	169	162	164	150	148	139	126
985:	162	140	141	132	152	129	150	138
993:	147	141	151	141	155	147	153	168
1001:	159	126	134	133	138	153	140	143
1009:	150	158	137	180	138	136	123	138
1017:	136	130	145	140	122	144	160	134
1025:	132	132	150	134	147	159	131	114
1033:	135	143	145	119	125	137	130	128
1041:	147	129	134	131	142	140	132	109
1049:	136	134	126	127	107	139	117	129
1057:	149	120	120	135	128	137	123	120
1065:	113	140	106	112	131	116	129	137
1073:	141	136	119	132	125	138	135	146
1081:	130	108	141	131	131	142	149	120
1089:	120	122	126	145	128	138	138	113
1097:	150	153	137	110	132	158	139	150
1105:	119	129	137	141	141	133	140	123
1113:	115	115	133	112	101	108	120	101
1121:	100	101	100	107	93	85	83	86
1129:	85	92	85	97	81	79	66	78
1137:	71	85	72	67	88	67	94	70
1145:	93	76	81	73	80	83	60	69
1153:	78	75	70	71	71	64	70	57
1161:	62	84	67	87	66	81	82	71
1169:	107	257	1262	2962	3371	1777	447	79
1177:	60	58	52	46	46	45	43	49
1185:	51	46	47	46	48	37	38	52
1193:	45	41	49	44	54	40	54	48
1201:	42	30	36	44	24	45	33	36
1209:	40	32	36	26	29	33	34	42
1217:	30	39	36	28	33	23	24	33
1225:	19	36	25	26	19	28	20	20

1233:	28	33	23	18	26	30	27	20

Sample Title: GAS 1302

Channel								
1241:	25	23	14	16	30	17	22	18
1249:	19	15	13	27	14	20	19	14
1257:	17	20	20	20	21	26	21	19
1265:	16	19	17	18	15	14	17	21
1273:	18	15	15	21	23	23	10	16
1281:	12	23	14	15	19	5	17	14
1289:	18	6	15	22	16	18	14	15
1297:	12	13	14	19	10	18	23	18
1305:	25	13	23	18	14	17	21	10
1313:	19	18	14	18	13	21	18	16
1321:	21	14	20	17	19	22	22	33
1329:	147	786	2308	3089	2022	601	60	10
1337:	1	3	2	6	3	5	3	10
1345:	4	4	4	5	4	13	6	2
1353:	4	4	4	0	4	9	4	6
1361:	7	3	3	3	2	6	5	3
1369:	5	4	2	5	4	4	5	4
1377:	5	4	4	7	9	2	4	3
1385:	4	4	2	3	5	6	4	11
1393:	3	9	8	4	4	6	4	10
1401:	4	4	4	2	0	5	4	3
1409:	3	2	3	5	5	2	5	3
1417:	1	5	1	7	0	5	2	3
1425:	5	4	2	3	6	4	1	1
1433:	2	4	4	4	5	4	4	4
1441:	1	1	2	2	1	3	2	2
1449:	4	2	4	7	4	2	2	4
1457:	4	7	6	6	3	5	5	2
1465:	2	4	5	2	3	2	2	4
1473:	2	6	6	3	2	4	1	3
1481:	4	0	0	6	4	3	2	3
1489:	3	4	3	3	10	7	2	1
1497:	3	6	4	4	4	4	4	3
1505:	5	2	2	3	3	1	3	3
1513:	5	5	4	0	4	3	5	1
1521:	2	6	2	4	0	3	3	2
1529:	6	1	4	1	3	2	2	0
1537:	2	0	1	1	2	5	4	2
1545:	4	5	3	4	2	3	6	2
1553:	2	2	1	1	1	4	4	3
1561:	5	4	1	0	2	4	4	2
1569:	6	2	2	2	4	4	9	1
1577:	5	3	3	3	4	3	2	1
1585:	4	3	1	4	0	5	2	1
1593:	5	5	0	4	3	3	6	6
1601:	7	5	3	4	1	3	3	5
1609:	4	4	0	2	2	3	3	2
1617:	4	0	1	2	3	1	4	1
1625:	1	1	2	2	1	4	2	1
1633:	3	3	1	1	5	3	3	0
1641:	2	2	2	3	2	2	2	3
1649:	3	2	3	3	1	1	0	1
1657:	4	7	5	0	4	3	1	4

1665:	3	2	2	4	1	5	1	2

Sample Title: GAS 1302

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

2097:	0	1	1	0	1	2	0	0

Sample Title: GAS 1302

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

2529:	0	1	0	2	0	0	1	0

Sample Title: GAS 1302

Channel								
2537:	2	0	0	0	0	0	0	0
2545:	0	0	0	0	0	0	0	0
2553:	0	0	0	0	0	0	0	0
2561:	0	0	0	1	1	0	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	1	0	0	0	0	0
2601:	1	0	0	0	0	0	0	0
2609:	0	0	0	0	0	1	3	0
2617:	0	0	0	0	0	0	0	0
2625:	0	1	0	0	0	0	0	0
2633:	0	0	0	0	1	0	0	0
2641:	0	0	0	0	0	0	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	1	0	0	0	0
2665:	0	0	0	0	0	0	1	0
2673:	0	0	0	0	0	0	0	0
2681:	0	0	0	0	0	0	1	0
2689:	0	0	0	0	0	0	0	0
2697:	0	0	1	0	0	0	0	0
2705:	0	0	0	0	0	0	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	0	0	1	0	1
2729:	0	0	0	0	0	0	0	0
2737:	0	0	0	0	0	0	0	0
2745:	0	0	0	0	0	0	0	0
2753:	0	1	0	0	0	0	0	0
2761:	0	0	0	0	0	0	1	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	1
2793:	0	0	0	0	0	0	0	0
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	0	0	0	0	1
2825:	0	0	0	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	0	0	0	0	0	0	0
2857:	1	0	0	1	0	0	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	1	0	0	0	0	0	0
2881:	0	0	0	0	0	1	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	0	0	0	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	0	0	1	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961:	0	1	0	0	0	0	1	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	1	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	0	0	0	0	0	0	0
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	1	0	0
3033:	0	0	0	0	0	0	1	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	1	0	1	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	1	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	0	0	0	0
3113:	0	0	0	0	0	1	0	0
3121:	0	0	0	0	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	1	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	1	0	0	0
3169:	0	0	0	0	0	0	1	0
3177:	0	0	0	0	0	0	0	0
3185:	0	1	0	0	0	0	0	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	1	0	1	0	0	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	1	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	1	0	0	0
3281:	0	0	0	1	0	0	0	0
3289:	0	0	0	1	1	0	0	0
3297:	0	0	0	0	0	0	0	1
3305:	0	0	0	0	0	0	0	0
3313:	0	0	1	0	0	0	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	1	0	0	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	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	1	0

3393:	0	0	0	0	0	0	0	0

Sample Title: GAS 1302

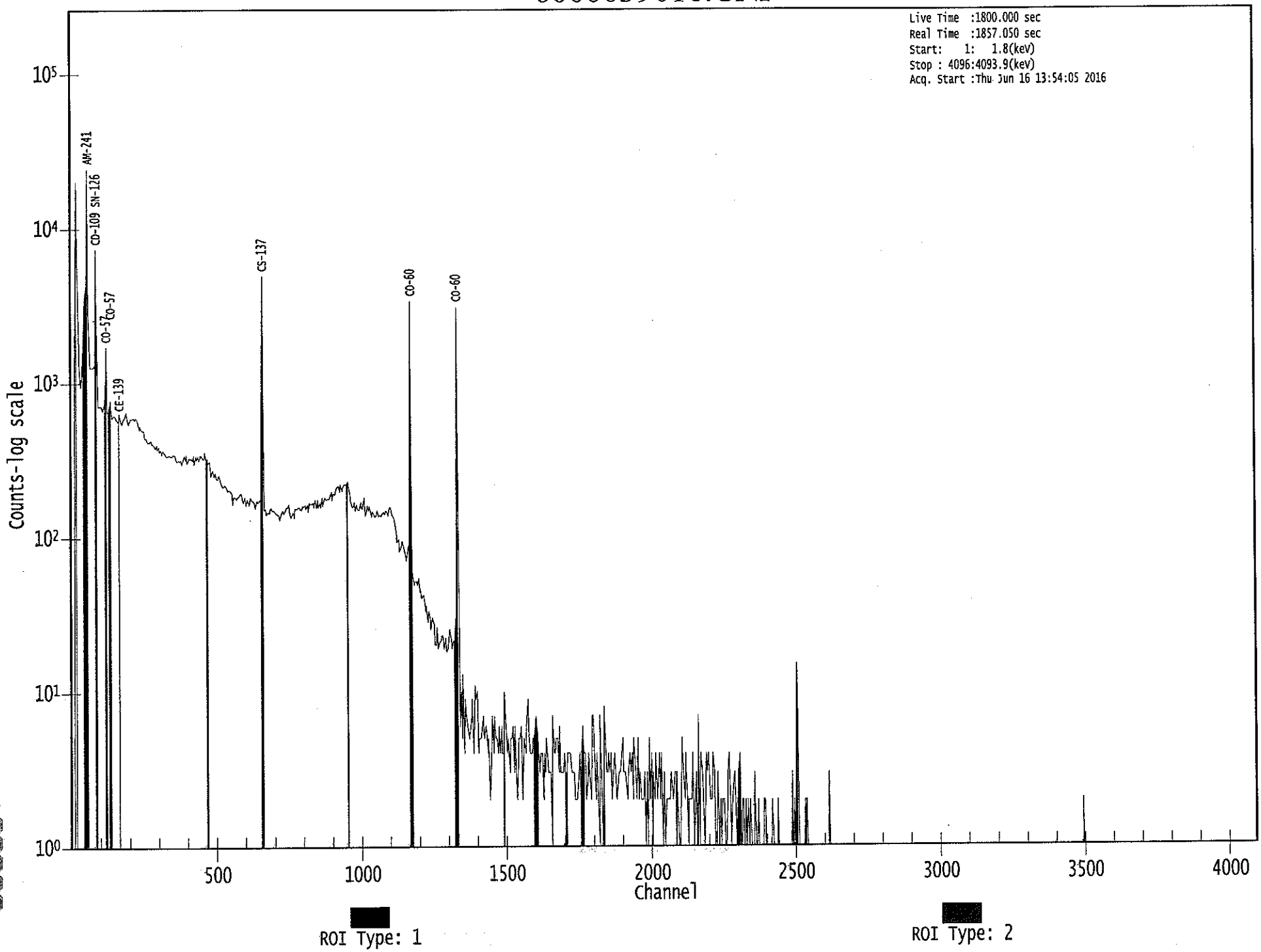
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	1	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	1	1	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	1	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	1	0	0	0	0
3489:	0	0	0	0	2	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	1	0	0
3529:	0	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	1	0	0	0	1	0	0
3561:	0	0	1	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:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	1	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	0	0	0	0	0
3649:	0	0	0	0	0	0	1	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	1	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	1	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	0	0	1	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	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	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	1	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	1	0	0	0	0	0
3817:	0	0	0	1	0	0	0	0

3825:	0	0	0	1	0	0	0	0

Sample Title: GAS 1302

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	1	0	1	0	0	0
3849:	0	0	0	0	0	0	1	0
3857:	0	0	0	0	0	0	0	0
3865:	0	1	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	1	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	1	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	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	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	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	1	0	1	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	1	0	0	0	0	0	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	0	0	0
4073:	0	0	0	0	0	0	0	1
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000039016.CNF



KB 6/16/16

Apex-Gamma

Analysis Report for 1606043-02

BLANK

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-02
Sample Description	: BLANK
Sample Type	: SOIL
Sample Size	: 7.834E+02 grams
Facility	: Countroom
Sample Taken On	: 6/16/2016 11:07:28AM
Acquisition Started	: 6/16/2016 2:26:46PM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3600.8 seconds
Dead Time	: 0.02 %
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	: 39019

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

KB 6/17/16

Analysis Report for 1606043-02

BLANK

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 3:26:49PM
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	62.57	61.83	0.0000	0.00
2	91.67	90.95	0.0000	0.00
3	126.79	126.08	0.0000	0.00
4	230.44	229.77	0.0000	0.00
5	402.10	401.51	0.0000	0.00
6	477.02	476.46	0.0000	0.00
7	533.88	533.35	0.0000	0.00
8	609.68	609.19	0.0000	0.00
9	666.50	666.03	0.0000	0.00
10	738.68	738.25	0.0000	0.00
11	786.78	786.38	0.0000	0.00
12	860.71	860.34	0.0000	0.00
13	913.56	913.22	0.0000	0.00
14	1290.51	1290.38	0.0000	0.00
15	1440.15	1440.11	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606043-02

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PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 3:26:49PM

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	62.57	57 -	66	61.83	5.65E+01	42.05	2.21E+02	1.20
2	91.67	84 -	95	90.95	9.31E+01	50.32	2.70E+02	2.32
3	126.79	121 -	131	126.08	5.90E+01	35.01	1.32E+02	6.14
4	230.44	227 -	233	229.77	2.00E+01	22.21	7.20E+01	3.64
5	402.10	388 -	413	401.51	4.43E+01	50.16	1.55E+02	18.19
6	477.02	473 -	479	476.46	1.20E+01	14.21	2.80E+01	1.74
7	533.88	529 -	539	533.35	1.89E+01	16.83	2.82E+01	7.52
8	609.68	604 -	614	609.19	2.40E+01	16.16	2.20E+01	3.11
9	666.50	662 -	672	666.03	1.90E+01	15.65	2.39E+01	6.29
10	738.68	731 -	743	738.25	1.28E+01	16.52	2.65E+01	4.69
11	786.78	784 -	791	786.38	9.00E+00	11.66	1.00E+01	2.25
12	860.71	856 -	863	860.34	7.19E+00	10.00	1.16E+01	1.65
13	913.56	907 -	920	913.22	2.70E+01	10.39	0.00E+00	3.08
14	1290.51	1287 -	1294	1290.38	6.90E+00	8.49	6.20E+00	1.61
15	1440.15	1437 -	1443	1440.11	9.00E+00	6.00	0.00E+00	1.45

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 3:26:49PM

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

Analysis Report for 1606043-02

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Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	62.57	57 -	66	5.65E+01	42.05	2.21E+02	3.23E+01
2	91.67	84 -	95	9.31E+01	50.32	2.70E+02	3.82E+01
3	126.79	121 -	131	5.90E+01	35.01	1.32E+02	2.59E+01
4	230.44	227 -	233	2.00E+01	22.21	7.20E+01	1.67E+01
5	402.10	388 -	413	4.43E+01	50.16	1.55E+02	3.98E+01
6	477.02	473 -	479	1.20E+01	14.21	2.80E+01	1.02E+01
7	533.88	529 -	539	1.89E+01	16.83	2.82E+01	1.18E+01
8	609.68	604 -	614	2.40E+01	16.16	2.20E+01	1.06E+01
9	666.50	662 -	672	1.90E+01	15.65	2.39E+01	1.07E+01
10	738.68	731 -	743	1.28E+01	16.52	2.65E+01	1.22E+01
11	786.78	784 -	791	9.00E+00	11.66	1.00E+01	8.22E+00
12	860.71	856 -	863	7.19E+00	10.00	1.16E+01	6.94E+00
13	913.56	907 -	920	2.70E+01	10.39	0.00E+00	0.00E+00
14	1290.51	1287 -	1294	6.90E+00	8.49	6.20E+00	5.48E+00
15	1440.15	1437 -	1443	9.00E+00	6.00	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 3:26:49PM

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	62.57	57 -	66	61.83	5.65E+01	42.05	2.21E+02	TH-230 TH-234
2	91.67	84 -	95	90.95	9.31E+01	50.32	2.70E+02	ND-147
3	126.79	121 -	131	126.08	5.90E+01	35.01	1.32E+02	HF-172
4	230.44	227 -	233	229.77	2.00E+01	22.21	7.20E+01	.....
5	402.10	388 -	413	401.51	4.43E+01	50.16	1.55E+02	RN-219
6	477.02	473 -	479	476.46	1.20E+01	14.21	2.80E+01	PM-144 BE-7
7	533.88	529 -	539	533.35	1.89E+01	16.83	2.82E+01	.....
8	609.68	604 -	614	609.19	2.40E+01	16.16	2.20E+01	BI-214

Analysis Report for 1606043-02

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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
9	666.50	662 -	672	666.03	1.90E+01	15.65	2.39E+01	SB-126
10	738.68	731 -	743	738.25	1.28E+01	16.52	2.65E+01	MO-99
11	786.78	784 -	791	786.38	9.00E+00	11.66	1.00E+01	.....
12	860.71	856 -	863	860.34	7.19E+00	10.00	1.16E+01	TL-208
13	913.56	907 -	920	913.22	2.70E+01	10.39	0.00E+00	.....
14	1290.51	1287 -	1294	1290.38	6.90E+00	8.49	6.20E+00	.....
15	1440.15	1437 -	1443	1440.11	9.00E+00	6.00	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 EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 3:26:49PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	62.57	5.65E+01	42.05	2.34E-02	1.76E-03
2	91.67	9.31E+01	50.32	1.92E-02	1.62E-03
3	126.79	5.90E+01	35.01	1.55E-02	1.49E-03
4	230.44	2.00E+01	22.21	9.71E-03	1.01E-03
5	402.10	4.43E+01	50.16	5.82E-03	7.21E-04
6	477.02	1.20E+01	14.21	4.93E-03	6.11E-04
7	533.88	1.89E+01	16.83	4.42E-03	5.28E-04
8	609.68	2.40E+01	16.16	3.87E-03	4.16E-04
9	666.50	1.90E+01	15.65	3.55E-03	3.38E-04
10	738.68	1.28E+01	16.52	3.20E-03	2.97E-04
11	786.78	9.00E+00	11.66	3.01E-03	2.70E-04
12	860.71	7.19E+00	10.00	2.76E-03	2.29E-04
13	913.56	2.70E+01	10.39	2.60E-03	2.06E-04
14	1290.51	6.90E+00	8.49	1.88E-03	2.04E-04
15	1440.15	9.00E+00	6.00	1.71E-03	1.93E-04

Analysis Report for 1606043-02

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 3:26:49PM

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	62.57	5.65E+01	42.05			5.65E+01	4.20E+01
2	91.67	9.31E+01	50.32			9.31E+01	5.03E+01
3	126.79	5.90E+01	35.01			5.90E+01	3.50E+01
4	230.44	2.00E+01	22.21			2.00E+01	2.22E+01
5	402.10	4.43E+01	50.16			4.43E+01	5.02E+01
6	477.02	1.20E+01	14.21			1.20E+01	1.42E+01
7	533.88	1.89E+01	16.83			1.89E+01	1.68E+01
8	609.68	2.40E+01	16.16			2.40E+01	1.62E+01
9	666.50	1.90E+01	15.65			1.90E+01	1.57E+01
10	738.68	1.28E+01	16.52			1.28E+01	1.65E+01
11	786.78	9.00E+00	11.66			9.00E+00	1.17E+01
12	860.71	7.19E+00	10.00			7.19E+00	1.00E+01
13	913.56	2.70E+01	10.39			2.70E+01	1.04E+01
14	1290.51	6.90E+00	8.49			6.90E+00	8.49E+00
15	1440.15	9.00E+00	6.00			9.00E+00	6.00E+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 1606043-02

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AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 3:26:49PM

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	62.57	5.65E+01	42.05			5.65E+01	4.20E+01
2	91.67	9.31E+01	50.32			9.31E+01	5.03E+01
3	126.79	5.90E+01	35.01			5.90E+01	3.50E+01
4	230.44	2.00E+01	22.21			2.00E+01	2.22E+01
5	402.10	4.43E+01	50.16			4.43E+01	5.02E+01
6	477.02	1.20E+01	14.21			1.20E+01	1.42E+01
7	533.88	1.89E+01	16.83			1.89E+01	1.68E+01
8	609.68	2.40E+01	16.16			2.40E+01	1.62E+01
9	666.50	1.90E+01	15.65			1.90E+01	1.57E+01
10	738.68	1.28E+01	16.52			1.28E+01	1.65E+01
11	786.78	9.00E+00	11.66			9.00E+00	1.17E+01
12	860.71	7.19E+00	10.00			7.19E+00	1.00E+01
13	913.56	2.70E+01	10.39			2.70E+01	1.04E+01
14	1290.51	6.90E+00	8.49			6.90E+00	8.49E+00
15	1440.15	9.00E+00	6.00			9.00E+00	6.00E+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

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BE-7	0.949	477.59	*	10.42	2.24E-01	2.67E-01
ND-147	0.679	91.11	*	28.90	1.63E-01	8.91E-02
		531.02		13.10		

Analysis Report for 1606043-02

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Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
HF-172	0.393	81.75		4.52		
		125.81	*	11.30	3.22E-01	1.94E-01
BI-214	0.447	609.31	*	46.30	1.28E-01	8.74E-02
		1120.29		15.10		
		1764.49		15.80		
		2204.22		4.98		
RN-219	0.985	401.80	*	6.50	1.12E+00	1.28E+00
TH-234	0.920	63.29	*	3.80	6.09E-01	4.56E-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 3:26:49PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
4	230.44	5.56052E-03	55.49		
7	533.88	5.25673E-03	44.47		
9	666.50	5.29122E-03	41.09	Tol.	SB-126
10	738.68	3.54701E-03	64.70	Tol.	MO-99
11	786.78	2.50000E-03	64.79		
12	860.71	1.99786E-03	69.52	Tol.	TL-208
13	913.56	7.50000E-03	19.25		
14	1290.51	1.91667E-03	61.49		
15	1440.15	2.50000E-03	33.33		

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 1606043-02

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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
BE-7	0.94	477.59	*	10.42	2.24E-01	2.67E-01
ND-147	0.67	91.11	*	28.90	1.63E-01	8.91E-02
		531.02		13.10		
HF-172	0.39	81.75		4.52		
		125.81	*	11.30	3.22E-01	1.94E-01
BI-214	0.44	609.31	*	46.30	1.28E-01	8.74E-02
		1120.29		15.10		
		1764.49		15.80		
		2204.22		4.98		
RN-219	0.98	401.80	*	6.50	1.12E+00	1.28E+00
TH-234	0.92	63.29	*	3.80	6.09E-01	4.56E-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
BE-7	0.949	2.24E-01	2.67E-01	
ND-147	0.679	1.63E-01	8.91E-02	
HF-172	0.393	3.22E-01	1.94E-01	
BI-214	0.447	1.28E-01	8.74E-02	
RN-219	0.985	1.12E+00	1.28E+00	

Analysis Report for 1606043-02

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Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
TH-234	0.920	6.09E-01	4.56E-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 1606043-02
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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 3:26:49PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
4	230.44	5.56052E-03	55.49		
7	533.88	5.25673E-03	44.47		
9	666.50	5.29122E-03	41.09	Tol.	SB-126
10	738.68	3.54701E-03	64.70	Tol.	MO-99
11	786.78	2.50000E-03	64.79		
12	860.71	1.99786E-03	69.52	Tol.	TL-208
13	913.56	7.50000E-03	19.25		
14	1290.51	1.91667E-03	61.49		
15	1440.15	2.50000E-03	33.33		

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	2.24E-01	4.32E-01	4.32E-01
+	NA-22	1274.54		99.94	0.00E+00	5.43E-02	5.43E-02
+	NA-24	1368.53		99.99	-2.72E-02	7.70E-02	7.70E-02
		2754.09		99.86	3.68E-03		1.03E-01
+	AL-26	1808.65		99.76	-3.42E-02	5.03E-02	5.03E-02
+	K-40	1460.81		10.67	1.11E-01	8.46E-01	8.46E-01
+	AR-41	1293.64		99.16	-7.27E-03	3.64E-01	3.64E-01
+	TI-44	67.88		94.40	1.64E-03	2.72E-02	2.82E-02

Analysis Report for 1606043-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TI-44	78.34	96.00	1.50E-03	2.72E-02	2.72E-02
+	SC-46	889.25	99.98	-1.40E-02	5.06E-02	5.06E-02
		1120.51	99.99	9.95E-04		6.31E-02
+	V-48	983.52	99.98	-8.49E-03	5.75E-02	6.93E-02
		1312.10	97.50	0.00E+00		5.75E-02
+	CR-51	320.08	9.83	-2.30E-01	4.04E-01	4.04E-01
+	MN-54	834.83	99.97	7.23E-04	6.79E-02	6.79E-02
+	CO-56	846.75	99.96	1.52E-02	7.69E-02	7.69E-02
		1037.75	14.03	2.47E-03		4.71E-01
		1238.25	67.00	8.96E-03		1.03E-01
		1771.40	15.51	-1.04E-01		5.67E-01
		2598.48	16.90	1.06E-01		4.90E-01
+	CO-57	122.06	85.51	-4.44E-03	3.26E-02	3.26E-02
		136.48	10.60	7.98E-02		2.84E-01
+	CO-58	810.76	99.40	-7.03E-03	6.43E-02	6.43E-02
+	FE-59	1099.22	56.50	-3.12E-02	1.02E-01	1.02E-01
		1291.56	43.20	5.84E-02		2.06E-01
+	CO-60	1173.22	100.00	-2.28E-02	3.86E-02	6.58E-02
		1332.49	100.00	-2.45E-02		3.86E-02
+	ZN-65	1115.52	50.75	-9.36E-03	1.15E-01	1.15E-01
+	GA-67	93.31	35.70	-4.05E-03	9.57E-02	9.57E-02
		208.95	2.24	-3.42E-01		1.81E+00
		300.22	16.00	-5.51E-02		2.57E-01
+	SE-75	121.11	16.70	-1.65E-02	4.89E-02	1.60E-01
		136.00	59.20	-5.52E-03		4.89E-02
		264.65	59.80	3.50E-02		7.67E-02
		279.53	25.20	-2.40E-02		1.63E-01
		400.65	11.40	-2.09E-01		4.84E-01
+	RB-82	776.52	13.00	-1.21E-02	5.17E-01	5.17E-01
+	RB-83	520.41	46.00	-5.03E-02	1.17E-01	1.17E-01
		529.64	30.30	3.19E-02		2.04E-01
		552.65	16.40	1.35E-01		3.81E-01
+	KR-85	513.99	0.43	1.23E+01	1.85E+01	1.85E+01
+	SR-85	513.99	99.27	5.38E-02	8.11E-02	8.11E-02
+	Y-88	898.02	93.40	5.29E-03	7.04E-02	7.04E-02
		1836.01	99.38	-2.55E-02		8.35E-02
+	NB-93M	16.57	9.43	4.67E-01	2.37E-01	2.37E-01
+	NB-94	702.63	100.00	-2.28E-02	5.58E-02	6.54E-02
		871.10	100.00	-3.51E-03		5.58E-02
+	NB-95	765.79	99.81	-1.40E-02	5.86E-02	5.86E-02
+	NB-95M	235.69	25.00	4.84E-02	1.76E-01	1.76E-01
+	ZR-95	724.18	43.70	4.17E-02	1.25E-01	1.58E-01
		756.72	55.30	3.33E-02		1.25E-01
+	MO-99	181.06	6.20	-2.46E-01	6.09E-01	6.51E-01
		739.58	12.80	2.96E-01		6.09E-01
		778.00	4.50	-5.34E-01		1.51E+00
+	RU-103	497.08	89.00	2.93E-02	6.62E-02	6.62E-02

Analysis Report for 1606043-02

BLANK

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RU-106	621.84	9.80	1.29E-01	5.64E-01	5.64E-01
+	AG-108M	433.93	89.90	-7.39E-03	5.12E-02	5.12E-02
		614.37	90.40	-8.27E-03		7.03E-02
		722.95	90.50	1.40E-02		7.77E-02
+	CD-109	88.03	3.72	-6.92E-01	7.74E-01	7.74E-01
+	AG-110M	657.75	93.14	1.26E-02	7.03E-02	7.03E-02
		677.61	10.53	2.45E-01		6.65E-01
		706.67	16.46	1.52E-01		4.27E-01
		763.93	21.98	-1.27E-01		2.45E-01
		884.67	71.63	1.74E-02		7.91E-02
		1384.27	23.94	2.52E-02		3.20E-01
+	CD-113M	263.70	0.02	7.52E+01	1.96E+02	1.96E+02
+	SN-113	255.12	1.93	-7.28E-01	8.14E-02	2.20E+00
		391.69	64.90	1.94E-02		8.14E-02
+	TE123M	159.00	84.10	-1.08E-02	3.93E-02	3.93E-02
+	SB-124	602.71	97.87	6.94E-03	6.02E-02	6.02E-02
		645.85	7.26	-1.51E-01		6.80E-01
		722.78	11.10	-9.27E-03		6.07E-01
		1691.02	49.00	-5.27E-02		1.22E-01
+	I-125	35.49	6.49	-2.07E-01	2.92E-01	2.92E-01
+	SB-125	176.33	6.89	2.58E-04	1.55E-01	5.34E-01
		427.89	29.33	6.36E-03		1.55E-01
		463.38	10.35	-5.93E-02		4.91E-01
		600.56	17.80	1.46E-01		3.49E-01
		635.90	11.32	-5.32E-02		5.36E-01
+	SB-126	414.70	83.30	6.10E-03	6.29E-02	6.29E-02
		666.33	99.60	4.65E-02		7.60E-02
		695.00	99.60	0.00E+00		7.27E-02
		720.50	53.80	1.09E-02		1.29E-01
+	SN-126	87.57	37.00	-6.93E-02	7.76E-02	7.76E-02
+	SB-127	473.00	25.00	-7.45E-03	1.92E-01	2.02E-01
		685.20	35.70	-7.20E-02		1.92E-01
		783.80	14.70	-3.16E-02		5.44E-01
+	I-129	29.78	57.00	-9.80E-03	3.60E-02	3.60E-02
		33.60	13.20	3.50E-03		1.49E-01
		39.58	7.52	-1.73E-02		2.66E-01
+	I-131	284.30	6.05	7.47E-02	6.28E-02	7.16E-01
		364.48	81.20	2.98E-02		6.28E-02
		636.97	7.26	-5.51E-02		8.29E-01
		722.89	1.80	-5.79E-02		3.79E+00
+	TE-132	49.72	13.10	5.36E-02	5.16E-02	1.63E-01
		228.16	88.00	-1.22E-03		5.16E-02
+	BA-133	81.00	33.00	-2.04E-02	7.76E-02	7.76E-02
		302.84	17.80	-6.14E-02		2.20E-01
		356.01	60.00	-3.24E-02		8.54E-02
+	I-133	529.87	86.30	1.27E-02	8.11E-02	8.11E-02
+	XE-133	81.00	38.00	-1.81E-02	6.88E-02	6.88E-02
+	CS-134	563.23	8.38	-9.10E-03	4.94E-02	6.96E-01

Analysis Report for 1606043-02

BLANK

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-134	569.32		15.43	1.95E-01	4.94E-02	4.29E-01
		604.70		97.60	2.52E-03		6.04E-02
		795.84		85.40	-2.64E-02		4.94E-02
		801.93		8.73	0.00E+00		6.99E-01
+	CS-135	268.24		16.00	-3.16E-02	2.75E-01	2.75E-01
+	I-135	1131.51		22.50	1.11E-01	4.13E-01	4.75E-01
		1260.41		28.60	-2.82E-02		4.13E-01
		1678.03		9.54	1.91E-01		1.51E+00
+	CS-136	153.22		7.46	8.21E-03	7.13E-02	4.34E-01
		163.89		4.61	-1.58E-01		7.40E-01
		176.55		13.56	1.32E-04		2.74E-01
		273.65		12.66	7.02E-02		3.41E-01
		340.57		48.50	-1.17E-02		9.17E-02
		818.50		99.70	-6.83E-03		7.13E-02
		1048.07		79.60	9.57E-03		9.26E-02
		1235.34		19.70	-2.51E-02		3.28E-01
+	CS-137	661.65		85.12	-8.75E-05	8.18E-02	8.18E-02
+	LA-138	788.74		34.00	1.25E-02	1.42E-01	1.89E-01
		1435.80		66.00	0.00E+00		1.42E-01
+	CE-139	165.85		80.35	-6.18E-03	4.23E-02	4.23E-02
+	BA-140	162.64		6.70	-7.03E-02	2.29E-01	5.09E-01
		304.84		4.50	-2.97E-01		8.70E-01
		423.70		3.20	-1.93E-01		1.44E+00
		437.55		2.00	-1.43E+00		2.25E+00
		537.32		25.00	-2.06E-02		2.29E-01
+	LA-140	328.77		20.50	8.45E-02	9.15E-02	2.29E-01
		487.03		45.50	2.31E-02		1.29E-01
		815.85		23.50	2.47E-02		3.10E-01
		1596.49		95.49	-4.33E-03		9.15E-02
+	CE-141	145.44		48.40	-1.23E-02	6.33E-02	6.33E-02
+	CE-143	57.36		11.80	-2.66E-02	1.23E-01	1.84E-01
		293.26		42.00	3.55E-02		1.23E-01
		664.55		5.20	-2.06E-01		1.46E+00
+	CE-144	133.54		10.80	-5.93E-03	2.64E-01	2.64E-01
+	PM-144	476.78		42.00	-2.18E-02	5.42E-02	1.30E-01
		618.01		98.60	-6.11E-03		5.42E-02
		696.49		99.49	8.04E-03		7.23E-02
+	PM-145	36.85		21.70	-7.06E-02	4.88E-02	8.61E-02
		37.36		39.70	-8.90E-03		4.88E-02
		42.30		15.10	7.77E-02		1.40E-01
		72.40		2.31	4.12E-01		1.11E+00
+	PM-146	453.90		39.94	6.39E-02	1.40E-01	1.40E-01
		735.90		14.01	-2.68E-02		4.77E-01
		747.13		13.10	-8.81E-02		4.35E-01
+	ND-147	91.11	*	28.90	1.63E-01	1.38E-01	1.38E-01
		531.02		13.10	2.53E-02		4.62E-01
+	PM-149	285.90		3.10	-3.45E-01	1.47E+00	1.47E+00
+	EU-152	121.78		20.50	-1.85E-02	1.36E-01	1.36E-01
		244.69		5.40	-2.58E-01		7.91E-01

Analysis Report for 1606043-02

BLANK

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-152	344.27		19.13	7.81E-02	1.36E-01	2.52E-01
		778.89		9.20	-2.51E-01		7.10E-01
		964.01		10.40	-1.59E-01		6.49E-01
		1085.78		7.22	-1.18E-01		1.00E+00
		1112.02		9.60	-1.66E-01		6.06E-01
		1407.95		14.94	-1.45E-01		4.83E-01
+	GD-153	97.43		31.30	-1.38E-02	9.18E-02	9.18E-02
		103.18		22.20	-4.53E-03		1.23E-01
+	EU-154	123.07		40.50	2.54E-03	7.28E-02	7.28E-02
		723.30		19.70	6.42E-02		3.57E-01
		873.19		11.50	-3.57E-02		4.86E-01
		996.32		10.30	-2.59E-02		7.31E-01
		1004.76		17.90	2.03E-01		4.24E-01
		1274.45		35.50	0.00E+00		1.53E-01
+	EU-155	86.50		30.90	-6.52E-03	8.82E-02	8.82E-02
		105.30		20.70	2.99E-03		1.36E-01
+	EU-156	811.77		10.40	-3.18E-02	6.39E-01	6.39E-01
		1153.47		7.20	-2.50E-01		1.07E+00
		1230.71		8.90	-1.41E-01		7.79E-01
+	HO-166M	184.41		72.60	2.68E-02	5.66E-02	5.66E-02
		280.45		29.60	2.11E-03		1.37E-01
		410.94		11.10	-1.02E-01		4.81E-01
		711.69		54.10	-1.05E-02		1.20E-01
+	TM-171	66.72		0.14	2.70E+00	1.90E+01	1.90E+01
+	HF-172	81.75		4.52	-1.28E-01	2.97E-01	5.82E-01
		125.81	*	11.30	3.22E-01		2.97E-01
+	LU-172	181.53		20.60	-2.31E-02	1.00E-01	1.96E-01
		810.06		16.63	-4.26E-02		3.90E-01
		912.12		15.25	2.60E-01		5.89E-01
		1093.66		62.50	4.74E-03		1.00E-01
+	LU-173	100.72		5.24	-2.87E-01	2.12E-01	5.09E-01
		272.11		21.20	8.93E-02		2.12E-01
+	HF-175	343.40		84.00	-1.59E-02	5.24E-02	5.24E-02
+	LU-176	88.34		13.30	1.10E-01	4.31E-02	2.36E-01
		201.83		86.00	1.19E-03		4.88E-02
		306.78		94.00	-5.91E-03		4.31E-02
+	TA-182	67.75		41.20	3.76E-03	6.46E-02	6.46E-02
		1121.30		34.90	-1.43E-03		1.81E-01
		1189.05		16.23	-1.62E-01		4.62E-01
		1221.41		26.98	2.57E-03		2.70E-01
		1231.02		11.44	-1.09E-01		6.02E-01
+	IR-192	308.46		29.68	2.43E-02	9.34E-02	1.45E-01
		468.07		48.10	-4.27E-02		9.34E-02
+	HG-203	279.19		77.30	-7.84E-03	5.30E-02	5.30E-02
+	BI-207	569.67		97.72	3.08E-02	6.78E-02	6.78E-02
		1063.62		74.90	-5.26E-02		9.47E-02
+	TL-208	583.14		30.22	1.73E-01	2.18E-01	2.18E-01
		860.37		4.48	5.19E-01		1.56E+00
		2614.66		35.85	5.54E-03		2.68E-01

Analysis Report for 1606043-02

BLANK

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BI-210M	262.00		45.00	-1.40E-02	9.66E-02	9.66E-02
		300.00		23.00	-7.77E-02		1.73E-01
+	PB-210	46.50		4.25	2.85E-02	4.85E-01	4.85E-01
+	PB-211	404.84		2.90	6.50E-01	2.02E+00	2.02E+00
		831.96		2.90	-1.39E-01		2.40E+00
+	BI-212	727.17		11.80	8.27E-02	5.46E-01	5.46E-01
		1620.62		2.75	-6.79E-01		2.44E+00
+	PB-212	238.63		44.60	2.28E-02	9.93E-02	9.93E-02
		300.09		3.41	-5.24E-01		1.16E+00
+	BI-214	609.31	*	46.30	1.28E-01	1.27E-01	1.27E-01
		1120.29		15.10	6.58E-03		4.18E-01
		1764.49		15.80	-2.54E-02		5.54E-01
		2204.22		4.98	5.95E-01		2.09E+00
+	PB-214	295.21		19.19	1.67E-01	1.40E-01	2.54E-01
		351.92		37.19	1.85E-02		1.40E-01
+	RN-219	401.80	*	6.50	1.12E+00	2.08E+00	2.08E+00
+	RA-223	323.87		3.88	-5.75E-01	1.02E+00	1.02E+00
+	RA-224	240.98		3.95	6.16E-01	1.15E+00	1.15E+00
+	RA-225	40.00		31.00	-4.23E-03	6.53E-02	6.53E-02
+	RA-226	186.21		3.28	7.62E-01	1.24E+00	1.24E+00
+	TH-227	50.10		8.40	8.10E-02	2.46E-01	2.46E-01
		236.00		11.50	1.02E-01		3.72E-01
		256.20		6.30	-2.12E-01		6.71E-01
+	AC-228	338.32		11.40	-4.50E-02	3.12E-01	3.80E-01
		911.07		27.70	1.47E-01		3.12E-01
		969.11		16.60	2.84E-02		4.26E-01
+	TH-230	48.44		16.90	7.14E-03	1.21E-01	1.21E-01
		62.85		4.60	3.62E-01		5.46E-01
		67.67		0.37	4.18E-01		7.18E+00
+	PA-231	283.67		1.60	-3.23E-02	1.70E+00	2.54E+00
		302.67		2.30	-4.75E-01		1.70E+00
+	TH-231	25.64		14.70	-4.21E-02	1.51E-01	1.51E-01
		84.21		6.40	-5.20E-02		4.07E-01
+	PA-233	311.98		38.60	1.61E-02	1.19E-01	1.19E-01
+	PA-234	131.20		20.40	-3.54E-02	1.46E-01	1.46E-01
		733.99		8.80	-1.18E-02		7.76E-01
		946.00		12.00	-1.06E-01		5.53E-01
+	PA-234M	1001.03		0.92	-2.44E+00	7.28E+00	7.28E+00
+	TH-234	63.29	*	3.80	6.09E-01	7.26E-01	7.26E-01
+	U-235	143.76		10.50	1.07E-01	3.04E-01	3.04E-01
		163.35		4.70	-1.53E-01		7.18E-01
		205.31		4.70	1.47E-01		8.63E-01
+	NP-237	86.50		12.60	-1.60E-02	2.16E-01	2.16E-01
+	NP-239	106.10		22.70	2.87E-03	1.31E-01	1.31E-01
		228.18		10.70	-2.24E-02		4.17E-01
		277.60		14.10	-1.12E-01		3.02E-01
+	AM-241	59.54		35.90	-4.08E-03	6.52E-02	6.52E-02

Analysis Report for 1606043-02

BLANK

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	AM-243	74.67	66.00	2.92E-03	3.91E-02	3.91E-02
+	CM-243	209.75	3.29	7.05E-02	2.91E-01	1.21E+00
		228.14	10.60	-9.78E-03		4.14E-01
		277.60	14.00	-1.07E-01		2.91E-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	4.32E-01	4.32E-01	2.24E-01	1.91E-01
	NA-22	1274.54		99.94	5.43E-02	5.43E-02	0.00E+00	2.03E-02
	NA-24	1368.53		99.99	7.70E-02	7.70E-02	-2.72E-02	2.98E-02
		2754.09		99.86	1.03E-01		3.68E-03	3.63E-02
	AL-26	1808.65		99.76	5.03E-02	5.03E-02	-3.42E-02	1.59E-02
	K-40	1460.81		10.67	8.46E-01	8.46E-01	1.11E-01	3.51E-01
	AR-41	1293.64		99.16	3.64E-01	3.64E-01	-7.27E-03	1.52E-01
	TI-44	67.88		94.40	2.82E-02	2.72E-02	1.64E-03	1.35E-02
		78.34		96.00	2.72E-02		1.50E-03	1.29E-02
	SC-46	889.25		99.98	5.06E-02	5.06E-02	-1.40E-02	2.05E-02
		1120.51		99.99	6.31E-02		9.95E-04	2.55E-02
	V-48	983.52		99.98	6.93E-02	5.75E-02	-8.49E-03	2.93E-02
		1312.10		97.50	5.75E-02		0.00E+00	2.15E-02
	CR-51	320.08		9.83	4.04E-01	4.04E-01	-2.30E-01	1.84E-01
	MN-54	834.83		99.97	6.79E-02	6.79E-02	7.23E-04	2.94E-02
	CO-56	846.75		99.96	7.69E-02	7.69E-02	1.52E-02	3.38E-02
		1037.75		14.03	4.71E-01		2.47E-03	1.95E-01
		1238.25		67.00	1.03E-01		8.96E-03	4.18E-02
		1771.40		15.51	5.67E-01		-1.04E-01	2.25E-01

Analysis Report for 1606043-02

BLANK

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-56	2598.48	16.90	4.90E-01	7.69E-02	1.06E-01	1.74E-01
CO-57	122.06	85.51	3.26E-02	3.26E-02	-4.44E-03	1.53E-02
	136.48	10.60	2.84E-01		7.98E-02	1.34E-01
CO-58	810.76	99.40	6.43E-02	6.43E-02	-7.03E-03	2.77E-02
FE-59	1099.22	56.50	1.02E-01	1.02E-01	-3.12E-02	4.05E-02
	1291.56	43.20	2.06E-01		5.84E-02	8.70E-02
CO-60	1173.22	100.00	6.58E-02	3.86E-02	-2.28E-02	2.66E-02
	1332.49	100.00	3.86E-02		-2.45E-02	1.22E-02
ZN-65	1115.52	50.75	1.15E-01	1.15E-01	-9.36E-03	4.57E-02
GA-67	93.31	35.70	9.57E-02	9.57E-02	-4.05E-03	4.59E-02
	208.95	2.24	1.81E+00		-3.42E-01	8.50E-01
	300.22	16.00	2.57E-01		-5.51E-02	1.17E-01
SE-75	121.11	16.70	1.60E-01	4.89E-02	-1.65E-02	7.50E-02
	136.00	59.20	4.89E-02		-5.52E-03	2.30E-02
	264.65	59.80	7.67E-02		3.50E-02	3.58E-02
	279.53	25.20	1.63E-01		-2.40E-02	7.50E-02
	400.65	11.40	4.84E-01		-2.09E-01	2.22E-01
RB-82	776.52	13.00	5.17E-01	5.17E-01	-1.21E-02	2.26E-01
RB-83	520.41	46.00	1.17E-01	1.17E-01	-5.03E-02	5.25E-02
	529.64	30.30	2.04E-01		3.19E-02	9.22E-02
	552.65	16.40	3.81E-01		1.35E-01	1.72E-01
KR-85	513.99	0.43	1.85E+01	1.85E+01	1.23E+01	8.61E+00
SR-85	513.99	99.27	8.11E-02	8.11E-02	5.38E-02	3.77E-02
Y-88	898.02	93.40	7.04E-02	7.04E-02	5.29E-03	2.99E-02
	1836.01	99.38	8.35E-02		-2.55E-02	3.23E-02
NB-93M	16.57	9.43	2.37E-01	2.37E-01	4.67E-01	1.14E-01
NB-94	702.63	100.00	6.54E-02	5.58E-02	-2.28E-02	2.89E-02
	871.10	100.00	5.58E-02		-3.51E-03	2.31E-02
NB-95	765.79	99.81	5.86E-02	5.86E-02	-1.40E-02	2.51E-02
NB-95M	235.69	25.00	1.76E-01	1.76E-01	4.84E-02	8.25E-02
ZR-95	724.18	43.70	1.58E-01	1.25E-01	4.17E-02	6.99E-02
	756.72	55.30	1.25E-01		3.33E-02	5.47E-02
MO-99	181.06	6.20	6.51E-01	6.09E-01	-2.46E-01	3.07E-01
	739.58	12.80	6.09E-01		2.96E-01	2.72E-01
	778.00	4.50	1.51E+00		-5.34E-01	6.56E-01
RU-103	497.08	89.00	6.62E-02	6.62E-02	2.93E-02	3.00E-02
RU-106	621.84	9.80	5.64E-01	5.64E-01	1.29E-01	2.47E-01
AG-108M	433.93	89.90	5.12E-02	5.12E-02	-7.39E-03	2.29E-02
	614.37	90.40	7.03E-02		-8.27E-03	3.14E-02
	722.95	90.50	7.77E-02		1.40E-02	3.45E-02
CD-109	88.03	3.72	7.74E-01	7.74E-01	-6.92E-01	3.69E-01
AG-110M	657.75	93.14	7.03E-02	7.03E-02	1.26E-02	3.13E-02
	677.61	10.53	6.65E-01		2.45E-01	2.97E-01
	706.67	16.46	4.27E-01		1.52E-01	1.90E-01
	763.93	21.98	2.45E-01		-1.27E-01	1.03E-01
	884.67	71.63	7.91E-02		1.74E-02	3.28E-02
	1384.27	23.94	3.20E-01		2.52E-02	1.29E-01
CD-113M	263.70	0.02	1.96E+02	1.96E+02	7.52E+01	9.13E+01
SN-113	255.12	1.93	2.20E+00	8.14E-02	-7.28E-01	1.03E+00
	391.69	64.90	8.14E-02		1.94E-02	3.73E-02
TE123M	159.00	84.10	3.93E-02	3.93E-02	-1.08E-02	1.85E-02
SB-124	602.71	97.87	6.02E-02	6.02E-02	6.94E-03	2.67E-02
	645.85	7.26	6.80E-01		-1.51E-01	2.91E-01

Analysis Report for 1606043-02

BLANK

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-124	722.78	11.10	6.07E-01	6.02E-02	-9.27E-03	2.68E-01
	1691.02	49.00	1.22E-01		-5.27E-02	4.34E-02
I-125	35.49	6.49	2.92E-01	2.92E-01	-2.07E-01	1.39E-01
SB-125	176.33	6.89	5.34E-01	1.55E-01	2.58E-04	2.52E-01
	427.89	29.33	1.55E-01		6.36E-03	6.93E-02
	463.38	10.35	4.91E-01		-5.93E-02	2.21E-01
	600.56	17.80	3.49E-01		1.46E-01	1.56E-01
	635.90	11.32	5.36E-01		-5.32E-02	2.37E-01
SB-126	414.70	83.30	6.29E-02	6.29E-02	6.10E-03	2.87E-02
	666.33	99.60	7.60E-02		4.65E-02	3.43E-02
	695.00	99.60	7.27E-02		0.00E+00	3.25E-02
	720.50	53.80	1.29E-01		1.09E-02	5.69E-02
SN-126	87.57	37.00	7.76E-02	7.76E-02	-6.93E-02	3.70E-02
SB-127	473.00	25.00	2.02E-01	1.92E-01	-7.45E-03	9.04E-02
	685.20	35.70	1.92E-01		-7.20E-02	8.53E-02
	783.80	14.70	5.44E-01		-3.16E-02	2.42E-01
I-129	29.78	57.00	3.60E-02	3.60E-02	-9.80E-03	1.72E-02
	33.60	13.20	1.49E-01		3.50E-03	7.09E-02
	39.58	7.52	2.66E-01		-1.73E-02	1.27E-01
I-131	284.30	6.05	7.16E-01	6.28E-02	7.47E-02	3.31E-01
	364.48	81.20	6.28E-02		2.98E-02	2.89E-02
	636.97	7.26	8.29E-01		-5.51E-02	3.66E-01
	722.89	1.80	3.79E+00		-5.79E-02	1.67E+00
TE-132	49.72	13.10	1.63E-01	5.16E-02	5.36E-02	7.75E-02
	228.16	88.00	5.16E-02		-1.22E-03	2.42E-02
BA-133	81.00	33.00	7.76E-02	7.76E-02	-2.04E-02	3.69E-02
	302.84	17.80	2.20E-01		-6.14E-02	1.00E-01
	356.01	60.00	8.54E-02		-3.24E-02	3.94E-02
I-133	529.87	86.30	8.11E-02	8.11E-02	1.27E-02	3.67E-02
XE-133	81.00	38.00	6.88E-02	6.88E-02	-1.81E-02	3.27E-02
CS-134	563.23	8.38	6.96E-01	4.94E-02	-9.10E-03	3.11E-01
	569.32	15.43	4.29E-01		1.95E-01	1.94E-01
	604.70	97.60	6.04E-02		2.52E-03	2.68E-02
	795.84	85.40	4.94E-02		-2.64E-02	1.96E-02
	801.93	8.73	6.99E-01		0.00E+00	2.99E-01
CS-135	268.24	16.00	2.75E-01	2.75E-01	-3.16E-02	1.28E-01
I-135	1131.51	22.50	4.75E-01	4.13E-01	1.11E-01	1.97E-01
	1260.41	28.60	4.13E-01		-2.82E-02	1.71E-01
	1678.03	9.54	1.51E+00		1.91E-01	6.17E-01
CS-136	153.22	7.46	4.34E-01	7.13E-02	8.21E-03	2.04E-01
	163.89	4.61	7.40E-01		-1.58E-01	3.48E-01
	176.55	13.56	2.74E-01		1.32E-04	1.29E-01
	273.65	12.66	3.41E-01		7.02E-02	1.58E-01
	340.57	48.50	9.17E-02		-1.17E-02	4.19E-02
	818.50	99.70	7.13E-02		-6.83E-03	3.11E-02
	1048.07	79.60	9.26E-02		9.57E-03	3.91E-02
	1235.34	19.70	3.28E-01		-2.51E-02	1.30E-01
CS-137	661.65	85.12	8.18E-02	8.18E-02	-8.75E-05	3.67E-02
LA-138	788.74	34.00	1.89E-01	1.42E-01	1.25E-02	8.17E-02
	1435.80	66.00	1.42E-01		0.00E+00	5.93E-02
CE-139	165.85	80.35	4.23E-02	4.23E-02	-6.18E-03	1.99E-02
BA-140	162.64	6.70	5.09E-01	2.29E-01	-7.03E-02	2.39E-01
	304.84	4.50	8.70E-01		-2.97E-01	3.97E-01

Analysis Report for 1606043-02

BLANK

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BA-140	423.70		3.20	1.44E+00	2.29E-01	-1.93E-01	6.48E-01
		437.55		2.00	2.25E+00		-1.43E+00	1.01E+00
		537.32		25.00	2.29E-01		-2.06E-02	1.03E-01
	LA-140	328.77		20.50	2.29E-01	9.15E-02	8.45E-02	1.06E-01
		487.03		45.50	1.29E-01		2.31E-02	5.88E-02
		815.85		23.50	3.10E-01		2.47E-02	1.36E-01
		1596.49		95.49	9.15E-02		-4.33E-03	3.70E-02
	CE-141	145.44		48.40	6.33E-02	6.33E-02	-1.23E-02	2.97E-02
	CE-143	57.36		11.80	1.84E-01	1.23E-01	-2.66E-02	8.72E-02
		293.26		42.00	1.23E-01		3.55E-02	5.74E-02
		664.55		5.20	1.46E+00		-2.06E-01	6.53E-01
	CE-144	133.54		10.80	2.64E-01	2.64E-01	-5.93E-03	1.24E-01
	PM-144	476.78		42.00	1.30E-01	5.42E-02	-2.18E-02	5.89E-02
		618.01		98.60	5.42E-02		-6.11E-03	2.37E-02
		696.49		99.49	7.23E-02		8.04E-03	3.23E-02
	PM-145	36.85		21.70	8.61E-02	4.88E-02	-7.06E-02	4.09E-02
		37.36		39.70	4.88E-02		-8.90E-03	2.32E-02
		42.30		15.10	1.40E-01		7.77E-02	6.69E-02
		72.40		2.31	1.11E+00		4.12E-01	5.29E-01
	PM-146	453.90		39.94	1.40E-01	1.40E-01	6.39E-02	6.38E-02
		735.90		14.01	4.77E-01		-2.68E-02	2.10E-01
		747.13		13.10	4.35E-01		-8.81E-02	1.86E-01
+	ND-147	91.11	*	28.90	1.38E-01	1.38E-01	1.63E-01	6.68E-02
		531.02		13.10	4.62E-01		2.53E-02	2.09E-01
	PM-149	285.90		3.10	1.47E+00	1.47E+00	-3.45E-01	6.80E-01
	EU-152	121.78		20.50	1.36E-01	1.36E-01	-1.85E-02	6.39E-02
		244.69		5.40	7.91E-01		-2.58E-01	3.70E-01
		344.27		19.13	2.52E-01		7.81E-02	1.16E-01
		778.89		9.20	7.10E-01		-2.51E-01	3.09E-01
		964.01		10.40	6.49E-01		-1.59E-01	2.74E-01
		1085.78		7.22	1.00E+00		-1.18E-01	4.20E-01
		1112.02		9.60	6.06E-01		-1.66E-01	2.41E-01
		1407.95		14.94	4.83E-01		-1.45E-01	1.92E-01
	GD-153	97.43		31.30	9.18E-02	9.18E-02	-1.38E-02	4.37E-02
		103.18		22.20	1.23E-01		-4.53E-03	5.83E-02
	EU-154	123.07		40.50	7.28E-02	7.28E-02	2.54E-03	3.44E-02
		723.30		19.70	3.57E-01		6.42E-02	1.59E-01
		873.19		11.50	4.86E-01		-3.57E-02	2.02E-01
		996.32		10.30	7.31E-01		-2.59E-02	3.13E-01
		1004.76		17.90	4.24E-01		2.03E-01	1.82E-01
		1274.45		35.50	1.53E-01		0.00E+00	5.72E-02
	EU-155	86.50		30.90	8.82E-02	8.82E-02	-6.52E-03	4.20E-02
		105.30		20.70	1.36E-01		2.99E-03	6.45E-02
	EU-156	811.77		10.40	6.39E-01	6.39E-01	-3.18E-02	2.77E-01
		1153.47		7.20	1.07E+00		-2.50E-01	4.49E-01
		1230.71		8.90	7.79E-01		-1.41E-01	3.15E-01
	HO-166M	184.41		72.60	5.66E-02	5.66E-02	2.68E-02	2.68E-02
		280.45		29.60	1.37E-01		2.11E-03	6.33E-02
		410.94		11.10	4.81E-01		-1.02E-01	2.20E-01
		711.69		54.10	1.20E-01		-1.05E-02	5.26E-02
	TM-171	66.72		0.14	1.90E+01	1.90E+01	2.70E+00	9.09E+00
+	HF-172	81.75		4.52	5.82E-01	2.97E-01	-1.28E-01	2.77E-01
		125.81	*	11.30	2.97E-01		3.22E-01	1.41E-01

Analysis Report for 1606043-02

BLANK

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	LU-172	181.53		20.60	1.96E-01	1.00E-01	-2.31E-02	9.24E-02
		810.06		16.63	3.90E-01		-4.26E-02	1.68E-01
		912.12		15.25	5.89E-01		2.60E-01	2.61E-01
		1093.66		62.50	1.00E-01		4.74E-03	4.05E-02
	LU-173	100.72		5.24	5.09E-01	2.12E-01	-2.87E-01	2.41E-01
		272.11		21.20	2.12E-01		8.93E-02	9.88E-02
	HF-175	343.40		84.00	5.24E-02	5.24E-02	-1.59E-02	2.39E-02
	LU-176	88.34		13.30	2.36E-01	4.31E-02	1.10E-01	1.13E-01
		201.83		86.00	4.88E-02		1.19E-03	2.30E-02
		306.78		94.00	4.31E-02		-5.91E-03	1.97E-02
	TA-182	67.75		41.20	6.46E-02	6.46E-02	3.76E-03	3.09E-02
		1121.30		34.90	1.81E-01		-1.43E-03	7.31E-02
		1189.05		16.23	4.62E-01		-1.62E-01	1.92E-01
		1221.41		26.98	2.70E-01		2.57E-03	1.11E-01
		1231.02		11.44	6.02E-01		-1.09E-01	2.43E-01
	IR-192	308.46		29.68	1.45E-01	9.34E-02	2.43E-02	6.67E-02
		468.07		48.10	9.34E-02		-4.27E-02	4.13E-02
	HG-203	279.19		77.30	5.30E-02	5.30E-02	-7.84E-03	2.45E-02
	BI-207	569.67		97.72	6.78E-02	6.78E-02	3.08E-02	3.07E-02
		1063.62		74.90	9.47E-02		-5.26E-02	3.97E-02
	TL-208	583.14		30.22	2.18E-01	2.18E-01	1.73E-01	9.82E-02
		860.37		4.48	1.56E+00		5.19E-01	6.75E-01
		2614.66		35.85	2.68E-01		5.54E-03	1.00E-01
	BI-210M	262.00		45.00	9.66E-02	9.66E-02	-1.40E-02	4.50E-02
		300.00		23.00	1.73E-01		-7.77E-02	7.89E-02
	PB-210	46.50		4.25	4.85E-01	4.85E-01	2.85E-02	2.31E-01
	PB-211	404.84		2.90	2.02E+00	2.02E+00	6.50E-01	9.31E-01
		831.96		2.90	2.40E+00		-1.39E-01	1.04E+00
	BI-212	727.17		11.80	5.46E-01	5.46E-01	8.27E-02	2.39E-01
		1620.62		2.75	2.44E+00		-6.79E-01	9.12E-01
	PB-212	238.63		44.60	9.93E-02	9.93E-02	2.28E-02	4.66E-02
		300.09		3.41	1.16E+00		-5.24E-01	5.32E-01
+	BI-214	609.31	*	46.30	1.27E-01	1.27E-01	1.28E-01	5.65E-02
		1120.29		15.10	4.18E-01		6.58E-03	1.69E-01
		1764.49		15.80	5.54E-01		-2.54E-02	2.20E-01
		2204.22		4.98	2.09E+00		5.95E-01	8.30E-01
	PB-214	295.21		19.19	2.54E-01	1.40E-01	1.67E-01	1.18E-01
		351.92		37.19	1.40E-01		1.85E-02	6.48E-02
+	RN-219	401.80	*	6.50	2.08E+00	2.08E+00	1.12E+00	1.01E+00
	RA-223	323.87		3.88	1.02E+00	1.02E+00	-5.75E-01	4.62E-01
	RA-224	240.98		3.95	1.15E+00	1.15E+00	6.16E-01	5.41E-01
	RA-225	40.00		31.00	6.53E-02	6.53E-02	-4.23E-03	3.11E-02
	RA-226	186.21		3.28	1.24E+00	1.24E+00	7.62E-01	5.88E-01
	TH-227	50.10		8.40	2.46E-01	2.46E-01	8.10E-02	1.17E-01
		236.00		11.50	3.72E-01		1.02E-01	1.74E-01
		256.20		6.30	6.71E-01		-2.12E-01	3.12E-01
	AC-228	338.32		11.40	3.80E-01	3.12E-01	-4.50E-02	1.73E-01
		911.07		27.70	3.12E-01		1.47E-01	1.38E-01
		969.11		16.60	4.26E-01		2.84E-02	1.81E-01
	TH-230	48.44		16.90	1.21E-01	1.21E-01	7.14E-03	5.78E-02
		62.85		4.60	5.46E-01		3.62E-01	2.61E-01
		67.67		0.37	7.18E+00		4.18E-01	3.43E+00
	PA-231	283.67		1.60	2.54E+00	1.70E+00	-3.23E-02	1.17E+00

Analysis Report for 1606043-02

BLANK

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PA-231	302.67		2.30	1.70E+00	1.70E+00	-4.75E-01	7.75E-01
	TH-231	25.64		14.70	1.51E-01	1.51E-01	-4.21E-02	7.26E-02
		84.21		6.40	4.07E-01		-5.20E-02	1.94E-01
	PA-233	311.98		38.60	1.19E-01	1.19E-01	1.61E-02	5.49E-02
	PA-234	131.20		20.40	1.46E-01	1.46E-01	-3.54E-02	6.88E-02
		733.99		8.80	7.76E-01		-1.18E-02	3.42E-01
		946.00		12.00	5.53E-01		-1.06E-01	2.33E-01
	PA-234M	1001.03		0.92	7.28E+00	7.28E+00	-2.44E+00	3.05E+00
+	TH-234	63.29	*	3.80	7.26E-01	7.26E-01	6.09E-01	3.48E-01
	U-235	143.76		10.50	3.04E-01	3.04E-01	1.07E-01	1.44E-01
		163.35		4.70	7.18E-01		-1.53E-01	3.37E-01
		205.31		4.70	8.63E-01		1.47E-01	4.06E-01
	NP-237	86.50		12.60	2.16E-01	2.16E-01	-1.60E-02	1.03E-01
	NP-239	106.10		22.70	1.31E-01	1.31E-01	2.87E-03	6.19E-02
		228.18		10.70	4.17E-01		-2.24E-02	1.96E-01
		277.60		14.10	3.02E-01		-1.12E-01	1.39E-01
	AM-241	59.54		35.90	6.52E-02	6.52E-02	-4.08E-03	3.11E-02
	AM-243	74.67		66.00	3.91E-02	3.91E-02	2.92E-03	1.86E-02
	CM-243	209.75		3.29	1.21E+00	2.91E-01	7.05E-02	5.69E-01
		228.14		10.60	4.14E-01		-9.78E-03	1.95E-01
		277.60		14.00	2.91E-01		-1.07E-01	1.34E-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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

Analysis Report for 1606043-02

BLANK

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:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	6	40
17:	58	35	43	34	24	24	23	30
25:	27	23	15	18	23	18	22	9
33:	13	16	19	17	9	15	12	16
41:	18	22	12	14	15	27	17	7
49:	10	10	18	11	13	9	13	7
57:	9	14	13	15	14	16	42	18
65:	13	13	15	17	16	18	13	13
73:	16	17	18	15	13	17	10	16
81:	17	13	13	12	21	13	10	15
89:	18	18	26	41	32	13	9	11
97:	13	10	12	13	15	12	5	14
105:	13	13	11	12	16	12	13	13
113:	10	12	12	11	5	10	12	7
121:	5	6	16	9	18	15	15	16
129:	11	7	7	5	5	10	12	13
137:	11	7	11	14	11	9	5	14
145:	15	4	9	10	5	6	16	7
153:	12	7	8	14	9	11	10	11
161:	8	6	12	7	11	9	10	12
169:	8	9	11	8	11	8	9	12
177:	14	9	12	6	13	5	13	11
185:	16	23	6	11	9	7	3	8
193:	7	11	13	11	12	6	11	12
201:	12	7	12	9	12	9	11	7
209:	5	6	7	10	11	8	7	8
217:	9	10	7	10	7	8	10	8
225:	8	8	6	10	11	10	11	5
233:	3	5	9	10	9	13	8	9
241:	7	7	11	6	8	6	6	8
249:	11	8	6	3	10	8	8	6
257:	7	6	4	9	12	5	7	8
265:	4	7	10	6	4	5	7	10
273:	3	10	7	5	4	3	3	4
281:	9	8	5	6	3	4	4	8
289:	5	5	10	12	6	9	6	4
297:	4	7	5	5	3	1	4	6
305:	3	3	5	6	5	6	4	6
313:	6	5	6	8	7	2	2	2
321:	3	2	2	6	8	3	5	3
329:	8	5	5	3	5	7	2	3
337:	4	8	0	2	5	6	4	6
345:	4	7	3	8	5	3	3	12
353:	6	6	5	6	5	3	2	10
361:	7	6	3	3	3	5	1	6

369:	3	3	3	7	6	4	7	3

Sample Title: BLANK

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

801: 0 2 1 2 3 0 1 3

Sample Title: BLANK

Channel								
809:	1	0	1	4	2	1	1	1
817:	2	2	3	3	1	2	2	0
825:	3	3	0	1	3	3	1	1
833:	1	3	1	1	2	1	2	2
841:	1	1	0	0	3	5	3	3
849:	1	2	3	0	1	1	1	1
857:	1	1	2	4	2	2	0	1
865:	0	2	0	2	1	0	1	0
873:	0	3	1	1	1	1	0	1
881:	2	0	0	1	0	0	2	2
889:	0	0	1	1	0	2	2	1
897:	1	0	2	1	0	2	2	2
905:	0	0	0	2	1	1	6	3
913:	4	2	1	1	2	1	3	0
921:	0	2	0	1	1	2	2	0
929:	2	1	2	1	0	1	3	2
937:	2	1	1	1	0	1	2	0
945:	3	2	0	0	0	2	1	4
953:	1	0	2	2	0	0	2	2
961:	1	3	2	0	0	0	1	1
969:	2	3	1	2	1	0	1	0
977:	2	0	0	3	0	1	1	2
985:	0	0	3	4	0	2	1	0
993:	3	2	2	2	1	0	0	2
1001:	3	2	0	1	0	2	0	2
1009:	1	0	0	1	1	0	0	1
1017:	2	4	1	2	1	1	0	2
1025:	0	3	2	1	1	0	0	2
1033:	0	0	1	0	0	1	1	4
1041:	1	2	1	1	3	2	0	0
1049:	1	1	1	1	0	2	0	1
1057:	2	0	1	1	2	1	1	0
1065:	2	1	0	2	3	3	2	1
1073:	1	1	1	0	0	1	2	1
1081:	0	1	2	2	1	1	0	0
1089:	1	1	1	3	0	0	0	0
1097:	0	2	0	0	0	2	1	0
1105:	2	1	1	0	0	1	0	0
1113:	1	1	1	1	0	0	1	1
1121:	1	1	1	0	1	0	0	1
1129:	1	0	0	1	2	3	0	1
1137:	0	1	1	0	0	0	1	1
1145:	0	1	3	2	1	2	0	0
1153:	1	3	1	0	1	0	2	1
1161:	0	2	0	1	2	0	0	6
1169:	1	1	0	1	0	1	1	1
1177:	0	0	1	1	0	1	2	2
1185:	0	1	0	1	2	2	0	1
1193:	1	2	1	1	0	0	1	0
1201:	0	1	0	1	1	0	2	0
1209:	1	0	1	0	3	0	0	0
1217:	1	0	2	1	0	1	0	1
1225:	1	3	1	0	1	1	1	0

1233:	0	0	2	0	1	0	1	2

Sample Title: BLANK

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

1665:	0	0	0	0	1	0	0	0

Sample Title: BLANK

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

2097:	0	0	0	0	0	0	0	0

Sample Title: BLANK

Channel								
2105:	0	1	0	0	0	0	1	0
2113:	1	0	1	0	1	0	1	0
2121:	0	0	0	1	0	0	0	0
2129:	0	0	1	0	0	0	2	0
2137:	0	1	0	0	0	0	0	0
2145:	0	2	0	2	0	0	0	0
2153:	0	1	0	0	0	0	0	0
2161:	0	0	0	0	0	0	1	0
2169:	1	0	0	0	0	0	0	1
2177:	0	0	0	0	0	0	0	0
2185:	0	0	0	1	1	0	0	0
2193:	0	0	0	2	0	0	0	0
2201:	0	0	1	0	1	0	0	1
2209:	0	2	0	0	1	0	2	0
2217:	0	0	0	1	0	0	0	1
2225:	0	0	1	0	1	0	0	0
2233:	0	0	0	0	0	0	0	0
2241:	0	0	1	1	0	0	0	0
2249:	1	1	0	0	1	1	0	0
2257:	1	0	0	0	0	0	0	0
2265:	1	0	2	0	0	1	0	0
2273:	0	0	0	0	1	0	0	0
2281:	0	1	0	0	0	0	0	0
2289:	0	0	0	0	0	1	0	0
2297:	1	0	0	1	0	0	2	0
2305:	0	0	1	0	1	0	1	0
2313:	1	0	0	0	1	0	0	1
2321:	0	0	0	0	0	0	0	0
2329:	0	1	0	1	0	1	0	0
2337:	0	0	0	1	0	0	1	0
2345:	1	0	0	0	0	0	0	0
2353:	0	0	0	0	0	0	0	0
2361:	0	1	0	1	0	0	0	0
2369:	0	0	0	0	0	0	0	0
2377:	0	0	1	0	0	2	0	0
2385:	1	0	0	0	0	1	1	0
2393:	1	0	0	1	0	0	0	0
2401:	0	0	1	1	0	0	1	0
2409:	2	0	0	0	0	0	0	0
2417:	0	1	0	1	0	1	1	1
2425:	0	0	0	0	0	0	0	0
2433:	0	0	0	0	0	0	0	1
2441:	1	0	0	0	1	0	0	0
2449:	1	0	0	0	0	0	0	0
2457:	0	0	0	0	0	0	0	0
2465:	0	1	0	0	1	0	0	0
2473:	0	0	0	0	0	0	0	1
2481:	0	0	1	1	1	1	0	0
2489:	0	0	0	0	0	0	0	0
2497:	0	0	1	0	0	0	0	0
2505:	0	1	0	1	0	0	0	0
2513:	0	1	1	0	0	1	0	0
2521:	0	0	0	0	0	1	0	0

2529:	0	0	0	0	0	0	0	0

Sample Title: BLANK

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

2961:	0	0	0	0	0	0	0	0

Sample Title: BLANK

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

3393:	0	0	0	0	0	0	1	0

Sample Title: BLANK

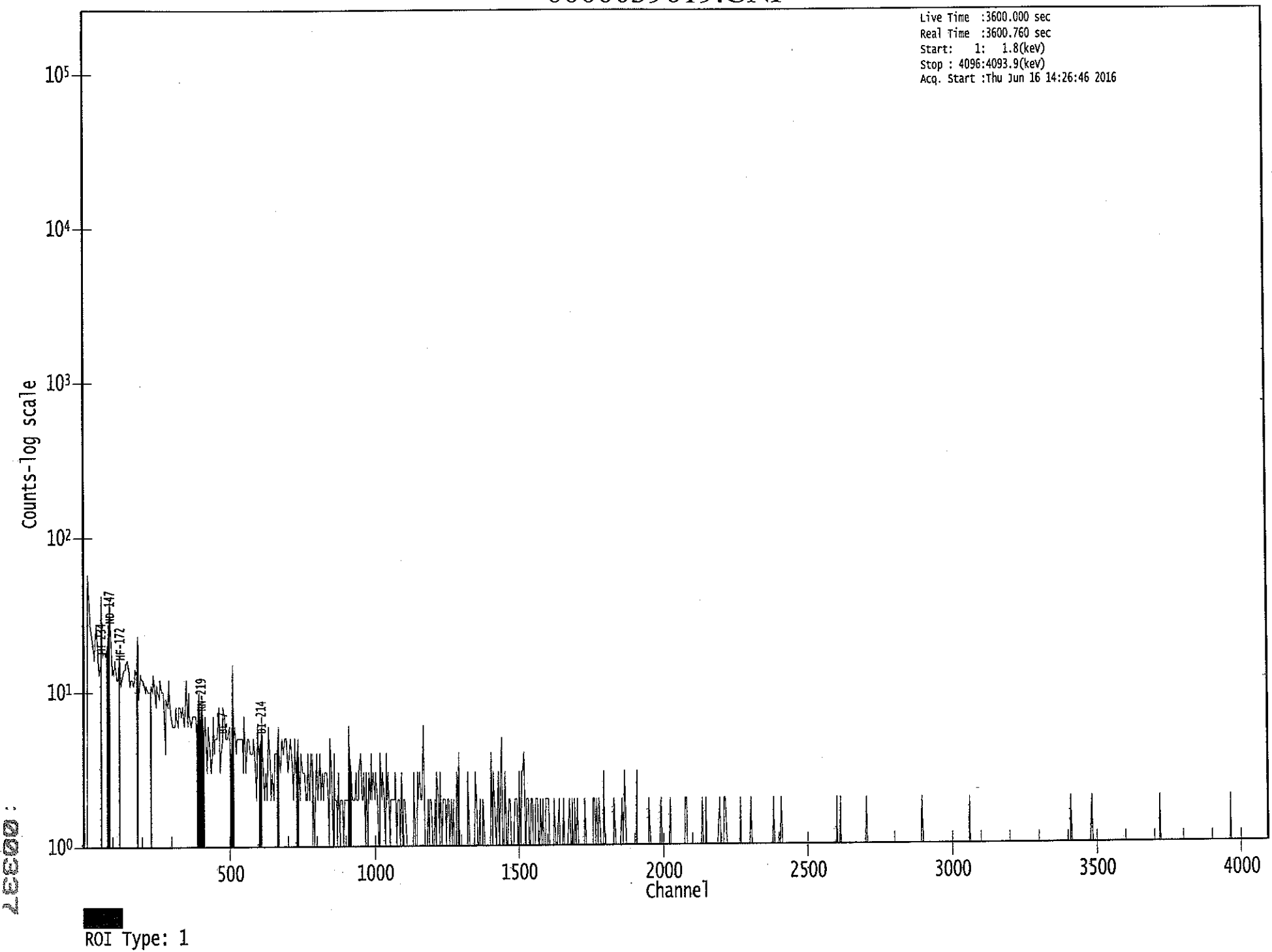
Channel								
3401:	0	0	1	1	0	0	0	0
3409:	2	1	1	0	0	0	1	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	1	0	0
3433:	0	0	0	1	0	0	1	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	1	0	0	0
3457:	0	0	0	0	0	0	0	1
3465:	0	0	0	1	0	0	0	0
3473:	0	0	0	0	1	0	0	0
3481:	0	0	2	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	1	0	1	1	0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

3825:	0	0	0	0	1	1	0	0

Sample Title: BLANK

Channel								
3833:	0	0	0	1	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	1	0
3857:	0	0	1	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:	1	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	1	0	0	0	1
3929:	0	0	0	1	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	1	0	0	1	0	0	0	0
3961:	0	0	1	2	0	0	0	0
3969:	1	0	0	1	0	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	1	0	0	0
4017:	0	0	1	0	0	0	1	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	1	0
4057:	0	0	0	1	0	0	0	0
4065:	0	0	1	0	0	1	1	0
4073:	1	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	1	1

0000039019.CNF



Apex-Gamma

6/16

Analysis Report for 1606043-03
CP-5031 00-02

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-03
Sample Description	: CP-5031 00-02
Sample Type	: SOIL
Sample Size	: 7.260E+02 grams
Facility	: Countroom
Sample Taken On	: 6/1/2016 11:07:49AM
Acquisition Started	: 6/16/2016 11:51:34AM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3600.9 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	: 39003

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/17/16

Analysis Report for 1606043-03

CP-5031 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 12:51:47PM
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	47.06	47.41	0.0000	0.00
2	63.96	64.30	0.0000	0.00
3	77.10	77.44	0.0000	0.00
4	87.95	88.28	0.0000	0.00
5	90.95	91.28	0.0000	0.00
6	124.36	124.68	0.0000	0.00
7	186.53	186.83	0.0000	0.00
8	239.03	239.32	0.0000	0.00
9	242.83	243.12	0.0000	0.00
10	295.89	296.16	0.0000	0.00
11	336.08	336.34	0.0000	0.00
12	338.92	339.17	0.0000	0.00
13	352.45	352.70	0.0000	0.00
14	487.93	488.14	0.0000	0.00
15	584.01	584.18	0.0000	0.00
16	609.92	610.08	0.0000	0.00
17	688.73	688.87	0.0000	0.00
18	769.41	769.52	0.0000	0.00
19	805.76	805.85	0.0000	0.00
20	861.84	861.91	0.0000	0.00
21	868.40	868.47	0.0000	0.00
22	884.84	884.90	0.0000	0.00
23	912.10	912.15	0.0000	0.00
24	934.69	934.73	0.0000	0.00
25	969.90	969.93	0.0000	0.00
26	1000.86	1000.88	0.0000	0.00
27	1007.79	1007.81	0.0000	0.00
28	1056.01	1056.02	0.0000	0.00
29	1121.10	1121.08	0.0000	0.00
30	1239.53	1239.47	0.0000	0.00
31	1281.08	1281.00	0.0000	0.00
32	1284.77	1284.69	0.0000	0.00
33	1378.64	1378.53	0.0000	0.00
34	1409.58	1409.45	0.0000	0.00
35	1461.60	1461.45	0.0000	0.00
36	1507.16	1507.00	0.0000	0.00
37	1510.01	1509.85	0.0000	0.00
38	1518.39	1518.22	0.0000	0.00
39	1539.81	1539.64	0.0000	0.00
40	1602.92	1602.72	0.0000	0.00
41	1625.89	1625.68	0.0000	0.00
42	1660.29	1660.07	0.0000	0.00

Analysis Report for 1606043-03

CP-5031 00-02

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1730.99	1730.74	0.0000	0.00
44	1765.24	1764.98	0.0000	0.00
45	1849.22	1848.93	0.0000	0.00
46	1889.90	1889.59	0.0000	0.00
47	2103.18	2102.79	0.0000	0.00
48	2204.35	2203.92	0.0000	0.00
49	2615.44	2614.86	0.0000	0.00
50	3139.90	3139.11	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606043-03

CP-5031 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 12:51:47PM

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	47.06	44	51	47.41	1.39E+02	67.14	6.64E+02	1.90
	2	63.96	61	68	64.30	1.96E+02	88.43	1.18E+03	1.50
	3	77.10	72	82	77.44	6.83E+02	119.90	1.54E+03	3.16
m	4	87.95	83	105	88.28	1.36E+02	58.62	6.06E+02	1.63
m	5	90.95	83	105	91.28	1.25E+02	62.01	5.94E+02	1.64
	6	124.36	122	128	124.68	5.54E+01	61.69	6.59E+02	3.45
	7	186.53	183	190	186.83	2.12E+02	70.34	6.83E+02	1.33
M	8	239.03	235	250	239.32	2.08E+02	51.22	3.37E+02	1.85
m	9	242.83	235	250	243.12	1.64E+02	51.58	2.88E+02	1.85
	10	295.89	292	299	296.16	3.21E+02	62.64	4.40E+02	1.35
M	11	336.08	335	343	336.34	1.67E+01	14.70	6.00E+01	1.95
m	12	338.92	335	343	339.17	3.84E+01	34.00	1.80E+02	1.95
	13	352.45	348	357	352.70	6.10E+02	69.46	3.42E+02	1.61
	14	487.93	485	492	488.14	2.87E+01	28.84	1.19E+02	1.63
	15	584.01	580	588	584.18	6.35E+01	35.33	1.53E+02	1.45
	16	609.92	605	614	610.08	4.55E+02	55.50	1.80E+02	1.51
	17	688.73	687	692	688.87	1.50E+01	17.32	4.80E+01	3.45
	18	769.41	765	773	769.52	4.89E+01	28.87	9.62E+01	2.60
	19	805.76	803	810	805.85	2.94E+01	20.30	5.11E+01	1.63
	20	861.84	858	865	861.91	1.85E+01	20.20	5.50E+01	1.16
	21	868.40	866	872	868.47	1.40E+01	16.94	4.20E+01	1.57
	22	884.84	881	890	884.90	1.90E+01	22.27	6.00E+01	2.95
	23	912.10	907	915	912.15	3.65E+01	27.07	9.10E+01	1.55
	24	934.69	931	938	934.73	2.70E+01	24.25	8.00E+01	1.65
	25	969.90	966	975	969.93	2.49E+01	27.48	9.02E+01	2.47
	26	1000.86	997	1005	1000.88	2.30E+01	18.06	3.60E+01	3.04
	27	1007.79	1005	1011	1007.81	1.45E+01	13.17	2.10E+01	2.48
	28	1056.01	1050	1066	1056.02	2.96E+01	31.91	8.89E+01	7.86
	29	1121.10	1116	1125	1121.08	8.67E+01	30.68	8.45E+01	2.57
	30	1239.53	1238	1244	1239.47	3.27E+01	23.28	5.86E+01	2.04
M	31	1281.08	1276	1292	1281.00	1.59E+01	14.04	2.27E+01	2.12
m	32	1284.77	1276	1292	1284.69	1.18E+01	18.82	4.12E+01	3.11
	33	1378.64	1374	1383	1378.53	2.88E+01	19.80	3.83E+01	2.35
	34	1409.58	1404	1414	1409.45	2.19E+01	18.26	3.22E+01	4.50
	35	1461.60	1457	1467	1461.45	2.19E+02	36.92	6.18E+01	2.21
M	36	1507.16	1506	1522	1507.00	6.59E+00	4.58	3.93E-01	2.21
m	37	1510.01	1506	1522	1509.85	3.52E+01	13.45	6.89E+00	2.44
m	38	1518.39	1506	1522	1518.22	1.01E+01	11.36	2.30E+01	2.44
	39	1539.81	1535	1542	1539.64	1.09E+01	10.77	1.22E+01	1.87
	40	1602.92	1601	1605	1602.72	7.20E+00	8.06	5.60E+00	2.75

Analysis Report for 1606043-03

CP-5031 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1625.89	1622 -	1629	1625.68	1.00E+01	9.38	8.00E+00	3.13
42	1660.29	1656 -	1663	1660.07	1.41E+01	8.94	3.81E+00	3.10
43	1730.99	1727 -	1735	1730.74	1.85E+01	11.51	9.00E+00	1.27
44	1765.24	1759 -	1770	1764.98	8.00E+01	21.54	1.80E+01	2.06
45	1849.22	1845 -	1851	1848.93	1.20E+01	11.18	1.40E+01	2.19
46	1889.90	1887 -	1892	1889.59	6.75E+00	6.40	2.50E+00	1.28
47	2103.18	2099 -	2107	2102.79	1.12E+01	8.50	3.62E+00	4.96
48	2204.35	2198 -	2207	2203.92	1.80E+01	11.92	1.00E+01	1.93
49	2615.44	2611 -	2618	2614.86	3.50E+01	11.83	0.00E+00	2.55
50	3139.90	3135 -	3142	3139.11	4.08E+00	6.32	3.83E+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 12:51:47PM

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	47.06	44 -	51	1.39E+02	67.14	6.64E+02	5.17E+01
	2	63.96	61 -	68	1.96E+02	88.43	1.18E+03	6.89E+01
	3	77.10	72 -	82	6.83E+02	119.90	1.54E+03	8.87E+01
m	4	87.95	83 -	105	1.36E+02	58.62	6.06E+02	4.05E+01
m	5	90.95	83 -	105	1.25E+02	62.01	5.94E+02	4.01E+01
	6	124.36	122 -	128	5.54E+01	61.69	6.59E+02	4.92E+01
	7	186.53	183 -	190	2.12E+02	70.34	6.83E+02	5.26E+01
M	8	239.03	235 -	250	2.08E+02	51.22	3.37E+02	3.02E+01
m	9	242.83	235 -	250	1.64E+02	51.58	2.88E+02	2.79E+01
	10	295.89	292 -	299	3.21E+02	62.64	4.40E+02	4.22E+01
M	11	336.08	335 -	343	1.67E+01	14.70	6.00E+01	1.27E+01
m	12	338.92	335 -	343	3.84E+01	34.00	1.80E+02	2.21E+01
	13	352.45	348 -	357	6.10E+02	69.46	3.42E+02	4.01E+01
	14	487.93	485 -	492	2.87E+01	28.84	1.19E+02	2.20E+01
	15	584.01	580 -	588	6.35E+01	35.33	1.53E+02	2.59E+01
	16	609.92	605 -	614	4.55E+02	55.50	1.80E+02	2.92E+01
	17	688.73	687 -	692	1.50E+01	17.32	4.80E+01	1.27E+01

Analysis Report for 1606043-03

CP-5031 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	18	769.41	765 -	773	4.89E+01	28.87	9.62E+01	2.08E+01
	19	805.76	803 -	810	2.94E+01	20.30	5.11E+01	1.41E+01
	20	861.84	858 -	865	1.85E+01	20.20	5.50E+01	1.50E+01
	21	868.40	866 -	872	1.40E+01	16.94	4.20E+01	1.25E+01
	22	884.84	881 -	890	1.90E+01	22.27	6.00E+01	1.68E+01
	23	912.10	907 -	915	3.65E+01	27.07	9.10E+01	1.99E+01
	24	934.69	931 -	938	2.70E+01	24.25	8.00E+01	1.80E+01
	25	969.90	966 -	975	2.49E+01	27.48	9.02E+01	2.10E+01
	26	1000.86	997 -	1005	2.30E+01	18.06	3.60E+01	1.26E+01
	27	1007.79	1005 -	1011	1.45E+01	13.17	2.10E+01	8.83E+00
	28	1056.01	1050 -	1066	2.96E+01	31.91	8.89E+01	8.61E+00
	29	1121.10	1116 -	1125	8.67E+01	30.68	8.45E+01	2.00E+01
	30	1239.53	1238 -	1244	3.27E+01	23.28	5.86E+01	2.96E+01
M	31	1281.08	1276 -	1292	1.59E+01	14.04	2.27E+01	7.84E+00
m	32	1284.77	1276 -	1292	1.18E+01	18.82	4.12E+01	1.06E+01
	33	1378.64	1374 -	1383	2.88E+01	19.80	3.83E+01	1.37E+01
	34	1409.58	1404 -	1414	2.19E+01	18.26	3.22E+01	1.29E+01
	35	1461.60	1457 -	1467	2.19E+02	36.92	6.18E+01	1.81E+01
M	36	1507.16	1506 -	1522	6.59E+00	4.58	3.93E-01	1.03E+00
m	37	1510.01	1506 -	1522	3.52E+01	13.45	6.89E+00	4.31E+00
m	38	1518.39	1506 -	1522	1.01E+01	11.36	2.30E+01	7.89E+00
	39	1539.81	1535 -	1542	1.09E+01	10.77	1.22E+01	7.00E+00
	40	1602.92	1601 -	1605	7.20E+00	8.06	5.60E+00	4.95E+00
	41	1625.89	1622 -	1629	1.00E+01	9.38	8.00E+00	5.70E+00
	42	1660.29	1656 -	1663	1.41E+01	8.94	3.81E+00	4.00E+00
	43	1730.99	1727 -	1735	1.85E+01	11.51	9.00E+00	6.29E+00
	44	1765.24	1759 -	1770	8.00E+01	21.54	1.80E+01	9.86E+00
	45	1849.22	1845 -	1851	1.20E+01	11.18	1.40E+01	7.21E+00
	46	1889.90	1887 -	1892	6.75E+00	6.40	2.50E+00	3.08E+00
	47	2103.18	2099 -	2107	1.12E+01	8.50	3.62E+00	4.31E+00
	48	2204.35	2198 -	2207	1.80E+01	11.92	1.00E+01	6.88E+00
	49	2615.44	2611 -	2618	3.50E+01	11.83	0.00E+00	0.00E+00
	50	3139.90	3135 -	3142	4.08E+00	6.32	3.83E+00	4.00E+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 1606043-03

CP-5031 00-02

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 12:51:47PM

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	47.06	44 -	51	47.41	1.39E+02	67.14	6.64E+02	PB-210
	2	63.96	61 -	68	64.30	1.96E+02	88.43	1.18E+03	TH-234
	3	77.10	72 -	82	77.44	6.83E+02	119.90	1.54E+03	.....
m	4	87.95	83 -	105	88.28	1.36E+02	58.62	6.06E+02	CD-109
									SN-126
									LU-176
m	5	90.95	83 -	105	91.28	1.25E+02	62.01	5.94E+02	ND-147
	6	124.36	122 -	128	124.68	5.54E+01	61.69	6.59E+02	.....
	7	186.53	183 -	190	186.83	2.12E+02	70.34	6.83E+02	RA-226
M	8	239.03	235 -	250	239.32	2.08E+02	51.22	3.37E+02	PB-212
m	9	242.83	235 -	250	243.12	1.64E+02	51.58	2.88E+02	.....
	10	295.89	292 -	299	296.16	3.21E+02	62.64	4.40E+02	PB-214
M	11	336.08	335 -	343	336.34	1.67E+01	14.70	6.00E+01	.....
m	12	338.92	335 -	343	339.17	3.84E+01	34.00	1.80E+02	AC-228
	13	352.45	348 -	357	352.70	6.10E+02	69.46	3.42E+02	PB-214
	14	487.93	485 -	492	488.14	2.87E+01	28.84	1.19E+02	LA-140
	15	584.01	580 -	588	584.18	6.35E+01	35.33	1.53E+02	TL-208
	16	609.92	605 -	614	610.08	4.55E+02	55.50	1.80E+02	BI-214
	17	688.73	687 -	692	688.87	1.50E+01	17.32	4.80E+01	.....
	18	769.41	765 -	773	769.52	4.89E+01	28.87	9.62E+01	.....
	19	805.76	803 -	810	805.85	2.94E+01	20.30	5.11E+01	.....
	20	861.84	858 -	865	861.91	1.85E+01	20.20	5.50E+01	.....
	21	868.40	866 -	872	868.47	1.40E+01	16.94	4.20E+01	.....
	22	884.84	881 -	890	884.90	1.90E+01	22.27	6.00E+01	AG-110M
	23	912.10	907 -	915	912.15	3.65E+01	27.07	9.10E+01	LU-172
	24	934.69	931 -	938	934.73	2.70E+01	24.25	8.00E+01	.....
	25	969.90	966 -	975	969.93	2.49E+01	27.48	9.02E+01	AC-228
	26	1000.86	997 -	1005	1000.88	2.30E+01	18.06	3.60E+01	PA-234M
	27	1007.79	1005 -	1011	1007.81	1.45E+01	13.17	2.10E+01	.....
	28	1056.01	1050 -	1066	1056.02	2.96E+01	31.91	8.89E+01	.....
	29	1121.10	1116 -	1125	1121.08	8.67E+01	30.68	8.45E+01	TA-182
									SC-46
									BI-214
	30	1239.53	1238 -	1244	1239.47	3.27E+01	23.28	5.86E+01	.....
M	31	1281.08	1276 -	1292	1281.00	1.59E+01	14.04	2.27E+01	.....
m	32	1284.77	1276 -	1292	1284.69	1.18E+01	18.82	4.12E+01	.....
	33	1378.64	1374 -	1383	1378.53	2.88E+01	19.80	3.83E+01	.....
	34	1409.58	1404 -	1414	1409.45	2.19E+01	18.26	3.22E+01	.....
	35	1461.60	1457 -	1467	1461.45	2.19E+02	36.92	6.18E+01	K-40
M	36	1507.16	1506 -	1522	1507.00	6.59E+00	4.58	3.93E-01	.....
m	37	1510.01	1506 -	1522	1509.85	3.52E+01	13.45	6.89E+00	.....

Analysis Report for 1606043-03

CP-5031 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	38	1518.39	1506 -	1522	1518.22	1.01E+01	11.36	2.30E+01	.....
	39	1539.81	1535 -	1542	1539.64	1.09E+01	10.77	1.22E+01	.....
	40	1602.92	1601 -	1605	1602.72	7.20E+00	8.06	5.60E+00	.....
	41	1625.89	1622 -	1629	1625.68	1.00E+01	9.38	8.00E+00	.....
	42	1660.29	1656 -	1663	1660.07	1.41E+01	8.94	3.81E+00	.....
	43	1730.99	1727 -	1735	1730.74	1.85E+01	11.51	9.00E+00	.....
	44	1765.24	1759 -	1770	1764.98	8.00E+01	21.54	1.80E+01	BI-214
	45	1849.22	1845 -	1851	1848.93	1.20E+01	11.18	1.40E+01	.....
	46	1889.90	1887 -	1892	1889.59	6.75E+00	6.40	2.50E+00	.....
	47	2103.18	2099 -	2107	2102.79	1.12E+01	8.50	3.62E+00	.....
	48	2204.35	2198 -	2207	2203.92	1.80E+01	11.92	1.00E+01	BI-214
	49	2615.44	2611 -	2618	2614.86	3.50E+01	11.83	0.00E+00	TL-208
	50	3139.90	3135 -	3142	3139.11	4.08E+00	6.32	3.83E+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 12:51:47PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	47.06	1.39E+02	67.14	1.72E-02	1.78E-03
	2	63.96	1.96E+02	88.43	2.51E-02	1.93E-03
	3	77.10	6.83E+02	119.90	2.78E-02	2.37E-03
m	4	87.95	1.36E+02	58.62	2.85E-02	2.74E-03
m	5	90.95	1.25E+02	62.01	2.86E-02	2.68E-03
	6	124.36	5.54E+01	61.69	2.71E-02	2.07E-03
	7	186.53	2.12E+02	70.34	2.24E-02	2.02E-03
M	8	239.03	2.08E+02	51.22	1.92E-02	1.64E-03
m	9	242.83	1.64E+02	51.58	1.90E-02	1.61E-03
	10	295.89	3.21E+02	62.64	1.67E-02	1.31E-03
M	11	336.08	1.67E+01	14.70	1.53E-02	1.23E-03
m	12	338.92	3.84E+01	34.00	1.52E-02	1.22E-03
	13	352.45	6.10E+02	69.46	1.48E-02	1.19E-03
	14	487.93	2.87E+01	28.84	1.16E-02	1.01E-03
	15	584.01	6.35E+01	35.33	1.02E-02	9.15E-04
	16	609.92	4.55E+02	55.50	9.82E-03	8.88E-04
	17	688.73	1.50E+01	17.32	8.93E-03	8.10E-04

Analysis Report for 1606043-03

CP-5031 00-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	18	769.41	4.89E+01	28.87	8.18E-03	7.38E-04
	19	805.76	2.94E+01	20.30	7.89E-03	7.05E-04
	20	861.84	1.85E+01	20.20	7.47E-03	6.55E-04
	21	868.40	1.40E+01	16.94	7.43E-03	6.49E-04
	22	884.84	1.90E+01	22.27	7.32E-03	6.34E-04
	23	912.10	3.65E+01	27.07	7.14E-03	6.15E-04
	24	934.69	2.70E+01	24.25	7.00E-03	6.03E-04
	25	969.90	2.49E+01	27.48	6.80E-03	5.85E-04
	26	1000.86	2.30E+01	18.06	6.63E-03	5.69E-04
	27	1007.79	1.45E+01	13.17	6.60E-03	5.65E-04
	28	1056.01	2.96E+01	31.91	6.36E-03	5.40E-04
	29	1121.10	8.67E+01	30.68	6.06E-03	5.06E-04
	30	1239.53	3.27E+01	23.28	5.61E-03	4.67E-04
M	31	1281.08	1.59E+01	14.04	5.47E-03	4.60E-04
m	32	1284.77	1.18E+01	18.82	5.46E-03	4.60E-04
	33	1378.64	2.88E+01	19.80	5.18E-03	4.40E-04
	34	1409.58	2.19E+01	18.26	5.10E-03	4.32E-04
	35	1461.60	2.19E+02	36.92	4.97E-03	4.19E-04
M	36	1507.16	6.59E+00	4.58	4.86E-03	4.08E-04
m	37	1510.01	3.52E+01	13.45	4.86E-03	4.07E-04
m	38	1518.39	1.01E+01	11.36	4.84E-03	4.05E-04
	39	1539.81	1.09E+01	10.77	4.79E-03	4.00E-04
	40	1602.92	7.20E+00	8.06	4.67E-03	3.84E-04
	41	1625.89	1.00E+01	9.38	4.62E-03	3.78E-04
	42	1660.29	1.41E+01	8.94	4.56E-03	3.70E-04
	43	1730.99	1.85E+01	11.51	4.45E-03	3.52E-04
	44	1765.24	8.00E+01	21.54	4.39E-03	3.43E-04
	45	1849.22	1.20E+01	11.18	4.28E-03	3.26E-04
	46	1889.90	6.75E+00	6.40	4.23E-03	3.26E-04
	47	2103.18	1.12E+01	8.50	4.02E-03	3.26E-04
	48	2204.35	1.80E+01	11.92	3.95E-03	3.26E-04
	49	2615.44	3.50E+01	11.83	3.79E-03	3.26E-04
	50	3139.90	4.08E+00	6.32	3.86E-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 12:51:47PM

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

Analysis Report for 1606043-03

CP-5031 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	47.06	1.39E+02	67.14	4.33E+01	8.35E+00	9.59E+01	6.77E+01
	2	63.96	1.96E+02	88.43	1.14E+02	2.81E+01	8.25E+01	9.28E+01
	3	77.10	6.83E+02	119.90			6.83E+02	1.20E+02
m	4	87.95	1.36E+02	58.62			1.36E+02	5.86E+01
m	5	90.95	1.25E+02	62.01			1.25E+02	6.20E+01
	6	124.36	5.54E+01	61.69			5.54E+01	6.17E+01
	7	186.53	2.12E+02	70.34	5.81E+01	8.50E+00	1.53E+02	7.09E+01
M	8	239.03	2.08E+02	51.22	1.81E+01	5.76E+00	1.90E+02	5.15E+01
m	9	242.83	1.64E+02	51.58			1.64E+02	5.16E+01
	10	295.89	3.21E+02	62.64	1.02E+00	5.38E+00	3.20E+02	6.29E+01
M	11	336.08	1.67E+01	14.70			1.67E+01	1.47E+01
m	12	338.92	3.84E+01	34.00	3.86E+00	4.98E+00	3.46E+01	3.44E+01
	13	352.45	6.10E+02	69.46	7.25E+00	4.86E+00	6.03E+02	6.96E+01
	14	487.93	2.87E+01	28.84			2.87E+01	2.88E+01
	15	584.01	6.35E+01	35.33	6.11E+00	3.78E+00	5.74E+01	3.55E+01
	16	609.92	4.55E+02	55.50	6.74E+00	3.64E+00	4.48E+02	5.56E+01
	17	688.73	1.50E+01	17.32			1.50E+01	1.73E+01
	18	769.41	4.89E+01	28.87			4.89E+01	2.89E+01
	19	805.76	2.94E+01	20.30			2.94E+01	2.03E+01
	20	861.84	1.85E+01	20.20			1.85E+01	2.02E+01
	21	868.40	1.40E+01	16.94			1.40E+01	1.69E+01
	22	884.84	1.90E+01	22.27			1.90E+01	2.23E+01
	23	912.10	3.65E+01	27.07	4.21E+00	2.98E+00	3.23E+01	2.72E+01
	24	934.69	2.70E+01	24.25			2.70E+01	2.42E+01
	25	969.90	2.49E+01	27.48			2.49E+01	2.75E+01
	26	1000.86	2.30E+01	18.06	4.72E+00	2.83E+00	1.83E+01	1.83E+01
	27	1007.79	1.45E+01	13.17			1.45E+01	1.32E+01
	28	1056.01	2.96E+01	31.91			2.96E+01	3.19E+01
	29	1121.10	8.67E+01	30.68			8.67E+01	3.07E+01
	30	1239.53	3.27E+01	23.28			3.27E+01	2.33E+01
M	31	1281.08	1.59E+01	14.04			1.59E+01	1.40E+01
m	32	1284.77	1.18E+01	18.82			1.18E+01	1.88E+01
	33	1378.64	2.88E+01	19.80			2.88E+01	1.98E+01
	34	1409.58	2.19E+01	18.26			2.19E+01	1.83E+01
	35	1461.60	2.19E+02	36.92	6.83E+00	2.10E+00	2.12E+02	3.70E+01
M	36	1507.16	6.59E+00	4.58			6.59E+00	4.58E+00
m	37	1510.01	3.52E+01	13.45			3.52E+01	1.35E+01
m	38	1518.39	1.01E+01	11.36			1.01E+01	1.14E+01
	39	1539.81	1.09E+01	10.77			1.09E+01	1.08E+01
	40	1602.92	7.20E+00	8.06			7.20E+00	8.06E+00
	41	1625.89	1.00E+01	9.38			1.00E+01	9.38E+00
	42	1660.29	1.41E+01	8.94			1.41E+01	8.94E+00
	43	1730.99	1.85E+01	11.51			1.85E+01	1.15E+01
	44	1765.24	8.00E+01	21.54	1.66E+00	1.65E+00	7.83E+01	2.16E+01
	45	1849.22	1.20E+01	11.18			1.20E+01	1.12E+01
	46	1889.90	6.75E+00	6.40			6.75E+00	6.40E+00
	47	2103.18	1.12E+01	8.50			1.12E+01	8.50E+00
	48	2204.35	1.80E+01	11.92			1.80E+01	1.19E+01
	49	2615.44	3.50E+01	11.83	4.95E+00	1.35E+00	3.00E+01	1.19E+01
	50	3139.90	4.08E+00	6.32			4.08E+00	6.32E+00

Analysis Report for 1606043-03

CP-5031 00-02

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 12:51:47PM

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	47.06	1.39E+02	67.14	4.33E+01	8.35E+00	9.59E+01	6.77E+01
	2	63.96	1.96E+02	88.43	1.14E+02	2.81E+01	8.25E+01	9.28E+01
	3	77.10	6.83E+02	119.90			6.83E+02	1.20E+02
m	4	87.95	1.36E+02	58.62			1.36E+02	5.86E+01
m	5	90.95	1.25E+02	62.01			1.25E+02	6.20E+01
	6	124.36	5.54E+01	61.69			5.54E+01	6.17E+01
	7	186.53	2.12E+02	70.34	5.81E+01	8.50E+00	1.53E+02	7.09E+01
M	8	239.03	2.08E+02	51.22	1.81E+01	5.76E+00	1.90E+02	5.15E+01
m	9	242.83	1.64E+02	51.58			1.64E+02	5.16E+01
	10	295.89	3.21E+02	62.64	1.02E+00	5.38E+00	3.20E+02	6.29E+01
M	11	336.08	1.67E+01	14.70			1.67E+01	1.47E+01
m	12	338.92	3.84E+01	34.00	3.86E+00	4.98E+00	3.46E+01	3.44E+01
	13	352.45	6.10E+02	69.46	7.25E+00	4.86E+00	6.03E+02	6.96E+01
	14	487.93	2.87E+01	28.84			2.87E+01	2.88E+01
	15	584.01	6.35E+01	35.33	6.11E+00	3.78E+00	5.74E+01	3.55E+01
	16	609.92	4.55E+02	55.50	6.74E+00	3.64E+00	4.48E+02	5.56E+01
	17	688.73	1.50E+01	17.32			1.50E+01	1.73E+01
	18	769.41	4.89E+01	28.87			4.89E+01	2.89E+01
	19	805.76	2.94E+01	20.30			2.94E+01	2.03E+01
	20	861.84	1.85E+01	20.20			1.85E+01	2.02E+01
	21	868.40	1.40E+01	16.94			1.40E+01	1.69E+01
	22	884.84	1.90E+01	22.27			1.90E+01	2.23E+01
	23	912.10	3.65E+01	27.07	4.21E+00	2.98E+00	3.23E+01	2.72E+01
	24	934.69	2.70E+01	24.25			2.70E+01	2.42E+01
	25	969.90	2.49E+01	27.48			2.49E+01	2.75E+01
	26	1000.86	2.30E+01	18.06	4.72E+00	2.83E+00	1.83E+01	1.83E+01
	27	1007.79	1.45E+01	13.17			1.45E+01	1.32E+01
	28	1056.01	2.96E+01	31.91			2.96E+01	3.19E+01
	29	1121.10	8.67E+01	30.68			8.67E+01	3.07E+01
	30	1239.53	3.27E+01	23.28			3.27E+01	2.33E+01
M	31	1281.08	1.59E+01	14.04			1.59E+01	1.40E+01
m	32	1284.77	1.18E+01	18.82			1.18E+01	1.88E+01

Analysis Report for 1606043-03

CP-5031 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	33	1378.64	2.88E+01	19.80			2.88E+01	1.98E+01
	34	1409.58	2.19E+01	18.26			2.19E+01	1.83E+01
	35	1461.60	2.19E+02	36.92	6.83E+00	2.10E+00	2.12E+02	3.70E+01
M	36	1507.16	6.59E+00	4.58			6.59E+00	4.58E+00
m	37	1510.01	3.52E+01	13.45			3.52E+01	1.35E+01
m	38	1518.39	1.01E+01	11.36			1.01E+01	1.14E+01
	39	1539.81	1.09E+01	10.77			1.09E+01	1.08E+01
	40	1602.92	7.20E+00	8.06			7.20E+00	8.06E+00
	41	1625.89	1.00E+01	9.38			1.00E+01	9.38E+00
	42	1660.29	1.41E+01	8.94			1.41E+01	8.94E+00
	43	1730.99	1.85E+01	11.51			1.85E+01	1.15E+01
	44	1765.24	8.00E+01	21.54	1.66E+00	1.65E+00	7.83E+01	2.16E+01
	45	1849.22	1.20E+01	11.18			1.20E+01	1.12E+01
	46	1889.90	6.75E+00	6.40			6.75E+00	6.40E+00
	47	2103.18	1.12E+01	8.50			1.12E+01	8.50E+00
	48	2204.35	1.80E+01	11.92			1.80E+01	1.19E+01
	49	2615.44	3.50E+01	11.83	4.95E+00	1.35E+00	3.00E+01	1.19E+01
	50	3139.90	4.08E+00	6.32			4.08E+00	6.32E+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

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.906	1460.81	*	10.67	4.14E+00	8.06E-01
CD-109	0.999	88.03	*	3.72	1.35E+00	6.04E-01
SN-126	0.978	87.57	*	37.00	1.33E-01	5.89E-02
ND-147	0.641	91.11	*	28.90	4.05E-01	2.05E-01
		531.02		13.10		
TL-208	0.794	583.14	*	30.22	1.93E-01	1.21E-01
		860.37		4.48		
		2614.66	*	35.85	2.28E-01	9.26E-02
PB-210	0.951	46.50	*	4.25	1.36E+00	9.71E-01
PB-212	0.870	238.63	*	44.60	2.29E-01	6.52E-02
		300.09		3.41		
BI-214	0.933	609.31	*	46.30	1.02E+00	1.57E-01
		1120.29	*	15.10	9.80E-01	3.56E-01

Analysis Report for 1606043-03

CP-5031 00-02

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.933	1764.49	*	15.80	1.17E+00	3.34E-01
		2204.22	*	4.98	9.47E-01	6.32E-01
PB-214	0.947	295.21	*	19.19	1.04E+00	2.19E-01
		351.92	*	37.19	1.14E+00	1.60E-01
RA-226	0.984	186.21	*	3.28	2.16E+00	4.09E+00
PA-234M	0.995	1001.03	*	0.92	3.10E+00	3.11E+00
TH-234	0.931	63.29	*	3.80	8.94E-01	1.01E+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 12:51:47PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	77.10	1.89606E-01	8.78		
	6	124.36	1.53979E-02	55.65		
m	9	242.83	4.54219E-02	15.77		
M	11	336.08	4.64666E-03	43.93		
m	12	338.92	9.60693E-03	49.68	Tol.	AC-228
	14	487.93	7.96717E-03	50.28	Tol.	LA-140
	17	688.73	4.16667E-03	57.74		
	18	769.41	1.35853E-02	29.52		
	19	805.76	8.17677E-03	34.48		
	20	861.84	5.13285E-03	54.66		
	21	868.40	3.88889E-03	60.50		
	22	884.84	5.27778E-03	58.61		
	23	912.10	8.96705E-03	42.19	Tol.	LU-172
	24	934.69	7.50000E-03	44.91		
	25	969.90	6.91468E-03	55.19	Tol.	AC-228
	27	1007.79	4.02778E-03	45.42		
	28	1056.01	8.20946E-03	53.99		
	30	1239.53	9.08602E-03	35.59	Sum	
M	31	1281.08	4.40433E-03	44.26		
m	32	1284.77	3.29093E-03	79.43		
	33	1378.64	8.00926E-03	34.33		
	34	1409.58	6.08187E-03	41.70		

Analysis Report for 1606043-03

CP-5031 00-02

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	36	1507.16	1.82986E-03	34.78		
m	37	1510.01	9.78632E-03	19.09		
m	38	1518.39	2.79705E-03	56.40		
	39	1539.81	3.02288E-03	49.49		
	40	1602.92	2.00000E-03	55.99		
	41	1625.89	2.77778E-03	46.90		
	42	1660.29	3.91493E-03	31.73		
	43	1730.99	5.13889E-03	31.11	Sum	
	45	1849.22	3.33333E-03	46.58		
	46	1889.90	1.87500E-03	47.43		
	47	2103.18	3.10897E-03	37.97		
	50	3139.90	1.13426E-03	77.44		

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	0.90	1460.81	*	10.67	4.14E+00	8.06E-01
CD-109	0.99	88.03	*	3.72	1.35E+00	6.04E-01
SN-126	0.97	87.57	*	37.00	1.33E-01	5.89E-02
ND-147	0.64	91.11	*	28.90	4.05E-01	2.05E-01
		531.02		13.10		
TL-208	0.79	583.14	*	30.22	1.93E-01	1.21E-01
		860.37		4.48		
		2614.66	*	35.85	2.28E-01	9.26E-02
PB-210	0.95	46.50	*	4.25	1.36E+00	9.71E-01
PB-212	0.87	238.63	*	44.60	2.29E-01	6.52E-02
		300.09		3.41		
BI-214	0.93	609.31	*	46.30	1.02E+00	1.57E-01
		1120.29	*	15.10	9.80E-01	3.56E-01
		1764.49	*	15.80	1.17E+00	3.34E-01
		2204.22	*	4.98	9.47E-01	6.32E-01
PB-214	0.94	295.21	*	19.19	1.04E+00	2.19E-01

Analysis Report for 1606043-03

CP-5031 00-02

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.94	351.92	*	37.19	1.14E+00	1.60E-01
RA-226	0.98	186.21	*	3.28	2.16E+00	4.09E+00
PA-234M	0.99	1001.03	*	0.92	3.10E+00	3.11E+00
TH-234	0.93	63.29	*	3.80	8.94E-01	1.01E+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	0.906	4.14E+00	8.06E-01	
?	CD-109	0.999	1.35E+00	6.04E-01	
?	SN-126	0.978	1.33E-01	5.89E-02	
	ND-147	0.641	4.05E-01	2.05E-01	
	TL-208	0.794	2.16E-01	7.36E-02	
	PB-210	0.951	1.36E+00	9.71E-01	
	PB-212	0.870	2.29E-01	6.52E-02	
	BI-214	0.933	1.03E+00	1.29E-01	
	PB-214	0.947	1.10E+00	1.29E-01	
	RA-226	0.984	2.16E+00	4.09E+00	
	PA-234M	0.995	3.10E+00	3.11E+00	
	TH-234	0.931	8.94E-01	1.01E+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 1606043-03

CP-5031 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 12:51:47PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	77.10	1.89606E-01	8.78		
	6	124.36	1.53979E-02	55.65		
m	9	242.83	4.54219E-02	15.77		
M	11	336.08	4.64666E-03	43.93		
m	12	338.92	9.60693E-03	49.68	Tol.	AC-228
	14	487.93	7.96717E-03	50.28	Tol.	LA-140
	17	688.73	4.16667E-03	57.74		
	18	769.41	1.35853E-02	29.52		
	19	805.76	8.17677E-03	34.48		
	20	861.84	5.13285E-03	54.66		
	21	868.40	3.88889E-03	60.50		
	22	884.84	5.27778E-03	58.61		
	23	912.10	8.96705E-03	42.19	Tol.	LU-172
	24	934.69	7.50000E-03	44.91		
	25	969.90	6.91468E-03	55.19	Tol.	AC-228
	27	1007.79	4.02778E-03	45.42		
	28	1056.01	8.20946E-03	53.99		
	30	1239.53	9.08602E-03	35.59	Sum	
M	31	1281.08	4.40433E-03	44.26		
m	32	1284.77	3.29093E-03	79.43		
	33	1378.64	8.00926E-03	34.33		
	34	1409.58	6.08187E-03	41.70		
M	36	1507.16	1.82986E-03	34.78		
m	37	1510.01	9.78632E-03	19.09		
m	38	1518.39	2.79705E-03	56.40		
	39	1539.81	3.02288E-03	49.49		
	40	1602.92	2.00000E-03	55.99		
	41	1625.89	2.77778E-03	46.90		
	42	1660.29	3.91493E-03	31.73		
	43	1730.99	5.13889E-03	31.11	Sum	
	45	1849.22	3.33333E-03	46.58		
	46	1889.90	1.87500E-03	47.43		
	47	2103.18	3.10897E-03	37.97		
	50	3139.90	1.13426E-03	77.44		

Analysis Report for 1606043-03

CP-5031 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 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	-1.69E-01	3.83E-01	3.83E-01
+	NA-22	1274.54		99.94	1.90E-03	3.59E-02	3.59E-02
+	NA-24	1368.53		99.99	-2.50E+05	4.51E+05	7.31E+05
		2754.09		99.86	9.72E+04		4.51E+05
+	AL-26	1808.65		99.76	-2.39E-03	3.37E-02	3.37E-02
+	K-40	1460.81	*	10.67	4.14E+00	7.83E-01	7.83E-01
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-1.48E-03	3.97E-02	3.97E-02
		78.34		96.00	7.91E-02		5.14E-02
+	SC-46	889.25		99.98	2.41E-03	4.39E-02	4.39E-02
		1120.51		99.99	1.62E-01		1.02E-01
+	V-48	983.52		99.98	1.23E-02	7.39E-02	8.46E-02
		1312.10		97.50	-2.09E-02		7.39E-02
+	CR-51	320.08		9.83	4.33E-02	4.60E-01	4.60E-01
+	MN-54	834.83		99.97	-1.26E-03	4.33E-02	4.33E-02
+	CO-56	846.75		99.96	-2.00E-02	4.52E-02	4.52E-02
		1037.75		14.03	1.20E-01		3.27E-01
		1238.25		67.00	-7.42E-02		1.31E-01
		1771.40		15.51	5.21E-02		2.89E-01
		2598.48		16.90	1.84E-02		1.35E-01
+	CO-57	122.06		85.51	2.72E-03	3.50E-02	3.50E-02
		136.48		10.60	3.73E-02		2.98E-01
+	CO-58	810.76		99.40	6.15E-03	4.13E-02	4.13E-02
+	FE-59	1099.22		56.50	4.34E-02	1.07E-01	1.07E-01
		1291.56		43.20	5.56E-03		1.39E-01
+	CO-60	1173.22		100.00	-9.77E-03	4.39E-02	4.61E-02
		1332.49		100.00	2.40E-02		4.39E-02
+	ZN-65	1115.52		50.75	1.36E-02	1.00E-01	1.00E-01
+	GA-67	93.31		35.70	5.85E+00	3.11E+00	3.11E+00
		208.95		2.24	-1.94E+01		3.68E+01
		300.22		16.00	2.38E-01		5.32E+00
+	SE-75	121.11		16.70	3.46E-02	5.47E-02	1.85E-01

Analysis Report for 1606043-03

CP-5031 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	-6.53E-03	5.47E-02	5.47E-02
		264.65		59.80	-1.21E-02		5.79E-02
		279.53		25.20	-3.21E-02		1.38E-01
		400.65		11.40	1.47E-02		3.20E-01
+	RB-82	776.52		13.00	1.23E-01	4.84E-01	4.84E-01
+	RB-83	520.41		46.00	4.83E-02	9.59E-02	9.59E-02
		529.64		30.30	2.91E-03		1.34E-01
		552.65		16.40	5.52E-02		2.56E-01
+	KR-85	513.99		0.43	1.57E+01	1.35E+01	1.35E+01
+	SR-85	513.99		99.27	8.05E-02	6.89E-02	6.89E-02
+	Y-88	898.02		93.40	9.34E-03	4.01E-02	5.04E-02
		1836.01		99.38	7.82E-03		4.01E-02
+	NB-93M	16.57		9.43	-5.00E+01	4.03E+01	4.03E+01
+	NB-94	702.63		100.00	-3.69E-03	3.99E-02	4.34E-02
		871.10		100.00	-6.70E-03		3.99E-02
+	NB-95	765.79		99.81	-8.21E-03	6.78E-02	6.78E-02
+	NB-95M	235.69		25.00	-9.01E+00	2.52E+00	2.52E+00
+	ZR-95	724.18		43.70	-5.21E-02	8.72E-02	1.16E-01
		756.72		55.30	1.88E-02		8.72E-02
+	MO-99	181.06		6.20	9.51E+00	1.53E+01	2.36E+01
		739.58		12.80	-1.39E+00		1.53E+01
		778.00		4.50	1.63E+01		4.09E+01
+	RU-103	497.08		89.00	6.39E-03	5.03E-02	5.03E-02
+	RU-106	621.84		9.80	-1.02E-01	3.73E-01	3.73E-01
+	AG-108M	433.93		89.90	-8.96E-03	4.16E-02	4.16E-02
		614.37		90.40	5.33E-03		4.78E-02
		722.95		90.50	-2.76E-02		4.69E-02
+	CD-109	88.03	*	3.72	1.35E+00	2.98E+00	2.98E+00
+	AG-110M	657.75		93.14	1.02E-02	4.69E-02	4.69E-02
		677.61		10.53	1.36E-01		4.07E-01
		706.67		16.46	7.49E-03		2.71E-01
		763.93		21.98	-3.66E-02		1.89E-01
		884.67		71.63	4.74E-02		6.76E-02
		1384.27		23.94	2.69E-02		1.86E-01
+	CD-113M	263.70		0.02	1.37E+01	1.42E+02	1.42E+02
+	SN-113	255.12		1.93	2.46E-01	5.75E-02	1.78E+00
		391.69		64.90	7.01E-03		5.75E-02
+	TE123M	159.00		84.10	3.90E-03	4.10E-02	4.10E-02
+	SB-124	602.71		97.87	1.27E-03	5.06E-02	5.06E-02
		645.85		7.26	8.87E-02		6.42E-01
		722.78		11.10	-2.68E-01		4.55E-01
		1691.02		49.00	-5.57E-03		7.85E-02
+	I-125	35.49		6.49	1.05E-01	1.55E+00	1.55E+00
+	SB-125	176.33		6.89	1.68E-01	1.39E-01	4.84E-01
		427.89		29.33	6.73E-02		1.39E-01
		463.38		10.35	1.31E-01		3.57E-01
		600.56		17.80	4.28E-02		2.36E-01
		635.90		11.32	-1.82E-01		3.23E-01

Analysis Report for 1606043-03

CP-5031 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70		83.30	-1.97E-02	9.40E-02	1.15E-01
		666.33		99.60	2.75E-02		9.78E-02
		695.00		99.60	1.14E-02		9.40E-02
		720.50		53.80	1.03E-01		1.93E-01
+	SN-126	87.57	*	37.00	1.33E-01	2.93E-01	2.93E-01
+	SB-127	473.00		25.00	-8.60E-01	1.63E+00	1.94E+00
		685.20		35.70	-4.13E-01		1.63E+00
		783.80		14.70	-6.32E-01		4.40E+00
+	I-129	29.78		57.00	-2.14E-02	2.91E-01	2.91E-01
		33.60		13.20	3.22E-01		7.89E-01
		39.58		7.52	2.21E-01		8.23E-01
+	I-131	284.30		6.05	7.46E-01	1.41E-01	1.94E+00
		364.48		81.20	-4.69E-03		1.41E-01
		636.97		7.26	2.96E-01		1.97E+00
		722.89		1.80	-5.08E+00		8.63E+00
+	TE-132	49.72		13.10	-6.06E+00	8.29E-01	8.43E+00
		228.16		88.00	-2.89E-01		8.29E-01
+	BA-133	81.00		33.00	-3.19E-01	6.88E-02	1.14E-01
		302.84		17.80	5.14E-02		1.93E-01
		356.01		60.00	-2.98E-01		6.88E-02
+	I-133	529.87		86.30	1.53E+02	7.06E+03	7.06E+03
+	XE-133	81.00		38.00	-2.02E+00	7.20E-01	7.20E-01
+	CS-134	563.23		8.38	8.32E-02	4.66E-02	4.89E-01
		569.32		15.43	1.71E-01		2.84E-01
		604.70		97.60	7.40E-03		4.76E-02
		795.84		85.40	-3.11E-03		4.66E-02
		801.93		8.73	-1.20E-01		4.40E-01
+	CS-135	268.24		16.00	1.11E-01	2.27E-01	2.27E-01
+	I-135	1131.51		22.50	-9.60E+14	4.03E+15	6.26E+15
		1260.41		28.60	6.72E+14		4.03E+15
		1678.03		9.54	5.11E+15		1.40E+16
+	CS-136	153.22		7.46	4.58E-01	8.04E-02	1.00E+00
		163.89		4.61	5.94E-01		1.59E+00
		176.55		13.56	1.86E-01		5.38E-01
		273.65		12.66	-1.31E-01		6.07E-01
		340.57		48.50	9.45E-02		1.64E-01
		818.50		99.70	-3.02E-02		8.04E-02
		1048.07		79.60	2.60E-02		1.03E-01
		1235.34		19.70	-7.73E-01		6.78E-01
+	CS-137	661.65		85.12	8.43E-03	4.91E-02	4.91E-02
+	LA-138	788.74		34.00	3.50E-02	6.45E-02	1.34E-01
		1435.80		66.00	1.20E-02		6.45E-02
+	CE-139	165.85		80.35	-6.40E-03	4.39E-02	4.39E-02
+	BA-140	162.64		6.70	2.81E-01	3.67E-01	1.11E+00
		304.84		4.50	4.05E-02		1.62E+00
		423.70		3.20	-7.06E-01		2.82E+00
		437.55		2.00	2.97E+00		4.65E+00
		537.32		25.00	1.70E-01		3.67E-01
+	LA-140	328.77		20.50	1.57E-02	9.85E-02	3.68E-01

Analysis Report for 1606043-03

CP-5031 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	487.03		45.50	1.24E-02	9.85E-02	1.92E-01
		815.85		23.50	-5.16E-02		3.54E-01
		1596.49		95.49	1.57E-02		9.85E-02
+	CE-141	145.44		48.40	5.06E-02	9.44E-02	9.44E-02
+	CE-143	57.36		11.80	7.79E+01	2.72E+02	6.50E+02
		293.26		42.00	5.48E+02		2.72E+02
		664.55		5.20	-1.79E+02		1.54E+03
+	CE-144	133.54		10.80	-1.58E-01	2.86E-01	2.86E-01
+	PM-144	476.78		42.00	-1.21E-02	4.17E-02	8.10E-02
		618.01		98.60	7.84E-03		4.17E-02
		696.49		99.49	1.78E-02		4.50E-02
+	PM-145	36.85		21.70	-2.73E-01	1.82E-01	3.39E-01
		37.36		39.70	2.51E-02		1.82E-01
		42.30		15.10	-2.33E-02		3.42E-01
		72.40		2.31	-4.66E+00		1.70E+00
+	PM-146	453.90		39.94	2.75E-02	9.72E-02	9.72E-02
		735.90		14.01	1.18E-02		3.23E-01
		747.13		13.10	7.98E-02		3.08E-01
+	ND-147	91.11	*	28.90	4.05E-01	7.57E-01	9.66E-01
		531.02		13.10	3.15E-01		7.57E-01
+	PM-149	285.90		3.10	1.57E+01	1.15E+02	1.15E+02
+	EU-152	121.78		20.50	1.09E-02	1.41E-01	1.41E-01
		244.69		5.40	8.51E-01		8.09E-01
		344.27		19.13	-1.39E-02		1.55E-01
		778.89		9.20	-6.95E-02		4.31E-01
		964.01		10.40	1.41E-02		4.58E-01
		1085.78		7.22	6.82E-02		6.80E-01
		1112.02		9.60	2.46E-02		4.43E-01
		1407.95		14.94	1.18E-01		3.71E-01
+	GD-153	97.43		31.30	3.08E-02	1.07E-01	1.07E-01
		103.18		22.20	4.98E-02		1.40E-01
+	EU-154	123.07		40.50	-6.33E-02	7.15E-02	7.15E-02
		723.30		19.70	-1.27E-01		2.16E-01
		873.19		11.50	6.48E-03		3.22E-01
		996.32		10.30	7.57E-02		3.79E-01
		1004.76		17.90	-3.67E-02		2.58E-01
		1274.45		35.50	5.32E-03		1.00E-01
+	EU-155	86.50		30.90	1.10E-01	1.28E-01	1.28E-01
		105.30		20.70	5.49E-02		1.42E-01
+	EU-156	811.77		10.40	1.64E-01	7.21E-01	7.21E-01
		1153.47		7.20	-2.11E-01		1.27E+00
		1230.71		8.90	-7.20E-01		1.08E+00
+	HO-166M	184.41		72.60	8.45E-02	6.09E-02	6.09E-02
		280.45		29.60	7.63E-03		1.08E-01
		410.94		11.10	2.09E-02		3.63E-01
		711.69		54.10	1.64E-02		7.82E-02
+	TM-171	66.72		0.14	-2.58E+01	2.98E+01	2.98E+01
+	HF-172	81.75		4.52	-1.71E+00	2.84E-01	7.77E-01
		125.81		11.30	1.16E-01		2.84E-01

Analysis Report for 1606043-03

CP-5031 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53		20.60	2.27E-01	3.24E-01	7.56E-01
		810.06		16.63	-1.63E-01		1.09E+00
		912.12		15.25	2.59E+00		1.96E+00
		1093.66		62.50	-7.09E-02		3.24E-01
+	LU-173	100.72		5.24	1.06E-01	1.77E-01	5.91E-01
		272.11		21.20	1.57E-02		1.77E-01
+	HF-175	343.40		84.00	4.28E-03	4.26E-02	4.26E-02
+	LU-176	88.34		13.30	2.60E-01	3.24E-02	3.01E-01
		201.83		86.00	1.45E-02		3.81E-02
		306.78		94.00	-4.93E-03		3.24E-02
+	TA-182	67.75		41.20	-3.72E-03	9.96E-02	9.96E-02
		1121.30		34.90	4.84E-01		2.85E-01
		1189.05		16.23	1.98E-02		3.45E-01
		1221.41		26.98	-6.13E-02		2.05E-01
		1231.02		11.44	-3.09E-01		4.64E-01
+	IR-192	308.46		29.68	2.52E-03	7.67E-02	1.17E-01
		468.07		48.10	-6.96E-02		7.67E-02
+	HG-203	279.19		77.30	-6.18E-05	5.28E-02	5.28E-02
+	BI-207	569.67		97.72	-4.51E-04	4.17E-02	4.17E-02
		1063.62		74.90	-1.43E-02		5.88E-02
+	TL-208	583.14	*	30.22	1.93E-01	7.87E-02	1.87E-01
		860.37		4.48	3.64E-01		9.91E-01
		2614.66	*	35.85	2.28E-01		7.87E-02
+	BI-210M	262.00		45.00	-1.29E-02	7.09E-02	7.09E-02
		300.00		23.00	6.74E-03		1.51E-01
+	PB-210	46.50	*	4.25	1.36E+00	1.55E+00	1.55E+00
+	PB-211	404.84		2.90	-2.00E-01	1.07E+00	1.07E+00
		831.96		2.90	-7.49E-01		1.29E+00
+	BI-212	727.17		11.80	4.28E-02	3.81E-01	3.81E-01
		1620.62		2.75	7.30E-02		1.14E+00
+	PB-212	238.63	*	44.60	2.29E-01	1.75E-01	1.75E-01
		300.09		3.41	4.55E-02		1.02E+00
+	BI-214	609.31	*	46.30	1.02E+00	1.41E-01	1.41E-01
		1120.29	*	15.10	9.80E-01		4.83E-01
		1764.49	*	15.80	1.17E+00		3.44E-01
		2204.22	*	4.98	9.47E-01		8.66E-01
+	PB-214	295.21	*	19.19	1.04E+00	1.58E-01	2.84E-01
		351.92	*	37.19	1.14E+00		1.58E-01
+	RN-219	401.80		6.50	9.96E-02	5.19E-01	5.19E-01
+	RA-223	323.87		3.88	-2.71E-02	7.89E-01	7.89E-01
+	RA-224	240.98		3.95	3.44E+00	1.41E+00	1.41E+00
+	RA-225	40.00		31.00	1.06E-01	3.93E-01	3.93E-01
+	RA-226	186.21	*	3.28	2.16E+00	1.58E+00	1.58E+00
+	TH-227	50.10		8.40	-3.80E-01	3.05E-01	5.29E-01
		236.00		11.50	-1.09E+00		3.05E-01
		256.20		6.30	-1.03E-01		4.99E-01
+	AC-228	338.32		11.40	2.59E-01	2.23E-01	3.32E-01
		911.07		27.70	2.01E-01		2.23E-01

Analysis Report for 1606043-03

CP-5031 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11		16.60	2.30E-01	2.23E-01	3.49E-01
+	TH-230	48.44		16.90	4.86E-01	3.04E-01	3.04E-01
		62.85		4.60	1.47E+00		1.02E+00
		67.67		0.37	-3.79E-01		1.01E+01
+	PA-231	283.67		1.60	5.38E-01	1.49E+00	2.00E+00
		302.67		2.30	3.97E-01		1.49E+00
+	TH-231	25.64		14.70	-1.75E+01	5.49E-01	3.34E+00
		84.21		6.40	-8.37E-01		5.49E-01
+	PA-233	311.98		38.60	-7.36E-03	1.13E-01	1.13E-01
+	PA-234	131.20		20.40	-2.16E-02	1.48E-01	1.48E-01
		733.99		8.80	-2.42E-01		4.88E-01
		946.00		12.00	6.11E-02		4.08E-01
+	PA-234M	1001.03	*	0.92	3.10E+00	4.96E+00	4.96E+00
+	TH-234	63.29	*	3.80	8.94E-01	1.65E+00	1.65E+00
+	U-235	143.76		10.50	-1.05E-01	3.09E-01	3.09E-01
		163.35		4.70	2.63E-01		7.05E-01
		205.31		4.70	-3.22E-01		6.91E-01
+	NP-237	86.50		12.60	2.68E-01	3.11E-01	3.11E-01
+	NP-239	106.10		22.70	4.18E+00	1.08E+01	1.08E+01
		228.18		10.70	-8.12E+00		2.33E+01
		277.60		14.10	9.90E+00		2.06E+01
+	AM-241	59.54		35.90	3.21E-02	1.08E-01	1.08E-01
+	AM-243	74.67		66.00	-1.60E-01	7.09E-02	7.09E-02
+	CM-243	209.75		3.29	4.65E-02	2.48E-01	1.03E+00
		228.14		10.60	-9.78E-02		2.80E-01
		277.60		14.00	1.19E-01		2.48E-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

NUCLIDE MDA REPORT

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

Analysis Report for 1606043-03

CP-5031 00-02

	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	3.83E-01	3.83E-01	-1.69E-01	1.78E-01
	NA-22	1274.54		99.94	3.59E-02	3.59E-02	1.90E-03	1.54E-02
	NA-24	1368.53		99.99	7.31E+05	4.51E+05	-2.50E+05	3.18E+05
		2754.09		99.86	4.51E+05		9.72E+04	1.60E+05
	AL-26	1808.65		99.76	3.37E-02	3.37E-02	-2.39E-03	1.36E-02
+	K-40	1460.81	*	10.67	7.83E-01	7.83E-01	4.14E+00	3.65E-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	3.97E-02	3.97E-02	-1.48E-03	1.93E-02
		78.34		96.00	5.14E-02		7.91E-02	2.52E-02
	SC-46	889.25		99.98	4.39E-02	4.39E-02	2.41E-03	1.98E-02
		1120.51		99.99	1.02E-01		1.62E-01	4.86E-02
	V-48	983.52		99.98	8.46E-02	7.39E-02	1.23E-02	3.83E-02
		1312.10		97.50	7.39E-02		-2.09E-02	3.18E-02
	CR-51	320.08		9.83	4.60E-01	4.60E-01	4.33E-02	2.17E-01
	MN-54	834.83		99.97	4.33E-02	4.33E-02	-1.26E-03	1.97E-02
	CO-56	846.75		99.96	4.52E-02	4.52E-02	-2.00E-02	2.05E-02
		1037.75		14.03	3.27E-01		1.20E-01	1.46E-01
		1238.25		67.00	1.31E-01		-7.42E-02	6.11E-02
		1771.40		15.51	2.89E-01		5.21E-02	1.21E-01
		2598.48		16.90	1.35E-01		1.84E-02	4.28E-02
	CO-57	122.06		85.51	3.50E-02	3.50E-02	2.72E-03	1.69E-02
		136.48		10.60	2.98E-01		3.73E-02	1.44E-01
	CO-58	810.76		99.40	4.13E-02	4.13E-02	6.15E-03	1.86E-02
	FE-59	1099.22		56.50	1.07E-01	1.07E-01	4.34E-02	4.86E-02
		1291.56		43.20	1.39E-01		5.56E-03	6.21E-02
	CO-60	1173.22		100.00	4.61E-02	4.39E-02	-9.77E-03	2.07E-02
		1332.49		100.00	4.39E-02		2.40E-02	1.93E-02
	ZN-65	1115.52		50.75	1.00E-01	1.00E-01	1.36E-02	4.53E-02
	GA-67	93.31		35.70	3.11E+00	3.11E+00	5.85E+00	1.52E+00
		208.95		2.24	3.68E+01		-1.94E+01	1.77E+01
		300.22		16.00	5.32E+00		2.38E-01	2.53E+00
	SE-75	121.11		16.70	1.85E-01	5.47E-02	3.46E-02	8.90E-02
		136.00		59.20	5.47E-02		-6.53E-03	2.63E-02
		264.65		59.80	5.79E-02		-1.21E-02	2.75E-02
		279.53		25.20	1.38E-01		-3.21E-02	6.56E-02
		400.65		11.40	3.20E-01		1.47E-02	1.50E-01
	RB-82	776.52		13.00	4.84E-01	4.84E-01	1.23E-01	2.22E-01
	RB-83	520.41		46.00	9.59E-02	9.59E-02	4.83E-02	4.49E-02
		529.64		30.30	1.34E-01		2.91E-03	6.24E-02
		552.65		16.40	2.56E-01		5.52E-02	1.19E-01
	KR-85	513.99		0.43	1.35E+01	1.35E+01	1.57E+01	6.44E+00
	SR-85	513.99		99.27	6.89E-02	6.89E-02	8.05E-02	3.30E-02
	Y-88	898.02		93.40	5.04E-02	4.01E-02	9.34E-03	2.29E-02
		1836.01		99.38	4.01E-02		7.82E-03	1.64E-02
	NB-93M	16.57		9.43	4.03E+01	4.03E+01	-5.00E+01	1.83E+01
	NB-94	702.63		100.00	4.34E-02	3.99E-02	-3.69E-03	2.01E-02
		871.10		100.00	3.99E-02		-6.70E-03	1.81E-02
	NB-95	765.79		99.81	6.78E-02	6.78E-02	-8.21E-03	3.16E-02
	NB-95M	235.69		25.00	2.52E+00	2.52E+00	-9.01E+00	1.21E+00
	ZR-95	724.18		43.70	1.16E-01	8.72E-02	-5.21E-02	5.34E-02
		756.72		55.30	8.72E-02		1.88E-02	4.00E-02

Analysis Report for 1606043-03

CP-5031 00-02

	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	2.36E+01	1.53E+01	9.51E+00	1.14E+01
		739.58		12.80	1.53E+01		-1.39E+00	7.05E+00
		778.00		4.50	4.09E+01		1.63E+01	1.87E+01
	RU-103	497.08		89.00	5.03E-02	5.03E-02	6.39E-03	2.34E-02
	RU-106	621.84		9.80	3.73E-01	3.73E-01	-1.02E-01	1.71E-01
	AG-108M	433.93		89.90	4.16E-02	4.16E-02	-8.96E-03	1.96E-02
		614.37		90.40	4.78E-02		5.33E-03	2.23E-02
		722.95		90.50	4.69E-02		-2.76E-02	2.17E-02
+	CD-109	88.03	*	3.72	2.98E+00	2.98E+00	1.35E+00	1.47E+00
	AG-110M	657.75		93.14	4.69E-02	4.69E-02	1.02E-02	2.18E-02
		677.61		10.53	4.07E-01		1.36E-01	1.88E-01
		706.67		16.46	2.71E-01		7.49E-03	1.26E-01
		763.93		21.98	1.89E-01		-3.66E-02	8.66E-02
		884.67		71.63	6.76E-02		4.74E-02	3.10E-02
		1384.27		23.94	1.86E-01		2.69E-02	8.11E-02
	CD-113M	263.70		0.02	1.42E+02	1.42E+02	1.37E+01	6.74E+01
	SN-113	255.12		1.93	1.78E+00	5.75E-02	2.46E-01	8.49E-01
		391.69		64.90	5.75E-02		7.01E-03	2.70E-02
	TE123M	159.00		84.10	4.10E-02	4.10E-02	3.90E-03	1.98E-02
	SB-124	602.71		97.87	5.06E-02	5.06E-02	1.27E-03	2.36E-02
		645.85		7.26	6.42E-01		8.87E-02	2.97E-01
		722.78		11.10	4.55E-01		-2.68E-01	2.10E-01
		1691.02		49.00	7.85E-02		-5.57E-03	3.17E-02
	I-125	35.49		6.49	1.55E+00	1.55E+00	1.05E-01	7.44E-01
	SB-125	176.33		6.89	4.84E-01	1.39E-01	1.68E-01	2.33E-01
		427.89		29.33	1.39E-01		6.73E-02	6.56E-02
		463.38		10.35	3.57E-01		1.31E-01	1.67E-01
		600.56		17.80	2.36E-01		4.28E-02	1.10E-01
		635.90		11.32	3.23E-01		-1.82E-01	1.48E-01
	SB-126	414.70		83.30	1.15E-01	9.40E-02	-1.97E-02	5.47E-02
		666.33		99.60	9.78E-02		2.75E-02	4.53E-02
		695.00		99.60	9.40E-02		1.14E-02	4.33E-02
		720.50		53.80	1.93E-01		1.03E-01	8.93E-02
+	SN-126	87.57	*	37.00	2.93E-01	2.93E-01	1.33E-01	1.45E-01
	SB-127	473.00		25.00	1.94E+00	1.63E+00	-8.60E-01	9.00E-01
		685.20		35.70	1.63E+00		-4.13E-01	7.49E-01
		783.80		14.70	4.40E+00		-6.32E-01	2.02E+00
	I-129	29.78		57.00	2.91E-01	2.91E-01	-2.14E-02	1.40E-01
		33.60		13.20	7.89E-01		3.22E-01	3.80E-01
		39.58		7.52	8.23E-01		2.21E-01	3.96E-01
	I-131	284.30		6.05	1.94E+00	1.41E-01	7.46E-01	9.20E-01
		364.48		81.20	1.41E-01		-4.69E-03	6.61E-02
		636.97		7.26	1.97E+00		2.96E-01	9.12E-01
		722.89		1.80	8.63E+00		-5.08E+00	3.98E+00
	TE-132	49.72		13.10	8.43E+00	8.29E-01	-6.06E+00	4.08E+00
		228.16		88.00	8.29E-01		-2.89E-01	3.95E-01
	BA-133	81.00		33.00	1.14E-01	6.88E-02	-3.19E-01	5.53E-02
		302.84		17.80	1.93E-01		5.14E-02	9.17E-02
		356.01		60.00	6.88E-02		-2.98E-01	3.28E-02
	I-133	529.87		86.30	7.06E+03	7.06E+03	1.53E+02	3.28E+03
	XE-133	81.00		38.00	7.20E-01	7.20E-01	-2.02E+00	3.50E-01
	CS-134	563.23		8.38	4.89E-01	4.66E-02	8.32E-02	2.28E-01
		569.32		15.43	2.84E-01		1.71E-01	1.33E-01

Analysis Report for 1606043-03

CP-5031 00-02

	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	4.76E-02	4.66E-02	7.40E-03	2.23E-02
		795.84		85.40	4.66E-02		-3.11E-03	2.12E-02
		801.93		8.73	4.40E-01		-1.20E-01	2.00E-01
	CS-135	268.24		16.00	2.27E-01	2.27E-01	1.11E-01	1.08E-01
	I-135	1131.51		22.50	6.26E+15	4.03E+15	-9.60E+14	2.84E+15
		1260.41		28.60	4.03E+15		6.72E+14	1.77E+15
		1678.03		9.54	1.40E+16		5.11E+15	6.09E+15
	CS-136	153.22		7.46	1.00E+00	8.04E-02	4.58E-01	4.84E-01
		163.89		4.61	1.59E+00		5.94E-01	7.67E-01
		176.55		13.56	5.38E-01		1.86E-01	2.59E-01
		273.65		12.66	6.07E-01		-1.31E-01	2.90E-01
		340.57		48.50	1.64E-01		9.45E-02	7.78E-02
		818.50		99.70	8.04E-02		-3.02E-02	3.62E-02
		1048.07		79.60	1.03E-01		2.60E-02	4.55E-02
		1235.34		19.70	6.78E-01		-7.73E-01	3.11E-01
	CS-137	661.65		85.12	4.91E-02	4.91E-02	8.43E-03	2.28E-02
	LA-138	788.74		34.00	1.34E-01	6.45E-02	3.50E-02	6.18E-02
		1435.80		66.00	6.45E-02		1.20E-02	2.81E-02
	CE-139	165.85		80.35	4.39E-02	4.39E-02	-6.40E-03	2.12E-02
	BA-140	162.64		6.70	1.11E+00	3.67E-01	2.81E-01	5.37E-01
		304.84		4.50	1.62E+00		4.05E-02	7.66E-01
		423.70		3.20	2.82E+00		-7.06E-01	1.34E+00
		437.55		2.00	4.65E+00		2.97E+00	2.20E+00
		537.32		25.00	3.67E-01		1.70E-01	1.72E-01
	LA-140	328.77		20.50	3.68E-01	9.85E-02	1.57E-02	1.74E-01
		487.03		45.50	1.92E-01		1.24E-02	9.00E-02
		815.85		23.50	3.54E-01		-5.16E-02	1.60E-01
		1596.49		95.49	9.85E-02		1.57E-02	4.22E-02
	CE-141	145.44		48.40	9.44E-02	9.44E-02	5.06E-02	4.56E-02
	CE-143	57.36		11.80	6.50E+02	2.72E+02	7.79E+01	3.15E+02
		293.26		42.00	2.72E+02		5.48E+02	1.32E+02
		664.55		5.20	1.54E+03		-1.79E+02	7.10E+02
	CE-144	133.54		10.80	2.86E-01	2.86E-01	-1.58E-01	1.38E-01
	PM-144	476.78		42.00	8.10E-02	4.17E-02	-1.21E-02	3.76E-02
		618.01		98.60	4.17E-02		7.84E-03	1.93E-02
		696.49		99.49	4.50E-02		1.78E-02	2.08E-02
	PM-145	36.85		21.70	3.39E-01	1.82E-01	-2.73E-01	1.63E-01
		37.36		39.70	1.82E-01		2.51E-02	8.77E-02
		42.30		15.10	3.42E-01		-2.33E-02	1.64E-01
		72.40		2.31	1.70E+00		-4.66E+00	8.30E-01
	PM-146	453.90		39.94	9.72E-02	9.72E-02	2.75E-02	4.57E-02
		735.90		14.01	3.23E-01		1.18E-02	1.50E-01
		747.13		13.10	3.08E-01		7.98E-02	1.41E-01
+	ND-147	91.11	*	28.90	9.66E-01	7.57E-01	4.05E-01	4.79E-01
		531.02		13.10	7.57E-01		3.15E-01	3.53E-01
	PM-149	285.90		3.10	1.15E+02	1.15E+02	1.57E+01	5.46E+01
	EU-152	121.78		20.50	1.41E-01	1.41E-01	1.09E-02	6.78E-02
		244.69		5.40	8.09E-01		8.51E-01	3.91E-01
		344.27		19.13	1.55E-01		-1.39E-02	7.28E-02
		778.89		9.20	4.31E-01		-6.95E-02	1.97E-01
		964.01		10.40	4.58E-01		1.41E-02	2.09E-01
		1085.78		7.22	6.80E-01		6.82E-02	3.09E-01
		1112.02		9.60	4.43E-01		2.46E-02	1.97E-01

Analysis Report for 1606043-03

CP-5031 00-02

	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	3.71E-01	1.41E-01	1.18E-01	1.67E-01
	GD-153	97.43		31.30	1.07E-01	1.07E-01	3.08E-02	5.19E-02
		103.18		22.20	1.40E-01		4.98E-02	6.76E-02
	EU-154	123.07		40.50	7.15E-02	7.15E-02	-6.33E-02	3.45E-02
		723.30		19.70	2.16E-01		-1.27E-01	9.98E-02
		873.19		11.50	3.22E-01		6.48E-03	1.45E-01
		996.32		10.30	3.79E-01		7.57E-02	1.69E-01
		1004.76		17.90	2.58E-01		-3.67E-02	1.17E-01
		1274.45		35.50	1.00E-01		5.32E-03	4.29E-02
	EU-155	86.50		30.90	1.28E-01	1.28E-01	1.10E-01	6.22E-02
		105.30		20.70	1.42E-01		5.49E-02	6.84E-02
	EU-156	811.77		10.40	7.21E-01	7.21E-01	1.64E-01	3.27E-01
		1153.47		7.20	1.27E+00		-2.11E-01	5.71E-01
		1230.71		8.90	1.08E+00		-7.20E-01	4.86E-01
	HO-166M	184.41		72.60	6.09E-02	6.09E-02	8.45E-02	2.96E-02
		280.45		29.60	1.08E-01		7.63E-03	5.11E-02
		410.94		11.10	3.63E-01		2.09E-02	1.72E-01
		711.69		54.10	7.82E-02		1.64E-02	3.61E-02
	TM-171	66.72		0.14	2.98E+01	2.98E+01	-2.58E+01	1.45E+01
	HF-172	81.75		4.52	7.77E-01	2.84E-01	-1.71E+00	3.78E-01
		125.81		11.30	2.84E-01		1.16E-01	1.37E-01
	LU-172	181.53		20.60	7.56E-01	3.24E-01	2.27E-01	3.64E-01
		810.06		16.63	1.09E+00		-1.63E-01	4.95E-01
		912.12		15.25	1.96E+00		2.59E+00	9.20E-01
		1093.66		62.50	3.24E-01		-7.09E-02	1.45E-01
	LU-173	100.72		5.24	5.91E-01	1.77E-01	1.06E-01	2.86E-01
		272.11		21.20	1.77E-01		1.57E-02	8.47E-02
	HF-175	343.40		84.00	4.26E-02	4.26E-02	4.28E-03	2.00E-02
	LU-176	88.34		13.30	3.01E-01	3.24E-02	2.60E-01	1.47E-01
		201.83		86.00	3.81E-02		1.45E-02	1.83E-02
		306.78		94.00	3.24E-02		-4.93E-03	1.53E-02
	TA-182	67.75		41.20	9.96E-02	9.96E-02	-3.72E-03	4.84E-02
		1121.30		34.90	2.85E-01		4.84E-01	1.35E-01
		1189.05		16.23	3.45E-01		1.98E-02	1.56E-01
		1221.41		26.98	2.05E-01		-6.13E-02	9.27E-02
		1231.02		11.44	4.64E-01		-3.09E-01	2.08E-01
	IR-192	308.46		29.68	1.17E-01	7.67E-02	2.52E-03	5.53E-02
		468.07		48.10	7.67E-02		-6.96E-02	3.56E-02
	HG-203	279.19		77.30	5.28E-02	5.28E-02	-6.18E-05	2.51E-02
	BI-207	569.67		97.72	4.17E-02	4.17E-02	-4.51E-04	1.95E-02
		1063.62		74.90	5.88E-02		-1.43E-02	2.64E-02
+	TL-208	583.14	*	30.22	1.87E-01	7.87E-02	1.93E-01	8.91E-02
		860.37		4.48	9.91E-01		3.64E-01	4.54E-01
		2614.66	*	35.85	7.87E-02		2.28E-01	2.91E-02
	BI-210M	262.00		45.00	7.09E-02	7.09E-02	-1.29E-02	3.37E-02
		300.00		23.00	1.51E-01		6.74E-03	7.17E-02
+	PB-210	46.50	*	4.25	1.55E+00	1.55E+00	1.36E+00	7.56E-01
	PB-211	404.84		2.90	1.07E+00	1.07E+00	-2.00E-01	5.01E-01
		831.96		2.90	1.29E+00		-7.49E-01	5.81E-01
	BI-212	727.17		11.80	3.81E-01	3.81E-01	4.28E-02	1.77E-01
		1620.62		2.75	1.14E+00		7.30E-02	4.63E-01
+	PB-212	238.63	*	44.60	1.75E-01	1.75E-01	2.29E-01	8.56E-02
		300.09		3.41	1.02E+00		4.55E-02	4.84E-01

Analysis Report for 1606043-03

CP-5031 00-02

	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	1.41E-01	1.41E-01	1.02E+00	6.75E-02
		1120.29	*	15.10	4.83E-01		9.80E-01	2.26E-01
		1764.49	*	15.80	3.44E-01		1.17E+00	1.52E-01
		2204.22	*	4.98	8.66E-01		9.47E-01	3.62E-01
+	PB-214	295.21	*	19.19	2.84E-01	1.58E-01	1.04E+00	1.38E-01
		351.92	*	37.19	1.58E-01		1.14E+00	7.65E-02
	RN-219	401.80		6.50	5.19E-01	5.19E-01	9.96E-02	2.43E-01
	RA-223	323.87		3.88	7.89E-01	7.89E-01	-2.71E-02	3.72E-01
	RA-224	240.98		3.95	1.41E+00	1.41E+00	3.44E+00	6.87E-01
	RA-225	40.00		31.00	3.93E-01	3.93E-01	1.06E-01	1.89E-01
+	RA-226	186.21	*	3.28	1.58E+00	1.58E+00	2.16E+00	7.70E-01
	TH-227	50.10		8.40	5.29E-01	3.05E-01	-3.80E-01	2.56E-01
		236.00		11.50	3.05E-01		-1.09E+00	1.46E-01
		256.20		6.30	4.99E-01		-1.03E-01	2.37E-01
	AC-228	338.32		11.40	3.32E-01	2.23E-01	2.59E-01	1.58E-01
		911.07		27.70	2.23E-01		2.01E-01	1.05E-01
		969.11		16.60	3.49E-01		2.30E-01	1.62E-01
	TH-230	48.44		16.90	3.04E-01	3.04E-01	4.86E-01	1.47E-01
		62.85		4.60	1.02E+00		1.47E+00	4.96E-01
		67.67		0.37	1.01E+01		-3.79E-01	4.92E+00
	PA-231	283.67		1.60	2.00E+00	1.49E+00	5.38E-01	9.49E-01
		302.67		2.30	1.49E+00		3.97E-01	7.07E-01
	TH-231	25.64		14.70	3.34E+00	5.49E-01	-1.75E+01	1.63E+00
		84.21		6.40	5.49E-01		-8.37E-01	2.67E-01
	PA-233	311.98		38.60	1.13E-01	1.13E-01	-7.36E-03	5.33E-02
	PA-234	131.20		20.40	1.48E-01	1.48E-01	-2.16E-02	7.16E-02
		733.99		8.80	4.88E-01		-2.42E-01	2.25E-01
		946.00		12.00	4.08E-01		6.11E-02	1.87E-01
+	PA-234M	1001.03	*	0.92	4.96E+00	4.96E+00	3.10E+00	2.25E+00
+	TH-234	63.29	*	3.80	1.65E+00	1.65E+00	8.94E-01	8.11E-01
	U-235	143.76		10.50	3.09E-01	3.09E-01	-1.05E-01	1.49E-01
		163.35		4.70	7.05E-01		2.63E-01	3.40E-01
		205.31		4.70	6.91E-01		-3.22E-01	3.31E-01
	NP-237	86.50		12.60	3.11E-01	3.11E-01	2.68E-01	1.52E-01
	NP-239	106.10		22.70	1.08E+01	1.08E+01	4.18E+00	5.21E+00
		228.18		10.70	2.33E+01		-8.12E+00	1.11E+01
		277.60		14.10	2.06E+01		9.90E+00	9.84E+00
	AM-241	59.54		35.90	1.08E-01	1.08E-01	3.21E-02	5.23E-02
	AM-243	74.67		66.00	7.09E-02	7.09E-02	-1.60E-01	3.47E-02
	CM-243	209.75		3.29	1.03E+00	2.48E-01	4.65E-02	4.95E-01
		228.14		10.60	2.80E-01		-9.78E-02	1.33E-01
		277.60		14.00	2.48E-01		1.19E-01	1.18E-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 1606043-03

CP-5031 00-02

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-5031 00-02

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	71	83	117	785	250
25:	76	54	41	44	48	48	35	46
33:	48	48	42	39	41	41	37	53
41:	39	42	37	35	50	37	103	102
49:	50	45	49	43	54	82	60	60
57:	53	63	70	70	62	75	80	198
65:	137	86	82	67	93	63	83	75
73:	78	80	148	222	153	303	142	96
81:	90	67	58	77	106	76	88	143
89:	97	88	119	96	194	243	82	77
97:	76	56	59	72	51	58	61	58
105:	45	65	52	53	47	64	63	56
113:	64	71	58	52	65	50	53	59
121:	35	42	50	61	59	66	52	55
129:	53	61	51	60	46	42	55	44
137:	62	39	53	53	62	56	40	50
145:	79	52	60	46	54	61	53	39
153:	74	71	52	48	47	54	46	41
161:	50	45	51	61	47	51	42	43
169:	51	34	49	46	45	37	51	50
177:	41	44	46	44	48	50	37	43
185:	54	90	179	59	47	44	40	32
193:	42	39	28	48	50	47	46	38
201:	42	38	43	34	26	56	38	33
209:	44	44	38	40	40	41	39	39
217:	41	37	31	36	26	37	36	29
225:	37	28	24	23	28	32	28	31
233:	37	43	23	38	36	43	122	115
241:	42	64	121	59	30	30	34	29
249:	37	16	22	25	27	20	24	31
257:	29	26	25	35	20	26	29	20
265:	36	23	19	30	31	38	47	19
273:	30	32	31	35	24	23	33	28
281:	17	18	22	27	18	32	18	20
289:	21	24	28	28	23	20	61	252
297:	106	21	30	24	27	26	25	24
305:	21	16	21	17	19	14	21	14
313:	22	16	15	21	21	22	20	21
321:	10	19	18	13	22	16	16	23
329:	25	16	23	17	25	16	14	25
337:	19	26	37	25	22	18	13	17
345:	12	22	11	20	14	19	36	197
353:	369	74	21	11	20	17	18	12
361:	11	22	5	17	21	18	16	18

369:	12	9	21	16	15	13	11	18

Sample Title: CP-5031 00-02

Channel								
377:	19	15	16	14	19	11	10	4
385:	15	17	21	17	14	16	20	18
393:	16	13	20	11	21	9	17	19
401:	15	14	12	18	12	17	6	9
409:	20	15	17	13	16	20	14	23
417:	19	10	22	16	13	13	15	13
425:	17	22	10	12	17	15	10	10
433:	9	11	13	17	16	11	12	17
441:	18	9	12	11	9	12	12	9
449:	8	14	10	12	14	16	12	10
457:	12	11	9	10	9	9	15	18
465:	5	7	11	9	6	7	10	10
473:	9	5	8	6	12	12	8	6
481:	4	13	12	7	9	12	11	18
489:	12	8	10	8	6	10	6	11
497:	10	6	7	8	6	10	14	11
505:	12	14	8	8	18	20	35	53
513:	39	13	10	7	11	9	14	14
521:	11	10	6	7	5	7	1	11
529:	11	9	12	6	8	9	11	7
537:	15	11	11	10	8	7	7	10
545:	8	11	14	11	7	10	7	5
553:	10	4	8	14	7	4	8	10
561:	6	9	6	10	11	15	8	14
569:	12	7	13	7	6	4	11	11
577:	12	7	9	8	6	9	20	49
585:	22	9	12	5	12	6	5	5
593:	5	14	7	6	8	11	7	6
601:	8	12	11	9	9	9	14	14
609:	77	273	115	16	12	6	12	3
617:	8	10	8	4	11	6	5	5
625:	4	7	6	7	6	11	12	4
633:	5	10	3	4	3	11	7	13
641:	6	11	5	10	7	8	8	8
649:	4	4	6	11	5	12	9	7
657:	6	9	7	8	10	5	6	10
665:	9	8	5	8	9	5	6	5
673:	5	5	8	4	11	7	6	6
681:	9	5	7	12	3	2	6	9
689:	6	9	5	4	4	8	10	7
697:	6	8	10	6	8	6	12	7
705:	7	8	9	6	8	7	4	8
713:	9	8	6	6	4	8	8	7
721:	13	9	6	4	7	3	8	14
729:	7	12	8	6	5	6	10	9
737:	5	6	13	7	9	6	5	10
745:	3	3	4	9	4	8	3	5
753:	2	7	5	9	6	4	4	7
761:	7	5	2	7	7	8	3	16
769:	21	22	7	11	2	6	6	7
777:	3	7	7	6	5	2	6	6
785:	6	8	11	6	9	5	6	4
793:	2	9	3	3	12	4	2	4

801:	7	3	1	8	7	19	11	2

Sample Title: CP-5031 00-02

Channel								
809:	5	2	6	4	2	6	6	1
817:	6	3	5	5	4	4	8	2
825:	5	8	8	6	4	3	2	8
833:	4	4	4	6	6	5	7	8
841:	4	8	6	5	5	6	5	3
849:	2	6	7	5	3	3	2	4
857:	4	4	3	5	14	5	5	8
865:	2	4	5	6	10	5	2	3
873:	3	2	6	5	5	5	3	4
881:	2	3	9	7	8	4	5	6
889:	3	2	4	4	3	4	7	6
897:	1	2	8	3	7	6	3	6
905:	8	9	3	2	4	6	15	28
913:	11	8	5	3	3	1	3	3
921:	4	3	4	3	5	6	6	5
929:	3	6	4	5	6	14	22	8
937:	4	4	6	6	7	3	8	7
945:	5	3	8	5	6	4	7	5
953:	9	4	4	5	3	3	5	7
961:	6	3	8	6	5	7	3	6
969:	13	15	10	4	5	3	4	3
977:	5	3	2	4	4	5	5	3
985:	4	4	6	5	4	3	4	3
993:	5	3	4	3	1	3	4	9
1001:	7	11	3	2	1	3	7	6
1009:	4	3	1	2	5	4	6	3
1017:	2	3	2	2	4	5	5	5
1025:	2	4	5	2	2	4	6	1
1033:	3	5	2	5	3	4	3	3
1041:	3	0	1	2	4	4	3	2
1049:	2	1	3	5	10	3	8	4
1057:	5	5	2	7	4	3	6	4
1065:	3	1	6	8	2	3	2	6
1073:	8	3	1	6	3	3	5	2
1081:	4	4	8	4	2	3	5	7
1089:	4	5	4	4	2	3	2	3
1097:	6	3	5	3	8	3	3	3
1105:	4	6	2	2	1	4	0	4
1113:	2	5	7	3	6	3	5	30
1121:	40	28	5	7	2	5	6	1
1129:	4	12	3	7	2	3	6	4
1137:	6	3	5	7	2	1	3	3
1145:	1	5	1	2	5	5	3	3
1153:	3	4	2	6	3	7	2	0
1161:	4	3	1	2	3	3	1	5
1169:	6	2	2	6	5	6	2	2
1177:	3	4	4	6	3	4	7	7
1185:	5	1	4	7	6	3	3	7
1193:	2	3	7	5	3	3	3	1
1201:	2	2	4	4	4	2	4	3
1209:	7	2	4	4	3	6	6	2
1217:	4	6	4	3	4	3	3	6
1225:	8	6	7	1	7	2	4	4

1233:	5	3	6	6	4	14	20	12

Sample Title: CP-5031 00-02

Channel								
1241:	8	5	2	1	5	2	1	5
1249:	4	1	4	2	3	6	6	5
1257:	6	6	2	0	1	2	0	1
1265:	1	5	2	5	4	2	2	3
1273:	1	1	3	0	2	4	3	2
1281:	9	7	4	4	8	2	4	3
1289:	7	2	3	2	4	2	3	2
1297:	3	3	2	3	3	4	2	4
1305:	4	0	4	3	1	1	1	2
1313:	2	1	5	1	2	5	3	2
1321:	1	5	2	2	2	3	3	0
1329:	3	4	4	3	2	1	1	0
1337:	1	5	0	0	2	3	1	3
1345:	3	4	3	3	2	4	2	4
1353:	5	1	4	1	3	4	3	0
1361:	1	2	4	1	1	1	1	2
1369:	4	2	4	5	3	2	3	5
1377:	4	12	11	6	4	1	0	3
1385:	1	4	3	2	4	0	2	2
1393:	3	2	3	3	4	2	3	2
1401:	3	7	2	2	1	4	1	7
1409:	7	6	2	4	3	1	1	3
1417:	0	1	2	0	4	1	0	1
1425:	2	1	3	2	2	1	0	2
1433:	1	2	4	2	4	1	1	1
1441:	3	2	2	1	2	2	3	1
1449:	1	3	3	2	1	3	3	4
1457:	4	1	6	30	93	85	21	2
1465:	2	3	3	1	1	0	5	3
1473:	1	2	1	4	5	1	3	0
1481:	3	1	1	2	3	2	6	0
1489:	4	2	3	0	3	1	1	1
1497:	5	0	1	2	2	0	2	2
1505:	0	0	3	0	6	16	7	1
1513:	2	4	2	1	3	6	4	3
1521:	1	2	2	3	1	1	1	3
1529:	1	2	0	2	0	2	0	1
1537:	2	3	2	4	5	0	1	2
1545:	2	0	0	4	3	1	1	1
1553:	2	1	3	1	3	3	1	1
1561:	0	1	2	0	1	2	2	2
1569:	1	0	2	1	1	2	0	1
1577:	1	1	3	2	1	1	1	6
1585:	0	4	2	3	4	1	1	0
1593:	2	0	2	2	1	4	1	2
1601:	2	4	2	2	0	0	0	1
1609:	1	1	2	3	2	2	2	0
1617:	0	0	0	4	1	0	1	2
1625:	3	4	3	1	0	1	5	2
1633:	1	1	1	3	2	3	2	0
1641:	1	0	3	3	3	1	0	2
1649:	2	0	0	2	1	4	0	1
1657:	2	1	2	3	3	4	0	0

1665:	0	1	2	1	1	0	0	0

Sample Title: CP-5031 00-02

Channel							
1673:	1	0	3	2	0	3	3	1
1681:	3	0	3	1	3	0	1	1
1689:	1	0	0	1	2	1	3	0
1697:	0	1	0	0	0	2	1	1
1705:	1	1	0	1	1	1	0	0
1713:	0	0	1	0	1	1	0	0
1721:	1	0	2	1	0	1	0	1
1729:	1	11	4	2	3	1	0	1
1737:	0	0	1	1	2	2	1	0
1745:	2	1	0	1	2	0	1	1
1753:	1	1	1	0	2	0	1	1
1761:	0	0	6	20	34	15	8	3
1769:	1	0	2	2	1	0	1	0
1777:	0	0	0	0	0	1	0	0
1785:	1	1	1	1	1	0	0	0
1793:	0	0	1	0	0	0	1	1
1801:	1	1	1	1	0	1	0	2
1809:	1	1	1	2	0	0	1	0
1817:	0	0	2	0	2	1	1	2
1825:	0	1	0	3	1	1	2	1
1833:	1	2	1	0	0	3	0	0
1841:	0	0	2	1	1	0	2	4
1849:	7	5	0	2	1	0	0	1
1857:	2	1	0	1	1	0	0	0
1865:	1	0	1	3	0	0	0	2
1873:	1	2	0	1	1	1	3	3
1881:	0	0	2	0	2	1	0	2
1889:	1	4	1	0	0	0	1	1
1897:	0	0	0	0	1	1	1	1
1905:	1	0	0	0	0	2	0	0
1913:	1	0	3	2	0	1	0	0
1921:	1	0	0	0	1	0	1	0
1929:	0	0	1	0	1	2	2	2
1937:	1	1	0	1	0	0	0	2
1945:	0	2	0	0	0	1	0	0
1953:	1	2	0	0	0	1	0	0
1961:	1	0	1	0	1	0	1	2
1969:	0	0	1	1	1	0	1	0
1977:	2	1	0	0	1	2	2	2
1985:	0	1	1	0	0	2	0	0
1993:	0	2	1	0	1	3	2	0
2001:	1	1	3	0	2	1	0	0
2009:	0	2	2	0	0	1	2	1
2017:	1	1	1	0	1	1	1	0
2025:	1	1	1	0	0	2	0	2
2033:	0	1	1	1	0	1	1	0
2041:	0	0	1	0	0	1	1	1
2049:	0	2	1	0	2	1	0	0
2057:	0	0	0	1	0	0	1	1
2065:	3	0	0	1	1	0	0	0
2073:	2	1	0	0	2	0	2	1
2081:	0	1	2	1	0	0	1	0
2089:	0	2	0	0	0	2	1	2

2097:	2	0	1	0	3	3	2	1

Sample Title: CP-5031 00-02

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

2529:	0	0	1	0	0	1	0	0

Sample Title: CP-5031 00-02

Channel								
2537:	1	0	1	0	0	1	0	1
2545:	0	1	0	0	0	1	0	0
2553:	0	0	0	0	0	0	2	1
2561:	0	1	0	0	0	1	0	1
2569:	0	1	0	1	0	0	0	0
2577:	0	0	0	1	0	0	1	2
2585:	0	0	1	0	0	0	0	0
2593:	0	0	0	0	0	0	0	1
2601:	0	0	0	0	0	0	0	0
2609:	1	0	0	1	3	8	13	8
2617:	2	0	0	1	0	0	0	0
2625:	0	1	0	0	0	0	1	1
2633:	0	1	0	0	0	0	1	1
2641:	0	2	0	0	0	0	1	0
2649:	0	1	0	0	1	0	0	0
2657:	0	0	0	1	0	0	0	1
2665:	0	1	1	0	0	0	0	0
2673:	0	1	0	0	1	0	0	1
2681:	0	1	1	1	0	0	0	0
2689:	1	0	0	0	0	0	0	0
2697:	0	0	0	1	0	0	0	0
2705:	0	0	0	0	0	1	0	0
2713:	0	0	2	0	0	0	0	0
2721:	1	0	0	0	0	0	0	0
2729:	0	1	0	0	1	0	0	0
2737:	0	0	0	0	0	0	0	0
2745:	0	0	0	0	0	0	1	1
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	1	1	0	0	0
2769:	0	1	0	0	0	0	0	0
2777:	0	0	0	1	0	0	0	0
2785:	0	1	0	0	0	0	0	1
2793:	1	1	0	0	1	0	0	0
2801:	0	0	1	0	0	0	0	1
2809:	1	1	0	0	0	0	0	0
2817:	0	0	0	0	0	1	0	0
2825:	0	0	0	0	0	0	1	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	1
2849:	0	0	0	1	2	1	0	0
2857:	0	1	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	1
2873:	1	0	0	0	0	0	1	0
2881:	0	0	0	0	1	0	1	0
2889:	0	1	0	0	0	0	0	0
2897:	0	0	2	0	0	0	1	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	1	0	0	1	0	0
2921:	0	0	0	0	0	1	0	0
2929:	1	0	0	0	0	0	2	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	1	0	0	0	0	0	0	0

2961:	1	0	0	0	1	0	1	0

Sample Title: CP-5031 00-02

Channel								
2969:	0	0	0	0	0	0	1	1
2977:	0	1	0	0	0	0	0	0
2985:	0	0	1	1	0	0	0	0
2993:	0	0	1	0	0	0	0	0
3001:	1	0	0	1	0	0	0	0
3009:	0	0	0	1	0	0	0	0
3017:	0	1	1	1	0	0	0	0
3025:	1	1	1	0	0	0	0	0
3033:	0	1	0	1	1	0	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	1	0	0
3057:	0	0	0	0	0	0	0	1
3065:	0	0	0	0	0	0	0	0
3073:	1	0	1	0	0	1	0	1
3081:	0	0	0	1	0	0	1	0
3089:	0	0	0	0	0	0	1	0
3097:	0	0	0	0	1	0	0	0
3105:	1	0	0	0	0	0	0	0
3113:	2	0	2	1	0	1	0	0
3121:	1	0	0	0	0	0	0	1
3129:	0	0	1	1	0	0	1	0
3137:	0	0	3	1	1	0	0	0
3145:	0	0	0	1	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	2	0	0	0	0	0	0	1
3169:	1	0	1	0	0	0	0	0
3177:	0	1	1	1	0	0	0	0
3185:	1	0	1	0	0	0	0	0
3193:	0	0	1	0	0	0	0	0
3201:	1	0	0	1	0	0	2	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	0	0	0	1	0
3233:	0	1	0	0	0	0	0	1
3241:	0	0	1	0	0	1	1	0
3249:	0	0	0	0	0	1	0	0
3257:	0	1	0	1	1	0	0	0
3265:	0	0	1	0	0	0	0	0
3273:	0	0	1	0	1	0	1	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	1	0	2	0	0	0
3305:	0	0	1	0	0	0	0	0
3313:	0	0	0	1	1	1	0	0
3321:	0	1	0	0	1	0	1	0
3329:	1	0	0	0	0	0	0	0
3337:	0	1	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	1
3353:	0	0	0	0	0	0	1	0
3361:	0	0	0	0	0	1	0	0
3369:	0	0	0	0	0	1	1	0
3377:	0	0	1	1	1	1	0	0
3385:	0	0	1	0	0	0	0	0

3393:	0	0	0	0	0	1	0	0

Sample Title: CP-5031 00-02

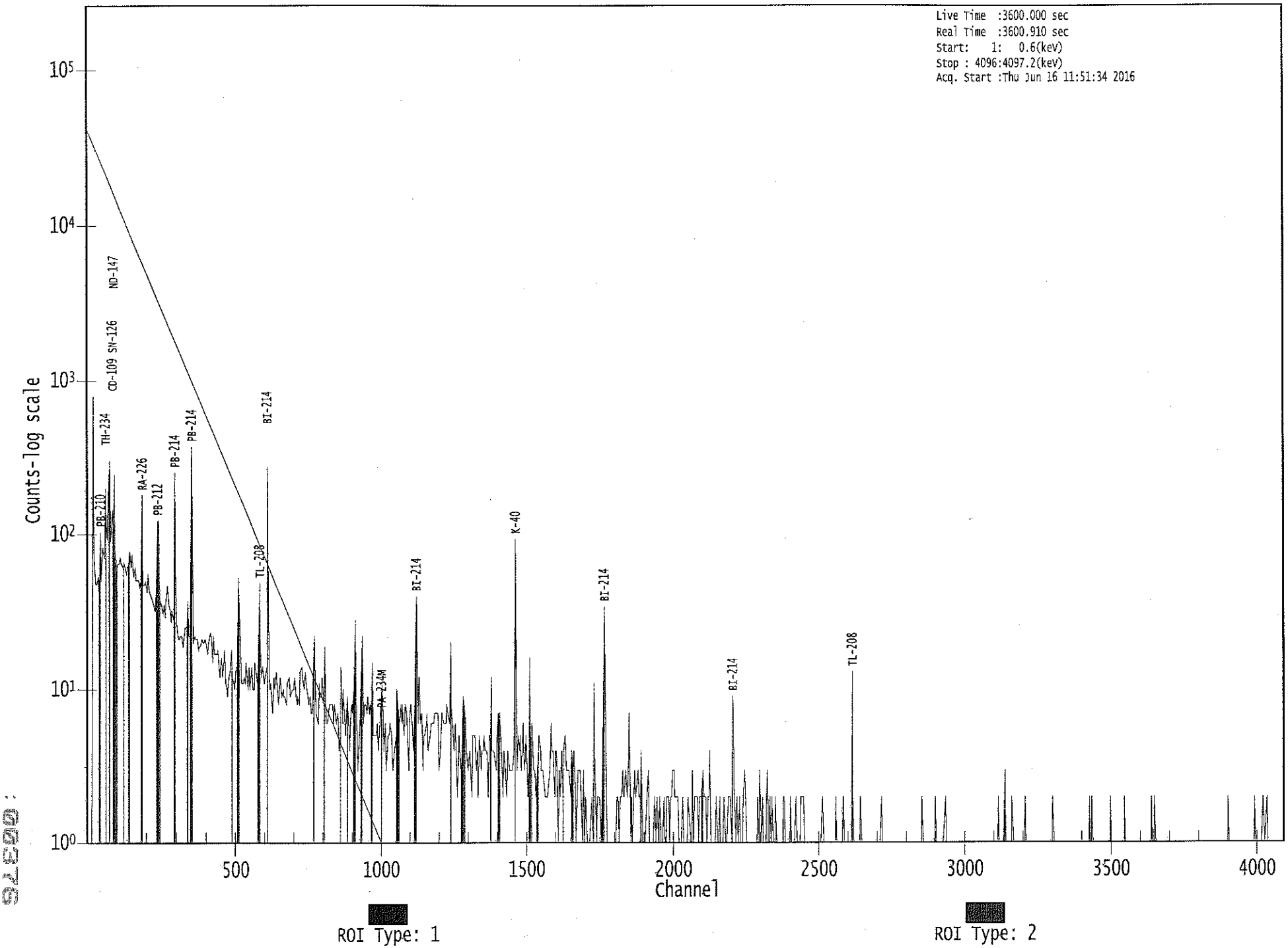
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	1	1	1	0	0	0	0	1
3417:	0	0	0	0	0	0	0	0
3425:	0	1	2	0	0	0	0	0
3433:	2	2	0	0	0	1	1	0
3441:	0	0	0	1	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	1	0	0	1	0	0
3473:	0	0	0	0	0	0	1	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	2	0	0	0	0	0	0
3505:	0	0	0	0	0	1	0	0
3513:	1	0	0	0	0	0	0	0
3521:	0	0	0	0	0	1	1	0
3529:	1	0	0	0	0	0	1	0
3537:	0	0	0	0	0	0	0	0
3545:	2	0	0	1	0	0	0	0
3553:	0	0	0	0	0	0	0	1
3561:	0	1	0	1	0	1	0	1
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	1	1	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	1	0	0	0	0	0
3601:	0	0	0	0	0	1	0	1
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	1	0	0	0
3625:	0	0	0	0	0	0	0	1
3633:	0	0	0	0	2	0	0	0
3641:	0	0	0	0	1	0	2	0
3649:	1	1	0	1	0	0	0	0
3657:	0	0	0	1	0	0	0	1
3665:	0	0	0	0	0	1	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	0	0	0	0	1	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	1	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	1	0	0
3761:	0	0	0	1	0	0	0	0
3769:	0	0	0	0	1	1	0	0
3777:	0	0	0	0	0	0	1	0
3785:	0	0	0	1	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	1	0	0	0	0	0
3809:	1	0	1	0	0	0	0	0
3817:	0	0	1	1	0	0	0	0

3825:	1	0	0	0	1	0	0	0

Sample Title: CP-5031 00-02

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	1	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	1	0	0	0	0
3881:	0	0	0	0	1	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	2	0	0	0
3905:	0	0	0	0	1	1	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	0	0	0	1	0	0
3945:	0	0	0	1	0	0	1	0
3953:	0	0	0	1	0	0	0	0
3961:	0	0	1	0	0	0	0	0
3969:	1	0	0	0	0	1	0	0
3977:	0	0	0	0	0	0	0	1
3985:	0	0	0	0	0	1	0	0
3993:	2	0	0	0	0	0	0	0
4001:	1	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	1
4017:	1	0	1	0	2	0	0	0
4025:	0	0	0	1	0	1	0	0
4033:	0	0	1	2	1	1	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	1	0	0	0	0	0
4057:	1	1	0	0	0	0	0	0
4065:	0	0	0	1	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	1	0	0
4089:	0	1	1	0	0	0	0	0

0000039003.CNF



Apex-Gamma

Analysis Report for 1606043-04
CP-5031 00-02

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-04
Sample Description	: CP-5031 00-02
Sample Type	: SOIL
Sample Size	: 7.260E+02 grams
Facility	: Countroom
Sample Taken On	: 6/1/2016 11:08:21AM
Acquisition Started	: 6/16/2016 12:52:04PM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3600.9 seconds
Dead Time	: 0.02 %
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	: 39068

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/17/16

Analysis Report for 1606043-04

CP-5031 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/17/2016 8:23:37AM
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	47.04	47.39	0.0000	0.00
2	76.81	77.16	0.0000	0.00
3	87.80	88.13	0.0000	0.00
4	90.80	91.14	0.0000	0.00
5	121.76	122.08	0.0000	0.00
6	153.65	153.97	0.0000	0.00
7	186.65	186.95	0.0000	0.00
8	239.56	239.85	0.0000	0.00
9	242.87	243.15	0.0000	0.00
10	259.34	259.62	0.0000	0.00
11	292.63	292.90	0.0000	0.00
12	295.86	296.13	0.0000	0.00
13	352.62	352.87	0.0000	0.00
14	362.75	363.00	0.0000	0.00
15	388.84	389.08	0.0000	0.00
16	437.13	437.35	0.0000	0.00
17	440.43	440.65	0.0000	0.00
18	511.49	511.68	0.0000	0.00
19	583.00	583.17	0.0000	0.00
20	610.10	610.26	0.0000	0.00
21	649.03	649.18	0.0000	0.00
22	651.67	651.82	0.0000	0.00
23	661.10	661.24	0.0000	0.00
24	667.70	667.85	0.0000	0.00
25	768.66	768.77	0.0000	0.00
26	809.13	809.23	0.0000	0.00
27	883.33	883.39	0.0000	0.00
28	911.70	911.75	0.0000	0.00
29	934.81	934.86	0.0000	0.00
30	1121.10	1121.08	0.0000	0.00
31	1155.69	1155.66	0.0000	0.00
32	1239.63	1239.56	0.0000	0.00
33	1378.76	1378.64	0.0000	0.00
34	1402.41	1402.29	0.0000	0.00
35	1408.98	1408.86	0.0000	0.00
36	1446.66	1446.52	0.0000	0.00
37	1461.73	1461.59	0.0000	0.00
38	1661.87	1661.65	0.0000	0.00
39	1727.72	1727.48	0.0000	0.00
40	1730.76	1730.52	0.0000	0.00
41	1765.49	1765.23	0.0000	0.00
42	1770.73	1770.47	0.0000	0.00

Analysis Report for 1606043-04

CP-5031 00-02

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1848.50	1848.22	0.0000	0.00
44	2104.48	2104.09	0.0000	0.00
45	2204.93	2204.51	0.0000	0.00
46	2351.92	2351.44	0.0000	0.00
47	2615.90	2615.32	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606043-04

CP-5031 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/17/2016 8:23:37AM

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	47.04	44 -	50	47.39	1.31E+02	61.63	5.96E+02	1.87
	2	76.81	72 -	81	77.16	5.96E+02	116.73	1.61E+03	3.02
m	3	87.80	83 -	97	88.13	1.08E+02	51.81	5.79E+02	1.48
m	4	90.80	83 -	97	91.14	9.02E+01	50.87	5.16E+02	1.49
	5	121.76	120 -	125	122.08	4.60E+01	53.23	5.28E+02	1.09
	6	153.65	152 -	157	153.97	6.14E+01	53.38	5.23E+02	1.22
	7	186.65	183 -	191	186.95	2.79E+02	76.50	7.18E+02	1.52
M	8	239.56	235 -	250	239.85	1.88E+02	45.60	2.75E+02	1.68
m	9	242.87	235 -	250	243.15	1.76E+02	42.71	2.34E+02	1.68
	10	259.34	257 -	262	259.62	3.63E+01	38.09	2.61E+02	2.85
M	11	292.63	291 -	299	292.90	2.24E+01	21.57	1.17E+02	1.73
m	12	295.86	291 -	299	296.13	3.53E+02	47.05	1.92E+02	1.70
M	13	352.62	348 -	367	352.87	6.16E+02	53.85	1.07E+02	1.61
m	14	362.75	348 -	367	363.00	1.78E+01	23.67	8.72E+01	1.63
	15	388.84	386 -	394	389.08	3.26E+01	39.24	2.19E+02	2.14
M	16	437.13	436 -	445	437.35	2.10E+01	11.31	2.40E+01	2.04
m	17	440.43	436 -	445	440.65	2.46E+01	23.24	7.20E+01	2.04
	18	511.49	508 -	514	511.68	1.12E+02	31.09	9.41E+01	2.91
	19	583.00	578 -	588	583.17	7.70E+01	36.03	1.32E+02	1.81
	20	610.10	606 -	614	610.26	4.36E+02	52.31	1.52E+02	1.84
M	21	649.03	648 -	655	649.18	1.19E+01	7.87	1.54E+01	2.00
m	22	651.67	648 -	655	651.82	1.87E+01	17.38	4.06E+01	2.01
	23	661.10	658 -	664	661.24	3.71E+01	22.73	6.78E+01	4.62
	24	667.70	665 -	672	667.85	3.14E+01	26.91	9.92E+01	3.18
	25	768.66	766 -	772	768.77	3.45E+01	25.27	9.10E+01	1.21
	26	809.13	804 -	814	809.23	2.90E+01	27.86	8.80E+01	6.06
	27	883.33	879 -	886	883.39	1.79E+01	21.73	6.42E+01	3.82
	28	911.70	908 -	915	911.75	4.53E+01	24.17	6.53E+01	2.21
	29	934.81	930 -	939	934.86	4.40E+01	22.93	5.00E+01	1.77
	30	1121.10	1117 -	1125	1121.08	7.86E+01	25.83	5.48E+01	2.44
	31	1155.69	1150 -	1160	1155.66	2.37E+01	23.43	6.06E+01	2.24
	32	1239.63	1234 -	1243	1239.56	2.95E+01	27.91	9.30E+01	2.08
	33	1378.76	1374 -	1382	1378.64	2.40E+01	18.17	3.60E+01	2.15
	34	1402.41	1397 -	1405	1402.29	1.47E+01	15.15	2.47E+01	2.88
	35	1408.98	1406 -	1414	1408.86	2.62E+01	12.98	1.17E+01	2.48
	36	1446.66	1442 -	1450	1446.52	1.12E+01	11.52	1.36E+01	4.70
	37	1461.73	1455 -	1467	1461.59	2.09E+02	34.14	3.81E+01	2.29
	38	1661.87	1659 -	1664	1661.65	5.71E+00	6.08	2.57E+00	1.12
M	39	1727.72	1726 -	1735	1727.48	9.12E+00	4.12	1.88E+00	2.78
m	40	1730.76	1726 -	1735	1730.52	2.37E+01	11.83	3.94E+00	2.78

Analysis Report for 1606043-04

CP-5031 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1765.49	1760 -	1774	1765.23	7.39E+01	18.34	4.52E+00	3.11
m	42	1770.73	1760 -	1774	1770.47	7.01E+00	16.52	9.53E-01	3.38
	43	1848.50	1844 -	1853	1848.22	2.30E+01	9.59	0.00E+00	2.58
	44	2104.48	2100 -	2107	2104.09	1.10E+01	6.63	0.00E+00	3.75
	45	2204.93	2200 -	2208	2204.51	2.86E+01	13.13	8.79E+00	1.93
	46	2351.92	2347 -	2354	2351.44	9.00E+00	6.00	0.00E+00	1.47
	47	2615.90	2611 -	2619	2615.32	3.09E+01	12.34	4.27E+00	3.26

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 : 6/17/2016 8:23:37AM

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	47.04	44 -	50	1.31E+02	61.63	5.96E+02	4.70E+01
	2	76.81	72 -	81	5.96E+02	116.73	1.61E+03	8.71E+01
m	3	87.80	83 -	97	1.08E+02	51.81	5.79E+02	3.96E+01
m	4	90.80	83 -	97	9.02E+01	50.87	5.16E+02	3.73E+01
	5	121.76	120 -	125	4.60E+01	53.23	5.28E+02	4.23E+01
	6	153.65	152 -	157	6.14E+01	53.38	5.23E+02	4.19E+01
	7	186.65	183 -	191	2.79E+02	76.50	7.18E+02	5.66E+01
M	8	239.56	235 -	250	1.88E+02	45.60	2.75E+02	2.73E+01
m	9	242.87	235 -	250	1.76E+02	42.71	2.34E+02	2.52E+01
	10	259.34	257 -	262	3.63E+01	38.09	2.61E+02	2.97E+01
M	11	292.63	291 -	299	2.24E+01	21.57	1.17E+02	1.78E+01
m	12	295.86	291 -	299	3.53E+02	47.05	1.92E+02	2.28E+01
M	13	352.62	348 -	367	6.16E+02	53.85	1.07E+02	1.70E+01
m	14	362.75	348 -	367	1.78E+01	23.67	8.72E+01	1.53E+01
	15	388.84	386 -	394	3.26E+01	39.24	2.19E+02	3.09E+01
M	16	437.13	436 -	445	2.10E+01	11.31	2.40E+01	8.05E+00
m	17	440.43	436 -	445	2.46E+01	23.24	7.20E+01	1.39E+01
	18	511.49	508 -	514	1.12E+02	31.09	9.41E+01	1.87E+01
	19	583.00	578 -	588	7.70E+01	36.03	1.32E+02	2.59E+01
	20	610.10	606 -	614	4.36E+02	52.31	1.52E+02	2.59E+01

Analysis Report for 1606043-04

CP-5031 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	21	649.03	648 -	655	1.19E+01	7.87	1.54E+01	6.46E+00
m	22	651.67	648 -	655	1.87E+01	17.38	4.06E+01	1.05E+01
	23	661.10	658 -	664	3.71E+01	22.73	6.78E+01	1.58E+01
	24	667.70	665 -	672	3.14E+01	26.91	9.92E+01	2.01E+01
	25	768.66	766 -	772	3.45E+01	25.27	9.10E+01	1.84E+01
	26	809.13	804 -	814	2.90E+01	27.86	8.80E+01	2.11E+01
	27	883.33	879 -	886	1.79E+01	21.73	6.42E+01	1.64E+01
	28	911.70	908 -	915	4.53E+01	24.17	6.53E+01	1.65E+01
	29	934.81	930 -	939	4.40E+01	22.93	5.00E+01	1.54E+01
	30	1121.10	1117 -	1125	7.86E+01	25.83	5.48E+01	1.54E+01
	31	1155.69	1150 -	1160	2.37E+01	23.43	6.06E+01	1.75E+01
	32	1239.63	1234 -	1243	2.95E+01	27.91	9.30E+01	2.11E+01
	33	1378.76	1374 -	1382	2.40E+01	18.17	3.60E+01	1.26E+01
	34	1402.41	1397 -	1405	1.47E+01	15.15	2.47E+01	1.07E+01
	35	1408.98	1406 -	1414	2.62E+01	12.98	1.17E+01	6.57E+00
	36	1446.66	1442 -	1450	1.12E+01	11.52	1.36E+01	7.71E+00
	37	1461.73	1455 -	1467	2.09E+02	34.14	3.81E+01	1.49E+01
	38	1661.87	1659 -	1664	5.71E+00	6.08	2.57E+00	3.09E+00
M	39	1727.72	1726 -	1735	9.12E+00	4.12	1.88E+00	2.25E+00
m	40	1730.76	1726 -	1735	2.37E+01	11.83	3.94E+00	3.26E+00
M	41	1765.49	1760 -	1774	7.39E+01	18.34	4.52E+00	3.49E+00
m	42	1770.73	1760 -	1774	7.01E+00	16.52	9.53E-01	1.60E+00
	43	1848.50	1844 -	1853	2.30E+01	9.59	0.00E+00	0.00E+00
	44	2104.48	2100 -	2107	1.10E+01	6.63	0.00E+00	0.00E+00
	45	2204.93	2200 -	2208	2.86E+01	13.13	8.79E+00	6.26E+00
	46	2351.92	2347 -	2354	9.00E+00	6.00	0.00E+00	0.00E+00
	47	2615.90	2611 -	2619	3.09E+01	12.34	4.27E+00	4.41E+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 : 6/17/2016 8:23:37AM

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 1606043-04

CP-5031 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	47.04	44 -	50	47.39	1.31E+02	61.63	5.96E+02	PB-210
	2	76.81	72 -	81	77.16	5.96E+02	116.73	1.61E+03	.....
m	3	87.80	83 -	97	88.13	1.08E+02	51.81	5.79E+02	SN-126 CD-109 LU-176
m	4	90.80	83 -	97	91.14	9.02E+01	50.87	5.16E+02	ND-147
	5	121.76	120 -	125	122.08	4.60E+01	53.23	5.28E+02	EU-152 CO-57 SE-75
	6	153.65	152 -	157	153.97	6.14E+01	53.38	5.23E+02	CS-136
	7	186.65	183 -	191	186.95	2.79E+02	76.50	7.18E+02	RA-226
M	8	239.56	235 -	250	239.85	1.88E+02	45.60	2.75E+02	PB-212
m	9	242.87	235 -	250	243.15	1.76E+02	42.71	2.34E+02	.....
	10	259.34	257 -	262	259.62	3.63E+01	38.09	2.61E+02	.....
M	11	292.63	291 -	299	292.90	2.24E+01	21.57	1.17E+02	CE-143
m	12	295.86	291 -	299	296.13	3.53E+02	47.05	1.92E+02	PB-214
M	13	352.62	348 -	367	352.87	6.16E+02	53.85	1.07E+02	PB-214
m	14	362.75	348 -	367	363.00	1.78E+01	23.67	8.72E+01	.....
	15	388.84	386 -	394	389.08	3.26E+01	39.24	2.19E+02	.....
M	16	437.13	436 -	445	437.35	2.10E+01	11.31	2.40E+01	BA-140
m	17	440.43	436 -	445	440.65	2.46E+01	23.24	7.20E+01	.....
	18	511.49	508 -	514	511.68	1.12E+02	31.09	9.41E+01	.....
	19	583.00	578 -	588	583.17	7.70E+01	36.03	1.32E+02	TL-208
	20	610.10	606 -	614	610.26	4.36E+02	52.31	1.52E+02	BI-214
M	21	649.03	648 -	655	649.18	1.19E+01	7.87	1.54E+01	.....
m	22	651.67	648 -	655	651.82	1.87E+01	17.38	4.06E+01	.....
	23	661.10	658 -	664	661.24	3.71E+01	22.73	6.78E+01	CS-137
	24	667.70	665 -	672	667.85	3.14E+01	26.91	9.92E+01	.....
	25	768.66	766 -	772	768.77	3.45E+01	25.27	9.10E+01	.....
	26	809.13	804 -	814	809.23	2.90E+01	27.86	8.80E+01	LU-172
	27	883.33	879 -	886	883.39	1.79E+01	21.73	6.42E+01	.....
	28	911.70	908 -	915	911.75	4.53E+01	24.17	6.53E+01	LU-172 AC-228
	29	934.81	930 -	939	934.86	4.40E+01	22.93	5.00E+01	.....
	30	1121.10	1117 -	1125	1121.08	7.86E+01	25.83	5.48E+01	TA-182 SC-46 BI-214
	31	1155.69	1150 -	1160	1155.66	2.37E+01	23.43	6.06E+01	.....
	32	1239.63	1234 -	1243	1239.56	2.95E+01	27.91	9.30E+01	.....
	33	1378.76	1374 -	1382	1378.64	2.40E+01	18.17	3.60E+01	.....
	34	1402.41	1397 -	1405	1402.29	1.47E+01	15.15	2.47E+01	.....
	35	1408.98	1406 -	1414	1408.86	2.62E+01	12.98	1.17E+01	.....
	36	1446.66	1442 -	1450	1446.52	1.12E+01	11.52	1.36E+01	.....
	37	1461.73	1455 -	1467	1461.59	2.09E+02	34.14	3.81E+01	K-40
	38	1661.87	1659 -	1664	1661.65	5.71E+00	6.08	2.57E+00	.....
M	39	1727.72	1726 -	1735	1727.48	9.12E+00	4.12	1.88E+00	.....
m	40	1730.76	1726 -	1735	1730.52	2.37E+01	11.83	3.94E+00	.....
M	41	1765.49	1760 -	1774	1765.23	7.39E+01	18.34	4.52E+00	BI-214
m	42	1770.73	1760 -	1774	1770.47	7.01E+00	16.52	9.53E-01	CO-56
	43	1848.50	1844 -	1853	1848.22	2.30E+01	9.59	0.00E+00	.....
	44	2104.48	2100 -	2107	2104.09	1.10E+01	6.63	0.00E+00	.....
	45	2204.93	2200 -	2208	2204.51	2.86E+01	13.13	8.79E+00	BI-214
	46	2351.92	2347 -	2354	2351.44	9.00E+00	6.00	0.00E+00	.....
	47	2615.90	2611 -	2619	2615.32	3.09E+01	12.34	4.27E+00	.....

Analysis Report for 1606043-04

CP-5031 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 EFFICIENCY REPORT

Peak Analysis Performed on : 6/17/2016 8:23:37AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	47.04	1.31E+02	61.63	1.71E-02	1.78E-03
	2	76.81	5.96E+02	116.73	2.77E-02	2.36E-03
m	3	87.80	1.08E+02	51.81	2.85E-02	2.73E-03
m	4	90.80	9.02E+01	50.87	2.86E-02	2.69E-03
	5	121.76	4.60E+01	53.23	2.73E-02	2.07E-03
	6	153.65	6.14E+01	53.38	2.48E-02	2.15E-03
	7	186.65	2.79E+02	76.50	2.23E-02	2.02E-03
M	8	239.56	1.88E+02	45.60	1.92E-02	1.63E-03
m	9	242.87	1.76E+02	42.71	1.90E-02	1.61E-03
	10	259.34	3.63E+01	38.09	1.82E-02	1.49E-03
M	11	292.63	2.24E+01	21.57	1.68E-02	1.31E-03
m	12	295.86	3.53E+02	47.05	1.67E-02	1.31E-03
M	13	352.62	6.16E+02	53.85	1.47E-02	1.19E-03
m	14	362.75	1.78E+01	23.67	1.45E-02	1.17E-03
	15	388.84	3.26E+01	39.24	1.38E-02	1.12E-03
M	16	437.13	2.10E+01	11.31	1.26E-02	1.07E-03
m	17	440.43	2.46E+01	23.24	1.26E-02	1.06E-03
	18	511.49	1.12E+02	31.09	1.12E-02	9.90E-04
	19	583.00	7.70E+01	36.03	1.02E-02	9.16E-04
	20	610.10	4.36E+02	52.31	9.82E-03	8.88E-04
M	21	649.03	1.19E+01	7.87	9.36E-03	8.47E-04
m	22	651.67	1.87E+01	17.38	9.33E-03	8.45E-04
	23	661.10	3.71E+01	22.73	9.22E-03	8.35E-04
	24	667.70	3.14E+01	26.91	9.15E-03	8.29E-04
	25	768.66	3.45E+01	25.27	8.19E-03	7.38E-04
	26	809.13	2.90E+01	27.86	7.86E-03	7.02E-04
	27	883.33	1.79E+01	21.73	7.33E-03	6.36E-04
	28	911.70	4.53E+01	24.17	7.14E-03	6.15E-04
	29	934.81	4.40E+01	22.93	7.00E-03	6.03E-04
	30	1121.10	7.86E+01	25.83	6.06E-03	5.06E-04
	31	1155.69	2.37E+01	23.43	5.92E-03	4.88E-04
	32	1239.63	2.95E+01	27.91	5.61E-03	4.67E-04
	33	1378.76	2.40E+01	18.17	5.18E-03	4.40E-04
	34	1402.41	1.47E+01	15.15	5.12E-03	4.34E-04

Analysis Report for 1606043-04

CP-5031 00-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	35	1408.98	2.62E+01	12.98	5.10E-03	4.32E-04
	36	1446.66	1.12E+01	11.52	5.00E-03	4.23E-04
	37	1461.73	2.09E+02	34.14	4.97E-03	4.19E-04
	38	1661.87	5.71E+00	6.08	4.56E-03	3.69E-04
M	39	1727.72	9.12E+00	4.12	4.45E-03	3.53E-04
m	40	1730.76	2.37E+01	11.83	4.45E-03	3.52E-04
M	41	1765.49	7.39E+01	18.34	4.39E-03	3.43E-04
m	42	1770.73	7.01E+00	16.52	4.39E-03	3.42E-04
	43	1848.50	2.30E+01	9.59	4.28E-03	3.26E-04
	44	2104.48	1.10E+01	6.63	4.02E-03	3.26E-04
	45	2204.93	2.86E+01	13.13	3.95E-03	3.26E-04
	46	2351.92	9.00E+00	6.00	3.87E-03	3.26E-04
	47	2615.90	3.09E+01	12.34	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 : 6/17/2016 8:23:37AM

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	47.04	1.31E+02	61.63	4.33E+01	8.35E+00	8.75E+01	6.22E+01
	2	76.81	5.96E+02	116.73			5.96E+02	1.17E+02
m	3	87.80	1.08E+02	51.81			1.08E+02	5.18E+01
m	4	90.80	9.02E+01	50.87			9.02E+01	5.09E+01
	5	121.76	4.60E+01	53.23			4.60E+01	5.32E+01
	6	153.65	6.14E+01	53.38			6.14E+01	5.34E+01
	7	186.65	2.79E+02	76.50	5.81E+01	8.50E+00	2.21E+02	7.70E+01
M	8	239.56	1.88E+02	45.60	1.81E+01	5.76E+00	1.70E+02	4.60E+01
m	9	242.87	1.76E+02	42.71			1.76E+02	4.27E+01
	10	259.34	3.63E+01	38.09			3.63E+01	3.81E+01
M	11	292.63	2.24E+01	21.57			2.24E+01	2.16E+01
m	12	295.86	3.53E+02	47.05	1.02E+00	5.38E+00	3.52E+02	4.74E+01
M	13	352.62	6.16E+02	53.85	7.25E+00	4.86E+00	6.09E+02	5.41E+01
m	14	362.75	1.78E+01	23.67			1.78E+01	2.37E+01
	15	388.84	3.26E+01	39.24			3.26E+01	3.92E+01
M	16	437.13	2.10E+01	11.31			2.10E+01	1.13E+01
m	17	440.43	2.46E+01	23.24			2.46E+01	2.32E+01

Analysis Report for 1606043-04

CP-5031 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	18	511.49	1.12E+02	31.09	7.58E+01	5.38E+00	3.62E+01	3.16E+01
	19	583.00	7.70E+01	36.03	6.11E+00	3.78E+00	7.09E+01	3.62E+01
	20	610.10	4.36E+02	52.31	6.74E+00	3.64E+00	4.29E+02	5.24E+01
M	21	649.03	1.19E+01	7.87			1.19E+01	7.87E+00
m	22	651.67	1.87E+01	17.38			1.87E+01	1.74E+01
	23	661.10	3.71E+01	22.73			3.71E+01	2.27E+01
	24	667.70	3.14E+01	26.91			3.14E+01	2.69E+01
	25	768.66	3.45E+01	25.27			3.45E+01	2.53E+01
	26	809.13	2.90E+01	27.86			2.90E+01	2.79E+01
	27	883.33	1.79E+01	21.73			1.79E+01	2.17E+01
	28	911.70	4.53E+01	24.17	4.21E+00	2.98E+00	4.11E+01	2.43E+01
	29	934.81	4.40E+01	22.93			4.40E+01	2.29E+01
	30	1121.10	7.86E+01	25.83			7.86E+01	2.58E+01
	31	1155.69	2.37E+01	23.43			2.37E+01	2.34E+01
	32	1239.63	2.95E+01	27.91			2.95E+01	2.79E+01
	33	1378.76	2.40E+01	18.17			2.40E+01	1.82E+01
	34	1402.41	1.47E+01	15.15			1.47E+01	1.51E+01
	35	1408.98	2.62E+01	12.98			2.62E+01	1.30E+01
	36	1446.66	1.12E+01	11.52			1.12E+01	1.15E+01
	37	1461.73	2.09E+02	34.14	6.83E+00	2.10E+00	2.02E+02	3.42E+01
	38	1661.87	5.71E+00	6.08			5.71E+00	6.08E+00
M	39	1727.72	9.12E+00	4.12			9.12E+00	4.12E+00
m	40	1730.76	2.37E+01	11.83			2.37E+01	1.18E+01
M	41	1765.49	7.39E+01	18.34	1.66E+00	1.65E+00	7.23E+01	1.84E+01
m	42	1770.73	7.01E+00	16.52			7.01E+00	1.65E+01
	43	1848.50	2.30E+01	9.59			2.30E+01	9.59E+00
	44	2104.48	1.10E+01	6.63			1.10E+01	6.63E+00
	45	2204.93	2.86E+01	13.13			2.86E+01	1.31E+01
	46	2351.92	9.00E+00	6.00			9.00E+00	6.00E+00
	47	2615.90	3.09E+01	12.34	4.95E+00	1.35E+00	2.59E+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 : 6/17/2016 8:23:37AM

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

Analysis Report for 1606043-04

CP-5031 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	47.04	1.31E+02	61.63	4.33E+01	8.35E+00	8.75E+01	6.22E+01
	2	76.81	5.96E+02	116.73			5.96E+02	1.17E+02
m	3	87.80	1.08E+02	51.81			1.08E+02	5.18E+01
m	4	90.80	9.02E+01	50.87			9.02E+01	5.09E+01
	5	121.76	4.60E+01	53.23			4.60E+01	5.32E+01
	6	153.65	6.14E+01	53.38			6.14E+01	5.34E+01
	7	186.65	2.79E+02	76.50	5.81E+01	8.50E+00	2.21E+02	7.70E+01
M	8	239.56	1.88E+02	45.60	1.81E+01	5.76E+00	1.70E+02	4.60E+01
m	9	242.87	1.76E+02	42.71			1.76E+02	4.27E+01
	10	259.34	3.63E+01	38.09			3.63E+01	3.81E+01
M	11	292.63	2.24E+01	21.57			2.24E+01	2.16E+01
m	12	295.86	3.53E+02	47.05	1.02E+00	5.38E+00	3.52E+02	4.74E+01
M	13	352.62	6.16E+02	53.85	7.25E+00	4.86E+00	6.09E+02	5.41E+01
m	14	362.75	1.78E+01	23.67			1.78E+01	2.37E+01
	15	388.84	3.26E+01	39.24			3.26E+01	3.92E+01
M	16	437.13	2.10E+01	11.31			2.10E+01	1.13E+01
m	17	440.43	2.46E+01	23.24			2.46E+01	2.32E+01
	18	511.49	1.12E+02	31.09	7.58E+01	5.38E+00	3.62E+01	3.16E+01
	19	583.00	7.70E+01	36.03	6.11E+00	3.78E+00	7.09E+01	3.62E+01
	20	610.10	4.36E+02	52.31	6.74E+00	3.64E+00	4.29E+02	5.24E+01
M	21	649.03	1.19E+01	7.87			1.19E+01	7.87E+00
m	22	651.67	1.87E+01	17.38			1.87E+01	1.74E+01
	23	661.10	3.71E+01	22.73			3.71E+01	2.27E+01
	24	667.70	3.14E+01	26.91			3.14E+01	2.69E+01
	25	768.66	3.45E+01	25.27			3.45E+01	2.53E+01
	26	809.13	2.90E+01	27.86			2.90E+01	2.79E+01
	27	883.33	1.79E+01	21.73			1.79E+01	2.17E+01
	28	911.70	4.53E+01	24.17	4.21E+00	2.98E+00	4.11E+01	2.43E+01
	29	934.81	4.40E+01	22.93			4.40E+01	2.29E+01
	30	1121.10	7.86E+01	25.83			7.86E+01	2.58E+01
	31	1155.69	2.37E+01	23.43			2.37E+01	2.34E+01
	32	1239.63	2.95E+01	27.91			2.95E+01	2.79E+01
	33	1378.76	2.40E+01	18.17			2.40E+01	1.82E+01
	34	1402.41	1.47E+01	15.15			1.47E+01	1.51E+01
	35	1408.98	2.62E+01	12.98			2.62E+01	1.30E+01
	36	1446.66	1.12E+01	11.52			1.12E+01	1.15E+01
	37	1461.73	2.09E+02	34.14	6.83E+00	2.10E+00	2.02E+02	3.42E+01
	38	1661.87	5.71E+00	6.08			5.71E+00	6.08E+00
M	39	1727.72	9.12E+00	4.12			9.12E+00	4.12E+00
m	40	1730.76	2.37E+01	11.83			2.37E+01	1.18E+01
M	41	1765.49	7.39E+01	18.34	1.66E+00	1.65E+00	7.23E+01	1.84E+01
m	42	1770.73	7.01E+00	16.52			7.01E+00	1.65E+01
	43	1848.50	2.30E+01	9.59			2.30E+01	9.59E+00
	44	2104.48	1.10E+01	6.63			1.10E+01	6.63E+00
	45	2204.93	2.86E+01	13.13			2.86E+01	1.31E+01
	46	2351.92	9.00E+00	6.00			9.00E+00	6.00E+00
	47	2615.90	3.09E+01	12.34	4.95E+00	1.35E+00	2.59E+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

Analysis Report for 1606043-04

CP-5031 00-02

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	0.874	1460.81	*	10.67	3.94E+00	7.50E-01
CO-57	0.813	122.06	*	85.51	2.12E-02	2.46E-02
		136.48		10.60		
CD-109	0.991	88.03	*	3.72	1.08E+00	5.31E-01
SN-126	0.992	87.57	*	37.00	1.06E-01	5.18E-02
CS-137	0.952	661.65	*	85.12	4.89E-02	3.03E-02
ND-147	0.633	91.11	*	28.90	2.93E-01	1.68E-01
		531.02		13.10		
PB-210	0.955	46.50	*	4.25	1.24E+00	8.93E-01
PB-212	0.773	238.63	*	44.60	2.06E-01	5.83E-02
		300.09		3.41		
BI-214	0.895	609.31	*	46.30	9.77E-01	1.48E-01
		1120.29	*	15.10	8.88E-01	3.01E-01
		1764.49	*	15.80	1.08E+00	2.87E-01
		2204.22	*	4.98	1.50E+00	7.02E-01
PB-214	0.928	295.21	*	19.19	1.14E+00	1.77E-01
		351.92	*	37.19	1.15E+00	1.38E-01
RA-226	0.970	186.21	*	3.28	3.12E+00	5.82E+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 : 6/17/2016 8:23:37AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1606043-04

CP-5031 00-02

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	76.81	1.65607E-01	9.79		
	6	153.65	1.70610E-02	43.45	Tol.	CS-136
m	9	242.87	4.90120E-02	12.10	Sum	
	10	259.34	1.00757E-02	52.51		
M	11	292.63	6.22484E-03	48.13	Tol.	CE-143
m	14	362.75	4.94379E-03	66.50		
	15	388.84	9.04538E-03	60.26		
M	16	437.13	5.83904E-03	26.91	Tol.	BA-140
m	17	440.43	6.82356E-03	47.30	D-Esc	
	18	511.49	1.00436E-02	43.64		
	19	583.00	1.96919E-02	25.55	Tol.	TL-208
M	21	649.03	3.30867E-03	33.05	Sum	
m	22	651.67	5.19326E-03	46.48		
	24	667.70	8.72085E-03	42.85		
	25	768.66	9.58333E-03	36.62		
	26	809.13	8.05556E-03	48.03	Tol.	LU-172
	27	883.33	4.96944E-03	60.72		
	28	911.70	1.14277E-02	29.59	Tol.	LU-172 AC-228
	29	934.81	1.22222E-02	26.06		
	31	1155.69	6.57922E-03	49.45		
	32	1239.63	8.19810E-03	47.28		
	33	1378.76	6.66667E-03	37.85		
	34	1402.41	4.07407E-03	51.65		
	35	1408.98	7.26563E-03	24.81		
	36	1446.66	3.11728E-03	51.33		
	38	1661.87	1.58730E-03	53.22		
M	39	1727.72	2.53360E-03	22.60		
m	40	1730.76	6.58067E-03	24.97	Sum	
m	42	1770.73	1.94734E-03	117.84		
	43	1848.50	6.38889E-03	20.85		
	44	2104.48	3.05556E-03	30.15		
	46	2351.92	2.50000E-03	33.33		
	47	2615.90	7.19817E-03	23.95		

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 1606043-04

CP-5031 00-02

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.87	1460.81	*	10.67	3.94E+00	7.50E-01
CO-57	0.81	122.06	*	85.51	2.12E-02	2.46E-02
		136.48		10.60		
CD-109	0.99	88.03	*	3.72	1.08E+00	5.31E-01
SN-126	0.99	87.57	*	37.00	1.06E-01	5.18E-02
CS-137	0.95	661.65	*	85.12	4.89E-02	3.03E-02
ND-147	0.63	91.11	*	28.90	2.93E-01	1.68E-01
		531.02		13.10		
PB-210	0.95	46.50	*	4.25	1.24E+00	8.93E-01
PB-212	0.77	238.63	*	44.60	2.06E-01	5.83E-02
		300.09		3.41		
BI-214	0.89	609.31	*	46.30	9.77E-01	1.48E-01
		1120.29	*	15.10	8.88E-01	3.01E-01
		1764.49	*	15.80	1.08E+00	2.87E-01
		2204.22	*	4.98	1.50E+00	7.02E-01
PB-214	0.92	295.21	*	19.19	1.14E+00	1.77E-01
		351.92	*	37.19	1.15E+00	1.38E-01
RA-226	0.97	186.21	*	3.28	3.12E+00	5.82E+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	0.874	3.94E+00	7.50E-01	
	CO-57	0.813	2.12E-02	2.46E-02	
?	CD-109	0.991	1.08E+00	5.31E-01	
?	SN-126	0.992	1.06E-01	5.18E-02	
	CS-137	0.952	4.89E-02	3.03E-02	
	ND-147	0.633	2.93E-01	1.68E-01	
	PB-210	0.955	1.24E+00	8.93E-01	

Analysis Report for 1606043-04

CP-5031 00-02

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
PB-212	0.773	2.06E-01	5.83E-02	
BI-214	0.895	9.95E-01	1.19E-01	
PB-214	0.928	1.15E+00	1.09E-01	
RA-226	0.970	3.12E+00	5.82E+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 1606043-04

CP-5031 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/17/2016 8:23:37AM
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	76.81	1.65607E-01	9.79		
	6	153.65	1.70610E-02	43.45	Tol.	CS-136
m	9	242.87	4.90120E-02	12.10	Sum	
	10	259.34	1.00757E-02	52.51		
M	11	292.63	6.22484E-03	48.13	Tol.	CE-143
m	14	362.75	4.94379E-03	66.50		
	15	388.84	9.04538E-03	60.26		
M	16	437.13	5.83904E-03	26.91	Tol.	BA-140
m	17	440.43	6.82356E-03	47.30	D-Esc	
	18	511.49	1.00436E-02	43.64		
	19	583.00	1.96919E-02	25.55	Tol.	TL-208
M	21	649.03	3.30867E-03	33.05	Sum	
m	22	651.67	5.19326E-03	46.48		
	24	667.70	8.72085E-03	42.85		
	25	768.66	9.58333E-03	36.62		
	26	809.13	8.05556E-03	48.03	Tol.	LU-172
	27	883.33	4.96944E-03	60.72		
	28	911.70	1.14277E-02	29.59	Tol.	LU-172 AC-228
	29	934.81	1.22222E-02	26.06		
	31	1155.69	6.57922E-03	49.45		
	32	1239.63	8.19810E-03	47.28		
	33	1378.76	6.66667E-03	37.85		
	34	1402.41	4.07407E-03	51.65		
	35	1408.98	7.26563E-03	24.81		
	36	1446.66	3.11728E-03	51.33		
	38	1661.87	1.58730E-03	53.22		
M	39	1727.72	2.53360E-03	22.60		
m	40	1730.76	6.58067E-03	24.97	Sum	
m	42	1770.73	1.94734E-03	117.84		
	43	1848.50	6.38889E-03	20.85		
	44	2104.48	3.05556E-03	30.15		
	46	2351.92	2.50000E-03	33.33		
	47	2615.90	7.19817E-03	23.95		

Analysis Report for 1606043-04

CP-5031 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 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	2.41E-02	4.44E-01	4.44E-01
+	NA-22	1274.54		99.94	8.57E-03	4.67E-02	4.67E-02
+	NA-24	1368.53		99.99	-6.46E+04	3.74E+05	7.43E+05
		2754.09		99.86	1.70E+04		3.74E+05
+	AL-26	1808.65		99.76	-5.18E-03	3.37E-02	3.37E-02
+	K-40	1460.81	*	10.67	3.94E+00	6.63E-01	6.63E-01
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-4.30E-02	3.99E-02	3.99E-02
		78.34		96.00	2.37E-02		5.11E-02
+	SC-46	889.25		99.98	4.27E-03	4.60E-02	4.60E-02
		1120.51		99.99	1.60E-01		9.51E-02
+	V-48	983.52		99.98	1.10E-02	7.64E-02	8.60E-02
		1312.10		97.50	-5.56E-03		7.64E-02
+	CR-51	320.08		9.83	-2.47E-01	4.26E-01	4.26E-01
+	MN-54	834.83		99.97	4.37E-03	4.38E-02	4.38E-02
+	CO-56	846.75		99.96	-1.56E-03	4.65E-02	4.65E-02
		1037.75		14.03	1.08E-01		3.39E-01
		1238.25		67.00	7.79E-02		1.24E-01
		1771.40		15.51	-5.00E-01		2.75E-01
		2598.48		16.90	-2.45E-02		2.21E-01
+	CO-57	122.06	*	85.51	2.12E-02	4.03E-02	4.03E-02
		136.48		10.60	-3.95E-02		3.02E-01
+	CO-58	810.76		99.40	-8.12E-03	5.27E-02	5.27E-02
+	FE-59	1099.22		56.50	-1.77E-02	9.40E-02	9.40E-02
		1291.56		43.20	-3.95E-02		1.19E-01
+	CO-60	1173.22		100.00	3.67E-02	5.26E-02	5.37E-02
		1332.49		100.00	3.64E-02		5.26E-02
+	ZN-65	1115.52		50.75	-8.26E-03	8.40E-02	8.40E-02
+	GA-67	93.31		35.70	6.87E+00	2.99E+00	2.99E+00
		208.95		2.24	2.03E+00		3.85E+01
		300.22		16.00	5.52E-01		5.01E+00
+	SE-75	121.11		16.70	1.29E-02	5.59E-02	1.94E-01

Analysis Report for 1606043-04

CP-5031 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	-1.03E-02	5.59E-02	5.74E-02
		264.65		59.80	6.27E-03		5.59E-02
		279.53		25.20	2.60E-03		1.31E-01
		400.65		11.40	6.64E-02		3.12E-01
+	RB-82	776.52		13.00	-6.81E-02	4.69E-01	4.69E-01
+	RB-83	520.41		46.00	-3.62E-02	9.07E-02	9.07E-02
		529.64		30.30	-7.92E-02		1.25E-01
		552.65		16.40	-1.68E-02		2.68E-01
+	KR-85	513.99		0.43	-2.67E+00	1.31E+01	1.31E+01
+	SR-85	513.99		99.27	-1.37E-02	6.71E-02	6.71E-02
+	Y-88	898.02		93.40	5.06E-02	2.48E-02	6.34E-02
		1836.01		99.38	-9.35E-03		2.48E-02
+	NB-93M	16.57		9.43	-3.92E+01	3.93E+01	3.93E+01
+	NB-94	702.63		100.00	7.04E-03	3.99E-02	4.27E-02
		871.10		100.00	-2.36E-03		3.99E-02
+	NB-95	765.79		99.81	-4.00E-03	7.36E-02	7.36E-02
+	NB-95M	235.69		25.00	-9.92E+00	2.48E+00	2.48E+00
+	ZR-95	724.18		43.70	-9.90E-02	9.01E-02	1.07E-01
		756.72		55.30	5.92E-02		9.01E-02
+	MO-99	181.06		6.20	6.34E+00	1.41E+01	2.40E+01
		739.58		12.80	6.94E+00		1.41E+01
		778.00		4.50	-6.35E-01		4.18E+01
+	RU-103	497.08		89.00	-1.01E-02	5.16E-02	5.16E-02
+	RU-106	621.84		9.80	-1.96E-01	3.69E-01	3.69E-01
+	AG-108M	433.93		89.90	6.56E-03	4.22E-02	4.29E-02
		614.37		90.40	1.93E-02		5.19E-02
		722.95		90.50	-4.74E-02		4.22E-02
+	CD-109	88.03	*	3.72	1.08E+00	2.10E+00	2.10E+00
+	AG-110M	657.75		93.14	-7.50E-03	4.15E-02	4.15E-02
		677.61		10.53	-5.03E-02		3.99E-01
		706.67		16.46	4.67E-02		2.88E-01
		763.93		21.98	-6.92E-02		1.98E-01
		884.67		71.63	-8.91E-03		6.91E-02
		1384.27		23.94	3.49E-02		2.05E-01
+	CD-113M	263.70		0.02	-1.67E+01	1.33E+02	1.33E+02
+	SN-113	255.12		1.93	2.67E-01	5.31E-02	1.79E+00
		391.69		64.90	-1.75E-02		5.31E-02
+	TE123M	159.00		84.10	1.99E-02	4.21E-02	4.21E-02
+	SB-124	602.71		97.87	1.78E-02	5.35E-02	5.35E-02
		645.85		7.26	-5.20E-02		5.60E-01
		722.78		11.10	-4.60E-01		4.10E-01
		1691.02		49.00	-9.94E-03		8.36E-02
+	I-125	35.49		6.49	2.25E-01	1.53E+00	1.53E+00
+	SB-125	176.33		6.89	-2.93E-01	1.38E-01	4.69E-01
		427.89		29.33	3.07E-02		1.38E-01
		463.38		10.35	1.10E-01		3.91E-01
		600.56		17.80	-3.81E-03		2.44E-01
		635.90		11.32	1.30E-01		3.64E-01

Analysis Report for 1606043-04

CP-5031 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70		83.30	-4.67E-02	9.42E-02	1.01E-01
		666.33		99.60	4.44E-02		1.18E-01
		695.00		99.60	4.22E-02		9.42E-02
		720.50		53.80	1.04E-02		1.74E-01
+	SN-126	87.57	*	37.00	1.06E-01	2.06E-01	2.06E-01
+	SB-127	473.00		25.00	-1.21E+00	1.64E+00	2.08E+00
		685.20		35.70	-4.10E-01		1.64E+00
		783.80		14.70	1.80E+00		4.79E+00
+	I-129	29.78		57.00	4.86E-02	2.88E-01	2.88E-01
		33.60		13.20	1.98E-01		7.70E-01
		39.58		7.52	-3.17E-01		7.81E-01
+	I-131	284.30		6.05	8.50E-02	1.37E-01	1.89E+00
		364.48		81.20	3.33E-02		1.37E-01
		636.97		7.26	4.41E-01		1.96E+00
		722.89		1.80	-8.76E+00		7.80E+00
+	TE-132	49.72		13.10	9.44E-01	8.96E-01	8.61E+00
		228.16		88.00	3.22E-01		8.96E-01
+	BA-133	81.00		33.00	-3.53E-01	6.84E-02	1.19E-01
		302.84		17.80	1.14E-01		1.94E-01
		356.01		60.00	-2.53E-01		6.84E-02
+	I-133	529.87		86.30	-4.30E+03	6.82E+03	6.82E+03
+	XE-133	81.00		38.00	-2.25E+00	7.56E-01	7.56E-01
+	CS-134	563.23		8.38	1.02E-01	4.43E-02	5.02E-01
		569.32		15.43	1.28E-01		2.71E-01
		604.70		97.60	1.95E-03		4.43E-02
		795.84		85.40	1.83E-02		5.18E-02
		801.93		8.73	-1.10E-02		4.71E-01
+	CS-135	268.24		16.00	8.47E-02	2.03E-01	2.03E-01
+	I-135	1131.51		22.50	1.20E+14	4.71E+15	6.22E+15
		1260.41		28.60	-2.52E+15		4.71E+15
		1678.03		9.54	-7.50E+14		1.06E+16
+	CS-136	153.22		7.46	9.02E-01	9.37E-02	1.00E+00
		163.89		4.61	5.29E-01		1.55E+00
		176.55		13.56	-3.27E-01		5.23E-01
		273.65		12.66	-1.64E-01		5.39E-01
		340.57		48.50	1.09E-01		1.67E-01
		818.50		99.70	4.54E-02		9.37E-02
		1048.07		79.60	4.72E-02		1.23E-01
		1235.34		19.70	7.87E-02		6.72E-01
+	CS-137	661.65	*	85.12	4.89E-02	4.52E-02	4.52E-02
+	LA-138	788.74		34.00	-3.92E-02	5.19E-02	1.23E-01
		1435.80		66.00	-3.46E-03		5.19E-02
+	CE-139	165.85		80.35	2.76E-04	4.21E-02	4.21E-02
+	BA-140	162.64		6.70	8.61E-02	3.25E-01	1.11E+00
		304.84		4.50	7.19E-02		1.64E+00
		423.70		3.20	-4.33E-01		2.68E+00
		437.55		2.00	1.01E+00		4.40E+00
		537.32		25.00	1.02E-01		3.25E-01
+	LA-140	328.77		20.50	1.79E-01	1.02E-01	3.77E-01

Analysis Report for 1606043-04

CP-5031 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	487.03		45.50	-1.30E-02	1.02E-01	1.86E-01
		815.85		23.50	-4.94E-02		4.01E-01
		1596.49		95.49	-1.69E-02		1.02E-01
+	CE-141	145.44		48.40	4.90E-02	9.54E-02	9.54E-02
+	CE-143	57.36		11.80	-2.14E+02	2.75E+02	6.62E+02
		293.26		42.00	6.22E+02		2.75E+02
		664.55		5.20	6.90E+02		1.97E+03
+	CE-144	133.54		10.80	-2.47E-01	2.92E-01	2.92E-01
+	PM-144	476.78		42.00	3.60E-03	3.88E-02	9.15E-02
		618.01		98.60	1.55E-02		4.06E-02
		696.49		99.49	-6.27E-03		3.88E-02
+	PM-145	36.85		21.70	1.43E-01	1.73E-01	3.42E-01
		37.36		39.70	1.07E-02		1.73E-01
		42.30		15.10	1.22E-01		3.42E-01
		72.40		2.31	-6.95E+00		1.68E+00
+	PM-146	453.90		39.94	1.72E-03	9.39E-02	9.39E-02
		735.90		14.01	-6.81E-03		2.97E-01
		747.13		13.10	-2.61E-02		2.79E-01
+	ND-147	91.11	*	28.90	2.93E-01	6.80E-01	6.80E-01
		531.02		13.10	-5.63E-01		6.80E-01
+	PM-149	285.90		3.10	-2.59E+00	1.13E+02	1.13E+02
+	EU-152	121.78		20.50	1.04E-01	1.47E-01	1.47E-01
		244.69		5.40	9.08E-01		7.54E-01
		344.27		19.13	1.10E-02		1.59E-01
		778.89		9.20	-2.09E-02		4.57E-01
		964.01		10.40	1.25E-01		5.10E-01
		1085.78		7.22	-1.49E-02		6.61E-01
		1112.02		9.60	6.16E-02		4.59E-01
		1407.95		14.94	3.88E-02		3.71E-01
+	GD-153	97.43		31.30	-1.61E-03	1.01E-01	1.01E-01
		103.18		22.20	-1.26E-01		1.33E-01
+	EU-154	123.07		40.50	3.73E-02	7.41E-02	7.41E-02
		723.30		19.70	-2.19E-01		1.95E-01
		873.19		11.50	-7.32E-02		3.39E-01
		996.32		10.30	-9.20E-02		3.93E-01
		1004.76		17.90	-1.05E-01		2.32E-01
		1274.45		35.50	2.39E-02		1.31E-01
+	EU-155	86.50		30.90	1.39E-01	1.28E-01	1.28E-01
		105.30		20.70	1.75E-02		1.41E-01
+	EU-156	811.77		10.40	-6.69E-01	8.30E-01	8.30E-01
		1153.47		7.20	6.54E-01		1.50E+00
		1230.71		8.90	3.06E-01		1.27E+00
+	HO-166M	184.41		72.60	7.85E-02	6.32E-02	6.32E-02
		280.45		29.60	7.90E-03		1.02E-01
		410.94		11.10	-2.38E-01		3.34E-01
		711.69		54.10	1.36E-02		8.10E-02
+	TM-171	66.72		0.14	-4.29E+01	2.94E+01	2.94E+01
+	HF-172	81.75		4.52	-1.71E+00	2.62E-01	8.07E-01
		125.81		11.30	-1.97E-02		2.62E-01

Analysis Report for 1606043-04

CP-5031 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53		20.60	2.72E-01	3.13E-01	7.98E-01
		810.06		16.63	1.09E+00		1.43E+00
		912.12		15.25	1.90E+00		1.93E+00
		1093.66		62.50	-3.97E-02		3.13E-01
+	LU-173	100.72		5.24	1.99E-01	1.57E-01	5.99E-01
		272.11		21.20	2.80E-02		1.57E-01
+	HF-175	343.40		84.00	6.85E-03	4.32E-02	4.32E-02
+	LU-176	88.34		13.30	3.46E-01	3.27E-02	2.98E-01
		201.83		86.00	-5.68E-03		3.65E-02
		306.78		94.00	-1.11E-02		3.27E-02
+	TA-182	67.75		41.20	-1.08E-01	1.00E-01	1.00E-01
		1121.30		34.90	4.26E-01		2.65E-01
		1189.05		16.23	1.24E-01		3.55E-01
		1221.41		26.98	4.80E-02		1.96E-01
		1231.02		11.44	1.31E-01		5.45E-01
+	IR-192	308.46		29.68	2.90E-02	9.09E-02	1.20E-01
		468.07		48.10	4.58E-03		9.09E-02
+	HG-203	279.19		77.30	-1.74E-02	4.80E-02	4.80E-02
+	BI-207	569.67		97.72	6.44E-03	4.03E-02	4.03E-02
		1063.62		74.90	2.33E-02		5.88E-02
+	TL-208	583.14		30.22	2.15E-01	1.76E-01	1.76E-01
		860.37		4.48	3.02E-01		1.06E+00
		2614.66		35.85	2.20E-01		2.27E-01
+	BI-210M	262.00		45.00	1.77E-02	7.49E-02	7.49E-02
		300.00		23.00	1.55E-02		1.41E-01
+	PB-210	46.50	*	4.25	1.24E+00	1.43E+00	1.43E+00
+	PB-211	404.84		2.90	4.08E-01	1.24E+00	1.24E+00
		831.96		2.90	-7.38E-01		1.29E+00
+	BI-212	727.17		11.80	2.11E-01	3.94E-01	3.94E-01
		1620.62		2.75	7.24E-01		1.58E+00
+	PB-212	238.63	*	44.60	2.06E-01	1.73E-01	1.73E-01
		300.09		3.41	1.05E-01		9.51E-01
+	BI-214	609.31	*	46.30	9.77E-01	1.26E-01	1.26E-01
		1120.29	*	15.10	8.88E-01		3.80E-01
		1764.49	*	15.80	1.08E+00		2.52E-01
		2204.22	*	4.98	1.50E+00		8.02E-01
+	PB-214	295.21	*	19.19	1.14E+00	2.10E-01	2.45E-01
		351.92	*	37.19	1.15E+00		2.10E-01
+	RN-219	401.80		6.50	-2.37E-01	4.80E-01	4.80E-01
+	RA-223	323.87		3.88	3.52E-01	8.34E-01	8.34E-01
+	RA-224	240.98		3.95	4.20E+00	1.43E+00	1.43E+00
+	RA-225	40.00		31.00	-1.52E-01	3.74E-01	3.74E-01
+	RA-226	186.21	*	3.28	3.12E+00	1.69E+00	1.69E+00
+	TH-227	50.10		8.40	5.86E-02	2.98E-01	5.35E-01
		236.00		11.50	-1.19E+00		2.98E-01
		256.20		6.30	4.25E-02		5.10E-01
+	AC-228	338.32		11.40	1.68E-01	2.26E-01	3.27E-01
		911.07		27.70	2.52E-01		2.26E-01

Analysis Report for 1606043-04

CP-5031 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	16.60	3.04E-01	2.26E-01	3.63E-01
+	TH-230	48.44	16.90	2.77E-01	3.08E-01	3.08E-01
		62.85	4.60	1.84E+00		9.99E-01
		67.67	0.37	-1.10E+01		1.02E+01
+	PA-231	283.67	1.60	-6.61E-02	1.49E+00	1.92E+00
		302.67	2.30	8.79E-01		1.49E+00
+	TH-231	25.64	14.70	-1.85E+01	5.58E-01	3.21E+00
		84.21	6.40	-1.10E+00		5.58E-01
+	PA-233	311.98	38.60	-1.86E-02	1.16E-01	1.16E-01
+	PA-234	131.20	20.40	5.13E-02	1.61E-01	1.61E-01
		733.99	8.80	-6.79E-02		4.60E-01
		946.00	12.00	-3.14E-02		3.71E-01
+	PA-234M	1001.03	0.92	2.43E+00	5.06E+00	5.06E+00
+	TH-234	63.29	3.80	1.89E+00	1.20E+00	1.20E+00
+	U-235	143.76	10.50	4.03E-02	3.12E-01	3.12E-01
		163.35	4.70	2.34E-01		6.85E-01
		205.31	4.70	-2.00E-01		7.14E-01
+	NP-237	86.50	12.60	3.40E-01	3.13E-01	3.13E-01
+	NP-239	106.10	22.70	1.35E+00	1.09E+01	1.09E+01
		228.18	10.70	9.09E+00		2.53E+01
		277.60	14.10	-2.62E+00		1.80E+01
+	AM-241	59.54	35.90	-1.19E-04	1.08E-01	1.08E-01
+	AM-243	74.67	66.00	-2.35E-01	7.00E-02	7.00E-02
+	CM-243	209.75	3.29	4.02E-01	2.13E-01	1.06E+00
		228.14	10.60	1.08E-01		3.00E-01
		277.60	14.00	-3.11E-02		2.13E-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

Analysis Report for 1606043-04

CP-5031 00-02

	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	4.44E-01	4.44E-01	2.41E-02	2.08E-01
	NA-22	1274.54		99.94	4.67E-02	4.67E-02	8.57E-03	2.08E-02
	NA-24	1368.53		99.99	7.43E+05	3.74E+05	-6.46E+04	3.21E+05
		2754.09		99.86	3.74E+05		1.70E+04	1.18E+05
	AL-26	1808.65		99.76	3.37E-02	3.37E-02	-5.18E-03	1.36E-02
+	K-40	1460.81	*	10.67	6.63E-01	6.63E-01	3.94E+00	3.05E-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	3.99E-02	3.99E-02	-4.30E-02	1.94E-02
		78.34		96.00	5.11E-02		2.37E-02	2.50E-02
	SC-46	889.25		99.98	4.60E-02	4.60E-02	4.27E-03	2.08E-02
		1120.51		99.99	9.51E-02		1.60E-01	4.49E-02
	V-48	983.52		99.98	8.60E-02	7.64E-02	1.10E-02	3.90E-02
		1312.10		97.50	7.64E-02		-5.56E-03	3.31E-02
	CR-51	320.08		9.83	4.26E-01	4.26E-01	-2.47E-01	2.00E-01
	MN-54	834.83		99.97	4.38E-02	4.38E-02	4.37E-03	2.00E-02
	CO-56	846.75		99.96	4.65E-02	4.65E-02	-1.56E-03	2.11E-02
		1037.75		14.03	3.39E-01		1.08E-01	1.52E-01
		1238.25		67.00	1.24E-01		7.79E-02	5.75E-02
		1771.40		15.51	2.75E-01		-5.00E-01	1.14E-01
		2598.48		16.90	2.21E-01		-2.45E-02	8.56E-02
+	CO-57	122.06	*	85.51	4.03E-02	4.03E-02	2.12E-02	1.95E-02
		136.48		10.60	3.02E-01		-3.95E-02	1.46E-01
	CO-58	810.76		99.40	5.27E-02	5.27E-02	-8.12E-03	2.43E-02
	FE-59	1099.22		56.50	9.40E-02	9.40E-02	-1.77E-02	4.19E-02
		1291.56		43.20	1.19E-01		-3.95E-02	5.18E-02
	CO-60	1173.22		100.00	5.37E-02	5.26E-02	3.67E-02	2.45E-02
		1332.49		100.00	5.26E-02		3.64E-02	2.37E-02
	ZN-65	1115.52		50.75	8.40E-02	8.40E-02	-8.26E-03	3.73E-02
	GA-67	93.31		35.70	2.99E+00	2.99E+00	6.87E+00	1.46E+00
		208.95		2.24	3.85E+01		2.03E+00	1.85E+01
		300.22		16.00	5.01E+00		5.52E-01	2.38E+00
	SE-75	121.11		16.70	1.94E-01	5.59E-02	1.29E-02	9.35E-02
		136.00		59.20	5.74E-02		-1.03E-02	2.77E-02
		264.65		59.80	5.59E-02		6.27E-03	2.66E-02
		279.53		25.20	1.31E-01		2.60E-03	6.22E-02
		400.65		11.40	3.12E-01		6.64E-02	1.46E-01
	RB-82	776.52		13.00	4.69E-01	4.69E-01	-6.81E-02	2.14E-01
	RB-83	520.41		46.00	9.07E-02	9.07E-02	-3.62E-02	4.23E-02
		529.64		30.30	1.25E-01		-7.92E-02	5.79E-02
		552.65		16.40	2.68E-01		-1.68E-02	1.25E-01
	KR-85	513.99		0.43	1.31E+01	1.31E+01	-2.67E+00	6.26E+00
	SR-85	513.99		99.27	6.71E-02	6.71E-02	-1.37E-02	3.21E-02
	Y-88	898.02		93.40	6.34E-02	2.48E-02	5.06E-02	2.94E-02
		1836.01		99.38	2.48E-02		-9.35E-03	8.79E-03
	NB-93M	16.57		9.43	3.93E+01	3.93E+01	-3.92E+01	1.78E+01
	NB-94	702.63		100.00	4.27E-02	3.99E-02	7.04E-03	1.97E-02
		871.10		100.00	3.99E-02		-2.36E-03	1.81E-02
	NB-95	765.79		99.81	7.36E-02	7.36E-02	-4.00E-03	3.45E-02
	NB-95M	235.69		25.00	2.48E+00	2.48E+00	-9.92E+00	1.19E+00
	ZR-95	724.18		43.70	1.07E-01	9.01E-02	-9.90E-02	4.89E-02
		756.72		55.30	9.01E-02		5.92E-02	4.15E-02

Analysis Report for 1606043-04

CP-5031 00-02

	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	2.40E+01	1.41E+01	6.34E+00	1.15E+01
		739.58		12.80	1.41E+01		6.94E+00	6.47E+00
		778.00		4.50	4.18E+01		-6.35E-01	1.92E+01
	RU-103	497.08		89.00	5.16E-02	5.16E-02	-1.01E-02	2.40E-02
	RU-106	621.84		9.80	3.69E-01	3.69E-01	-1.96E-01	1.69E-01
	AG-108M	433.93		89.90	4.29E-02	4.22E-02	6.56E-03	2.02E-02
		614.37		90.40	5.19E-02		1.93E-02	2.44E-02
		722.95		90.50	4.22E-02		-4.74E-02	1.93E-02
+	CD-109	88.03	*	3.72	2.10E+00	2.10E+00	1.08E+00	1.03E+00
	AG-110M	657.75		93.14	4.15E-02	4.15E-02	-7.50E-03	1.91E-02
		677.61		10.53	3.99E-01		-5.03E-02	1.84E-01
		706.67		16.46	2.88E-01		4.67E-02	1.34E-01
		763.93		21.98	1.98E-01		-6.92E-02	9.10E-02
		884.67		71.63	6.91E-02		-8.91E-03	3.17E-02
		1384.27		23.94	2.05E-01		3.49E-02	9.07E-02
	CD-113M	263.70		0.02	1.33E+02	1.33E+02	-1.67E+01	6.30E+01
	SN-113	255.12		1.93	1.79E+00	5.31E-02	2.67E-01	8.52E-01
		391.69		64.90	5.31E-02		-1.75E-02	2.48E-02
	TE123M	159.00		84.10	4.21E-02	4.21E-02	1.99E-02	2.03E-02
	SB-124	602.71		97.87	5.35E-02	5.35E-02	1.78E-02	2.50E-02
		645.85		7.26	5.60E-01		-5.20E-02	2.55E-01
		722.78		11.10	4.10E-01		-4.60E-01	1.87E-01
		1691.02		49.00	8.36E-02		-9.94E-03	3.43E-02
	I-125	35.49		6.49	1.53E+00	1.53E+00	2.25E-01	7.36E-01
	SB-125	176.33		6.89	4.69E-01	1.38E-01	-2.93E-01	2.26E-01
		427.89		29.33	1.38E-01		3.07E-02	6.53E-02
		463.38		10.35	3.91E-01		1.10E-01	1.84E-01
		600.56		17.80	2.44E-01		-3.81E-03	1.14E-01
		635.90		11.32	3.64E-01		1.30E-01	1.69E-01
	SB-126	414.70		83.30	1.01E-01	9.42E-02	-4.67E-02	4.77E-02
		666.33		99.60	1.18E-01		4.44E-02	5.55E-02
		695.00		99.60	9.42E-02		4.22E-02	4.34E-02
		720.50		53.80	1.74E-01		1.04E-02	8.00E-02
+	SN-126	87.57	*	37.00	2.06E-01	2.06E-01	1.06E-01	1.02E-01
	SB-127	473.00		25.00	2.08E+00	1.64E+00	-1.21E+00	9.71E-01
		685.20		35.70	1.64E+00		-4.10E-01	7.55E-01
		783.80		14.70	4.79E+00		1.80E+00	2.22E+00
	I-129	29.78		57.00	2.88E-01	2.88E-01	4.86E-02	1.39E-01
		33.60		13.20	7.70E-01		1.98E-01	3.70E-01
		39.58		7.52	7.81E-01		-3.17E-01	3.74E-01
	I-131	284.30		6.05	1.89E+00	1.37E-01	8.50E-02	8.95E-01
		364.48		81.20	1.37E-01		3.33E-02	6.41E-02
		636.97		7.26	1.96E+00		4.41E-01	9.07E-01
		722.89		1.80	7.80E+00		-8.76E+00	3.57E+00
	TE-132	49.72		13.10	8.61E+00	8.96E-01	9.44E-01	4.16E+00
		228.16		88.00	8.96E-01		3.22E-01	4.28E-01
	BA-133	81.00		33.00	1.19E-01	6.84E-02	-3.53E-01	5.78E-02
		302.84		17.80	1.94E-01		1.14E-01	9.20E-02
		356.01		60.00	6.84E-02		-2.53E-01	3.26E-02
	I-133	529.87		86.30	6.82E+03	6.82E+03	-4.30E+03	3.15E+03
	XE-133	81.00		38.00	7.56E-01	7.56E-01	-2.25E+00	3.68E-01
	CS-134	563.23		8.38	5.02E-01	4.43E-02	1.02E-01	2.35E-01
		569.32		15.43	2.71E-01		1.28E-01	1.27E-01

Analysis Report for 1606043-04

CP-5031 00-02

	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	4.43E-02	4.43E-02	1.95E-03	2.07E-02
		795.84		85.40	5.18E-02		1.83E-02	2.38E-02
		801.93		8.73	4.71E-01		-1.10E-02	2.15E-01
	CS-135	268.24		16.00	2.03E-01	2.03E-01	8.47E-02	9.67E-02
	I-135	1131.51		22.50	6.22E+15	4.71E+15	1.20E+14	2.78E+15
		1260.41		28.60	4.71E+15		-2.52E+15	2.08E+15
		1678.03		9.54	1.06E+16		-7.50E+14	4.27E+15
	CS-136	153.22		7.46	1.00E+00	9.37E-02	9.02E-01	4.83E-01
		163.89		4.61	1.55E+00		5.29E-01	7.46E-01
		176.55		13.56	5.23E-01		-3.27E-01	2.52E-01
		273.65		12.66	5.39E-01		-1.64E-01	2.56E-01
		340.57		48.50	1.67E-01		1.09E-01	7.93E-02
		818.50		99.70	9.37E-02		4.54E-02	4.28E-02
		1048.07		79.60	1.23E-01		4.72E-02	5.54E-02
		1235.34		19.70	6.72E-01		7.87E-02	3.08E-01
+	CS-137	661.65	*	85.12	4.52E-02	4.52E-02	4.89E-02	2.08E-02
	LA-138	788.74		34.00	1.23E-01	5.19E-02	-3.92E-02	5.65E-02
		1435.80		66.00	5.19E-02		-3.46E-03	2.17E-02
	CE-139	165.85		80.35	4.21E-02	4.21E-02	2.76E-04	2.03E-02
	BA-140	162.64		6.70	1.11E+00	3.25E-01	8.61E-02	5.34E-01
		304.84		4.50	1.64E+00		7.19E-02	7.75E-01
		423.70		3.20	2.68E+00		-4.33E-01	1.26E+00
		437.55		2.00	4.40E+00		1.01E+00	2.07E+00
		537.32		25.00	3.25E-01		1.02E-01	1.51E-01
	LA-140	328.77		20.50	3.77E-01	1.02E-01	1.79E-01	1.78E-01
		487.03		45.50	1.86E-01		-1.30E-02	8.72E-02
		815.85		23.50	4.01E-01		-4.94E-02	1.83E-01
		1596.49		95.49	1.02E-01		-1.69E-02	4.40E-02
	CE-141	145.44		48.40	9.54E-02	9.54E-02	4.90E-02	4.62E-02
	CE-143	57.36		11.80	6.62E+02	2.75E+02	-2.14E+02	3.20E+02
		293.26		42.00	2.75E+02		6.22E+02	1.33E+02
		664.55		5.20	1.97E+03		6.90E+02	9.25E+02
	CE-144	133.54		10.80	2.92E-01	2.92E-01	-2.47E-01	1.41E-01
	PM-144	476.78		42.00	9.15E-02	3.88E-02	3.60E-03	4.28E-02
		618.01		98.60	4.06E-02		1.55E-02	1.88E-02
		696.49		99.49	3.88E-02		-6.27E-03	1.78E-02
	PM-145	36.85		21.70	3.42E-01	1.73E-01	1.43E-01	1.64E-01
		37.36		39.70	1.73E-01		1.07E-02	8.28E-02
		42.30		15.10	3.42E-01		1.22E-01	1.64E-01
		72.40		2.31	1.68E+00		-6.95E+00	8.18E-01
	PM-146	453.90		39.94	9.39E-02	9.39E-02	1.72E-03	4.41E-02
		735.90		14.01	2.97E-01		-6.81E-03	1.37E-01
		747.13		13.10	2.79E-01		-2.61E-02	1.27E-01
+	ND-147	91.11	*	28.90	6.80E-01	6.80E-01	2.93E-01	3.36E-01
		531.02		13.10	6.80E-01		-5.63E-01	3.14E-01
	PM-149	285.90		3.10	1.13E+02	1.13E+02	-2.59E+00	5.36E+01
	EU-152	121.78		20.50	1.47E-01	1.47E-01	1.04E-01	7.09E-02
		244.69		5.40	7.54E-01		9.08E-01	3.63E-01
		344.27		19.13	1.59E-01		1.10E-02	7.47E-02
		778.89		9.20	4.57E-01		-2.09E-02	2.10E-01
		964.01		10.40	5.10E-01		1.25E-01	2.35E-01
		1085.78		7.22	6.61E-01		-1.49E-02	2.99E-01
		1112.02		9.60	4.59E-01		6.16E-02	2.06E-01

Analysis Report for 1606043-04

CP-5031 00-02

	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	3.71E-01	1.47E-01	3.88E-02	1.67E-01
	GD-153	97.43		31.30	1.01E-01	1.01E-01	-1.61E-03	4.90E-02
		103.18		22.20	1.33E-01		-1.26E-01	6.43E-02
	EU-154	123.07		40.50	7.41E-02	7.41E-02	3.73E-02	3.58E-02
		723.30		19.70	1.95E-01		-2.19E-01	8.91E-02
		873.19		11.50	3.39E-01		-7.32E-02	1.53E-01
		996.32		10.30	3.93E-01		-9.20E-02	1.76E-01
		1004.76		17.90	2.32E-01		-1.05E-01	1.04E-01
		1274.45		35.50	1.31E-01		2.39E-02	5.81E-02
	EU-155	86.50		30.90	1.28E-01	1.28E-01	1.39E-01	6.26E-02
		105.30		20.70	1.41E-01		1.75E-02	6.80E-02
	EU-156	811.77		10.40	8.30E-01	8.30E-01	-6.69E-01	3.81E-01
		1153.47		7.20	1.50E+00		6.54E-01	6.83E-01
		1230.71		8.90	1.27E+00		3.06E-01	5.80E-01
	HO-166M	184.41		72.60	6.32E-02	6.32E-02	7.85E-02	3.07E-02
		280.45		29.60	1.02E-01		7.90E-03	4.84E-02
		410.94		11.10	3.34E-01		-2.38E-01	1.57E-01
		711.69		54.10	8.10E-02		1.36E-02	3.76E-02
	TM-171	66.72		0.14	2.94E+01	2.94E+01	-4.29E+01	1.43E+01
	HF-172	81.75		4.52	8.07E-01	2.62E-01	-1.71E+00	3.92E-01
		125.81		11.30	2.62E-01		-1.97E-02	1.27E-01
	LU-172	181.53		20.60	7.98E-01	3.13E-01	2.72E-01	3.85E-01
		810.06		16.63	1.43E+00		1.09E+00	6.63E-01
		912.12		15.25	1.93E+00		1.90E+00	9.06E-01
		1093.66		62.50	3.13E-01		-3.97E-02	1.39E-01
	LU-173	100.72		5.24	5.99E-01	1.57E-01	1.99E-01	2.90E-01
		272.11		21.20	1.57E-01		2.80E-02	7.46E-02
	HF-175	343.40		84.00	4.32E-02	4.32E-02	6.85E-03	2.03E-02
	LU-176	88.34		13.30	2.98E-01	3.27E-02	3.46E-01	1.45E-01
		201.83		86.00	3.65E-02		-5.68E-03	1.75E-02
		306.78		94.00	3.27E-02		-1.11E-02	1.54E-02
	TA-182	67.75		41.20	1.00E-01	1.00E-01	-1.08E-01	4.87E-02
		1121.30		34.90	2.65E-01		4.26E-01	1.25E-01
		1189.05		16.23	3.55E-01		1.24E-01	1.61E-01
		1221.41		26.98	1.96E-01		4.80E-02	8.78E-02
		1231.02		11.44	5.45E-01		1.31E-01	2.49E-01
	IR-192	308.46		29.68	1.20E-01	9.09E-02	2.90E-02	5.68E-02
		468.07		48.10	9.09E-02		4.58E-03	4.27E-02
	HG-203	279.19		77.30	4.80E-02	4.80E-02	-1.74E-02	2.27E-02
	BI-207	569.67		97.72	4.03E-02	4.03E-02	6.44E-03	1.87E-02
		1063.62		74.90	5.88E-02		2.33E-02	2.64E-02
	TL-208	583.14		30.22	1.76E-01	1.76E-01	2.15E-01	8.36E-02
		860.37		4.48	1.06E+00		3.02E-01	4.87E-01
		2614.66		35.85	2.27E-01		2.20E-01	1.03E-01
	BI-210M	262.00		45.00	7.49E-02	7.49E-02	1.77E-02	3.57E-02
		300.00		23.00	1.41E-01		1.55E-02	6.68E-02
+	PB-210	46.50	*	4.25	1.43E+00	1.43E+00	1.24E+00	6.93E-01
	PB-211	404.84		2.90	1.24E+00	1.24E+00	4.08E-01	5.83E-01
		831.96		2.90	1.29E+00		-7.38E-01	5.81E-01
	BI-212	727.17		11.80	3.94E-01	3.94E-01	2.11E-01	1.83E-01
		1620.62		2.75	1.58E+00		7.24E-01	6.81E-01
+	PB-212	238.63	*	44.60	1.73E-01	1.73E-01	2.06E-01	8.47E-02
		300.09		3.41	9.51E-01		1.05E-01	4.50E-01

Analysis Report for 1606043-04

CP-5031 00-02

	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	1.26E-01	1.26E-01	9.77E-01	6.01E-02
		1120.29	*	15.10	3.80E-01		8.88E-01	1.74E-01
		1764.49	*	15.80	2.52E-01		1.08E+00	1.06E-01
		2204.22	*	4.98	8.02E-01		1.50E+00	3.30E-01
+	PB-214	295.21	*	19.19	2.45E-01	2.10E-01	1.14E+00	1.18E-01
		351.92	*	37.19	2.10E-01		1.15E+00	1.02E-01
	RN-219	401.80		6.50	4.80E-01	4.80E-01	-2.37E-01	2.24E-01
	RA-223	323.87		3.88	8.34E-01	8.34E-01	3.52E-01	3.94E-01
	RA-224	240.98		3.95	1.43E+00	1.43E+00	4.20E+00	6.97E-01
	RA-225	40.00		31.00	3.74E-01	3.74E-01	-1.52E-01	1.79E-01
+	RA-226	186.21	*	3.28	1.69E+00	1.69E+00	3.12E+00	8.24E-01
	TH-227	50.10		8.40	5.35E-01	2.98E-01	5.86E-02	2.59E-01
		236.00		11.50	2.98E-01		-1.19E+00	1.43E-01
		256.20		6.30	5.10E-01		4.25E-02	2.43E-01
	AC-228	338.32		11.40	3.27E-01	2.26E-01	1.68E-01	1.55E-01
		911.07		27.70	2.26E-01		2.52E-01	1.06E-01
		969.11		16.60	3.63E-01		3.04E-01	1.69E-01
	TH-230	48.44		16.90	3.08E-01	3.08E-01	2.77E-01	1.50E-01
		62.85		4.60	9.99E-01		1.84E+00	4.87E-01
		67.67		0.37	1.02E+01		-1.10E+01	4.95E+00
	PA-231	283.67		1.60	1.92E+00	1.49E+00	-6.61E-02	9.07E-01
		302.67		2.30	1.49E+00		8.79E-01	7.10E-01
	TH-231	25.64		14.70	3.21E+00	5.58E-01	-1.85E+01	1.56E+00
		84.21		6.40	5.58E-01		-1.10E+00	2.71E-01
	PA-233	311.98		38.60	1.16E-01	1.16E-01	-1.86E-02	5.48E-02
	PA-234	131.20		20.40	1.61E-01	1.61E-01	5.13E-02	7.78E-02
		733.99		8.80	4.60E-01		-6.79E-02	2.11E-01
		946.00		12.00	3.71E-01		-3.14E-02	1.69E-01
	PA-234M	1001.03		0.92	5.06E+00	5.06E+00	2.43E+00	2.30E+00
	TH-234	63.29		3.80	1.20E+00	1.20E+00	1.89E+00	5.84E-01
	U-235	143.76		10.50	3.12E-01	3.12E-01	4.03E-02	1.51E-01
		163.35		4.70	6.85E-01		2.34E-01	3.30E-01
		205.31		4.70	7.14E-01		-2.00E-01	3.43E-01
	NP-237	86.50		12.60	3.13E-01	3.13E-01	3.40E-01	1.53E-01
	NP-239	106.10		22.70	1.09E+01	1.09E+01	1.35E+00	5.24E+00
		228.18		10.70	2.53E+01		9.09E+00	1.21E+01
		277.60		14.10	1.80E+01		-2.62E+00	8.50E+00
	AM-241	59.54		35.90	1.08E-01	1.08E-01	-1.19E-04	5.22E-02
	AM-243	74.67		66.00	7.00E-02	7.00E-02	-2.35E-01	3.42E-02
	CM-243	209.75		3.29	1.06E+00	2.13E-01	4.02E-01	5.09E-01
		228.14		10.60	3.00E-01		1.08E-01	1.43E-01
		277.60		14.00	2.13E-01		-3.11E-02	1.01E-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 1606043-04

CP-5031 00-02

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-5031 00-02

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	32	61	61	110	759	251
25:	46	45	41	46	54	39	37	41
33:	41	40	48	42	40	36	38	32
41:	30	54	46	37	36	49	121	107
49:	44	35	52	58	56	67	59	53
57:	61	66	72	62	75	63	72	188
65:	135	70	68	87	91	80	74	80
73:	84	101	112	249	117	332	152	99
81:	74	93	77	76	109	83	74	142
89:	110	83	115	77	182	193	98	76
97:	44	48	63	72	72	53	49	61
105:	51	45	63	50	54	56	72	62
113:	69	59	57	61	54	50	47	44
121:	70	49	54	53	40	46	62	48
129:	61	79	60	53	45	70	53	38
137:	68	39	63	43	57	46	52	61
145:	67	58	53	54	49	64	43	40
153:	77	55	55	55	41	49	50	59
161:	52	45	51	54	48	42	37	43
169:	41	39	55	47	45	59	39	41
177:	49	47	42	48	43	55	39	61
185:	50	103	182	71	43	53	36	33
193:	40	50	41	45	30	46	41	31
201:	32	36	32	47	35	44	42	32
209:	51	43	44	40	33	37	36	42
217:	34	35	35	35	36	36	40	35
225:	32	36	33	35	27	25	21	25
233:	35	35	27	39	43	30	121	128
241:	37	66	126	36	30	22	23	23
249:	24	19	22	28	27	36	26	22
257:	21	31	25	39	28	23	21	35
265:	20	18	24	26	15	34	32	20
273:	27	16	26	25	18	24	22	15
281:	23	23	23	19	21	21	26	21
289:	20	22	17	23	33	20	69	230
297:	92	22	14	24	30	21	24	27
305:	22	18	18	17	21	23	18	13
313:	17	21	18	23	14	19	17	11
321:	15	16	24	20	18	21	13	22
329:	23	26	24	12	17	21	25	18
337:	19	23	42	26	15	19	17	13
345:	17	18	14	10	18	17	22	163
353:	384	75	20	19	13	14	13	17
361:	17	11	19	12	17	20	4	13

369:	10	10	13	13	11	18	13	18

Sample Title: CP-5031 00-02

Channel								
377:	18	20	16	13	10	10	13	27
385:	13	9	16	25	22	14	18	17
393:	11	10	16	10	13	12	19	10
401:	9	19	16	12	14	23	23	10
409:	20	20	12	13	11	6	13	17
417:	12	15	20	10	7	13	12	11
425:	18	13	18	17	10	8	18	17
433:	11	16	4	8	18	11	15	16
441:	20	9	10	11	6	6	9	14
449:	15	10	8	8	9	7	11	19
457:	18	11	9	10	12	13	15	12
465:	18	11	9	13	11	11	6	5
473:	14	12	7	8	13	12	11	11
481:	15	7	10	10	7	8	13	14
489:	12	8	12	13	6	7	11	12
497:	12	6	8	5	12	8	11	11
505:	9	10	8	3	12	16	37	46
513:	40	5	11	9	11	11	10	9
521:	13	9	5	6	11	13	6	9
529:	6	6	6	7	10	8	10	17
537:	5	8	6	6	4	4	6	8
545:	8	10	7	10	9	10	12	9
553:	5	12	11	5	7	12	8	10
561:	6	9	15	9	8	14	8	8
569:	7	7	16	9	7	5	6	8
577:	6	6	10	11	12	13	19	34
585:	18	7	8	5	7	10	8	5
593:	10	8	8	12	9	7	9	12
601:	11	10	9	11	9	10	6	12
609:	70	232	139	28	12	3	12	8
617:	11	6	2	6	8	2	7	8
625:	9	9	8	6	12	7	10	4
633:	11	9	8	2	11	10	5	5
641:	6	4	4	6	4	5	6	2
649:	10	6	8	13	5	2	4	2
657:	4	2	13	11	7	15	19	4
665:	9	10	16	10	14	6	10	6
673:	6	5	6	6	8	5	6	9
681:	9	10	9	3	2	6	8	6
689:	11	2	7	11	5	7	6	9
697:	3	6	4	5	7	4	8	12
705:	10	6	9	7	8	7	10	7
713:	7	9	6	5	7	8	9	4
721:	5	6	6	6	6	6	7	18
729:	9	7	4	6	9	9	6	2
737:	7	6	6	9	6	6	2	4
745:	3	5	5	9	3	4	5	7
753:	6	8	8	9	8	4	4	4
761:	2	1	8	6	6	7	13	7
769:	29	13	6	5	8	3	6	6
777:	4	8	8	4	6	6	7	8
785:	6	7	12	6	4	4	4	4
793:	7	8	6	4	6	7	6	7

801:	3	8	3	5	5	3	14	9

Sample Title: CP-5031 00-02

Channel								
809:	5	4	6	11	8	3	5	8
817:	9	2	3	9	4	4	2	4
825:	6	8	6	4	7	2	3	4
833:	3	4	6	6	9	6	7	8
841:	10	5	5	7	9	3	7	2
849:	0	6	4	6	3	9	8	4
857:	4	8	7	6	7	8	6	4
865:	5	4	7	5	5	1	6	4
873:	4	6	3	5	3	7	5	5
881:	5	11	7	7	8	2	3	6
889:	5	10	3	2	6	2	7	7
897:	10	7	5	14	6	3	4	7
905:	6	3	7	4	8	6	18	23
913:	12	5	2	4	4	5	7	2
921:	6	3	6	4	4	7	4	3
929:	2	3	4	5	3	11	22	11
937:	4	5	1	4	5	3	4	2
945:	2	6	8	6	6	7	6	5
953:	7	3	9	7	4	1	5	1
961:	3	9	6	6	6	12	6	3
969:	13	16	9	4	2	4	4	2
977:	3	3	5	2	5	2	4	7
985:	4	4	6	3	6	4	4	1
993:	4	2	4	4	1	8	2	8
1001:	4	5	3	4	3	3	3	5
1009:	5	5	3	6	5	5	4	5
1017:	6	3	1	4	3	2	5	4
1025:	2	3	7	2	6	4	5	6
1033:	4	3	3	2	6	2	5	4
1041:	3	2	1	4	6	6	3	5
1049:	2	2	4	2	3	6	4	2
1057:	4	3	0	4	5	6	5	3
1065:	4	3	1	2	3	4	4	3
1073:	3	2	3	2	3	7	3	0
1081:	4	2	6	7	1	5	4	3
1089:	5	5	6	3	0	3	2	1
1097:	7	5	0	3	4	3	6	4
1105:	3	5	3	5	5	3	5	3
1113:	2	5	2	2	3	3	4	21
1121:	36	27	6	4	2	5	2	7
1129:	2	2	4	2	3	5	4	3
1137:	11	2	3	6	3	7	2	1
1145:	3	8	4	2	3	2	4	3
1153:	3	6	8	11	5	4	6	2
1161:	4	3	6	6	7	4	7	0
1169:	3	2	6	6	4	7	7	3
1177:	4	1	4	0	2	4	1	4
1185:	4	3	2	9	1	5	7	6
1193:	4	1	2	3	5	5	7	4
1201:	5	4	1	1	1	3	2	8
1209:	6	6	6	8	8	2	3	2
1217:	3	6	2	3	2	5	5	3
1225:	3	3	2	7	4	4	3	6

1233:	7	6	4	4	5	9	19	15

Sample Title: CP-5031 00-02

Channel								
1241:	6	4	4	2	5	6	3	1
1249:	2	2	2	1	3	5	7	4
1257:	4	0	9	3	1	1	1	3
1265:	5	0	1	2	3	2	2	3
1273:	3	4	6	3	1	3	2	4
1281:	4	4	3	2	3	3	3	2
1289:	3	3	3	1	1	3	3	4
1297:	3	4	1	2	1	3	5	4
1305:	3	3	2	3	1	4	3	1
1313:	0	2	3	3	1	2	0	4
1321:	3	1	2	3	3	2	2	1
1329:	5	5	2	3	6	2	4	2
1337:	0	2	3	1	1	3	0	1
1345:	4	3	1	3	4	2	3	1
1353:	2	2	3	2	5	7	2	4
1361:	1	0	7	2	1	3	4	3
1369:	1	1	1	1	1	3	0	1
1377:	3	13	11	6	4	1	3	4
1385:	1	4	3	2	2	4	0	3
1393:	0	1	2	2	4	3	2	0
1401:	2	6	4	6	0	0	4	9
1409:	9	3	3	3	1	0	2	0
1417:	2	4	3	0	0	4	2	2
1425:	2	2	0	1	3	1	2	2
1433:	2	0	1	2	1	2	1	2
1441:	0	1	2	0	4	0	5	1
1449:	5	0	2	3	4	2	4	1
1457:	4	1	4	21	80	80	27	2
1465:	3	1	0	0	2	1	1	1
1473:	0	3	2	3	2	1	2	3
1481:	1	0	2	2	3	2	1	0
1489:	1	5	1	1	3	1	0	2
1497:	0	0	0	4	2	1	2	0
1505:	1	3	2	2	6	5	6	1
1513:	2	1	3	0	5	2	3	0
1521:	2	3	1	0	1	1	1	1
1529:	0	2	3	0	3	1	2	3
1537:	0	1	1	7	0	1	0	4
1545:	2	2	2	0	2	0	3	2
1553:	0	1	0	2	2	1	1	4
1561:	1	2	1	2	0	1	1	1
1569:	1	1	1	0	1	1	0	1
1577:	2	0	1	4	1	2	4	3
1585:	2	2	3	1	3	1	1	3
1593:	1	3	3	3	1	1	1	2
1601:	3	3	0	2	3	2	3	1
1609:	2	1	0	1	3	3	0	0
1617:	2	2	1	4	0	2	2	0
1625:	2	1	2	0	2	1	2	2
1633:	2	1	1	0	1	3	3	3
1641:	0	2	1	2	1	1	1	1
1649:	1	1	1	0	3	1	0	1
1657:	0	1	0	2	0	4	1	0

1665:	0	2	2	1	1	1	2	1

Sample Title: CP-5031 00-02

Channel								
1673:	2	0	2	0	0	1	2	1
1681:	0	2	0	0	3	2	1	1
1689:	1	0	1	1	1	2	1	1
1697:	2	1	2	3	0	1	1	0
1705:	0	2	2	0	2	2	2	1
1713:	1	0	1	2	1	1	1	1
1721:	1	0	0	1	1	0	4	3
1729:	5	6	10	2	1	1	0	0
1737:	2	0	0	2	1	0	0	0
1745:	0	0	1	0	0	1	1	1
1753:	0	2	0	0	2	1	1	0
1761:	1	1	3	18	23	24	7	1
1769:	1	3	1	1	1	0	0	0
1777:	2	0	0	0	0	0	1	2
1785:	1	1	1	2	1	0	1	0
1793:	0	0	0	2	0	0	0	2
1801:	0	0	1	2	0	2	1	2
1809:	1	0	0	1	1	1	1	0
1817:	0	0	1	1	1	3	0	1
1825:	1	0	1	2	1	1	1	0
1833:	0	0	0	0	0	2	0	2
1841:	1	0	0	0	0	2	5	8
1849:	5	1	1	1	0	0	1	1
1857:	2	0	0	1	2	0	1	0
1865:	0	0	0	1	2	3	0	0
1873:	3	1	0	1	0	1	0	0
1881:	1	1	0	0	1	0	0	1
1889:	2	2	0	1	0	1	0	0
1897:	0	0	1	0	0	0	2	0
1905:	0	3	1	0	1	0	2	0
1913:	0	0	0	2	0	2	0	1
1921:	1	1	1	0	1	0	0	1
1929:	0	0	0	0	1	1	1	0
1937:	0	0	2	0	3	0	0	1
1945:	0	0	1	0	0	0	0	0
1953:	0	0	0	1	0	1	0	0
1961:	1	0	0	0	0	0	0	0
1969:	1	2	0	0	1	1	1	0
1977:	1	0	1	0	0	0	1	0
1985:	1	2	1	0	2	1	0	1
1993:	1	0	1	0	0	0	0	0
2001:	0	1	2	1	0	0	1	2
2009:	1	1	1	1	0	0	2	0
2017:	0	1	0	1	1	0	0	0
2025:	0	1	0	1	0	1	2	0
2033:	0	0	2	1	1	0	0	1
2041:	0	2	2	1	2	0	0	0
2049:	0	0	0	1	0	0	0	0
2057:	1	2	1	3	1	1	2	1
2065:	3	0	2	0	0	1	0	0
2073:	1	1	1	0	0	0	1	2
2081:	2	1	3	0	0	1	0	0
2089:	0	0	1	1	1	1	2	0

2097:	0	2	0	0	1	0	3	2

Sample Title: CP-5031 00-02

Channel								
2105:	3	2	0	0	1	0	0	0
2113:	0	2	2	0	1	3	1	3
2121:	0	1	0	1	2	0	0	0
2129:	0	0	0	0	0	1	1	0
2137:	1	0	0	0	0	2	1	2
2145:	2	0	0	1	0	1	0	1
2153:	0	3	2	0	0	1	0	1
2161:	0	0	0	0	0	1	1	1
2169:	0	0	0	0	0	0	0	0
2177:	0	1	1	0	0	0	0	1
2185:	0	2	0	0	0	1	0	1
2193:	1	0	1	0	1	0	2	0
2201:	0	2	3	14	10	2	2	0
2209:	0	0	0	0	1	0	1	1
2217:	1	0	0	0	1	1	0	1
2225:	0	1	0	0	0	1	1	2
2233:	0	2	1	0	0	0	2	0
2241:	1	1	0	0	1	0	0	0
2249:	0	2	0	0	1	1	0	1
2257:	1	1	1	1	1	1	0	0
2265:	0	0	0	2	0	0	0	1
2273:	0	3	0	0	2	0	1	0
2281:	0	0	1	0	0	0	1	0
2289:	0	1	0	0	0	0	1	1
2297:	0	1	0	0	2	1	0	1
2305:	0	0	1	0	0	1	0	0
2313:	0	0	1	0	1	0	0	0
2321:	1	0	0	0	0	1	0	1
2329:	0	0	0	0	0	0	0	1
2337:	0	0	1	1	0	0	0	1
2345:	0	0	0	1	1	1	0	2
2353:	4	0	0	0	0	0	0	2
2361:	0	0	0	0	0	0	1	0
2369:	0	1	1	2	0	0	1	0
2377:	0	2	0	0	0	1	3	0
2385:	0	1	1	0	1	0	1	0
2393:	0	1	0	0	0	1	1	0
2401:	0	0	0	1	0	0	1	0
2409:	0	0	2	1	1	0	2	0
2417:	0	0	0	0	1	0	0	0
2425:	0	0	0	1	1	0	0	0
2433:	0	2	0	0	0	0	1	0
2441:	1	1	1	0	0	0	3	2
2449:	0	1	0	0	0	0	1	0
2457:	0	0	1	1	2	0	0	2
2465:	0	1	0	0	0	0	0	1
2473:	0	0	0	1	1	1	0	1
2481:	0	0	0	0	0	0	0	0
2489:	0	1	1	0	2	0	0	0
2497:	0	1	0	0	0	0	1	1
2505:	0	0	0	0	0	1	0	0
2513:	0	1	1	0	1	0	1	0
2521:	1	0	0	0	1	0	0	0

2529:	0	0	0	0	0	0	0	0

Sample Title: CP-5031 00-02

Channel								
2537:	0	0	0	0	0	1	0	0
2545:	0	1	0	1	0	1	1	0
2553:	0	0	0	0	0	1	0	0
2561:	1	0	0	0	0	1	0	0
2569:	0	0	0	0	0	1	0	0
2577:	1	0	0	0	0	1	0	0
2585:	0	0	0	0	1	1	0	1
2593:	0	0	0	0	1	0	1	1
2601:	0	1	0	2	1	1	0	1
2609:	2	1	0	0	4	6	9	8
2617:	3	3	0	0	0	0	0	0
2625:	0	0	0	0	0	0	0	0
2633:	0	0	0	1	0	0	0	0
2641:	0	0	0	0	0	0	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	1	0	1	0
2665:	0	0	0	1	0	0	0	0
2673:	0	0	0	2	1	0	0	0
2681:	0	0	0	0	0	0	0	0
2689:	0	0	0	1	0	0	1	1
2697:	0	0	0	1	1	0	0	1
2705:	0	0	1	0	0	0	0	0
2713:	1	1	0	0	0	0	0	0
2721:	0	1	0	1	0	1	0	0
2729:	1	2	0	0	1	0	0	0
2737:	1	0	0	0	0	0	0	0
2745:	2	0	1	0	0	0	1	0
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	1	0	0	0	0
2769:	0	0	1	0	0	0	0	0
2777:	2	0	0	0	1	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	1	0	0	0	0	2	0	0
2801:	0	0	0	0	0	1	1	0
2809:	1	0	0	1	0	0	0	1
2817:	0	0	0	0	1	0	1	0
2825:	0	1	0	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	2	0	0	1	0	0	0	1
2849:	0	0	0	0	0	0	0	0
2857:	0	0	0	1	0	0	0	1
2865:	0	0	0	0	0	0	2	1
2873:	0	0	0	0	0	0	0	0
2881:	0	1	0	0	1	0	0	0
2889:	0	0	0	2	0	0	0	0
2897:	0	2	2	0	0	0	0	0
2905:	0	1	0	0	0	1	0	0
2913:	0	0	0	0	0	0	1	1
2921:	1	0	0	0	0	1	1	0
2929:	0	0	0	0	0	0	0	2
2937:	0	1	0	1	0	0	0	0
2945:	0	1	0	0	0	1	1	0
2953:	1	1	1	0	0	1	0	0

2961:	1	0	0	0	0	0	0	0

Sample Title: CP-5031 00-02

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

3393:	0	0	0	0	0	0	0	1

Sample Title: CP-5031 00-02

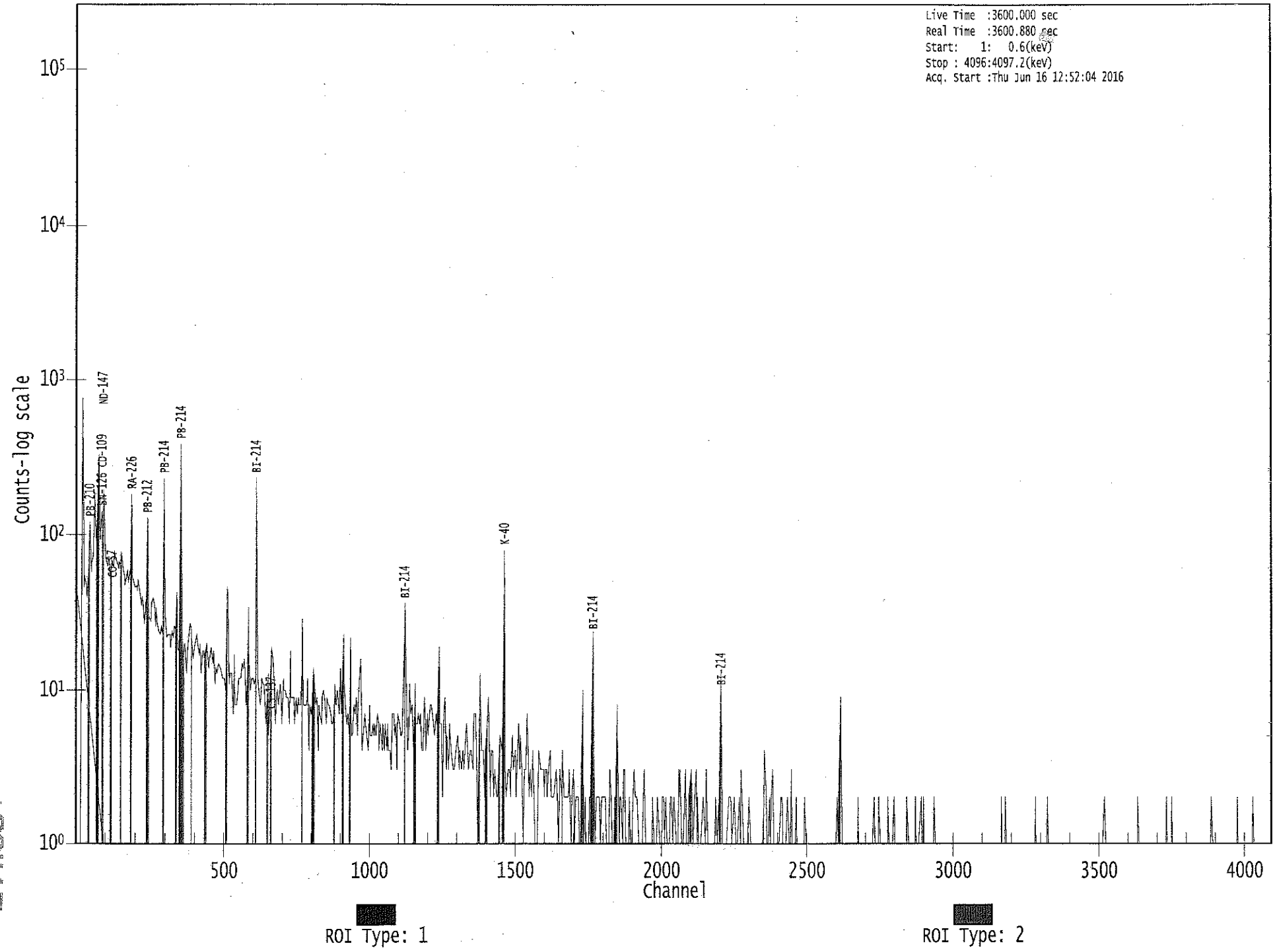
Channel								
3401:	0	0	0	0	1	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	1	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	1	0
3441:	0	1	0	0	1	0	1	1
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	1	0	0	0	0	0
3473:	0	0	0	0	0	0	1	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	1	0
3497:	0	0	1	1	0	1	1	0
3505:	0	0	0	0	1	0	0	0
3513:	1	0	0	0	0	0	2	0
3521:	0	0	0	1	0	0	0	0
3529:	0	0	0	1	0	0	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	0	0	0	0	0	0
3569:	0	0	0	0	1	0	0	1
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	1	0	0
3593:	1	0	0	0	0	0	0	0
3601:	0	0	0	0	1	0	1	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	1	0
3625:	1	0	1	0	0	0	0	1
3633:	2	0	0	0	0	1	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	1	0	0	1	0	0	0	0
3673:	1	0	0	0	0	0	1	0
3681:	0	0	0	0	0	0	0	0
3689:	0	1	0	0	0	0	0	0
3697:	0	1	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	2	0	0	0	0
3737:	1	0	0	1	0	0	0	0
3745:	0	0	0	0	0	2	0	0
3753:	0	0	0	0	0	0	0	1
3761:	0	0	0	0	0	0	0	0
3769:	0	1	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	1	0	0	0	0
3801:	1	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

Sample Title: CP-5031 00-02

Channel								
3833:	0	0	1	0	0	0	0	0
3841:	0	0	0	0	0	0	1	0
3849:	0	0	0	0	1	0	0	0
3857:	0	1	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	1	1	2	1	1
3889:	0	0	1	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	1	0	0	0	0	0	0
3913:	1	0	0	0	0	0	0	1
3921:	0	0	0	0	1	0	0	0
3929:	0	1	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	1	0	0	0	0
3953:	1	0	0	1	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	1	0	2
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	1	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	1	0	0	0	0	0	0
4017:	0	1	1	1	0	0	0	0
4025:	0	1	1	0	2	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	1	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	1	0	0	0	0	0	0
4089:	0	0	0	1	0	0	0	0

0000039068.CNF



Apex-Gamma

6/16

Analysis Report for 1606043-05
CP-5031 02-05

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-05
Sample Description	: CP-5031 02-05
Sample Type	: SOIL
Sample Size	: 5.817E+02 grams
Facility	: Countroom
Sample Taken On	: 6/1/2016 11:08:44AM
Acquisition Started	: 6/16/2016 11:51:42AM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3659.3 seconds
Dead Time	: 1.62 %
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	: 39004

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/17/16

Analysis Report for 1606043-05

CP-5031 02-05

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 12:52:43PM
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	63.41	62.67	0.0000	0.00
2	76.37	75.64	0.0000	0.00
3	92.79	92.06	0.0000	0.00
4	186.35	185.66	0.0000	0.00
5	204.41	203.74	0.0000	0.00
6	209.41	208.73	0.0000	0.00
7	239.20	238.54	0.0000	0.00
8	296.35	295.71	0.0000	0.00
9	337.78	337.16	0.0000	0.00
10	351.78	351.16	0.0000	0.00
11	511.66	511.12	0.0000	0.00
12	583.21	582.70	0.0000	0.00
13	609.22	608.72	0.0000	0.00
14	728.50	728.07	0.0000	0.00
15	911.13	910.79	0.0000	0.00
16	973.40	973.09	0.0000	0.00
17	1460.27	1460.24	0.0000	0.00
18	1473.02	1473.00	0.0000	0.00
19	1508.17	1508.17	0.0000	0.00
20	1763.91	1764.07	0.0000	0.00
21	1827.00	1827.20	0.0000	0.00
22	1862.77	1863.00	0.0000	0.00
23	2440.60	2441.24	0.0000	0.00
24	2613.83	2614.60	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606043-05

CP-5031 02-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 12:52:43PM

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	63.41	59 -	65	62.67	1.07E+02	73.63	9.10E+02	2.26
	2	76.37	71 -	81	75.64	4.45E+02	113.83	1.49E+03	4.19
	3	92.79	87 -	97	92.06	1.78E+02	106.44	1.38E+03	2.19
	4	186.35	182 -	189	185.66	1.12E+02	58.14	4.82E+02	2.07
M	5	204.41	200 -	218	203.74	4.55E+01	45.30	3.28E+02	2.90
m	6	209.41	200 -	218	208.73	4.05E+01	55.43	4.32E+02	2.91
	7	239.20	232 -	245	238.54	3.70E+02	83.32	6.01E+02	2.41
	8	296.35	289 -	303	295.71	1.54E+02	68.40	4.28E+02	2.95
	9	337.78	333 -	341	337.16	4.60E+01	39.85	2.16E+02	5.76
	10	351.78	344 -	357	351.16	1.94E+02	61.11	3.29E+02	2.48
	11	511.66	505 -	517	511.12	1.04E+02	40.84	1.40E+02	3.84
	12	583.21	578 -	587	582.70	9.10E+01	31.53	9.00E+01	2.61
	13	609.22	601 -	614	608.72	1.25E+02	47.58	1.97E+02	2.90
	14	728.50	722 -	733	728.07	3.21E+01	29.87	9.37E+01	7.36
	15	911.13	906 -	916	910.79	4.89E+01	28.46	8.02E+01	1.97
	16	973.40	963 -	984	973.09	5.31E+01	45.22	1.30E+02	16.63
	17	1460.27	1453 -	1464	1460.24	2.89E+02	34.76	7.20E+00	2.80
	18	1473.02	1469 -	1476	1473.00	6.00E+00	8.49	8.00E+00	1.73
	19	1508.17	1503 -	1512	1508.17	1.06E+01	12.12	1.47E+01	1.67
	20	1763.91	1759 -	1768	1764.07	1.95E+01	10.63	4.95E+00	3.35
	21	1827.00	1823 -	1829	1827.20	5.00E+00	6.34	4.00E+00	1.69
	22	1862.77	1858 -	1865	1863.00	6.00E+00	4.90	0.00E+00	2.87
	23	2440.60	2437 -	2444	2441.24	6.00E+00	6.93	4.00E+00	2.62
	24	2613.83	2609 -	2619	2614.60	2.13E+01	11.24	5.42E+00	1.26

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 1606043-05

CP-5031 02-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 12:52:43PM

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	63.41	59 -	65	1.07E+02	73.63	9.10E+02	5.81E+01
	2	76.37	71 -	81	4.45E+02	113.83	1.49E+03	8.69E+01
	3	92.79	87 -	97	1.78E+02	106.44	1.38E+03	8.47E+01
	4	186.35	182 -	189	1.12E+02	58.14	4.82E+02	4.45E+01
M	5	204.41	200 -	218	4.55E+01	45.30	3.28E+02	2.98E+01
m	6	209.41	200 -	218	4.05E+01	55.43	4.32E+02	3.42E+01
	7	239.20	232 -	245	3.70E+02	83.32	6.01E+02	6.08E+01
	8	296.35	289 -	303	1.54E+02	68.40	4.28E+02	5.24E+01
	9	337.78	333 -	341	4.60E+01	39.85	2.16E+02	3.08E+01
	10	351.78	344 -	357	1.94E+02	61.11	3.29E+02	4.47E+01
	11	511.66	505 -	517	1.04E+02	40.84	1.40E+02	2.91E+01
	12	583.21	578 -	587	9.10E+01	31.53	9.00E+01	2.06E+01
	13	609.22	601 -	614	1.25E+02	47.58	1.97E+02	3.45E+01
	14	728.50	722 -	733	3.21E+01	29.87	9.37E+01	2.27E+01
	15	911.13	906 -	916	4.89E+01	28.46	8.02E+01	2.04E+01
	16	973.40	963 -	984	5.31E+01	45.22	1.30E+02	3.52E+01
	17	1460.27	1453 -	1464	2.89E+02	34.76	7.20E+00	5.84E+00
	18	1473.02	1469 -	1476	6.00E+00	8.49	8.00E+00	5.70E+00
	19	1508.17	1503 -	1512	1.06E+01	12.12	1.47E+01	8.40E+00
	20	1763.91	1759 -	1768	1.95E+01	10.63	4.95E+00	4.86E+00
	21	1827.00	1823 -	1829	5.00E+00	6.34	4.00E+00	3.70E+00
	22	1862.77	1858 -	1865	6.00E+00	4.90	0.00E+00	0.00E+00
	23	2440.60	2437 -	2444	6.00E+00	6.93	4.00E+00	4.03E+00
	24	2613.83	2609 -	2619	2.13E+01	11.24	5.42E+00	5.27E+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 1606043-05

CP-5031 02-05

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 12:52:43PM

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	63.41	59 -	65	62.67	1.07E+02	73.63	9.10E+02	TH-234 TH-230
	2	76.37	71 -	81	75.64	4.45E+02	113.83	1.49E+03	.....
	3	92.79	87 -	97	92.06	1.78E+02	106.44	1.38E+03	GA-67
	4	186.35	182 -	189	185.66	1.12E+02	58.14	4.82E+02	RA-226
M	5	204.41	200 -	218	203.74	4.55E+01	45.30	3.28E+02	U-235
m	6	209.41	200 -	218	208.73	4.05E+01	55.43	4.32E+02	CM-243 GA-67
	7	239.20	232 -	245	238.54	3.70E+02	83.32	6.01E+02	PB-212
	8	296.35	289 -	303	295.71	1.54E+02	68.40	4.28E+02	.....
	9	337.78	333 -	341	337.16	4.60E+01	39.85	2.16E+02	AC-228
	10	351.78	344 -	357	351.16	1.94E+02	61.11	3.29E+02	PB-214
	11	511.66	505 -	517	511.12	1.04E+02	40.84	1.40E+02	.....
	12	583.21	578 -	587	582.70	9.10E+01	31.53	9.00E+01	TL-208
	13	609.22	601 -	614	608.72	1.25E+02	47.58	1.97E+02	BI-214
	14	728.50	722 -	733	728.07	3.21E+01	29.87	9.37E+01	.....
	15	911.13	906 -	916	910.79	4.89E+01	28.46	8.02E+01	AC-228 LU-172
	16	973.40	963 -	984	973.09	5.31E+01	45.22	1.30E+02	.....
	17	1460.27	1453 -	1464	1460.24	2.89E+02	34.76	7.20E+00	K-40
	18	1473.02	1469 -	1476	1473.00	6.00E+00	8.49	8.00E+00	.....
	19	1508.17	1503 -	1512	1508.17	1.06E+01	12.12	1.47E+01	.....
	20	1763.91	1759 -	1768	1764.07	1.95E+01	10.63	4.95E+00	BI-214
	21	1827.00	1823 -	1829	1827.20	5.00E+00	6.34	4.00E+00	.....
	22	1862.77	1858 -	1865	1863.00	6.00E+00	4.90	0.00E+00	.....
	23	2440.60	2437 -	2444	2441.24	6.00E+00	6.93	4.00E+00	.....
	24	2613.83	2609 -	2619	2614.60	2.13E+01	11.24	5.42E+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 1606043-05

CP-5031 02-05

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 12:52:43PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	63.41	1.07E+02	73.63	2.32E-02	1.76E-03
	2	76.37	4.45E+02	113.83	2.12E-02	1.69E-03
	3	92.79	1.78E+02	106.44	1.90E-02	1.62E-03
	4	186.35	1.12E+02	58.14	1.16E-02	1.15E-03
M	5	204.41	4.55E+01	45.30	1.07E-02	1.09E-03
m	6	209.41	4.05E+01	55.43	1.05E-02	1.08E-03
	7	239.20	3.70E+02	83.32	9.40E-03	9.85E-04
	8	296.35	1.54E+02	68.40	7.76E-03	8.42E-04
	9	337.78	4.60E+01	39.85	6.87E-03	7.96E-04
	10	351.78	1.94E+02	61.11	6.61E-03	7.80E-04
	11	511.66	1.04E+02	40.84	4.60E-03	5.60E-04
	12	583.21	9.10E+01	31.53	4.05E-03	4.55E-04
	13	609.22	1.25E+02	47.58	3.88E-03	4.17E-04
	14	728.50	3.21E+01	29.87	3.25E-03	3.03E-04
	15	911.13	4.89E+01	28.46	2.61E-03	2.06E-04
	16	973.40	5.31E+01	45.22	2.45E-03	1.98E-04
	17	1460.27	2.89E+02	34.76	1.68E-03	1.89E-04
	18	1473.02	6.00E+00	8.49	1.67E-03	1.86E-04
	19	1508.17	1.06E+01	12.12	1.64E-03	1.79E-04
	20	1763.91	1.95E+01	10.63	1.43E-03	1.26E-04
	21	1827.00	5.00E+00	6.34	1.39E-03	1.13E-04
	22	1862.77	6.00E+00	4.90	1.37E-03	1.11E-04
	23	2440.60	6.00E+00	6.93	1.12E-03	1.11E-04
	24	2613.83	2.13E+01	11.24	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 12:52:43PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038679.CNF

Analysis Report for 1606043-05

CP-5031 02-05

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	63.41	1.07E+02	73.63	3.84E+01	6.93E+00	6.87E+01	7.40E+01
	2	76.37	4.45E+02	113.83			4.45E+02	1.14E+02
	3	92.79	1.78E+02	106.44	5.93E+01	9.62E+00	1.19E+02	1.07E+02
	4	186.35	1.12E+02	58.14	2.90E+01	7.24E+00	8.31E+01	5.86E+01
M	5	204.41	4.55E+01	45.30			4.55E+01	4.53E+01
m	6	209.41	4.05E+01	55.43			4.05E+01	5.54E+01
	7	239.20	3.70E+02	83.32	7.10E+00	5.46E+00	3.62E+02	8.35E+01
	8	296.35	1.54E+02	68.40			1.54E+02	6.84E+01
	9	337.78	4.60E+01	39.85			4.60E+01	3.98E+01
	10	351.78	1.94E+02	61.11	1.61E+00	4.34E+00	1.92E+02	6.13E+01
	11	511.66	1.04E+02	40.84	4.57E+01	5.07E+00	5.83E+01	4.12E+01
	12	583.21	9.10E+01	31.53	2.37E+00	3.72E+00	8.86E+01	3.17E+01
	13	609.22	1.25E+02	47.58			1.25E+02	4.76E+01
	14	728.50	3.21E+01	29.87			3.21E+01	2.99E+01
	15	911.13	4.89E+01	28.46			4.89E+01	2.85E+01
	16	973.40	5.31E+01	45.22			5.31E+01	4.52E+01
	17	1460.27	2.89E+02	34.76	9.79E-01	1.85E+00	2.88E+02	3.48E+01
	18	1473.02	6.00E+00	8.49			6.00E+00	8.49E+00
	19	1508.17	1.06E+01	12.12			1.06E+01	1.21E+01
	20	1763.91	1.95E+01	10.63			1.95E+01	1.06E+01
	21	1827.00	5.00E+00	6.34			5.00E+00	6.34E+00
	22	1862.77	6.00E+00	4.90			6.00E+00	4.90E+00
	23	2440.60	6.00E+00	6.93			6.00E+00	6.93E+00
	24	2613.83	2.13E+01	11.24			2.13E+01	1.12E+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 12:52:43PM

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	63.41	1.07E+02	73.63	3.84E+01	6.93E+00	6.87E+01	7.40E+01
2	76.37	4.45E+02	113.83			4.45E+02	1.14E+02
3	92.79	1.78E+02	106.44	5.93E+01	9.62E+00	1.19E+02	1.07E+02
4	186.35	1.12E+02	58.14	2.90E+01	7.24E+00	8.31E+01	5.86E+01

Analysis Report for 1606043-05

CP-5031 02-05

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	5	204.41	4.55E+01	45.30			4.55E+01	4.53E+01
m	6	209.41	4.05E+01	55.43			4.05E+01	5.54E+01
	7	239.20	3.70E+02	83.32	7.10E+00	5.46E+00	3.62E+02	8.35E+01
	8	296.35	1.54E+02	68.40			1.54E+02	6.84E+01
	9	337.78	4.60E+01	39.85			4.60E+01	3.98E+01
	10	351.78	1.94E+02	61.11	1.61E+00	4.34E+00	1.92E+02	6.13E+01
	11	511.66	1.04E+02	40.84	4.57E+01	5.07E+00	5.83E+01	4.12E+01
	12	583.21	9.10E+01	31.53	2.37E+00	3.72E+00	8.86E+01	3.17E+01
	13	609.22	1.25E+02	47.58			1.25E+02	4.76E+01
	14	728.50	3.21E+01	29.87			3.21E+01	2.99E+01
	15	911.13	4.89E+01	28.46			4.89E+01	2.85E+01
	16	973.40	5.31E+01	45.22			5.31E+01	4.52E+01
	17	1460.27	2.89E+02	34.76	9.79E-01	1.85E+00	2.88E+02	3.48E+01
	18	1473.02	6.00E+00	8.49			6.00E+00	8.49E+00
	19	1508.17	1.06E+01	12.12			1.06E+01	1.21E+01
	20	1763.91	1.95E+01	10.63			1.95E+01	1.06E+01
	21	1827.00	5.00E+00	6.34			5.00E+00	6.34E+00
	22	1862.77	6.00E+00	4.90			6.00E+00	4.90E+00
	23	2440.60	6.00E+00	6.93			6.00E+00	6.93E+00
	24	2613.83	2.13E+01	11.24			2.13E+01	1.12E+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	2.07E+01	3.44E+00
TL-208	0.833	583.14	*	30.22	9.35E-01	3.51E-01
		860.37		4.48		
		2614.66	*	35.85	7.15E-01	3.85E-01
PB-212	0.849	238.63	*	44.60	1.12E+00	2.83E-01
		300.09		3.41		
BI-214	0.668	609.31	*	46.30	8.96E-01	3.56E-01
		1120.29		15.10		
		1764.49	*	15.80	1.11E+00	6.13E-01
		2204.22		4.98		
PB-214	0.424	295.21		19.19		

Analysis Report for 1606043-05

CP-5031 02-05

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.424	351.92	*	37.19	1.01E+00	3.43E-01
RA-226	0.997	186.21	*	3.28	2.82E+00	5.54E+00
AC-228	0.576	338.32	*	11.40	7.58E-01	6.63E-01
		911.07	*	27.70	8.73E-01	5.13E-01
		969.11		16.60		
TH-234	0.998	63.29	*	3.80	1.00E+00	1.08E+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 12:52:43PM
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	76.37	1.23629E-01	12.79		
	3	92.79	3.29876E-02	45.00	Tol.	GA-67
M	5	204.41	1.26327E-02	49.80	Tol.	U-235
m	6	209.41	1.12638E-02	68.34	Tol.	GA-67
						CM-243
	8	296.35	4.27653E-02	22.21		
	11	511.66	1.61853E-02	35.31		
	14	728.50	8.92757E-03	46.46		
	16	973.40	1.47458E-02	42.59		
	18	1473.02	1.66667E-03	70.71		
	19	1508.17	2.95525E-03	56.98		
	21	1827.00	1.38889E-03	63.44	Sum	
	22	1862.77	1.66667E-03	40.82		
	23	2440.60	1.66667E-03	57.74		

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 1606043-05

CP-5031 02-05

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	2.07E+01	3.44E+00
TL-208	0.83	583.14	*	30.22	9.35E-01	3.51E-01
		860.37		4.48		
		2614.66	*	35.85	7.15E-01	3.85E-01
PB-212	0.84	238.63	*	44.60	1.12E+00	2.83E-01
		300.09		3.41		
BI-214	0.66	609.31	*	46.30	8.96E-01	3.56E-01
		1120.29		15.10		
		1764.49	*	15.80	1.11E+00	6.13E-01
		2204.22		4.98		
PB-214	0.42	295.21		19.19		
		351.92	*	37.19	1.01E+00	3.43E-01
RA-226	0.99	186.21	*	3.28	2.82E+00	5.54E+00
AC-228	0.57	338.32	*	11.40	7.58E-01	6.63E-01
		911.07	*	27.70	8.73E-01	5.13E-01
		969.11		16.60		
TH-234	0.99	63.29	*	3.80	1.00E+00	1.08E+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

Analysis Report for 1606043-05

CP-5031 02-05

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.954	2.07E+01	3.44E+00	
X	GA-67	0.565			
	TL-208	0.833	8.35E-01	2.59E-01	
	PB-212	0.849	1.12E+00	2.83E-01	
	BI-214	0.668	9.51E-01	3.08E-01	
	PB-214	0.424	1.01E+00	3.43E-01	
	RA-226	0.997	2.82E+00	5.54E+00	
	AC-228	0.576	8.30E-01	4.05E-01	
	TH-234	0.998	1.00E+00	1.08E+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 1606043-05
CP-5031 02-05

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 12:52:43PM
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	76.37	1.23629E-01	12.79		
	3	92.79	3.29876E-02	45.00	Tol.	GA-67
M	5	204.41	1.26327E-02	49.80	Tol.	U-235
m	6	209.41	1.12638E-02	68.34	Tol.	GA-67
						CM-243
	8	296.35	4.27653E-02	22.21		
	11	511.66	1.61853E-02	35.31		
	14	728.50	8.92757E-03	46.46		
	16	973.40	1.47458E-02	42.59		
	18	1473.02	1.66667E-03	70.71		
	19	1508.17	2.95525E-03	56.98		
	21	1827.00	1.38889E-03	63.44	Sum	
	22	1862.77	1.66667E-03	40.82		
	23	2440.60	1.66667E-03	57.74		

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	2.93E-01	1.33E+00	1.33E+00
+	NA-22	1274.54	99.94	-5.01E-02	1.75E-01	1.75E-01
+	NA-24	1368.53	99.99	-1.39E+06	5.99E+05	1.54E+06

Analysis Report for 1606043-05

CP-5031 02-05

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	NA-24	2754.09		99.86	0.00E+00	5.99E+05	5.99E+05
+	AL-26	1808.65		99.76	2.15E-02	1.30E-01	1.30E-01
+	K-40	1460.81	*	10.67	2.07E+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	-1.83E-02	7.69E-02	7.69E-02
		78.34		96.00	2.15E-01		9.73E-02
+	SC-46	889.25		99.98	1.27E-02	1.65E-01	1.65E-01
		1120.51		99.99	4.93E-02		2.45E-01
+	V-48	983.52		99.98	5.58E-03	3.01E-01	3.09E-01
		1312.10		97.50	1.18E-02		3.01E-01
+	CR-51	320.08		9.83	-3.05E-01	1.52E+00	1.52E+00
+	MN-54	834.83		99.97	-5.92E-03	1.69E-01	1.69E-01
+	CO-56	846.75		99.96	1.24E-02	1.80E-01	1.80E-01
		1037.75		14.03	-4.92E-01		1.30E+00
		1238.25		67.00	-9.41E-02		4.01E-01
		1771.40		15.51	-1.77E-01		7.15E-01
		2598.48		16.90	-2.16E-01		7.52E-01
+	CO-57	122.06		85.51	-3.05E-02	9.01E-02	9.01E-02
		136.48		10.60	-3.15E-01		7.75E-01
+	CO-58	810.76		99.40	-6.79E-04	1.80E-01	1.80E-01
+	FE-59	1099.22		56.50	-4.70E-02	3.73E-01	3.73E-01
		1291.56		43.20	-7.20E-02		5.57E-01
+	CO-60	1173.22		100.00	6.69E-02	1.91E-01	1.98E-01
		1332.49		100.00	6.14E-02		1.91E-01
+	ZN-65	1115.52		50.75	2.06E-01	4.55E-01	4.55E-01
+	GA-67	93.31	*	35.70	5.53E+00	8.15E+00	8.15E+00
		208.95	*	2.24	5.44E+01		2.19E+02
		300.22		16.00	-3.93E+00		1.75E+01
+	SE-75	121.11		16.70	-2.39E-01	1.45E-01	4.81E-01
		136.00		59.20	-8.68E-02		1.45E-01
		264.65		59.80	8.94E-03		1.79E-01
		279.53		25.20	1.08E-01		4.47E-01
		400.65		11.40	-3.38E-01		9.70E-01
+	RB-82	776.52		13.00	7.18E-01	1.76E+00	1.76E+00
+	RB-83	520.41		46.00	-6.40E-02	2.69E-01	2.69E-01
		529.64		30.30	-1.15E-01		4.41E-01
		552.65		16.40	-1.78E-01		8.61E-01
+	KR-85	513.99		0.43	3.96E+01	3.65E+01	3.65E+01
+	SR-85	513.99		99.27	2.03E-01	1.87E-01	1.87E-01
+	Y-88	898.02		93.40	-5.62E-02	1.24E-01	1.72E-01
		1836.01		99.38	-5.16E-02		1.24E-01
+	NB-93M	16.57		9.43	6.76E-01	3.81E-01	3.81E-01
+	NB-94	702.63		100.00	6.13E-02	1.47E-01	1.60E-01
		871.10		100.00	-8.61E-03		1.47E-01
+	NB-95	765.79		99.81	5.95E-02	2.02E-01	2.02E-01
+	NB-95M	235.69		25.00	2.15E+01	1.05E+01	1.05E+01
+	ZR-95	724.18		43.70	0.00E+00	3.07E-01	4.22E-01

Analysis Report for 1606043-05

CP-5031 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	ZR-95	756.72	55.30	2.23E-02	3.07E-01	3.07E-01
+	MO-99	181.06	6.20	4.01E+00	4.54E+01	6.66E+01
		739.58	12.80	-3.89E+00		4.54E+01
		778.00	4.50	-1.36E+01		1.45E+02
+	RU-103	497.08	89.00	-2.42E-02	1.73E-01	1.73E-01
+	RU-106	621.84	9.80	-7.34E-02	1.28E+00	1.28E+00
+	AG-108M	433.93	89.90	-1.32E-02	1.24E-01	1.24E-01
		614.37	90.40	4.33E-03		1.79E-01
		722.95	90.50	2.91E-03		1.65E-01
+	CD-109	88.03	3.72	3.07E-01	2.29E+00	2.29E+00
+	AG-110M	657.75	93.14	-3.60E-02	1.50E-01	1.50E-01
		677.61	10.53	2.72E-01		1.25E+00
		706.67	16.46	5.12E-01		1.00E+00
		763.93	21.98	-5.55E-02		6.83E-01
		884.67	71.63	1.71E-02		2.32E-01
		1384.27	23.94	-1.03E-01		5.77E-01
+	CD-113M	263.70	0.02	-6.35E+01	4.21E+02	4.21E+02
+	SN-113	255.12	1.93	1.97E+00	1.85E-01	5.61E+00
		391.69	64.90	5.84E-02		1.85E-01
+	TE123M	159.00	84.10	-5.32E-02	1.11E-01	1.11E-01
+	SB-124	602.71	97.87	2.94E-02	1.77E-01	1.77E-01
		645.85	7.26	2.72E-01		2.24E+00
		722.78	11.10	2.96E-01		1.60E+00
		1691.02	49.00	-1.90E-01		1.96E-01
+	I-125	35.49	6.49	1.99E-02	8.04E-01	8.04E-01
+	SB-125	176.33	6.89	-1.40E-01	3.80E-01	1.30E+00
		427.89	29.33	-5.53E-02		3.80E-01
		463.38	10.35	8.77E-01		1.26E+00
		600.56	17.80	2.62E-01		8.45E-01
		635.90	11.32	1.32E-01		1.16E+00
+	SB-126	414.70	83.30	1.27E-02	3.17E-01	3.23E-01
		666.33	99.60	2.31E-01		3.38E-01
		695.00	99.60	1.48E-02		3.17E-01
		720.50	53.80	6.48E-02		5.69E-01
+	SN-126	87.57	37.00	3.01E-02	2.24E-01	2.24E-01
+	SB-127	473.00	25.00	-2.44E+00	5.96E+00	7.00E+00
		685.20	35.70	2.41E+00		5.96E+00
		783.80	14.70	-6.92E-01		1.54E+01
+	I-129	29.78	57.00	-3.44E-03	7.27E-02	7.27E-02
		33.60	13.20	2.50E-02		3.25E-01
		39.58	7.52	-2.53E-01		6.05E-01
+	I-131	284.30	6.05	-1.24E-01	4.71E-01	6.09E+00
		364.48	81.20	8.31E-02		4.71E-01
		636.97	7.26	-2.17E-01		6.58E+00
		722.89	1.80	5.61E+00		3.03E+01
+	TE-132	49.72	13.10	2.00E+00	2.63E+00	1.06E+01
		228.16	88.00	1.21E-02		2.63E+00
+	BA-133	81.00	33.00	-7.04E-04	2.55E-01	2.68E-01
		302.84	17.80	1.85E-02		5.97E-01

Analysis Report for 1606043-05

CP-5031 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-133	356.01	60.00	-1.62E-02	2.55E-01	2.55E-01
+	I-133	529.87	86.30	-6.07E+03	2.32E+04	2.32E+04
+	XE-133	81.00	38.00	-4.46E-03	1.70E+00	1.70E+00
+	CS-134	563.23	8.38	-7.10E-02	1.80E-01	1.48E+00
		569.32	15.43	2.05E-01		8.17E-01
		604.70	97.60	-1.52E-01		1.85E-01
		795.84	85.40	4.54E-02		1.80E-01
		801.93	8.73	-6.38E-01		1.63E+00
+	CS-135	268.24	16.00	8.74E-02	6.14E-01	6.14E-01
+	I-135	1131.51	22.50	7.21E+15	1.84E+16	2.45E+16
		1260.41	28.60	1.35E+15		1.84E+16
		1678.03	9.54	1.20E+16		4.25E+16
+	CS-136	153.22	7.46	-2.13E-02	3.51E-01	2.48E+00
		163.89	4.61	3.05E+00		4.33E+00
		176.55	13.56	-1.56E-01		1.44E+00
		273.65	12.66	2.18E-01		1.73E+00
		340.57	48.50	2.26E-02		5.16E-01
		818.50	99.70	-2.45E-02		3.51E-01
		1048.07	79.60	-8.09E-02		4.15E-01
		1235.34	19.70	4.37E-01		2.68E+00
+	CS-137	661.65	85.12	-1.77E-02	1.65E-01	1.65E-01
+	LA-138	788.74	34.00	4.36E-02	2.30E-01	4.54E-01
		1435.80	66.00	2.29E-02		2.30E-01
+	CE-139	165.85	80.35	6.53E-02	1.19E-01	1.19E-01
+	BA-140	162.64	6.70	1.28E+00	1.19E+00	2.99E+00
		304.84	4.50	-1.02E+00		4.97E+00
		423.70	3.20	-7.91E-01		8.15E+00
		437.55	2.00	5.69E+00		1.31E+01
		537.32	25.00	6.32E-01		1.19E+00
+	LA-140	328.77	20.50	2.96E-01	2.76E-01	1.21E+00
		487.03	45.50	1.55E-01		5.56E-01
		815.85	23.50	-1.98E-01		1.48E+00
		1596.49	95.49	-4.35E-02		2.76E-01
+	CE-141	145.44	48.40	-1.41E-03	2.42E-01	2.42E-01
+	CE-143	57.36	11.80	3.18E+01	5.87E+02	1.04E+03
		293.26	42.00	5.63E+02		5.87E+02
		664.55	5.20	2.22E+03		5.54E+03
+	CE-144	133.54	10.80	-3.00E-01	7.46E-01	7.46E-01
+	PM-144	476.78	42.00	1.68E-02	1.26E-01	2.79E-01
		618.01	98.60	-5.62E-03		1.26E-01
		696.49	99.49	7.08E-02		1.51E-01
+	PM-145	36.85	21.70	-1.02E-01	1.12E-01	2.01E-01
		37.36	39.70	-1.99E-02		1.12E-01
		42.30	15.10	-5.39E-02		3.23E-01
		72.40	2.31	-3.42E-02		3.72E+00
+	PM-146	453.90	39.94	-9.14E-02	2.80E-01	2.80E-01
		735.90	14.01	-1.33E-01		9.66E-01
		747.13	13.10	-8.31E-02		1.08E+00
+	ND-147	91.11	28.90	1.32E+00	8.00E-01	8.00E-01

Analysis Report for 1606043-05

CP-5031 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	ND-147	531.02	13.10	-1.39E+00	8.00E-01	2.36E+00
+	PM-149	285.90	3.10	1.06E+02	3.67E+02	3.67E+02
+	EU-152	121.78	20.50	-1.22E-01	3.62E-01	3.62E-01
		244.69	5.40	9.17E-02		2.01E+00
		344.27	19.13	2.63E-02		5.20E-01
		778.89	9.20	-1.50E-01		1.60E+00
		964.01	10.40	1.51E-01		1.87E+00
		1085.78	7.22	5.12E-01		2.39E+00
		1112.02	9.60	-6.42E-01		2.05E+00
		1407.95	14.94	-2.33E-01		1.14E+00
+	GD-153	97.43	31.30	7.47E-03	2.57E-01	2.57E-01
		103.18	22.20	-8.45E-02		3.35E-01
+	EU-154	123.07	40.50	-3.11E-02	1.86E-01	1.86E-01
		723.30	19.70	1.34E-02		7.60E-01
		873.19	11.50	3.30E-01		1.37E+00
		996.32	10.30	9.45E-01		1.67E+00
		1004.76	17.90	-4.00E-01		8.58E-01
		1274.45	35.50	-1.40E-01		4.89E-01
+	EU-155	86.50	30.90	2.66E-02	2.65E-01	2.65E-01
		105.30	20.70	-1.60E-01		3.44E-01
+	EU-156	811.77	10.40	-2.17E-01	2.89E+00	2.89E+00
		1153.47	7.20	-1.34E+00		5.49E+00
		1230.71	8.90	-3.36E-01		5.13E+00
+	HO-166M	184.41	72.60	1.41E-02	1.47E-01	1.47E-01
		280.45	29.60	7.81E-02		3.47E-01
		410.94	11.10	9.63E-02		1.04E+00
		711.69	54.10	-1.22E-01		2.48E-01
+	TM-171	66.72	0.14	-1.24E+01	5.33E+01	5.33E+01
+	HF-172	81.75	4.52	-8.57E-03	6.97E-01	1.88E+00
		125.81	11.30	1.34E-01		6.97E-01
+	LU-172	181.53	20.60	6.54E-02	1.20E+00	2.29E+00
		810.06	16.63	-1.66E-02		4.40E+00
		912.12	15.25	7.64E+00		6.82E+00
		1093.66	62.50	-3.99E-01		1.20E+00
+	LU-173	100.72	5.24	-3.11E-01	4.61E-01	1.38E+00
		272.11	21.20	-1.98E-01		4.61E-01
+	HF-175	343.40	84.00	6.91E-03	1.40E-01	1.40E-01
+	LU-176	88.34	13.30	5.46E-02	1.03E-01	6.48E-01
		201.83	86.00	-1.73E-03		1.10E-01
		306.78	94.00	-1.48E-02		1.03E-01
+	TA-182	67.75	41.20	-4.58E-02	1.93E-01	1.93E-01
		1121.30	34.90	-1.68E-01		6.54E-01
		1189.05	16.23	3.35E-01		1.56E+00
		1221.41	26.98	-4.27E-01		8.21E-01
		1231.02	11.44	-1.44E-01		2.20E+00
+	IR-192	308.46	29.68	7.31E-03	2.90E-01	3.79E-01
		468.07	48.10	6.15E-03		2.90E-01
+	HG-203	279.19	77.30	4.03E-02	1.67E-01	1.67E-01
+	BI-207	569.67	97.72	3.19E-02	1.27E-01	1.27E-01

Analysis Report for 1606043-05

CP-5031 02-05

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-207	1063.62		74.90	2.39E-02	1.27E-01	2.29E-01
+	TL-208	583.14	*	30.22	9.35E-01	4.45E-01	4.72E-01
		860.37		4.48	1.53E-01		3.24E+00
		2614.66	*	35.85	7.15E-01		4.45E-01
+	BI-210M	262.00		45.00	-5.12E-02	2.14E-01	2.14E-01
		300.00		23.00	3.72E-01		5.36E-01
+	PB-210	46.50		4.25	2.80E-01	1.25E+00	1.25E+00
+	PB-211	404.84		2.90	-6.23E-01	3.74E+00	3.74E+00
		831.96		2.90	-1.05E+00		5.71E+00
+	BI-212	727.17		11.80	6.61E-01	1.33E+00	1.33E+00
		1620.62		2.75	-5.42E-01		3.28E+00
+	PB-212	238.63	*	44.60	1.12E+00	3.85E-01	3.85E-01
		300.09		3.41	2.51E+00		3.62E+00
+	BI-214	609.31	*	46.30	8.96E-01	5.17E-01	5.17E-01
		1120.29		15.10	2.88E-01		1.43E+00
		1764.49	*	15.80	1.11E+00		7.07E-01
		2204.22		4.98	-4.50E-01		3.23E+00
+	PB-214	295.21		19.19	8.40E-01	4.86E-01	6.70E-01
		351.92	*	37.19	1.01E+00		4.86E-01
+	RN-219	401.80		6.50	-2.39E-01	1.56E+00	1.56E+00
+	RA-223	323.87		3.88	-6.18E-01	2.71E+00	2.71E+00
+	RA-224	240.98		3.95	1.11E+01	3.86E+00	3.86E+00
+	RA-225	40.00		31.00	-1.25E-01	2.98E-01	2.98E-01
+	RA-226	186.21	*	3.28	2.82E+00	3.20E+00	3.20E+00
+	TH-227	50.10		8.40	1.27E-01	6.71E-01	6.71E-01
		236.00		11.50	2.61E+00		1.26E+00
		256.20		6.30	5.06E-01		1.57E+00
+	AC-228	338.32	*	11.40	7.58E-01	7.76E-01	1.06E+00
		911.07	*	27.70	8.73E-01		7.76E-01
		969.11		16.60	6.70E-01		1.26E+00
+	TH-230	48.44		16.90	2.85E-02	3.25E-01	3.25E-01
		62.85		4.60	4.51E-01		1.51E+00
		67.67		0.37	-4.65E+00		1.96E+01
+	PA-231	283.67		1.60	1.59E+00	4.61E+00	6.42E+00
		302.67		2.30	1.42E-01		4.61E+00
+	TH-231	25.64		14.70	-2.49E-01	2.75E-01	2.75E-01
		84.21		6.40	1.26E-01		1.23E+00
+	PA-233	311.98		38.60	-2.80E-02	3.72E-01	3.72E-01
+	PA-234	131.20		20.40	1.83E-01	3.91E-01	3.91E-01
		733.99		8.80	-1.45E-01		1.56E+00
		946.00		12.00	-2.30E-01		1.26E+00
+	PA-234M	1001.03		0.92	-2.02E-01	1.78E+01	1.78E+01
+	TH-234	63.29	*	3.80	1.00E+00	1.77E+00	1.77E+00
+	U-235	143.76		10.50	4.24E-01	8.17E-01	8.17E-01
		163.35		4.70	1.35E+00		1.92E+00
		205.31		4.70	1.88E+00		2.15E+00
+	NP-237	86.50		12.60	6.49E-02	6.47E-01	6.47E-01

Analysis Report for 1606043-05

CP-5031 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NP-239	106.10	22.70	-1.23E+01	2.63E+01	2.63E+01
		228.18	10.70	5.57E-01		7.33E+01
		277.60	14.10	-8.53E+00		5.95E+01
+	AM-241	59.54	35.90	-1.74E-03	1.86E-01	1.86E-01
+	AM-243	74.67	66.00	3.58E-01	1.40E-01	1.40E-01
+	CM-243	209.75	3.29	-1.22E+00	7.14E-01	2.92E+00
		228.14	10.60	4.09E-03		8.91E-01
		277.60	14.00	-1.02E-01		7.14E-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	1.33E+00	1.33E+00	2.93E-01	6.24E-01
	NA-22	1274.54		99.94	1.75E-01	1.75E-01	-5.01E-02	7.82E-02
	NA-24	1368.53		99.99	1.54E+06	5.99E+05	-1.39E+06	5.98E+05
		2754.09		99.86	5.99E+05		0.00E+00	0.00E+00
	AL-26	1808.65		99.76	1.30E-01	1.30E-01	2.15E-02	5.24E-02
+	K-40	1460.81	*	10.67	1.09E+00	1.09E+00	2.07E+01	4.49E-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	7.69E-02	7.69E-02	-1.83E-02	3.76E-02
		78.34		96.00	9.73E-02		2.15E-01	4.78E-02
	SC-46	889.25		99.98	1.65E-01	1.65E-01	1.27E-02	7.53E-02
		1120.51		99.99	2.45E-01		4.93E-02	1.13E-01
	V-48	983.52		99.98	3.09E-01	3.01E-01	5.58E-03	1.41E-01
		1312.10		97.50	3.01E-01		1.18E-02	1.32E-01
	CR-51	320.08		9.83	1.52E+00	1.52E+00	-3.05E-01	7.26E-01
	MN-54	834.83		99.97	1.69E-01	1.69E-01	-5.92E-03	7.80E-02

Analysis Report for 1606043-05

CP-5031 02-05

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-56	846.75		99.96	1.80E-01	1.80E-01	1.24E-02	8.30E-02
	1037.75		14.03	1.30E+00		-4.92E-01	5.90E-01
	1238.25		67.00	4.01E-01		-9.41E-02	1.85E-01
	1771.40		15.51	7.15E-01		-1.77E-01	2.68E-01
	2598.48		16.90	7.52E-01		-2.16E-01	2.67E-01
CO-57	122.06		85.51	9.01E-02	9.01E-02	-3.05E-02	4.37E-02
	136.48		10.60	7.75E-01		-3.15E-01	3.76E-01
CO-58	810.76		99.40	1.80E-01	1.80E-01	-6.79E-04	8.29E-02
FE-59	1099.22		56.50	3.73E-01	3.73E-01	-4.70E-02	1.69E-01
	1291.56		43.20	5.57E-01		-7.20E-02	2.52E-01
CO-60	1173.22		100.00	1.98E-01	1.91E-01	6.69E-02	9.06E-02
	1332.49		100.00	1.91E-01		6.14E-02	8.58E-02
ZN-65	1115.52		50.75	4.55E-01	4.55E-01	2.06E-01	2.11E-01
GA-67	93.31	*	35.70	8.15E+00	8.15E+00	5.53E+00	4.01E+00
	208.95	*	2.24	2.19E+02		5.44E+01	1.08E+02
	300.22		16.00	1.75E+01		-3.93E+00	8.42E+00
SE-75	121.11		16.70	4.81E-01	1.45E-01	-2.39E-01	2.33E-01
	136.00		59.20	1.45E-01		-8.68E-02	7.02E-02
	264.65		59.80	1.79E-01		8.94E-03	8.60E-02
	279.53		25.20	4.47E-01		1.08E-01	2.14E-01
	400.65		11.40	9.70E-01		-3.38E-01	4.56E-01
RB-82	776.52		13.00	1.76E+00	1.76E+00	7.18E-01	8.13E-01
RB-83	520.41		46.00	2.69E-01	2.69E-01	-6.40E-02	1.25E-01
	529.64		30.30	4.41E-01		-1.15E-01	2.06E-01
	552.65		16.40	8.61E-01		-1.78E-01	4.02E-01
KR-85	513.99		0.43	3.65E+01	3.65E+01	3.96E+01	1.74E+01
SR-85	513.99		99.27	1.87E-01	1.87E-01	2.03E-01	8.91E-02
Y-88	898.02		93.40	1.72E-01	1.24E-01	-5.62E-02	7.81E-02
	1836.01		99.38	1.24E-01		-5.16E-02	4.80E-02
NB-93M	16.57		9.43	3.81E-01	3.81E-01	6.76E-01	1.85E-01
NB-94	702.63		100.00	1.60E-01	1.47E-01	6.13E-02	7.46E-02
	871.10		100.00	1.47E-01		-8.61E-03	6.70E-02
NB-95	765.79		99.81	2.02E-01	2.02E-01	5.95E-02	9.35E-02
NB-95M	235.69		25.00	1.05E+01	1.05E+01	2.15E+01	5.10E+00
ZR-95	724.18		43.70	4.22E-01	3.07E-01	0.00E+00	1.96E-01
	756.72		55.30	3.07E-01		2.23E-02	1.41E-01
MO-99	181.06		6.20	6.66E+01	4.54E+01	4.01E+00	3.23E+01
	739.58		12.80	4.54E+01		-3.89E+00	2.08E+01
	778.00		4.50	1.45E+02		-1.36E+01	6.66E+01
RU-103	497.08		89.00	1.73E-01	1.73E-01	-2.42E-02	8.10E-02
RU-106	621.84		9.80	1.28E+00	1.28E+00	-7.34E-02	5.93E-01
AG-108M	433.93		89.90	1.24E-01	1.24E-01	-1.32E-02	5.83E-02
	614.37		90.40	1.79E-01		4.33E-03	8.47E-02
	722.95		90.50	1.65E-01		2.91E-03	7.65E-02
CD-109	88.03		3.72	2.29E+00	2.29E+00	3.07E-01	1.12E+00
AG-110M	657.75		93.14	1.50E-01	1.50E-01	-3.60E-02	6.94E-02
	677.61		10.53	1.25E+00		2.72E-01	5.78E-01
	706.67		16.46	1.00E+00		5.12E-01	4.69E-01
	763.93		21.98	6.83E-01		-5.55E-02	3.15E-01
	884.67		71.63	2.32E-01		1.71E-02	1.07E-01
	1384.27		23.94	5.77E-01		-1.03E-01	2.46E-01
CD-113M	263.70		0.02	4.21E+02	4.21E+02	-6.35E+01	2.02E+02
SN-113	255.12		1.93	5.61E+00	1.85E-01	1.97E+00	2.69E+00

Analysis Report for 1606043-05

CP-5031 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SN-113	391.69	64.90	1.85E-01	1.85E-01	5.84E-02	8.78E-02
TE123M	159.00	84.10	1.11E-01	1.11E-01	-5.32E-02	5.36E-02
SB-124	602.71	97.87	1.77E-01	1.77E-01	2.94E-02	8.33E-02
	645.85	7.26	2.24E+00		2.72E-01	1.04E+00
	722.78	11.10	1.60E+00		2.96E-01	7.42E-01
	1691.02	49.00	1.96E-01		-1.90E-01	6.94E-02
I-125	35.49	6.49	8.04E-01	8.04E-01	1.99E-02	3.91E-01
SB-125	176.33	6.89	1.30E+00	3.80E-01	-1.40E-01	6.28E-01
	427.89	29.33	3.80E-01		-5.53E-02	1.79E-01
	463.38	10.35	1.26E+00		8.77E-01	5.95E-01
	600.56	17.80	8.45E-01		2.62E-01	3.97E-01
	635.90	11.32	1.16E+00		1.32E-01	5.40E-01
SB-126	414.70	83.30	3.23E-01	3.17E-01	1.27E-02	1.53E-01
	666.33	99.60	3.38E-01		2.31E-01	1.58E-01
	695.00	99.60	3.17E-01		1.48E-02	1.47E-01
	720.50	53.80	5.69E-01		6.48E-02	2.61E-01
SN-126	87.57	37.00	2.24E-01	2.24E-01	3.01E-02	1.10E-01
SB-127	473.00	25.00	7.00E+00	5.96E+00	-2.44E+00	3.29E+00
	685.20	35.70	5.96E+00		2.41E+00	2.76E+00
	783.80	14.70	1.54E+01		-6.92E-01	7.11E+00
I-129	29.78	57.00	7.27E-02	7.27E-02	-3.44E-03	3.53E-02
	33.60	13.20	3.25E-01		2.50E-02	1.58E-01
	39.58	7.52	6.05E-01		-2.53E-01	2.94E-01
I-131	284.30	6.05	6.09E+00	4.71E-01	-1.24E-01	2.91E+00
	364.48	81.20	4.71E-01		8.31E-02	2.23E-01
	636.97	7.26	6.58E+00		-2.17E-01	3.05E+00
	722.89	1.80	3.03E+01		5.61E+00	1.41E+01
TE-132	49.72	13.10	1.06E+01	2.63E+00	2.00E+00	5.15E+00
	228.16	88.00	2.63E+00		1.21E-02	1.27E+00
BA-133	81.00	33.00	2.68E-01	2.55E-01	-7.04E-04	1.31E-01
	302.84	17.80	5.97E-01		1.85E-02	2.86E-01
	356.01	60.00	2.55E-01		-1.62E-02	1.23E-01
I-133	529.87	86.30	2.32E+04	2.32E+04	-6.07E+03	1.08E+04
XE-133	81.00	38.00	1.70E+00	1.70E+00	-4.46E-03	8.33E-01
CS-134	563.23	8.38	1.48E+00	1.80E-01	-7.10E-02	6.88E-01
	569.32	15.43	8.17E-01		2.05E-01	3.81E-01
	604.70	97.60	1.85E-01		-1.52E-01	8.79E-02
	795.84	85.40	1.80E-01		4.54E-02	8.29E-02
	801.93	8.73	1.63E+00		-6.38E-01	7.46E-01
CS-135	268.24	16.00	6.14E-01	6.14E-01	8.74E-02	2.94E-01
I-135	1131.51	22.50	2.45E+16	1.84E+16	7.21E+15	1.12E+16
	1260.41	28.60	1.84E+16		1.35E+15	8.30E+15
	1678.03	9.54	4.25E+16		1.20E+16	1.78E+16
CS-136	153.22	7.46	2.48E+00	3.51E-01	-2.13E-02	1.20E+00
	163.89	4.61	4.33E+00		3.05E+00	2.10E+00
	176.55	13.56	1.44E+00		-1.56E-01	6.98E-01
	273.65	12.66	1.73E+00		2.18E-01	8.29E-01
	340.57	48.50	5.16E-01		2.26E-02	2.47E-01
	818.50	99.70	3.51E-01		-2.45E-02	1.62E-01
	1048.07	79.60	4.15E-01		-8.09E-02	1.86E-01
	1235.34	19.70	2.68E+00		4.37E-01	1.24E+00
CS-137	661.65	85.12	1.65E-01	1.65E-01	-1.77E-02	7.66E-02
LA-138	788.74	34.00	4.54E-01	2.30E-01	4.36E-02	2.10E-01

Analysis Report for 1606043-05

CP-5031 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
LA-138	1435.80	66.00	2.30E-01	2.30E-01	2.29E-02	9.96E-02
CE-139	165.85	80.35	1.19E-01	1.19E-01	6.53E-02	5.78E-02
BA-140	162.64	6.70	2.99E+00	1.19E+00	1.28E+00	1.45E+00
	304.84	4.50	4.97E+00		-1.02E+00	2.37E+00
	423.70	3.20	8.15E+00		-7.91E-01	3.85E+00
	437.55	2.00	1.31E+01		5.69E+00	6.17E+00
	537.32	25.00	1.19E+00		6.32E-01	5.57E-01
LA-140	328.77	20.50	1.21E+00	2.76E-01	2.96E-01	5.76E-01
	487.03	45.50	5.56E-01		1.55E-01	2.60E-01
	815.85	23.50	1.48E+00		-1.98E-01	6.81E-01
	1596.49	95.49	2.76E-01		-4.35E-02	1.12E-01
CE-141	145.44	48.40	2.42E-01	2.42E-01	-1.41E-03	1.17E-01
CE-143	57.36	11.80	1.04E+03	5.87E+02	3.18E+01	5.07E+02
	293.26	42.00	5.87E+02		5.63E+02	2.83E+02
	664.55	5.20	5.54E+03		2.22E+03	2.58E+03
CE-144	133.54	10.80	7.46E-01	7.46E-01	-3.00E-01	3.62E-01
PM-144	476.78	42.00	2.79E-01	1.26E-01	1.68E-02	1.31E-01
	618.01	98.60	1.26E-01		-5.62E-03	5.80E-02
	696.49	99.49	1.51E-01		7.08E-02	7.03E-02
PM-145	36.85	21.70	2.01E-01	1.12E-01	-1.02E-01	9.77E-02
	37.36	39.70	1.12E-01		-1.99E-02	5.45E-02
	42.30	15.10	3.23E-01		-5.39E-02	1.57E-01
	72.40	2.31	3.72E+00		-3.42E-02	1.82E+00
PM-146	453.90	39.94	2.80E-01	2.80E-01	-9.14E-02	1.31E-01
	735.90	14.01	9.66E-01		-1.33E-01	4.44E-01
	747.13	13.10	1.08E+00		-8.31E-02	4.98E-01
ND-147	91.11	28.90	8.00E-01	8.00E-01	1.32E+00	3.92E-01
	531.02	13.10	2.36E+00		-1.39E+00	1.10E+00
PM-149	285.90	3.10	3.67E+02	3.67E+02	1.06E+02	1.76E+02
EU-152	121.78	20.50	3.62E-01	3.62E-01	-1.22E-01	1.76E-01
	244.69	5.40	2.01E+00		9.17E-02	9.71E-01
	344.27	19.13	5.20E-01		2.63E-02	2.47E-01
	778.89	9.20	1.60E+00		-1.50E-01	7.37E-01
	964.01	10.40	1.87E+00		1.51E-01	8.68E-01
	1085.78	7.22	2.39E+00		5.12E-01	1.08E+00
	1112.02	9.60	2.05E+00		-6.42E-01	9.41E-01
	1407.95	14.94	1.14E+00		-2.33E-01	5.05E-01
GD-153	97.43	31.30	2.57E-01	2.57E-01	7.47E-03	1.25E-01
	103.18	22.20	3.35E-01		-8.45E-02	1.63E-01
EU-154	123.07	40.50	1.86E-01	1.86E-01	-3.11E-02	9.01E-02
	723.30	19.70	7.60E-01		1.34E-02	3.53E-01
	873.19	11.50	1.37E+00		3.30E-01	6.31E-01
	996.32	10.30	1.67E+00		9.45E-01	7.62E-01
	1004.76	17.90	8.58E-01		-4.00E-01	3.88E-01
	1274.45	35.50	4.89E-01		-1.40E-01	2.18E-01
EU-155	86.50	30.90	2.65E-01	2.65E-01	2.66E-02	1.30E-01
	105.30	20.70	3.44E-01		-1.60E-01	1.67E-01
EU-156	811.77	10.40	2.89E+00	2.89E+00	-2.17E-01	1.33E+00
	1153.47	7.20	5.49E+00		-1.34E+00	2.51E+00
	1230.71	8.90	5.13E+00		-3.36E-01	2.36E+00
HO-166M	184.41	72.60	1.47E-01	1.47E-01	1.41E-02	7.13E-02
	280.45	29.60	3.47E-01		7.81E-02	1.66E-01
	410.94	11.10	1.04E+00		9.63E-02	4.93E-01

Analysis Report for 1606043-05

CP-5031 02-05

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	HO-166M	711.69		54.10	2.48E-01	1.47E-01	-1.22E-01	1.14E-01
	TM-171	66.72		0.14	5.33E+01	5.33E+01	-1.24E+01	2.61E+01
	HF-172	81.75		4.52	1.88E+00	6.97E-01	-8.57E-03	9.22E-01
		125.81		11.30	6.97E-01		1.34E-01	3.39E-01
	LU-172	181.53		20.60	2.29E+00	1.20E+00	6.54E-02	1.11E+00
		810.06		16.63	4.40E+00		-1.66E-02	2.03E+00
		912.12		15.25	6.82E+00		7.64E+00	3.20E+00
		1093.66		62.50	1.20E+00		-3.99E-01	5.40E-01
	LU-173	100.72		5.24	1.38E+00	4.61E-01	-3.11E-01	6.71E-01
		272.11		21.20	4.61E-01		-1.98E-01	2.20E-01
	HF-175	343.40		84.00	1.40E-01	1.40E-01	6.91E-03	6.63E-02
	LU-176	88.34		13.30	6.48E-01	1.03E-01	5.46E-02	3.17E-01
		201.83		86.00	1.10E-01		-1.73E-03	5.31E-02
		306.78		94.00	1.03E-01		-1.48E-02	4.88E-02
	TA-182	67.75		41.20	1.93E-01	1.93E-01	-4.58E-02	9.43E-02
		1121.30		34.90	6.54E-01		-1.68E-01	3.02E-01
		1189.05		16.23	1.56E+00		3.35E-01	7.21E-01
		1221.41		26.98	8.21E-01		-4.27E-01	3.75E-01
		1231.02		11.44	2.20E+00		-1.44E-01	1.01E+00
	IR-192	308.46		29.68	3.79E-01	2.90E-01	7.31E-03	1.80E-01
		468.07		48.10	2.90E-01		6.15E-03	1.36E-01
	HG-203	279.19		77.30	1.67E-01	1.67E-01	4.03E-02	8.00E-02
	BI-207	569.67		97.72	1.27E-01	1.27E-01	3.19E-02	5.94E-02
		1063.62		74.90	2.29E-01		2.39E-02	1.04E-01
+	TL-208	583.14	*	30.22	4.72E-01	4.45E-01	9.35E-01	2.22E-01
		860.37		4.48	3.24E+00		1.53E-01	1.48E+00
		2614.66	*	35.85	4.45E-01		7.15E-01	1.77E-01
	BI-210M	262.00		45.00	2.14E-01	2.14E-01	-5.12E-02	1.02E-01
		300.00		23.00	5.36E-01		3.72E-01	2.58E-01
	PB-210	46.50		4.25	1.25E+00	1.25E+00	2.80E-01	6.07E-01
	PB-211	404.84		2.90	3.74E+00	3.74E+00	-6.23E-01	1.76E+00
		831.96		2.90	5.71E+00		-1.05E+00	2.64E+00
	BI-212	727.17		11.80	1.33E+00	1.33E+00	6.61E-01	6.21E-01
		1620.62		2.75	3.28E+00		-5.42E-01	1.23E+00
+	PB-212	238.63	*	44.60	3.85E-01	3.85E-01	1.12E+00	1.88E-01
		300.09		3.41	3.62E+00		2.51E+00	1.74E+00
+	BI-214	609.31	*	46.30	5.17E-01	5.17E-01	8.96E-01	2.49E-01
		1120.29		15.10	1.43E+00		2.88E-01	6.62E-01
		1764.49	*	15.80	7.07E-01		1.11E+00	2.77E-01
		2204.22		4.98	3.23E+00		-4.50E-01	1.32E+00
+	PB-214	295.21		19.19	6.70E-01	4.86E-01	8.40E-01	3.24E-01
		351.92	*	37.19	4.86E-01		1.01E+00	2.36E-01
	RN-219	401.80		6.50	1.56E+00	1.56E+00	-2.39E-01	7.35E-01
	RA-223	323.87		3.88	2.71E+00	2.71E+00	-6.18E-01	1.29E+00
	RA-224	240.98		3.95	3.86E+00	3.86E+00	1.11E+01	1.88E+00
	RA-225	40.00		31.00	2.98E-01	2.98E-01	-1.25E-01	1.45E-01
+	RA-226	186.21	*	3.28	3.20E+00	3.20E+00	2.82E+00	1.55E+00
	TH-227	50.10		8.40	6.71E-01	6.71E-01	1.27E-01	3.28E-01
		236.00		11.50	1.26E+00		2.61E+00	6.16E-01
		256.20		6.30	1.57E+00		5.06E-01	7.54E-01
+	AC-228	338.32	*	11.40	1.06E+00	7.76E-01	7.58E-01	5.08E-01
		911.07	*	27.70	7.76E-01		8.73E-01	3.64E-01
		969.11		16.60	1.26E+00		6.70E-01	5.88E-01

Analysis Report for 1606043-05

CP-5031 02-05

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TH-230	48.44		16.90	3.25E-01	3.25E-01	2.85E-02	1.58E-01
		62.85		4.60	1.51E+00		4.51E-01	7.39E-01
		67.67		0.37	1.96E+01		-4.65E+00	9.58E+00
	PA-231	283.67		1.60	6.42E+00	4.61E+00	1.59E+00	3.08E+00
		302.67		2.30	4.61E+00		1.42E-01	2.20E+00
	TH-231	25.64		14.70	2.75E-01	2.75E-01	-2.49E-01	1.33E-01
		84.21		6.40	1.23E+00		1.26E-01	6.01E-01
	PA-233	311.98		38.60	3.72E-01	3.72E-01	-2.80E-02	1.77E-01
	PA-234	131.20		20.40	3.91E-01	3.91E-01	1.83E-01	1.90E-01
		733.99		8.80	1.56E+00		-1.45E-01	7.18E-01
		946.00		12.00	1.26E+00		-2.30E-01	5.71E-01
	PA-234M	1001.03		0.92	1.78E+01	1.78E+01	-2.02E-01	8.10E+00
+	TH-234	63.29	*	3.80	1.77E+00	1.77E+00	1.00E+00	8.66E-01
	U-235	143.76		10.50	8.17E-01	8.17E-01	4.24E-01	3.97E-01
		163.35		4.70	1.92E+00		1.35E+00	9.29E-01
		205.31		4.70	2.15E+00		1.88E+00	1.04E+00
	NP-237	86.50		12.60	6.47E-01	6.47E-01	6.49E-02	3.17E-01
	NP-239	106.10		22.70	2.63E+01	2.63E+01	-1.23E+01	1.28E+01
		228.18		10.70	7.33E+01		5.57E-01	3.53E+01
		277.60		14.10	5.95E+01		-8.53E+00	2.85E+01
	AM-241	59.54		35.90	1.86E-01	1.86E-01	-1.74E-03	9.10E-02
	AM-243	74.67		66.00	1.40E-01	1.40E-01	3.58E-01	6.90E-02
	CM-243	209.75		3.29	2.92E+00	7.14E-01	-1.22E+00	1.41E+00
		228.14		10.60	8.91E-01		4.09E-03	4.29E-01
		277.60		14.00	7.14E-01		-1.02E-01	3.42E-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

Analysis Report for 1606043-05

CP-5031 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-5031 02-05

Elapsed Live time: 3600
Elapsed Real Time: 3659

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	11	59
17:	69	51	51	70	48	55	53	32
25:	33	45	48	31	40	50	49	47
33:	47	39	37	48	41	53	46	36
41:	61	49	44	45	53	70	71	59
49:	56	63	57	60	62	67	63	77
57:	63	63	62	64	81	91	113	90
65:	61	73	82	77	76	77	59	76
73:	104	143	155	167	174	104	78	66
81:	64	71	74	79	71	80	82	68
89:	74	94	87	121	118	63	53	52
97:	54	44	59	53	36	39	49	44
105:	48	50	43	45	53	57	42	47
113:	50	43	51	38	33	31	43	44
121:	58	31	49	37	39	37	54	41
129:	38	43	46	36	45	42	27	33
137:	43	37	42	49	51	45	37	54
145:	34	36	40	39	37	37	35	50
153:	35	35	47	23	35	27	47	35
161:	41	38	41	43	42	29	35	33
169:	31	40	28	17	34	30	41	36
177:	38	28	34	41	37	33	36	35
185:	82	66	47	30	24	29	33	35
193:	31	34	30	26	30	26	23	23
201:	33	20	50	37	31	25	29	42
209:	37	27	27	27	19	29	32	32
217:	29	18	32	24	18	15	24	19
225:	22	23	28	23	22	28	30	20
233:	33	34	30	25	74	138	120	47
241:	48	34	29	20	18	19	22	21
249:	19	16	19	22	24	23	27	23
257:	20	23	9	25	20	21	20	20
265:	19	27	16	14	19	26	20	16
273:	23	11	18	16	25	20	21	13
281:	25	23	21	15	25	20	12	13
289:	15	19	15	14	25	50	47	36
297:	26	20	26	27	16	17	15	14
305:	15	15	11	11	17	17	12	22
313:	11	11	19	17	14	15	12	14
321:	10	23	15	16	11	28	13	25
329:	12	20	13	12	12	20	11	19
337:	24	23	23	14	8	16	13	11
345:	18	9	5	18	26	37	81	61
353:	41	21	13	10	7	16	6	12
361:	16	14	10	6	12	12	13	16

369:	13	12	13	18	13	8	11	12

Sample Title: CP-5031 02-05

Channel								
377:	14	9	14	12	8	15	9	9
385:	15	8	6	13	12	16	14	12
393:	16	13	5	13	10	6	4	7
401:	14	14	7	11	13	12	9	10
409:	16	16	15	14	11	5	13	12
417:	12	9	12	10	13	15	8	13
425:	9	6	15	14	10	13	2	8
433:	16	4	10	12	14	7	13	8
441:	11	7	9	10	8	9	13	11
449:	7	14	10	7	10	5	12	9
457:	7	6	8	17	5	13	12	10
465:	12	13	16	10	10	5	8	7
473:	10	10	10	12	10	8	7	3
481:	7	10	9	5	6	7	7	11
489:	8	8	7	8	7	8	6	10
497:	6	13	14	7	5	10	10	11
505:	6	9	14	13	19	26	25	17
513:	13	10	10	8	4	2	7	9
521:	8	4	8	9	7	8	11	10
529:	8	9	6	3	5	8	10	11
537:	14	8	8	8	9	5	6	9
545:	4	11	7	12	5	4	4	12
553:	7	9	11	5	8	8	13	6
561:	11	5	7	6	5	4	6	6
569:	5	11	9	8	10	8	4	6
577:	6	3	4	6	14	37	34	21
585:	10	3	4	5	8	4	4	9
593:	3	8	10	11	8	12	9	12
601:	4	10	10	8	2	13	11	51
609:	42	40	13	6	9	4	8	4
617:	4	8	7	4	5	6	7	5
625:	5	6	6	7	3	4	8	3
633:	4	5	9	8	8	7	4	8
641:	6	6	11	7	3	7	10	3
649:	7	10	4	4	7	5	4	8
657:	8	6	6	2	9	7	10	7
665:	5	10	10	5	5	5	3	1
673:	5	4	4	9	4	3	8	4
681:	5	5	7	4	8	13	7	3
689:	5	6	0	7	6	4	7	8
697:	4	8	7	8	4	7	5	6
705:	7	18	7	6	4	8	6	4
713:	3	5	4	2	4	9	5	5
721:	5	5	4	5	9	10	9	11
729:	2	7	6	8	3	3	5	7
737:	6	1	5	4	5	6	2	7
745:	2	6	6	7	7	6	4	10
753:	5	3	6	5	5	7	6	1
761:	5	7	2	5	7	2	10	8
769:	5	3	7	3	5	2	7	6
777:	8	4	8	8	3	1	5	7
785:	6	6	5	4	8	4	4	7
793:	7	4	10	4	3	5	4	3

801:	4	4	5	4	4	7	8	6

Sample Title: CP-5031 02-05

Channel								
809:	4	2	9	3	6	3	5	4
817:	9	4	4	8	5	8	3	7
825:	7	7	7	3	8	6	6	5
833:	10	4	4	7	3	6	10	3
841:	4	4	6	3	4	4	3	8
849:	4	10	1	3	8	3	5	1
857:	3	6	6	4	4	3	7	3
865:	4	2	2	3	3	5	6	1
873:	6	8	3	4	7	6	3	7
881:	8	3	3	8	3	4	3	4
889:	2	6	4	4	5	5	2	1
897:	4	6	3	6	3	4	6	5
905:	5	4	5	7	3	24	16	12
913:	9	3	3	3	3	4	1	3
921:	4	3	7	4	9	2	4	5
929:	5	6	6	8	3	6	7	2
937:	4	1	9	1	7	2	4	5
945:	1	4	6	2	6	3	4	3
953:	2	4	3	1	0	5	5	6
961:	3	6	4	6	3	4	11	12
969:	10	12	5	4	3	4	5	4
977:	6	1	4	3	4	4	9	0
985:	3	4	4	6	3	0	3	4
993:	2	2	5	6	3	7	6	4
1001:	4	1	3	3	4	5	1	5
1009:	3	6	4	3	7	4	3	4
1017:	8	1	0	4	6	1	5	2
1025:	3	3	5	4	4	2	7	6
1033:	2	5	3	5	2	1	5	3
1041:	5	2	7	4	3	2	2	6
1049:	4	0	4	1	4	3	1	5
1057:	6	4	3	4	2	5	4	4
1065:	3	3	6	2	1	3	3	5
1073:	4	1	5	2	6	2	5	2
1081:	3	2	2	5	5	5	5	4
1089:	3	2	4	2	2	1	4	5
1097:	4	2	4	4	2	4	1	5
1105:	7	3	3	4	2	4	4	8
1113:	2	4	8	6	4	5	13	6
1121:	2	7	4	4	2	7	6	6
1129:	2	6	0	5	3	10	2	2
1137:	4	2	6	3	4	3	5	1
1145:	5	7	11	2	3	5	4	0
1153:	8	4	7	1	8	3	6	3
1161:	1	3	2	5	1	1	4	3
1169:	4	2	5	6	7	2	6	5
1177:	1	5	2	3	2	4	1	5
1185:	7	3	9	5	3	4	6	2
1193:	13	4	8	7	3	4	5	1
1201:	5	8	6	4	3	5	7	4
1209:	8	5	4	6	5	8	1	6
1217:	7	6	6	5	4	1	4	2
1225:	2	7	5	7	6	4	6	7

1233:	3	5	5	5	12	4	5	3

Sample Title: CP-5031 02-05

Channel								
1241:	7	4	9	3	10	5	6	3
1249:	3	7	1	6	4	2	2	3
1257:	2	3	2	3	2	5	6	3
1265:	2	5	3	3	1	2	1	1
1273:	5	3	2	3	4	3	5	2
1281:	7	5	3	2	0	3	3	3
1289:	3	3	5	6	3	2	1	4
1297:	4	7	2	5	4	1	3	4
1305:	1	2	3	1	4	2	5	0
1313:	1	0	2	2	0	3	2	2
1321:	4	0	1	1	3	2	4	2
1329:	4	4	1	4	6	1	4	1
1337:	2	1	1	1	1	1	0	0
1345:	3	3	1	4	5	3	1	4
1353:	2	2	3	2	2	0	4	2
1361:	2	1	3	0	1	1	0	0
1369:	0	1	0	1	2	1	1	2
1377:	3	5	2	2	2	1	0	2
1385:	3	0	1	0	1	0	1	0
1393:	2	1	3	0	2	0	3	1
1401:	1	2	1	3	3	2	4	1
1409:	2	1	3	0	4	2	4	3
1417:	2	4	1	3	2	1	2	1
1425:	2	1	1	2	1	1	2	3
1433:	1	1	1	2	2	2	1	1
1441:	2	1	1	1	2	1	0	1
1449:	1	2	1	1	0	2	1	1
1457:	3	18	50	94	80	37	7	0
1465:	0	0	2	0	1	0	1	1
1473:	3	4	0	0	1	0	1	1
1481:	0	1	1	0	0	3	1	0
1489:	3	1	2	0	0	1	0	0
1497:	1	0	0	1	0	2	0	1
1505:	2	2	1	6	4	0	2	0
1513:	1	1	1	1	0	1	0	0
1521:	0	2	0	2	1	0	0	0
1529:	2	1	0	3	0	0	2	0
1537:	1	0	1	2	0	0	0	0
1545:	2	1	1	2	0	0	0	1
1553:	2	0	0	0	0	0	0	1
1561:	0	0	1	2	0	0	1	1
1569:	0	0	0	0	2	1	1	0
1577:	1	1	0	1	2	0	3	0
1585:	0	0	4	1	1	1	2	1
1593:	1	1	1	1	0	0	1	0
1601:	1	2	0	0	1	2	1	3
1609:	2	0	0	0	0	0	1	0
1617:	0	0	2	0	0	0	0	1
1625:	0	1	0	1	1	1	1	3
1633:	1	2	0	0	1	1	0	0
1641:	1	0	0	0	1	0	2	1
1649:	0	0	1	1	0	1	0	1
1657:	0	2	1	0	2	0	0	1

1665:	0	2	0	0	0	2	1	1

Sample Title: CP-5031 02-05

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

2097:	0	0	0	1	0	1	1	0

Sample Title: CP-5031 02-05

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

2529:	0	0	1	0	0	1	1	1

Sample Title: CP-5031 02-05

Channel								
2537:	1	0	0	1	0	1	1	1
2545:	1	1	0	0	0	0	0	1
2553:	0	1	0	0	1	0	0	0
2561:	0	1	0	0	1	0	0	0
2569:	0	0	0	0	1	0	0	0
2577:	0	0	0	0	0	1	0	0
2585:	1	0	0	1	0	0	0	0
2593:	0	0	0	1	0	0	0	1
2601:	0	0	0	0	1	1	0	0
2609:	1	0	0	2	2	4	12	1
2617:	1	1	0	0	0	1	0	0
2625:	0	0	0	0	0	0	0	0
2633:	0	0	0	0	0	1	0	0
2641:	0	1	0	0	0	0	0	0
2649:	1	2	0	0	0	0	0	0
2657:	0	0	1	0	0	0	0	0
2665:	0	0	0	1	0	0	1	0
2673:	0	3	0	0	1	0	1	0
2681:	0	0	0	0	0	0	1	0
2689:	0	1	1	0	0	1	0	0
2697:	0	0	0	0	0	0	1	1
2705:	0	0	0	0	0	0	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	1	0	0	0	1	0
2729:	0	0	1	0	0	0	0	0
2737:	0	0	0	0	0	0	0	1
2745:	0	0	1	0	0	0	0	0
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	0	0	0	0	0
2769:	1	0	0	0	0	0	0	1
2777:	0	1	1	0	0	1	0	0
2785:	0	0	0	0	0	0	0	0
2793:	1	0	0	0	0	0	0	0
2801:	0	0	1	0	0	0	0	1
2809:	0	1	0	0	0	0	0	0
2817:	0	1	0	0	0	0	0	0
2825:	0	0	0	1	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	1	1	0	0	0	0	0	0
2849:	0	0	0	0	0	0	0	1
2857:	0	0	0	0	1	1	1	0
2865:	0	0	0	0	0	0	0	0
2873:	1	0	0	0	0	0	0	0
2881:	1	0	1	0	1	0	0	0
2889:	1	0	0	1	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	1	1	0	0	0	0
2913:	1	1	0	1	0	0	0	1
2921:	0	0	0	0	1	0	0	0
2929:	0	0	1	0	0	0	0	0
2937:	0	1	0	0	0	1	1	0
2945:	0	2	0	0	0	0	0	0
2953:	0	0	0	1	0	0	0	0

2961:	0	0	0	0	1	0	0	0

Sample Title: CP-5031 02-05

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

3393:	0	2	0	0	0	0	0	0

Sample Title: CP-5031 02-05

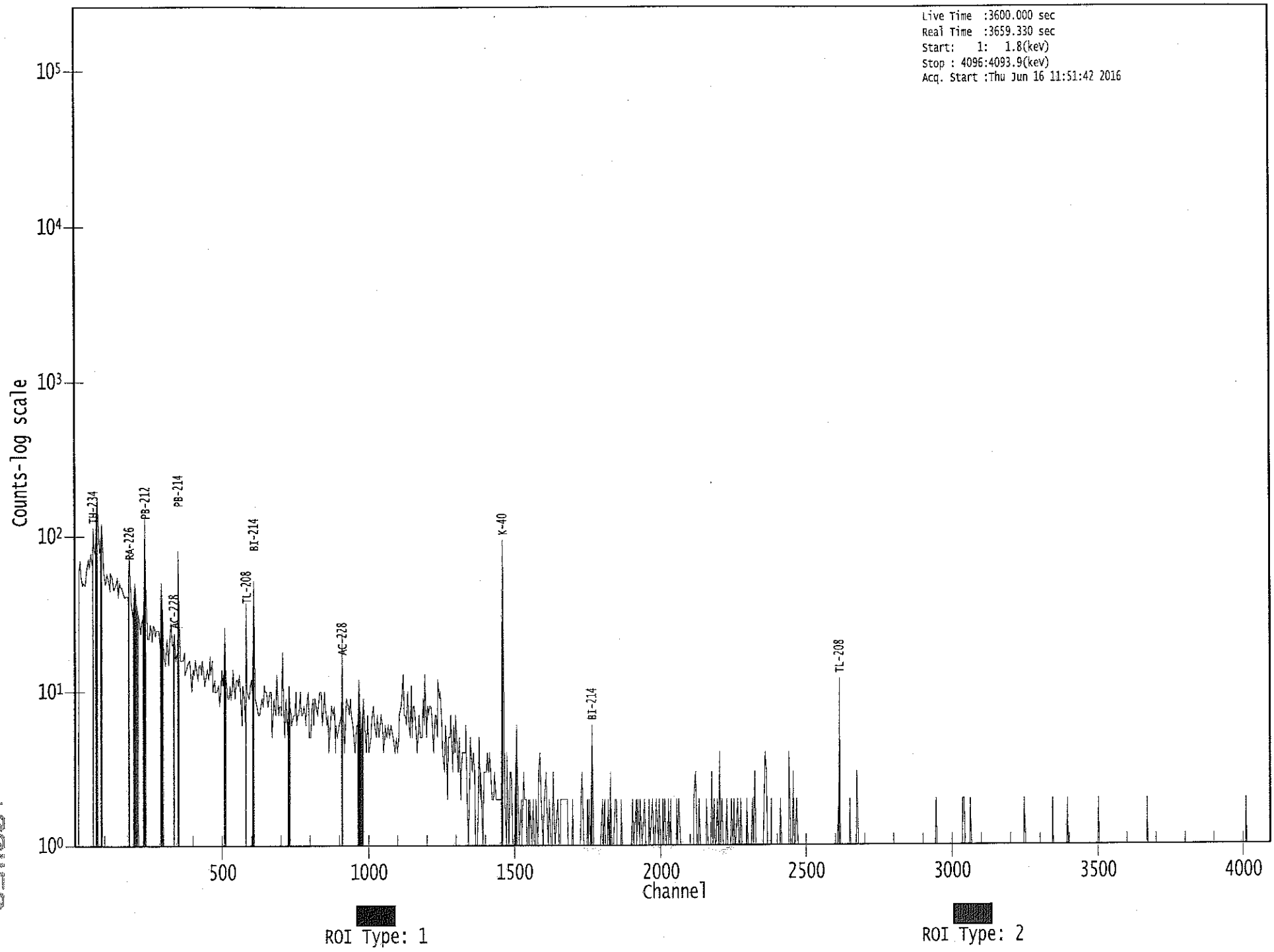
Channel								
3401:	0	0	0	0	1	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	1	0	1
3425:	0	0	0	0	0	0	0	0
3433:	0	1	0	0	0	0	0	0
3441:	0	1	0	0	0	0	0	0
3449:	1	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	1	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	1
3489:	0	0	1	0	0	0	0	0
3497:	0	0	1	1	2	0	0	0
3505:	0	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	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	0	0	1	0	0	0
3569:	0	0	0	0	0	0	1	0
3577:	0	0	0	0	0	0	0	0
3585:	1	0	1	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	1	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	1	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	1
3657:	0	0	0	0	0	0	1	0
3665:	0	0	0	0	2	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	1	0	0	0	0	0	0	0
3689:	0	0	1	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	1	0	0	1
3713:	0	0	0	0	0	0	0	0
3721:	1	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	1	1
3737:	0	1	1	0	0	0	1	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	1	0	0
3769:	0	0	0	0	1	0	0	0
3777:	0	1	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	1	0	0
3801:	0	0	0	0	1	0	0	0
3809:	1	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	1	0

3825:	0	0	0	0	0	0	0	0

Sample Title: CP-5031 02-05

Channel								
3833:	0	1	0	0	0	0	0	0
3841:	0	0	0	1	0	0	0	0
3849:	0	0	1	0	0	0	0	0
3857:	0	0	0	0	0	0	0	1
3865:	1	1	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	1	0	0
3897:	0	1	0	0	0	0	0	0
3905:	0	0	1	0	1	1	1	1
3913:	0	0	0	0	0	0	0	0
3921:	1	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	1	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	0	1	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	1
3985:	1	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	2	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	1	0	0	0	0
4049:	0	0	0	0	0	0	0	1
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	1	0	0	0	0	0
4081:	0	0	0	0	0	1	0	0
4089:	0	0	0	1	0	0	0	0

0000039004.CNF



Apex-Gamma

Analysis Report for 1606043-06
CP-5031 05-10

6/16

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-06
Sample Description	: CP-5031 05-10
Sample Type	: SOIL
Sample Size	: 3.594E+02 grams
Facility	: Countroom
Sample Taken On	: 6/1/2016 11:09:07AM
Acquisition Started	: 6/16/2016 12:03:52PM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3601.3 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	: 39005

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/17/16

Analysis Report for 1606043-06

CP-5031 05-10

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 1:03:57PM
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	13.11	13.23	0.0000	0.00
2	39.16	39.27	0.0000	0.00
3	53.57	53.67	0.0000	0.00
4	63.69	63.78	0.0000	0.00
5	76.37	76.46	0.0000	0.00
6	84.25	84.33	0.0000	0.00
7	87.14	87.22	0.0000	0.00
8	89.58	89.66	0.0000	0.00
9	92.99	93.07	0.0000	0.00
10	154.02	154.06	0.0000	0.00
11	185.91	185.93	0.0000	0.00
12	209.65	209.67	0.0000	0.00
13	225.55	225.55	0.0000	0.00
14	238.74	238.74	0.0000	0.00
15	269.93	269.91	0.0000	0.00
16	295.17	295.14	0.0000	0.00
17	299.90	299.86	0.0000	0.00
18	328.49	328.44	0.0000	0.00
19	338.54	338.49	0.0000	0.00
20	351.94	351.88	0.0000	0.00
21	396.28	396.20	0.0000	0.00
22	410.10	410.01	0.0000	0.00
23	463.23	463.11	0.0000	0.00
24	510.82	510.67	0.0000	0.00
25	545.32	545.15	0.0000	0.00
26	583.27	583.09	0.0000	0.00
27	609.51	609.32	0.0000	0.00
28	795.10	794.82	0.0000	0.00
29	838.52	838.22	0.0000	0.00
30	860.66	860.36	0.0000	0.00
31	911.44	911.11	0.0000	0.00
32	933.73	933.39	0.0000	0.00
33	969.20	968.85	0.0000	0.00
34	1094.00	1093.61	0.0000	0.00
35	1121.05	1120.65	0.0000	0.00
36	1356.54	1356.05	0.0000	0.00
37	1376.89	1376.40	0.0000	0.00
38	1402.07	1401.57	0.0000	0.00
39	1409.31	1408.80	0.0000	0.00
40	1461.24	1460.72	0.0000	0.00
41	1549.91	1549.36	0.0000	0.00
42	1730.73	1730.13	0.0000	0.00

Analysis Report for 1606043-06

CP-5031 05-10

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1764.33	1763.73	0.0000	0.00
44	2150.31	2149.63	0.0000	0.00
45	2204.02	2203.32	0.0000	0.00
46	2254.30	2253.60	0.0000	0.00
47	2614.43	2613.69	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606043-06

CP-5031 05-10

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 1:03:57PM

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	13.11	12	16	13.23	1.91E+03	126.34	1.63E+03	1.17
	2	39.16	37	41	39.27	4.29E+01	48.12	4.78E+02	1.74
	3	53.57	52	56	53.67	4.84E+01	54.79	6.29E+02	1.39
	4	63.69	61	67	63.78	1.12E+02	84.54	1.22E+03	1.36
	5	76.37	72	83	76.46	7.70E+02	143.39	2.17E+03	3.26
M	6	84.25	83	96	84.33	8.94E+01	30.38	2.45E+02	1.33
m	7	87.14	83	96	87.22	1.53E+02	53.81	4.71E+02	1.34
m	8	89.58	83	96	89.66	1.19E+02	51.96	4.50E+02	1.35
m	9	92.99	83	96	93.07	2.17E+02	53.93	4.30E+02	1.36
	10	154.02	151	157	154.06	5.81E+01	58.53	5.74E+02	2.50
	11	185.91	182	189	185.93	2.17E+02	62.96	5.17E+02	1.24
	12	209.65	205	213	209.67	1.13E+02	66.50	6.08E+02	1.49
	13	225.55	223	228	225.55	3.91E+01	41.33	3.08E+02	2.58
	14	238.74	237	240	238.74	6.40E+02	64.87	4.20E+02	1.24
	15	269.93	266	274	269.91	7.88E+01	53.98	3.98E+02	2.89
M	16	295.17	292	305	295.14	1.76E+02	36.50	1.86E+02	1.49
m	17	299.90	292	305	299.86	6.15E+01	33.96	1.94E+02	1.50
	18	328.49	326	331	328.44	5.40E+01	36.41	2.22E+02	1.21
	19	338.54	334	342	338.49	1.40E+02	50.69	3.07E+02	1.85
	20	351.94	348	355	351.88	2.62E+02	55.61	3.43E+02	1.21
	21	396.28	393	399	396.20	3.25E+01	32.18	1.65E+02	3.03
	22	410.10	405	414	410.01	5.03E+01	43.31	2.37E+02	4.58
	23	463.23	460	467	463.11	4.47E+01	33.70	1.59E+02	1.43
	24	510.82	508	516	510.67	1.37E+02	43.99	2.28E+02	1.83
	25	545.32	543	547	545.15	1.42E+01	18.78	6.35E+01	2.41
	26	583.27	579	586	583.09	2.06E+02	39.29	1.19E+02	1.47
	27	609.51	605	613	609.32	2.52E+02	46.37	1.75E+02	1.53
	28	795.10	791	799	794.82	2.47E+01	30.71	1.29E+02	1.54
	29	838.52	833	845	838.22	3.61E+01	35.93	1.30E+02	5.87
	30	860.66	857	863	860.36	1.81E+01	20.01	5.98E+01	1.59
	31	911.44	906	915	911.11	1.75E+02	35.96	8.50E+01	1.48
	32	933.73	929	937	933.39	4.14E+01	20.65	3.91E+01	5.14
	33	969.20	965	973	968.85	7.30E+01	39.28	1.80E+02	1.65
	34	1094.00	1089	1097	1093.61	1.88E+01	21.34	5.84E+01	3.13
	35	1121.05	1117	1125	1120.65	5.38E+01	29.77	9.25E+01	1.82
	36	1356.54	1353	1358	1356.05	9.44E+00	10.44	1.31E+01	1.34
	37	1376.89	1372	1380	1376.40	2.47E+01	15.66	2.27E+01	1.72
	38	1402.07	1397	1405	1401.57	1.18E+01	10.22	8.50E+00	1.44
	39	1409.31	1406	1412	1408.80	1.59E+01	10.22	8.10E+00	2.05
	40	1461.24	1455	1466	1460.72	5.50E+02	49.84	3.46E+01	2.14

Analysis Report for 1606043-06

CP-5031 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1549.91	1545 -	1555	1549.36	1.15E+01	11.34	1.10E+01	2.95
42	1730.73	1727 -	1732	1730.13	6.27E+00	8.94	9.45E+00	1.33
43	1764.33	1758 -	1768	1763.73	4.45E+01	16.14	1.10E+01	2.33
44	2150.31	2145 -	2152	2149.63	8.00E+00	5.66	0.00E+00	1.66
45	2204.02	2198 -	2207	2203.32	8.59E+00	11.79	1.48E+01	2.58
46	2254.30	2248 -	2258	2253.60	1.00E+01	6.32	0.00E+00	1.33
47	2614.43	2608 -	2617	2613.69	6.70E+01	18.38	1.00E+01	2.72

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 1:03:57PM

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	13.11	12 -	16	1.91E+03	126.34	1.63E+03	7.51E+01
	2	39.16	37 -	41	4.29E+01	48.12	4.78E+02	3.81E+01
	3	53.57	52 -	56	4.84E+01	54.79	6.29E+02	4.36E+01
	4	63.69	61 -	67	1.12E+02	84.54	1.22E+03	6.73E+01
	5	76.37	72 -	83	7.70E+02	143.39	2.17E+03	1.09E+02
M	6	84.25	83 -	96	8.94E+01	30.38	2.45E+02	2.57E+01
m	7	87.14	83 -	96	1.53E+02	53.81	4.71E+02	3.57E+01
m	8	89.58	83 -	96	1.19E+02	51.96	4.50E+02	3.49E+01
m	9	92.99	83 -	96	2.17E+02	53.93	4.30E+02	3.41E+01
	10	154.02	151 -	157	5.81E+01	58.53	5.74E+02	4.65E+01
	11	185.91	182 -	189	2.17E+02	62.96	5.17E+02	4.57E+01
	12	209.65	205 -	213	1.13E+02	66.50	6.08E+02	5.18E+01
	13	225.55	223 -	228	3.91E+01	41.33	3.08E+02	3.24E+01
	14	238.74	237 -	240	6.40E+02	64.87	4.20E+02	3.34E+01
	15	269.93	266 -	274	7.88E+01	53.98	3.98E+02	4.19E+01
M	16	295.17	292 -	305	1.76E+02	36.50	1.86E+02	2.24E+01
m	17	299.90	292 -	305	6.15E+01	33.96	1.94E+02	2.29E+01
	18	328.49	326 -	331	5.40E+01	36.41	2.22E+02	2.74E+01
	19	338.54	334 -	342	1.40E+02	50.69	3.07E+02	3.69E+01
	20	351.94	348 -	355	2.62E+02	55.61	3.43E+02	3.72E+01

Analysis Report for 1606043-06

CP-5031 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
21	396.28	393 -	399	3.25E+01	32.18	1.65E+02	2.47E+01
22	410.10	405 -	414	5.03E+01	43.31	2.37E+02	3.36E+01
23	463.23	460 -	467	4.47E+01	33.70	1.59E+02	2.54E+01
24	510.82	508 -	516	1.37E+02	43.99	2.28E+02	3.06E+01
25	545.32	543 -	547	1.42E+01	18.78	6.35E+01	1.41E+01
26	583.27	579 -	586	2.06E+02	39.29	1.19E+02	2.20E+01
27	609.51	605 -	613	2.52E+02	46.37	1.75E+02	2.78E+01
28	795.10	791 -	799	2.47E+01	30.71	1.29E+02	2.39E+01
29	838.52	833 -	845	3.61E+01	35.93	1.30E+02	1.46E+01
30	860.66	857 -	863	1.81E+01	20.01	5.98E+01	1.49E+01
31	911.44	906 -	915	1.75E+02	35.96	8.50E+01	2.00E+01
32	933.73	929 -	937	4.14E+01	20.65	3.91E+01	1.33E+01
33	969.20	965 -	973	7.30E+01	39.28	1.80E+02	2.91E+01
34	1094.00	1089 -	1097	1.88E+01	21.34	5.84E+01	1.60E+01
35	1121.05	1117 -	1125	5.38E+01	29.77	9.25E+01	2.13E+01
36	1356.54	1353 -	1358	9.44E+00	10.44	1.31E+01	6.94E+00
37	1376.89	1372 -	1380	2.47E+01	15.66	2.27E+01	9.95E+00
38	1402.07	1397 -	1405	1.18E+01	10.22	8.50E+00	6.23E+00
39	1409.31	1406 -	1412	1.59E+01	10.22	8.10E+00	5.24E+00
40	1461.24	1455 -	1466	5.50E+02	49.84	3.46E+01	1.39E+01
41	1549.91	1545 -	1555	1.15E+01	11.34	1.10E+01	7.47E+00
42	1730.73	1727 -	1732	6.27E+00	8.94	9.45E+00	6.09E+00
43	1764.33	1758 -	1768	4.45E+01	16.14	1.10E+01	7.47E+00
44	2150.31	2145 -	2152	8.00E+00	5.66	0.00E+00	0.00E+00
45	2204.02	2198 -	2207	8.59E+00	11.79	1.48E+01	8.41E+00
46	2254.30	2248 -	2258	1.00E+01	6.32	0.00E+00	0.00E+00
47	2614.43	2608 -	2617	6.70E+01	18.38	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 1:03:57PM

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 1606043-06

CP-5031 05-10

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	13.11	12 -	16	13.23	1.91E+03	126.34	1.63E+03	.....
	2	39.16	37 -	41	39.27	4.29E+01	48.12	4.78E+02	I-129
									RA-225
	3	53.57	52 -	56	53.67	4.84E+01	54.79	6.29E+02	.....
	4	63.69	61 -	67	63.78	1.12E+02	84.54	1.22E+03	TH-234
									TH-230
	5	76.37	72 -	83	76.46	7.70E+02	143.39	2.17E+03	.....
M	6	84.25	83 -	96	84.33	8.94E+01	30.38	2.45E+02	TH-231
m	7	87.14	83 -	96	87.22	1.53E+02	53.81	4.71E+02	SN-126
									NP-237
									EU-155
									CD-109
m	8	89.58	83 -	96	89.66	1.19E+02	51.96	4.50E+02	.....
m	9	92.99	83 -	96	93.07	2.17E+02	53.93	4.30E+02	GA-67
	10	154.02	151 -	157	154.06	5.81E+01	58.53	5.74E+02	CS-136
	11	185.91	182 -	189	185.93	2.17E+02	62.96	5.17E+02	RA-226
	12	209.65	205 -	213	209.67	1.13E+02	66.50	6.08E+02	CM-243
									GA-67
	13	225.55	223 -	228	225.55	3.91E+01	41.33	3.08E+02	.....
	14	238.74	237 -	240	238.74	6.40E+02	64.87	4.20E+02	PB-212
	15	269.93	266 -	274	269.91	7.88E+01	53.98	3.98E+02	.....
M	16	295.17	292 -	305	295.14	1.76E+02	36.50	1.86E+02	PB-214
m	17	299.90	292 -	305	299.86	6.15E+01	33.96	1.94E+02	BI-210M
									PB-212
									GA-67
	18	328.49	326 -	331	328.44	5.40E+01	36.41	2.22E+02	LA-140
	19	338.54	334 -	342	338.49	1.40E+02	50.69	3.07E+02	AC-228
	20	351.94	348 -	355	351.88	2.62E+02	55.61	3.43E+02	PB-214
	21	396.28	393 -	399	396.20	3.25E+01	32.18	1.65E+02	.....
	22	410.10	405 -	414	410.01	5.03E+01	43.31	2.37E+02	HO-166M
	23	463.23	460 -	467	463.11	4.47E+01	33.70	1.59E+02	SB-125
	24	510.82	508 -	516	510.67	1.37E+02	43.99	2.28E+02	.....
	25	545.32	543 -	547	545.15	1.42E+01	18.78	6.35E+01	.....
	26	583.27	579 -	586	583.09	2.06E+02	39.29	1.19E+02	TL-208
	27	609.51	605 -	613	609.32	2.52E+02	46.37	1.75E+02	BI-214
	28	795.10	791 -	799	794.82	2.47E+01	30.71	1.29E+02	CS-134
	29	838.52	833 -	845	838.22	3.61E+01	35.93	1.30E+02	.....
	30	860.66	857 -	863	860.36	1.81E+01	20.01	5.98E+01	TL-208
	31	911.44	906 -	915	911.11	1.75E+02	35.96	8.50E+01	AC-228
									LU-172
	32	933.73	929 -	937	933.39	4.14E+01	20.65	3.91E+01	.....
	33	969.20	965 -	973	968.85	7.30E+01	39.28	1.80E+02	AC-228
	34	1094.00	1089 -	1097	1093.61	1.88E+01	21.34	5.84E+01	LU-172
	35	1121.05	1117 -	1125	1120.65	5.38E+01	29.77	9.25E+01	TA-182
									SC-46
									BI-214
	36	1356.54	1353 -	1358	1356.05	9.44E+00	10.44	1.31E+01	.....
	37	1376.89	1372 -	1380	1376.40	2.47E+01	15.66	2.27E+01	.....
	38	1402.07	1397 -	1405	1401.57	1.18E+01	10.22	8.50E+00	.....
	39	1409.31	1406 -	1412	1408.80	1.59E+01	10.22	8.10E+00	.....
	40	1461.24	1455 -	1466	1460.72	5.50E+02	49.84	3.46E+01	K-40
	41	1549.91	1545 -	1555	1549.36	1.15E+01	11.34	1.10E+01	.....
	42	1730.73	1727 -	1732	1730.13	6.27E+00	8.94	9.45E+00	.....
	43	1764.33	1758 -	1768	1763.73	4.45E+01	16.14	1.10E+01	BI-214

Analysis Report for 1606043-06

CP-5031 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
44	2150.31	2145 -	2152	2149.63	8.00E+00	5.66	0.00E+00	.....
45	2204.02	2198 -	2207	2203.32	8.59E+00	11.79	1.48E+01	BI-214
46	2254.30	2248 -	2258	2253.60	1.00E+01	6.32	0.00E+00	.....
47	2614.43	2608 -	2617	2613.69	6.70E+01	18.38	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 1:03:57PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	13.11	1.91E+03	126.34	1.39E-05	1.66E-03
	2	39.16	4.29E+01	48.12	1.23E-02	1.66E-03
	3	53.57	4.84E+01	54.79	2.05E-02	1.66E-03
	4	63.69	1.12E+02	84.54	2.38E-02	1.75E-03
	5	76.37	7.70E+02	143.39	2.56E-02	2.02E-03
M	6	84.25	8.94E+01	30.38	2.60E-02	2.19E-03
m	7	87.14	1.53E+02	53.81	2.60E-02	2.26E-03
m	8	89.58	1.19E+02	51.96	2.60E-02	2.27E-03
m	9	92.99	2.17E+02	53.93	2.60E-02	2.27E-03
	10	154.02	5.81E+01	58.53	2.21E-02	2.39E-03
	11	185.91	2.17E+02	62.96	1.99E-02	2.40E-03
	12	209.65	1.13E+02	66.50	1.85E-02	2.36E-03
	13	225.55	3.91E+01	41.33	1.77E-02	2.33E-03
	14	238.74	6.40E+02	64.87	1.70E-02	2.31E-03
	15	269.93	7.88E+01	53.98	1.57E-02	2.26E-03
M	16	295.17	1.76E+02	36.50	1.47E-02	2.21E-03
m	17	299.90	6.15E+01	33.96	1.46E-02	2.21E-03
	18	328.49	5.40E+01	36.41	1.36E-02	2.16E-03
	19	338.54	1.40E+02	50.69	1.33E-02	2.14E-03
	20	351.94	2.62E+02	55.61	1.30E-02	2.12E-03
	21	396.28	3.25E+01	32.18	1.19E-02	2.03E-03
	22	410.10	5.03E+01	43.31	1.16E-02	1.95E-03
	23	463.23	4.47E+01	33.70	1.05E-02	1.68E-03
	24	510.82	1.37E+02	43.99	9.77E-03	1.43E-03
	25	545.32	1.42E+01	18.78	9.28E-03	1.25E-03
	26	583.27	2.06E+02	39.29	8.79E-03	1.06E-03

Analysis Report for 1606043-06

CP-5031 05-10

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
27	609.51	2.52E+02	46.37	8.48E-03	9.22E-04
28	795.10	2.47E+01	30.71	6.82E-03	8.23E-04
29	838.52	3.61E+01	35.93	6.53E-03	8.79E-04
30	860.66	1.81E+01	20.01	6.39E-03	9.07E-04
31	911.44	1.75E+02	35.96	6.09E-03	9.28E-04
32	933.73	4.14E+01	20.65	5.97E-03	8.83E-04
33	969.20	7.30E+01	39.28	5.79E-03	8.11E-04
34	1094.00	1.88E+01	21.34	5.25E-03	5.59E-04
35	1121.05	5.38E+01	29.77	5.15E-03	5.04E-04
36	1356.54	9.44E+00	10.44	4.46E-03	3.64E-04
37	1376.89	2.47E+01	15.66	4.41E-03	3.66E-04
38	1402.07	1.18E+01	10.22	4.35E-03	3.68E-04
39	1409.31	1.59E+01	10.22	4.34E-03	3.68E-04
40	1461.24	5.50E+02	49.84	4.23E-03	3.72E-04
41	1549.91	1.15E+01	11.34	4.07E-03	3.79E-04
42	1730.73	6.27E+00	8.94	3.81E-03	3.93E-04
43	1764.33	4.45E+01	16.14	3.77E-03	3.96E-04
44	2150.31	8.00E+00	5.66	3.48E-03	4.01E-04
45	2204.02	8.59E+00	11.79	3.45E-03	4.01E-04
46	2254.30	1.00E+01	6.32	3.44E-03	4.01E-04
47	2614.43	6.70E+01	18.38	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 1:03:57PM

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	13.11	1.91E+03	126.34			1.91E+03	1.26E+02
	2	39.16	4.29E+01	48.12			4.29E+01	4.81E+01
	3	53.57	4.84E+01	54.79			4.84E+01	5.48E+01
	4	63.69	1.12E+02	84.54	2.91E+01	8.34E+00	8.25E+01	8.49E+01
	5	76.37	7.70E+02	143.39			7.70E+02	1.43E+02
M	6	84.25	8.94E+01	30.38			8.94E+01	3.04E+01
m	7	87.14	1.53E+02	53.81			1.53E+02	5.38E+01
m	8	89.58	1.19E+02	51.96			1.19E+02	5.20E+01
m	9	92.99	2.17E+02	53.93	4.47E+01	7.30E+00	1.73E+02	5.44E+01

Analysis Report for 1606043-06

CP-5031 05-10

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	10	154.02	5.81E+01	58.53			5.81E+01	5.85E+01
	11	185.91	2.17E+02	62.96	3.13E+01	6.95E+00	1.85E+02	6.33E+01
	12	209.65	1.13E+02	66.50			1.13E+02	6.65E+01
	13	225.55	3.91E+01	41.33			3.91E+01	4.13E+01
	14	238.74	6.40E+02	64.87	1.19E+01	7.10E+00	6.28E+02	6.53E+01
	15	269.93	7.88E+01	53.98			7.88E+01	5.40E+01
M	16	295.17	1.76E+02	36.50			1.76E+02	3.65E+01
m	17	299.90	6.15E+01	33.96			6.15E+01	3.40E+01
	18	328.49	5.40E+01	36.41			5.40E+01	3.64E+01
	19	338.54	1.40E+02	50.69			1.40E+02	5.07E+01
	20	351.94	2.62E+02	55.61	9.12E+00	4.79E+00	2.53E+02	5.58E+01
	21	396.28	3.25E+01	32.18			3.25E+01	3.22E+01
	22	410.10	5.03E+01	43.31			5.03E+01	4.33E+01
	23	463.23	4.47E+01	33.70			4.47E+01	3.37E+01
	24	510.82	1.37E+02	43.99	6.97E+01	5.00E+00	6.73E+01	4.43E+01
	25	545.32	1.42E+01	18.78			1.42E+01	1.88E+01
	26	583.27	2.06E+02	39.29	3.98E+00	3.57E+00	2.02E+02	3.95E+01
	27	609.51	2.52E+02	46.37	8.66E+00	3.90E+00	2.44E+02	4.65E+01
	28	795.10	2.47E+01	30.71			2.47E+01	3.07E+01
	29	838.52	3.61E+01	35.93			3.61E+01	3.59E+01
	30	860.66	1.81E+01	20.01			1.81E+01	2.00E+01
	31	911.44	1.75E+02	35.96	2.01E+00	2.72E+00	1.73E+02	3.61E+01
	32	933.73	4.14E+01	20.65			4.14E+01	2.06E+01
	33	969.20	7.30E+01	39.28			7.30E+01	3.93E+01
	34	1094.00	1.88E+01	21.34			1.88E+01	2.13E+01
	35	1121.05	5.38E+01	29.77			5.38E+01	2.98E+01
	36	1356.54	9.44E+00	10.44			9.44E+00	1.04E+01
	37	1376.89	2.47E+01	15.66			2.47E+01	1.57E+01
	38	1402.07	1.18E+01	10.22			1.18E+01	1.02E+01
	39	1409.31	1.59E+01	10.22			1.59E+01	1.02E+01
	40	1461.24	5.50E+02	49.84	3.09E+00	1.97E+00	5.47E+02	4.99E+01
	41	1549.91	1.15E+01	11.34			1.15E+01	1.13E+01
	42	1730.73	6.27E+00	8.94			6.27E+00	8.94E+00
	43	1764.33	4.45E+01	16.14			4.45E+01	1.61E+01
	44	2150.31	8.00E+00	5.66			8.00E+00	5.66E+00
	45	2204.02	8.59E+00	11.79			8.59E+00	1.18E+01
	46	2254.30	1.00E+01	6.32			1.00E+01	6.32E+00
	47	2614.43	6.70E+01	18.38			6.70E+01	1.84E+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 1606043-06

CP-5031 05-10

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 1:03:57PM

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	13.11	1.91E+03	126.34			1.91E+03	1.26E+02
	2	39.16	4.29E+01	48.12			4.29E+01	4.81E+01
	3	53.57	4.84E+01	54.79			4.84E+01	5.48E+01
	4	63.69	1.12E+02	84.54	2.91E+01	8.34E+00	8.25E+01	8.49E+01
	5	76.37	7.70E+02	143.39			7.70E+02	1.43E+02
M	6	84.25	8.94E+01	30.38			8.94E+01	3.04E+01
m	7	87.14	1.53E+02	53.81			1.53E+02	5.38E+01
m	8	89.58	1.19E+02	51.96			1.19E+02	5.20E+01
m	9	92.99	2.17E+02	53.93	4.47E+01	7.30E+00	1.73E+02	5.44E+01
	10	154.02	5.81E+01	58.53			5.81E+01	5.85E+01
	11	185.91	2.17E+02	62.96	3.13E+01	6.95E+00	1.85E+02	6.33E+01
	12	209.65	1.13E+02	66.50			1.13E+02	6.65E+01
	13	225.55	3.91E+01	41.33			3.91E+01	4.13E+01
	14	238.74	6.40E+02	64.87	1.19E+01	7.10E+00	6.28E+02	6.53E+01
	15	269.93	7.88E+01	53.98			7.88E+01	5.40E+01
M	16	295.17	1.76E+02	36.50			1.76E+02	3.65E+01
m	17	299.90	6.15E+01	33.96			6.15E+01	3.40E+01
	18	328.49	5.40E+01	36.41			5.40E+01	3.64E+01
	19	338.54	1.40E+02	50.69			1.40E+02	5.07E+01
	20	351.94	2.62E+02	55.61	9.12E+00	4.79E+00	2.53E+02	5.58E+01
	21	396.28	3.25E+01	32.18			3.25E+01	3.22E+01
	22	410.10	5.03E+01	43.31			5.03E+01	4.33E+01
	23	463.23	4.47E+01	33.70			4.47E+01	3.37E+01
	24	510.82	1.37E+02	43.99	6.97E+01	5.00E+00	6.73E+01	4.43E+01
	25	545.32	1.42E+01	18.78			1.42E+01	1.88E+01
	26	583.27	2.06E+02	39.29	3.98E+00	3.57E+00	2.02E+02	3.95E+01
	27	609.51	2.52E+02	46.37	8.66E+00	3.90E+00	2.44E+02	4.65E+01
	28	795.10	2.47E+01	30.71			2.47E+01	3.07E+01
	29	838.52	3.61E+01	35.93			3.61E+01	3.59E+01
	30	860.66	1.81E+01	20.01			1.81E+01	2.00E+01
	31	911.44	1.75E+02	35.96	2.01E+00	2.72E+00	1.73E+02	3.61E+01
	32	933.73	4.14E+01	20.65			4.14E+01	2.06E+01
	33	969.20	7.30E+01	39.28			7.30E+01	3.93E+01
	34	1094.00	1.88E+01	21.34			1.88E+01	2.13E+01
	35	1121.05	5.38E+01	29.77			5.38E+01	2.98E+01
	36	1356.54	9.44E+00	10.44			9.44E+00	1.04E+01
	37	1376.89	2.47E+01	15.66			2.47E+01	1.57E+01
	38	1402.07	1.18E+01	10.22			1.18E+01	1.02E+01
	39	1409.31	1.59E+01	10.22			1.59E+01	1.02E+01
	40	1461.24	5.50E+02	49.84	3.09E+00	1.97E+00	5.47E+02	4.99E+01
	41	1549.91	1.15E+01	11.34			1.15E+01	1.13E+01

Analysis Report for 1606043-06

CP-5031 05-10

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1730.73	6.27E+00	8.94			6.27E+00	8.94E+00
43	1764.33	4.45E+01	16.14			4.45E+01	1.61E+01
44	2150.31	8.00E+00	5.66			8.00E+00	5.66E+00
45	2204.02	8.59E+00	11.79			8.59E+00	1.18E+01
46	2254.30	1.00E+01	6.32			1.00E+01	6.32E+00
47	2614.43	6.70E+01	18.38			6.70E+01	1.84E+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	0.970	1460.81	*	10.67	2.53E+01	3.25E+00
GA-67	0.882	93.31	*	35.70	9.54E+00	2.18E+01
		208.95	*	2.24	1.40E+02	2.87E+02
		300.22	*	16.00	1.35E+01	3.16E+01
CD-109	0.881	88.03	*	3.72	3.37E+00	1.24E+00
SN-126	0.971	87.57	*	37.00	3.31E-01	1.20E-01
EU-155	0.323	86.50	*	30.90	3.98E-01	1.45E-01
		105.30		20.70		
TL-208	0.994	583.14	*	30.22	1.59E+00	3.65E-01
		860.37	*	4.48	1.32E+00	1.47E+00
		2614.66	*	35.85	1.15E+00	3.43E-01
PB-212	0.998	238.63	*	44.60	1.73E+00	2.96E-01
		300.09	*	3.41	2.59E+00	1.48E+00
BI-214	0.978	609.31	*	46.30	1.30E+00	2.85E-01
		1120.29	*	15.10	1.44E+00	8.12E-01
		1764.49	*	15.80	1.56E+00	5.89E-01
		2204.22	*	4.98	1.04E+00	1.44E+00
PB-214	1.000	295.21	*	19.19	1.30E+00	3.33E-01
		351.92	*	37.19	1.09E+00	3.00E-01
RA-225	0.888	40.00	*	31.00	4.77E-01	5.39E-01
RA-226	0.985	186.21	*	3.28	5.93E+00	1.11E+01
AC-228	0.987	338.32	*	11.40	1.92E+00	7.61E-01
		911.07	*	27.70	2.14E+00	5.52E-01
		969.11	*	16.60	1.59E+00	8.82E-01
TH-231	0.308	25.64		14.70		

Analysis Report for 1606043-06

CP-5031 05-10

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TH-231	0.308	84.21	*	6.40	1.12E+00	3.93E-01
TH-234	0.975	63.29	*	3.80	1.91E+00	1.97E+00
NP-237	0.937	86.50	*	12.60	9.71E-01	3.53E-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 1:03:57PM
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	13.11	5.29357E-01	3.31		
	3	53.57	1.34309E-02	56.66		
	5	76.37	2.13876E-01	9.31		
m	8	89.58	3.31498E-02	21.77		
	10	154.02	1.61413E-02	50.36	Tol.	CS-136
	13	225.55	1.08708E-02	52.80	Sum	
	15	269.93	2.18790E-02	34.27	Sum	
	18	328.49	1.50000E-02	33.72	Tol.	LA-140
	21	396.28	9.03019E-03	49.50	Sum	
	22	410.10	1.39859E-02	43.01	Tol.	HO-166M
	23	463.23	1.24037E-02	37.74	Tol.	SB-125
	24	510.82	1.86840E-02	32.91		
	25	545.32	3.95229E-03	66.00		
	28	795.10	6.84769E-03	62.29	Sum	
	29	838.52	1.00220E-02	49.80		
	32	933.73	1.15073E-02	24.92		
	34	1094.00	5.22280E-03	56.74	Tol.	LU-172
	36	1356.54	2.62153E-03	55.31		
	37	1376.89	6.85185E-03	31.74		
	38	1402.07	3.26389E-03	43.50		
	39	1409.31	4.43056E-03	32.05		
	41	1549.91	3.19444E-03	49.29		
	42	1730.73	1.74242E-03	71.29	Sum	
	44	2150.31	2.22222E-03	35.36		
	46	2254.30	2.77778E-03	31.62		

Analysis Report for 1606043-06

CP-5031 05-10

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	2.53E+01	3.25E+00
GA-67	0.88	93.31	*	35.70	9.54E+00	2.18E+01
		208.95	*	2.24	1.40E+02	2.87E+02
		300.22	*	16.00	1.35E+01	3.16E+01
CD-109	0.88	88.03	*	3.72	3.37E+00	1.24E+00
SN-126	0.97	87.57	*	37.00	3.31E-01	1.20E-01
EU-155	0.32	86.50	*	30.90	3.98E-01	1.45E-01
		105.30		20.70		
TL-208	0.99	583.14	*	30.22	1.59E+00	3.65E-01
		860.37	*	4.48	1.32E+00	1.47E+00
		2614.66	*	35.85	1.15E+00	3.43E-01
PB-212	0.99	238.63	*	44.60	1.73E+00	2.96E-01
		300.09	*	3.41	2.59E+00	1.48E+00
BI-214	0.97	609.31	*	46.30	1.30E+00	2.85E-01
		1120.29	*	15.10	1.44E+00	8.12E-01
		1764.49	*	15.80	1.56E+00	5.89E-01
		2204.22	*	4.98	1.04E+00	1.44E+00
PB-214	1.00	295.21	*	19.19	1.30E+00	3.33E-01
		351.92	*	37.19	1.09E+00	3.00E-01
RA-225	0.88	40.00	*	31.00	4.77E-01	5.39E-01
RA-226	0.98	186.21	*	3.28	5.93E+00	1.11E+01
AC-228	0.98	338.32	*	11.40	1.92E+00	7.61E-01
		911.07	*	27.70	2.14E+00	5.52E-01
		969.11	*	16.60	1.59E+00	8.82E-01
TH-231	0.30	25.64		14.70		
		84.21	*	6.40	1.12E+00	3.93E-01
TH-234	0.97	63.29	*	3.80	1.91E+00	1.97E+00
NP-237	0.93	86.50	*	12.60	9.71E-01	3.53E-01

Analysis Report for 1606043-06

CP-5031 05-10

* = 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	0.970	2.53E+01	3.25E+00	
	GA-67	0.882	9.01E+00	1.79E+01	
?	CD-109	0.881	3.37E+00	1.24E+00	
?	SN-126	0.971	3.31E-01	1.20E-01	
?	EU-155	0.323	3.98E-01	1.45E-01	
	TL-208	0.994	1.36E+00	2.46E-01	
	PB-212	0.998	1.70E+00	2.91E-01	
	BI-214	0.978	1.35E+00	2.41E-01	
	PB-214	1.000	1.19E+00	2.23E-01	
	RA-225	0.888	4.77E-01	5.39E-01	
	RA-226	0.985	5.93E+00	1.11E+01	
	AC-228	0.987	1.96E+00	3.99E-01	
	TH-231	0.308	1.12E+00	3.93E-01	
	TH-234	0.975	1.91E+00	1.97E+00	
?	NP-237	0.937	9.71E-01	3.53E-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 1606043-06

CP-5031 05-10

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 1:03:57PM
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	13.11	5.29357E-01	3.31		
	3	53.57	1.34309E-02	56.66		
	5	76.37	2.13876E-01	9.31		
m	8	89.58	3.31498E-02	21.77		
	10	154.02	1.61413E-02	50.36	Tol.	CS-136
	13	225.55	1.08708E-02	52.80	Sum	
	15	269.93	2.18790E-02	34.27	Sum	
	18	328.49	1.50000E-02	33.72	Tol.	LA-140
	21	396.28	9.03019E-03	49.50	Sum	
	22	410.10	1.39859E-02	43.01	Tol.	HO-166M
	23	463.23	1.24037E-02	37.74	Tol.	SB-125
	24	510.82	1.86840E-02	32.91		
	25	545.32	3.95229E-03	66.00		
	28	795.10	6.84769E-03	62.29	Sum	
	29	838.52	1.00220E-02	49.80		
	32	933.73	1.15073E-02	24.92		
	34	1094.00	5.22280E-03	56.74	Tol.	LU-172
	36	1356.54	2.62153E-03	55.31		
	37	1376.89	6.85185E-03	31.74		
	38	1402.07	3.26389E-03	43.50		
	39	1409.31	4.43056E-03	32.05		
	41	1549.91	3.19444E-03	49.29		
	42	1730.73	1.74242E-03	71.29	Sum	
	44	2150.31	2.22222E-03	35.36		
	46	2254.30	2.77778E-03	31.62		

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 1606043-06

CP-5031 05-10

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	3.51E-03	8.73E-01	8.73E-01
+	NA-22	1274.54		99.94	9.38E-03	1.37E-01	1.37E-01
+	NA-24	1368.53		99.99	-2.51E+05	8.06E+05	1.85E+06
		2754.09		99.86	1.10E+05		8.06E+05
+	AL-26	1808.65		99.76	-5.62E-03	7.37E-02	7.37E-02
+	K-40	1460.81	*	10.67	2.53E+01	1.45E+00	1.45E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-2.56E-02	7.12E-02	7.12E-02
		78.34		96.00	3.92E-01		1.10E-01
+	SC-46	889.25		99.98	-3.36E-02	1.17E-01	1.17E-01
		1120.51		99.99	2.58E-01		2.18E-01
+	V-48	983.52		99.98	-3.23E-02	2.26E-01	2.26E-01
		1312.10		97.50	6.05E-02		2.43E-01
+	CR-51	320.08		9.83	5.56E-01	1.18E+00	1.18E+00
+	MN-54	834.83		99.97	3.55E-02	1.33E-01	1.33E-01
+	CO-56	846.75		99.96	2.81E-02	1.20E-01	1.20E-01
		1037.75		14.03	3.47E-01		9.38E-01
		1238.25		67.00	1.74E-01		2.75E-01
		1771.40		15.51	8.68E-02		6.81E-01
		2598.48		16.90	9.70E-02		4.47E-01
+	CO-57	122.06		85.51	-2.09E-02	7.64E-02	7.64E-02
		136.48		10.60	1.75E-01		6.66E-01
+	CO-58	810.76		99.40	-2.65E-02	1.05E-01	1.05E-01
+	FE-59	1099.22		56.50	-1.85E-02	2.70E-01	2.70E-01
		1291.56		43.20	-1.45E-01		3.37E-01
+	CO-60	1173.22		100.00	3.17E-02	1.09E-01	1.34E-01
		1332.49		100.00	3.65E-02		1.09E-01
+	ZN-65	1115.52		50.75	-1.20E-02	2.79E-01	2.79E-01
+	GA-67	93.31	*	35.70	9.54E+00	1.02E+01	1.02E+01
		208.95	*	2.24	1.40E+02		1.32E+02
		300.22	*	16.00	1.35E+01		2.52E+01
+	SE-75	121.11		16.70	8.20E-02	1.20E-01	4.12E-01
		136.00		59.20	-7.96E-02		1.20E-01
		264.65		59.80	-2.41E-02		1.25E-01
		279.53		25.20	5.22E-02		3.46E-01
		400.65		11.40	2.21E-01		7.30E-01
+	RB-82	776.52		13.00	-2.75E-01	1.29E+00	1.29E+00
+	RB-83	520.41		46.00	4.13E-03	2.03E-01	2.03E-01
		529.64		30.30	1.46E-02		3.02E-01
		552.65		16.40	-5.98E-02		5.09E-01
+	KR-85	513.99		0.43	-3.98E+01	2.30E+01	2.30E+01
+	SR-85	513.99		99.27	-2.04E-01	1.18E-01	1.18E-01

Analysis Report for 1606043-06

CP-5031 05-10

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02		93.40	-1.06E-03	1.05E-01	1.19E-01
		1836.01		99.38	3.04E-02		1.05E-01
+	NB-93M	16.57		9.43	-2.16E+01	1.24E+02	1.24E+02
+	NB-94	702.63		100.00	-1.61E-02	1.13E-01	1.13E-01
		871.10		100.00	3.75E-02		1.15E-01
+	NB-95	765.79		99.81	9.35E-02	1.63E-01	1.63E-01
+	NB-95M	235.69		25.00	4.59E+00	7.93E+00	7.93E+00
+	ZR-95	724.18		43.70	6.48E-02	2.52E-01	3.52E-01
		756.72		55.30	1.22E-01		2.52E-01
+	MO-99	181.06		6.20	2.00E+01	3.94E+01	4.92E+01
		739.58		12.80	1.23E+01		3.94E+01
		778.00		4.50	1.11E+01		1.09E+02
+	RU-103	497.08		89.00	-2.39E-03	1.22E-01	1.22E-01
+	RU-106	621.84		9.80	7.28E-01	1.08E+00	1.08E+00
+	AG-108M	433.93		89.90	2.93E-02	8.67E-02	8.67E-02
		614.37		90.40	-1.37E-02		1.11E-01
		722.95		90.50	-1.20E-01		1.32E-01
+	CD-109	88.03	*	3.72	3.37E+00	4.04E+00	4.04E+00
+	AG-110M	657.75		93.14	-1.66E-02	1.15E-01	1.15E-01
		677.61		10.53	-2.02E-01		9.73E-01
		706.67		16.46	4.95E-01		7.38E-01
		763.93		21.98	-5.95E-01		5.05E-01
		884.67		71.63	7.06E-02		1.67E-01
		1384.27		23.94	-1.74E-01		3.76E-01
+	CD-113M	263.70		0.02	-5.07E+01	3.00E+02	3.00E+02
+	SN-113	255.12		1.93	1.24E+00	1.25E-01	4.21E+00
		391.69		64.90	3.31E-02		1.25E-01
+	TE123M	159.00		84.10	-2.43E-02	8.49E-02	8.49E-02
+	SB-124	602.71		97.87	5.14E-02	1.33E-01	1.33E-01
		645.85		7.26	-1.56E-01		1.70E+00
		722.78		11.10	-1.17E+00		1.28E+00
		1691.02		49.00	1.81E-02		1.58E-01
+	I-125	35.49		6.49	7.59E-01	2.30E+00	2.30E+00
+	SB-125	176.33		6.89	4.12E-01	2.66E-01	1.04E+00
		427.89		29.33	5.40E-03		2.66E-01
		463.38		10.35	7.54E-01		9.20E-01
		600.56		17.80	2.00E-01		6.33E-01
		635.90		11.32	-1.27E-02		8.75E-01
+	SB-126	414.70		83.30	-3.63E-02	2.10E-01	2.10E-01
		666.33		99.60	3.90E-02		2.41E-01
		695.00		99.60	8.41E-02		2.71E-01
		720.50		53.80	4.86E-02		5.14E-01
+	SN-126	87.57	*	37.00	3.31E-01	3.98E-01	3.98E-01
+	SB-127	473.00		25.00	1.94E+00	4.49E+00	4.70E+00
		685.20		35.70	-2.45E-01		4.49E+00
		783.80		14.70	6.68E+00		1.16E+01
+	I-129	29.78		57.00	-2.70E-01	3.73E-01	3.73E-01
		33.60		13.20	-3.07E-01		1.12E+00

Analysis Report for 1606043-06

CP-5031 05-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	4.09E-01	3.73E-01	1.45E+00
+	I-131	284.30	6.05	-1.67E+00	3.21E-01	4.38E+00
		364.48	81.20	-1.62E-02		3.21E-01
		636.97	7.26	-7.73E-01		4.87E+00
		722.89	1.80	-2.22E+01		2.43E+01
+	TE-132	49.72	13.10	5.01E+00	1.96E+00	1.41E+01
		228.16	88.00	-6.75E-01		1.96E+00
+	BA-133	81.00	33.00	1.78E-01	1.25E-01	1.90E-01
		302.84	17.80	-5.00E-01		4.16E-01
		356.01	60.00	-4.48E-02		1.25E-01
+	I-133	529.87	86.30	-6.54E+03	1.47E+04	1.47E+04
+	XE-133	81.00	38.00	1.13E+00	1.21E+00	1.21E+00
+	CS-134	563.23	8.38	2.82E-01	1.15E-01	1.11E+00
		569.32	15.43	9.33E-02		5.65E-01
		604.70	97.60	7.63E-03		1.15E-01
		795.84	85.40	1.08E-01		1.54E-01
		801.93	8.73	-3.22E-01		1.20E+00
+	CS-135	268.24	16.00	8.80E-02	5.29E-01	5.29E-01
+	I-135	1131.51	22.50	2.41E+15	1.37E+16	1.56E+16
		1260.41	28.60	5.34E+14		1.37E+16
		1678.03	9.54	6.97E+14		2.44E+16
+	CS-136	153.22	7.46	9.57E-01	1.90E-01	2.19E+00
		163.89	4.61	-4.81E-02		3.42E+00
		176.55	13.56	-8.44E-01		1.13E+00
		273.65	12.66	-4.82E-01		1.23E+00
		340.57	48.50	-1.33E-01		4.14E-01
		818.50	99.70	-5.22E-02		1.90E-01
		1048.07	79.60	-1.21E-01		2.96E-01
		1235.34	19.70	7.34E-01		1.90E+00
+	CS-137	661.65	85.12	-3.87E-03	1.24E-01	1.24E-01
+	LA-138	788.74	34.00	-4.10E-02	1.62E-01	3.19E-01
		1435.80	66.00	5.04E-02		1.62E-01
+	CE-139	165.85	80.35	1.42E-02	9.54E-02	9.54E-02
+	BA-140	162.64	6.70	3.47E-01	6.90E-01	2.40E+00
		304.84	4.50	-1.72E+00		3.51E+00
		423.70	3.20	1.65E+00		5.59E+00
		437.55	2.00	3.47E+00		8.93E+00
		537.32	25.00	1.36E-02		6.90E-01
+	LA-140	328.77	20.50	1.46E+00	3.10E-01	1.02E+00
		487.03	45.50	1.85E-01		4.09E-01
		815.85	23.50	-3.39E-01		8.23E-01
		1596.49	95.49	1.94E-01		3.10E-01
+	CE-141	145.44	48.40	7.50E-02	2.16E-01	2.16E-01
+	CE-143	57.36	11.80	2.27E+02	4.88E+02	1.15E+03
		293.26	42.00	2.36E+02		4.88E+02
		664.55	5.20	-2.52E+02		4.02E+03
+	CE-144	133.54	10.80	-1.28E-01	6.15E-01	6.15E-01
+	PM-144	476.78	42.00	7.36E-04	1.00E-01	1.83E-01
		618.01	98.60	-9.85E-03		1.00E-01

Analysis Report for 1606043-06

CP-5031 05-10

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	696.49		99.49	5.11E-02	1.00E-01	1.23E-01
+	PM-145	36.85		21.70	-1.94E-01	2.87E-01	5.44E-01
		37.36		39.70	-1.02E-01		2.87E-01
		42.30		15.10	-5.08E-02		5.82E-01
		72.40		2.31	-1.46E+00		2.96E+00
+	PM-146	453.90		39.94	1.32E-02	2.07E-01	2.07E-01
		735.90		14.01	-2.60E-01		7.54E-01
		747.13		13.10	-3.25E-02		7.73E-01
+	ND-147	91.11		28.90	1.30E-01	8.57E-01	8.57E-01
		531.02		13.10	-3.49E-01		1.49E+00
+	PM-149	285.90		3.10	9.15E+01	2.75E+02	2.75E+02
+	EU-152	121.78		20.50	-8.40E-02	3.07E-01	3.07E-01
		244.69		5.40	-3.27E+00		1.32E+00
		344.27		19.13	4.48E-02		3.64E-01
		778.89		9.20	-9.98E-02		1.16E+00
		964.01		10.40	-1.54E-01		1.43E+00
		1085.78		7.22	1.65E-01		1.55E+00
		1112.02		9.60	-8.58E-01		1.32E+00
		1407.95		14.94	9.35E-03		7.42E-01
+	GD-153	97.43		31.30	1.58E-01	2.27E-01	2.27E-01
		103.18		22.20	-3.73E-01		3.05E-01
+	EU-154	123.07		40.50	5.31E-02	1.60E-01	1.60E-01
		723.30		19.70	-5.55E-01		6.09E-01
		873.19		11.50	3.06E-01		9.99E-01
		996.32		10.30	-6.22E-01		1.06E+00
		1004.76		17.90	4.70E-01		7.61E-01
		1274.45		35.50	2.62E-02		3.83E-01
+	EU-155	86.50	*	30.90	3.98E-01	3.20E-01	4.79E-01
		105.30		20.70	-5.97E-02		3.20E-01
+	EU-156	811.77		10.40	-2.16E-01	1.73E+00	1.73E+00
		1153.47		7.20	1.08E+00		3.92E+00
		1230.71		8.90	-1.59E-01		3.34E+00
+	HO-166M	184.41		72.60	1.43E-01	1.26E-01	1.26E-01
		280.45		29.60	4.08E-02		2.71E-01
		410.94		11.10	7.32E-01		8.09E-01
		711.69		54.10	-1.52E-01		1.75E-01
+	TM-171	66.72		0.14	1.19E+00	4.86E+01	4.86E+01
+	HF-172	81.75		4.52	9.36E-01	5.76E-01	1.32E+00
		125.81		11.30	-9.36E-01		5.76E-01
+	LU-172	181.53		20.60	9.26E-01	9.71E-01	1.64E+00
		810.06		16.63	-6.50E-01		2.58E+00
		912.12		15.25	1.62E+01		7.25E+00
		1093.66		62.50	5.19E-01		9.71E-01
+	LU-173	100.72		5.24	2.81E-01	3.94E-01	1.34E+00
		272.11		21.20	-2.16E-02		3.94E-01
+	HF-175	343.40		84.00	-1.28E-02	9.63E-02	9.63E-02
+	LU-176	88.34		13.30	1.33E+00	7.85E-02	7.27E-01
		201.83		86.00	4.22E-02		9.24E-02
		306.78		94.00	1.96E-02		7.85E-02

Analysis Report for 1606043-06

CP-5031 05-10

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TA-182	67.75		41.20	-6.44E-02	1.79E-01	1.79E-01
		1121.30		34.90	6.43E-01		5.87E-01
		1189.05		16.23	-5.06E-02		9.72E-01
		1221.41		26.98	3.08E-01		6.61E-01
		1231.02		11.44	2.63E-01		1.50E+00
+	IR-192	308.46		29.68	5.48E-02	1.65E-01	2.95E-01
		468.07		48.10	-3.83E-02		1.65E-01
+	HG-203	279.19		77.30	9.45E-02	1.36E-01	1.36E-01
+	BI-207	569.67		97.72	1.46E-02	8.81E-02	8.81E-02
		1063.62		74.90	1.20E-01		1.74E-01
+	TL-208	583.14	*	30.22	1.59E+00	2.82E-01	3.75E-01
		860.37	*	4.48	1.32E+00		2.37E+00
		2614.66	*	35.85	1.15E+00		2.82E-01
+	BI-210M	262.00		45.00	-2.01E-03	1.54E-01	1.54E-01
		300.00		23.00	1.94E-01		3.77E-01
+	PB-210	46.50		4.25	1.90E+00	2.23E+00	2.23E+00
+	PB-211	404.84		2.90	5.66E-01	2.70E+00	2.70E+00
		831.96		2.90	-5.26E-01		3.83E+00
+	BI-212	727.17		11.80	6.25E-01	1.14E+00	1.14E+00
		1620.62		2.75	7.04E-01		3.98E+00
+	PB-212	238.63	*	44.60	1.73E+00	1.97E-01	1.97E-01
		300.09	*	3.41	2.59E+00		4.81E+00
+	BI-214	609.31	*	46.30	1.30E+00	3.16E-01	3.16E-01
		1120.29	*	15.10	1.44E+00		1.22E+00
		1764.49	*	15.80	1.56E+00		6.19E-01
		2204.22	*	4.98	1.04E+00		2.37E+00
+	PB-214	295.21	*	19.19	1.30E+00	3.39E-01	8.44E-01
		351.92	*	37.19	1.09E+00		3.39E-01
+	RN-219	401.80		6.50	8.50E-01	1.23E+00	1.23E+00
+	RA-223	323.87		3.88	1.18E+00	2.00E+00	2.00E+00
+	RA-224	240.98		3.95	4.30E+00	4.30E+00	4.30E+00
+	RA-225	40.00	*	31.00	4.77E-01	8.77E-01	8.77E-01
+	RA-226	186.21	*	3.28	5.93E+00	3.10E+00	3.10E+00
+	TH-227	50.10		8.40	3.14E-01	8.85E-01	8.85E-01
		236.00		11.50	5.54E-01		9.58E-01
		256.20		6.30	3.95E-02		1.17E+00
+	AC-228	338.32	*	11.40	1.92E+00	5.37E-01	1.05E+00
		911.07	*	27.70	2.14E+00		5.37E-01
		969.11	*	16.60	1.59E+00		1.32E+00
+	TH-230	48.44		16.90	-4.41E-01	4.59E-01	4.59E-01
		62.85		4.60	2.34E+00		1.79E+00
		67.67		0.37	-6.55E+00		1.82E+01
+	PA-231	283.67		1.60	-1.72E+00	3.21E+00	4.52E+00
		302.67		2.30	-3.86E+00		3.21E+00
+	TH-231	25.64		14.70	2.19E-01	2.26E+00	3.09E+00
		84.21	*	6.40	1.12E+00		2.26E+00
+	PA-233	311.98		38.60	-5.31E-02	2.92E-01	2.92E-01
+	PA-234	131.20		20.40	3.33E-01	3.52E-01	3.52E-01

Analysis Report for 1606043-06

CP-5031 05-10

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	733.99		8.80	-2.91E-01	3.52E-01	1.18E+00
		946.00		12.00	-2.60E-01		8.79E-01
+	PA-234M	1001.03		0.92	3.63E+00	1.43E+01	1.43E+01
+	TH-234	63.29	*	3.80	1.91E+00	3.22E+00	3.22E+00
+	U-235	143.76		10.50	6.10E-01	7.19E-01	7.19E-01
		163.35		4.70	2.19E-01		1.52E+00
		205.31		4.70	6.27E-01		1.60E+00
+	NP-237	86.50	*	12.60	9.71E-01	1.17E+00	1.17E+00
+	NP-239	106.10		22.70	2.08E+00	2.47E+01	2.47E+01
		228.18		10.70	-1.90E+01		5.52E+01
		277.60		14.10	2.43E+01		4.98E+01
+	AM-241	59.54		35.90	-4.73E-03	1.91E-01	1.91E-01
+	AM-243	74.67		66.00	-4.42E-01	1.45E-01	1.45E-01
+	CM-243	209.75		3.29	3.55E+00	5.97E-01	2.75E+00
		228.14		10.60	-2.28E-01		6.63E-01
		277.60		14.00	2.91E-01		5.97E-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	8.73E-01	8.73E-01	3.51E-03	4.05E-01
	NA-22	1274.54		99.94	1.37E-01	1.37E-01	9.38E-03	6.23E-02
	NA-24	1368.53		99.99	1.85E+06	8.06E+05	-2.51E+05	8.10E+05
		2754.09		99.86	8.06E+05		1.10E+05	2.55E+05
	AL-26	1808.65		99.76	7.37E-02	7.37E-02	-5.62E-03	2.92E-02
+	K-40	1460.81	*	10.67	1.45E+00	1.45E+00	2.53E+01	6.61E-01

Analysis Report for 1606043-06

CP-5031 05-10

	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	7.12E-02	7.12E-02	-2.56E-02	3.44E-02
		78.34		96.00	1.10E-01		3.92E-01	5.36E-02
	SC-46	889.25		99.98	1.17E-01	1.17E-01	-3.36E-02	5.31E-02
		1120.51		99.99	2.18E-01		2.58E-01	1.03E-01
	V-48	983.52		99.98	2.26E-01	2.26E-01	-3.23E-02	1.03E-01
		1312.10		97.50	2.43E-01		6.05E-02	1.09E-01
	CR-51	320.08		9.83	1.18E+00	1.18E+00	5.56E-01	5.61E-01
	MN-54	834.83		99.97	1.33E-01	1.33E-01	3.55E-02	6.19E-02
	CO-56	846.75		99.96	1.20E-01	1.20E-01	2.81E-02	5.49E-02
		1037.75		14.03	9.38E-01		3.47E-01	4.27E-01
		1238.25		67.00	2.75E-01		1.74E-01	1.28E-01
		1771.40		15.51	6.81E-01		8.68E-02	2.85E-01
		2598.48		16.90	4.47E-01		9.70E-02	1.67E-01
	CO-57	122.06		85.51	7.64E-02	7.64E-02	-2.09E-02	3.68E-02
		136.48		10.60	6.66E-01		1.75E-01	3.21E-01
	CO-58	810.76		99.40	1.05E-01	1.05E-01	-2.65E-02	4.78E-02
	FE-59	1099.22		56.50	2.70E-01	2.70E-01	-1.85E-02	1.23E-01
		1291.56		43.20	3.37E-01		-1.45E-01	1.51E-01
	CO-60	1173.22		100.00	1.34E-01	1.09E-01	3.17E-02	6.14E-02
		1332.49		100.00	1.09E-01		3.65E-02	4.84E-02
	ZN-65	1115.52		50.75	2.79E-01	2.79E-01	-1.20E-02	1.28E-01
+	GA-67	93.31	*	35.70	1.02E+01	1.02E+01	9.54E+00	5.02E+00
		208.95	*	2.24	1.32E+02		1.40E+02	6.42E+01
		300.22	*	16.00	2.52E+01		1.35E+01	1.23E+01
	SE-75	121.11		16.70	4.12E-01	1.20E-01	8.20E-02	1.99E-01
		136.00		59.20	1.20E-01		-7.96E-02	5.78E-02
		264.65		59.80	1.25E-01		-2.41E-02	5.94E-02
		279.53		25.20	3.46E-01		5.22E-02	1.65E-01
		400.65		11.40	7.30E-01		2.21E-01	3.42E-01
	RB-82	776.52		13.00	1.29E+00	1.29E+00	-2.75E-01	6.00E-01
	RB-83	520.41		46.00	2.03E-01	2.03E-01	4.13E-03	9.44E-02
		529.64		30.30	3.02E-01		1.46E-02	1.40E-01
		552.65		16.40	5.09E-01		-5.98E-02	2.33E-01
	KR-85	513.99		0.43	2.30E+01	2.30E+01	-3.98E+01	1.08E+01
	SR-85	513.99		99.27	1.18E-01	1.18E-01	-2.04E-01	5.55E-02
	Y-88	898.02		93.40	1.19E-01	1.05E-01	-1.06E-03	5.43E-02
		1836.01		99.38	1.05E-01		3.04E-02	4.38E-02
	NB-93M	16.57		9.43	1.24E+02	1.24E+02	-2.16E+01	6.02E+01
	NB-94	702.63		100.00	1.13E-01	1.13E-01	-1.61E-02	5.27E-02
		871.10		100.00	1.15E-01		3.75E-02	5.32E-02
	NB-95	765.79		99.81	1.63E-01	1.63E-01	9.35E-02	7.63E-02
	NB-95M	235.69		25.00	7.93E+00	7.93E+00	4.59E+00	3.85E+00
	ZR-95	724.18		43.70	3.52E-01	2.52E-01	6.48E-02	1.66E-01
		756.72		55.30	2.52E-01		1.22E-01	1.17E-01
	MO-99	181.06		6.20	4.92E+01	3.94E+01	2.00E+01	2.36E+01
		739.58		12.80	3.94E+01		1.23E+01	1.84E+01
		778.00		4.50	1.09E+02		1.11E+01	5.03E+01
	RU-103	497.08		89.00	1.22E-01	1.22E-01	-2.39E-03	5.66E-02
	RU-106	621.84		9.80	1.08E+00	1.08E+00	7.28E-01	5.04E-01
	AG-108M	433.93		89.90	8.67E-02	8.67E-02	2.93E-02	4.05E-02
		614.37		90.40	1.11E-01		-1.37E-02	5.18E-02
		722.95		90.50	1.32E-01		-1.20E-01	6.18E-02

Analysis Report for 1606043-06

CP-5031 05-10

	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	4.04E+00	4.04E+00	3.37E+00	1.99E+00
	AG-110M	657.75		93.14	1.15E-01	1.15E-01	-1.66E-02	5.37E-02
		677.61		10.53	9.73E-01		-2.02E-01	4.50E-01
		706.67		16.46	7.38E-01		4.95E-01	3.45E-01
		763.93		21.98	5.05E-01		-5.95E-01	2.34E-01
		884.67		71.63	1.67E-01		7.06E-02	7.68E-02
		1384.27		23.94	3.76E-01		-1.74E-01	1.60E-01
	CD-113M	263.70		0.02	3.00E+02	3.00E+02	-5.07E+01	1.42E+02
	SN-113	255.12		1.93	4.21E+00	1.25E-01	1.24E+00	2.00E+00
		391.69		64.90	1.25E-01		3.31E-02	5.85E-02
	TE123M	159.00		84.10	8.49E-02	8.49E-02	-2.43E-02	4.08E-02
	SB-124	602.71		97.87	1.33E-01	1.33E-01	5.14E-02	6.25E-02
		645.85		7.26	1.70E+00		-1.56E-01	7.93E-01
		722.78		11.10	1.28E+00		-1.17E+00	5.99E-01
		1691.02		49.00	1.58E-01		1.81E-02	6.11E-02
	I-125	35.49		6.49	2.30E+00	2.30E+00	7.59E-01	1.10E+00
	SB-125	176.33		6.89	1.04E+00	2.66E-01	4.12E-01	5.00E-01
		427.89		29.33	2.66E-01		5.40E-03	1.24E-01
		463.38		10.35	9.20E-01		7.54E-01	4.34E-01
		600.56		17.80	6.33E-01		2.00E-01	2.98E-01
		635.90		11.32	8.75E-01		-1.27E-02	4.07E-01
	SB-126	414.70		83.30	2.10E-01	2.10E-01	-3.63E-02	9.80E-02
		666.33		99.60	2.41E-01		3.90E-02	1.12E-01
		695.00		99.60	2.71E-01		8.41E-02	1.27E-01
		720.50		53.80	5.14E-01		4.86E-02	2.40E-01
+	SN-126	87.57	*	37.00	3.98E-01	3.98E-01	3.31E-01	1.96E-01
	SB-127	473.00		25.00	4.70E+00	4.49E+00	1.94E+00	2.18E+00
		685.20		35.70	4.49E+00		-2.45E-01	2.09E+00
		783.80		14.70	1.16E+01		6.68E+00	5.39E+00
	I-129	29.78		57.00	3.73E-01	3.73E-01	-2.70E-01	1.77E-01
		33.60		13.20	1.12E+00		-3.07E-01	5.35E-01
		39.58		7.52	1.45E+00		4.09E-01	6.95E-01
	I-131	284.30		6.05	4.38E+00	3.21E-01	-1.67E+00	2.08E+00
		364.48		81.20	3.21E-01		-1.62E-02	1.50E-01
		636.97		7.26	4.87E+00		-7.73E-01	2.26E+00
		722.89		1.80	2.43E+01		-2.22E+01	1.14E+01
	TE-132	49.72		13.10	1.41E+01	1.96E+00	5.01E+00	6.78E+00
		228.16		88.00	1.96E+00		-6.75E-01	9.37E-01
	BA-133	81.00		33.00	1.90E-01	1.25E-01	1.78E-01	9.19E-02
		302.84		17.80	4.16E-01		-5.00E-01	1.97E-01
		356.01		60.00	1.25E-01		-4.48E-02	5.89E-02
	I-133	529.87		86.30	1.47E+04	1.47E+04	-6.54E+03	6.77E+03
	XE-133	81.00		38.00	1.21E+00	1.21E+00	1.13E+00	5.83E-01
	CS-134	563.23		8.38	1.11E+00	1.15E-01	2.82E-01	5.16E-01
		569.32		15.43	5.65E-01		9.33E-02	2.62E-01
		604.70		97.60	1.15E-01		7.63E-03	5.39E-02
		795.84		85.40	1.54E-01		1.08E-01	7.18E-02
		801.93		8.73	1.20E+00		-3.22E-01	5.53E-01
	CS-135	268.24		16.00	5.29E-01	5.29E-01	8.80E-02	2.53E-01
	I-135	1131.51		22.50	1.56E+16	1.37E+16	2.41E+15	7.09E+15
		1260.41		28.60	1.37E+16		5.34E+14	6.24E+15
		1678.03		9.54	2.44E+16		6.97E+14	1.00E+16
	CS-136	153.22		7.46	2.19E+00	1.90E-01	9.57E-01	1.06E+00

Analysis Report for 1606043-06

CP-5031 05-10

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	3.42E+00	1.90E-01	-4.81E-02	1.65E+00
	176.55	13.56	1.13E+00		-8.44E-01	5.41E-01
	273.65	12.66	1.23E+00		-4.82E-01	5.84E-01
	340.57	48.50	4.14E-01		-1.33E-01	1.97E-01
	818.50	99.70	1.90E-01		-5.22E-02	8.56E-02
	1048.07	79.60	2.96E-01		-1.21E-01	1.34E-01
	1235.34	19.70	1.90E+00		7.34E-01	8.84E-01
CS-137	661.65	85.12	1.24E-01	1.24E-01	-3.87E-03	5.76E-02
LA-138	788.74	34.00	3.19E-01	1.62E-01	-4.10E-02	1.47E-01
	1435.80	66.00	1.62E-01		5.04E-02	7.09E-02
CE-139	165.85	80.35	9.54E-02	9.54E-02	1.42E-02	4.59E-02
BA-140	162.64	6.70	2.40E+00	6.90E-01	3.47E-01	1.16E+00
	304.84	4.50	3.51E+00		-1.72E+00	1.65E+00
	423.70	3.20	5.59E+00		1.65E+00	2.62E+00
	437.55	2.00	8.93E+00		3.47E+00	4.17E+00
	537.32	25.00	6.90E-01		1.36E-02	3.18E-01
LA-140	328.77	20.50	1.02E+00	3.10E-01	1.46E+00	4.87E-01
	487.03	45.50	4.09E-01		1.85E-01	1.91E-01
	815.85	23.50	8.23E-01		-3.39E-01	3.71E-01
	1596.49	95.49	3.10E-01		1.94E-01	1.38E-01
CE-141	145.44	48.40	2.16E-01	2.16E-01	7.50E-02	1.05E-01
CE-143	57.36	11.80	1.15E+03	4.88E+02	2.27E+02	5.53E+02
	293.26	42.00	4.88E+02		2.36E+02	2.35E+02
	664.55	5.20	4.02E+03		-2.52E+02	1.87E+03
CE-144	133.54	10.80	6.15E-01	6.15E-01	-1.28E-01	2.96E-01
PM-144	476.78	42.00	1.83E-01	1.00E-01	7.36E-04	8.49E-02
	618.01	98.60	1.00E-01		-9.85E-03	4.65E-02
	696.49	99.49	1.23E-01		5.11E-02	5.76E-02
PM-145	36.85	21.70	5.44E-01	2.87E-01	-1.94E-01	2.59E-01
	37.36	39.70	2.87E-01		-1.02E-01	1.37E-01
	42.30	15.10	5.82E-01		-5.08E-02	2.78E-01
	72.40	2.31	2.96E+00		-1.46E+00	1.43E+00
PM-146	453.90	39.94	2.07E-01	2.07E-01	1.32E-02	9.69E-02
	735.90	14.01	7.54E-01		-2.60E-01	3.49E-01
	747.13	13.10	7.73E-01		-3.25E-02	3.56E-01
ND-147	91.11	28.90	8.57E-01	8.57E-01	1.30E-01	4.19E-01
	531.02	13.10	1.49E+00		-3.49E-01	6.87E-01
PM-149	285.90	3.10	2.75E+02	2.75E+02	9.15E+01	1.31E+02
EU-152	121.78	20.50	3.07E-01	3.07E-01	-8.40E-02	1.48E-01
	244.69	5.40	1.32E+00		-3.27E+00	6.31E-01
	344.27	19.13	3.64E-01		4.48E-02	1.71E-01
	778.89	9.20	1.16E+00		-9.98E-02	5.34E-01
	964.01	10.40	1.43E+00		-1.54E-01	6.69E-01
	1085.78	7.22	1.55E+00		1.65E-01	6.99E-01
	1112.02	9.60	1.32E+00		-8.58E-01	6.03E-01
	1407.95	14.94	7.42E-01		9.35E-03	3.27E-01
GD-153	97.43	31.30	2.27E-01	2.27E-01	1.58E-01	1.10E-01
	103.18	22.20	3.05E-01		-3.73E-01	1.47E-01
EU-154	123.07	40.50	1.60E-01	1.60E-01	5.31E-02	7.70E-02
	723.30	19.70	6.09E-01		-5.55E-01	2.85E-01
	873.19	11.50	9.99E-01		3.06E-01	4.61E-01
	996.32	10.30	1.06E+00		-6.22E-01	4.80E-01
	1004.76	17.90	7.61E-01		4.70E-01	3.53E-01

Analysis Report for 1606043-06

CP-5031 05-10

	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	3.83E-01	1.60E-01	2.62E-02	1.74E-01
+	EU-155	86.50	*	30.90	4.79E-01	3.20E-01	3.98E-01	2.36E-01
		105.30		20.70	3.20E-01		-5.97E-02	1.55E-01
	EU-156	811.77		10.40	1.73E+00	1.73E+00	-2.16E-01	7.84E-01
		1153.47		7.20	3.92E+00		1.08E+00	1.81E+00
		1230.71		8.90	3.34E+00		-1.59E-01	1.54E+00
	HO-166M	184.41		72.60	1.26E-01	1.26E-01	1.43E-01	6.13E-02
		280.45		29.60	2.71E-01		4.08E-02	1.29E-01
		410.94		11.10	8.09E-01		7.32E-01	3.83E-01
		711.69		54.10	1.75E-01		-1.52E-01	8.06E-02
	TM-171	66.72		0.14	4.86E+01	4.86E+01	1.19E+00	2.35E+01
	HF-172	81.75		4.52	1.32E+00	5.76E-01	9.36E-01	6.37E-01
		125.81		11.30	5.76E-01		-9.36E-01	2.78E-01
	LU-172	181.53		20.60	1.64E+00	9.71E-01	9.26E-01	7.89E-01
		810.06		16.63	2.58E+00		-6.50E-01	1.17E+00
		912.12		15.25	7.25E+00		1.62E+01	3.48E+00
		1093.66		62.50	9.71E-01		5.19E-01	4.45E-01
	LU-173	100.72		5.24	1.34E+00	3.94E-01	2.81E-01	6.47E-01
		272.11		21.20	3.94E-01		-2.16E-02	1.88E-01
	HF-175	343.40		84.00	9.63E-02	9.63E-02	-1.28E-02	4.52E-02
	LU-176	88.34		13.30	7.27E-01	7.85E-02	1.33E+00	3.55E-01
		201.83		86.00	9.24E-02		4.22E-02	4.45E-02
		306.78		94.00	7.85E-02		1.96E-02	3.72E-02
	TA-182	67.75		41.20	1.79E-01	1.79E-01	-6.44E-02	8.64E-02
		1121.30		34.90	5.87E-01		6.43E-01	2.76E-01
		1189.05		16.23	9.72E-01		-5.06E-02	4.47E-01
		1221.41		26.98	6.61E-01		3.08E-01	3.06E-01
		1231.02		11.44	1.50E+00		2.63E-01	6.94E-01
	IR-192	308.46		29.68	2.95E-01	1.65E-01	5.48E-02	1.40E-01
		468.07		48.10	1.65E-01		-3.83E-02	7.63E-02
	HG-203	279.19		77.30	1.36E-01	1.36E-01	9.45E-02	6.52E-02
	BI-207	569.67		97.72	8.81E-02	8.81E-02	1.46E-02	4.08E-02
		1063.62		74.90	1.74E-01		1.20E-01	8.02E-02
+	TL-208	583.14	*	30.22	3.75E-01	2.82E-01	1.59E+00	1.77E-01
		860.37	*	4.48	2.37E+00		1.32E+00	1.09E+00
		2614.66	*	35.85	2.82E-01		1.15E+00	1.18E-01
	BI-210M	262.00		45.00	1.54E-01	1.54E-01	-2.01E-03	7.31E-02
		300.00		23.00	3.77E-01		1.94E-01	1.80E-01
	PB-210	46.50		4.25	2.23E+00	2.23E+00	1.90E+00	1.08E+00
	PB-211	404.84		2.90	2.70E+00	2.70E+00	5.66E-01	1.27E+00
		831.96		2.90	3.83E+00		-5.26E-01	1.77E+00
	BI-212	727.17		11.80	1.14E+00	1.14E+00	6.25E-01	5.35E-01
		1620.62		2.75	3.98E+00		7.04E-01	1.73E+00
+	PB-212	238.63	*	44.60	1.97E-01	1.97E-01	1.73E+00	9.46E-02
		300.09	*	3.41	4.81E+00		2.59E+00	2.35E+00
+	BI-214	609.31	*	46.30	3.16E-01	3.16E-01	1.30E+00	1.51E-01
		1120.29	*	15.10	1.22E+00		1.44E+00	5.72E-01
		1764.49	*	15.80	6.19E-01		1.56E+00	2.62E-01
		2204.22	*	4.98	2.37E+00		1.04E+00	1.02E+00
+	PB-214	295.21	*	19.19	8.44E-01	3.39E-01	1.30E+00	4.12E-01
		351.92	*	37.19	3.39E-01		1.09E+00	1.63E-01
	RN-219	401.80		6.50	1.23E+00	1.23E+00	8.50E-01	5.76E-01
	RA-223	323.87		3.88	2.00E+00	2.00E+00	1.18E+00	9.49E-01

Analysis Report for 1606043-06

CP-5031 05-10

	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	4.30E+00	4.30E+00	4.30E+00	2.11E+00
+	RA-225	40.00	*	31.00	8.77E-01	8.77E-01	4.77E-01	4.23E-01
+	RA-226	186.21	*	3.28	3.10E+00	3.10E+00	5.93E+00	1.51E+00
	TH-227	50.10		8.40	8.85E-01	8.85E-01	3.14E-01	4.25E-01
		236.00		11.50	9.58E-01		5.54E-01	4.64E-01
		256.20		6.30	1.17E+00		3.95E-02	5.58E-01
+	AC-228	338.32	*	11.40	1.05E+00	5.37E-01	1.92E+00	5.06E-01
		911.07	*	27.70	5.37E-01		2.14E+00	2.52E-01
		969.11	*	16.60	1.32E+00		1.59E+00	6.32E-01
	TH-230	48.44		16.90	4.59E-01	4.59E-01	-4.41E-01	2.20E-01
		62.85		4.60	1.79E+00		2.34E+00	8.71E-01
		67.67		0.37	1.82E+01		-6.55E+00	8.79E+00
	PA-231	283.67		1.60	4.52E+00	3.21E+00	-1.72E+00	2.14E+00
		302.67		2.30	3.21E+00		-3.86E+00	1.52E+00
+	TH-231	25.64		14.70	3.09E+00	2.26E+00	2.19E-01	1.48E+00
		84.21	*	6.40	2.26E+00		1.12E+00	1.11E+00
	PA-233	311.98		38.60	2.92E-01	2.92E-01	-5.31E-02	1.39E-01
	PA-234	131.20		20.40	3.52E-01	3.52E-01	3.33E-01	1.70E-01
		733.99		8.80	1.18E+00		-2.91E-01	5.47E-01
		946.00		12.00	8.79E-01		-2.60E-01	4.00E-01
	PA-234M	1001.03		0.92	1.43E+01	1.43E+01	3.63E+00	6.62E+00
+	TH-234	63.29	*	3.80	3.22E+00	3.22E+00	1.91E+00	1.58E+00
	U-235	143.76		10.50	7.19E-01	7.19E-01	6.10E-01	3.48E-01
		163.35		4.70	1.52E+00		2.19E-01	7.31E-01
		205.31		4.70	1.60E+00		6.27E-01	7.68E-01
+	NP-237	86.50	*	12.60	1.17E+00	1.17E+00	9.71E-01	5.75E-01
	NP-239	106.10		22.70	2.47E+01	2.47E+01	2.08E+00	1.20E+01
		228.18		10.70	5.52E+01		-1.90E+01	2.63E+01
		277.60		14.10	4.98E+01		2.43E+01	2.38E+01
	AM-241	59.54		35.90	1.91E-01	1.91E-01	-4.73E-03	9.21E-02
	AM-243	74.67		66.00	1.45E-01	1.45E-01	-4.42E-01	7.08E-02
	CM-243	209.75		3.29	2.75E+00	5.97E-01	3.55E+00	1.33E+00
		228.14		10.60	6.63E-01		-2.28E-01	3.16E-01
		277.60		14.00	5.97E-01		2.91E-01	2.85E-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 1606043-06

CP-5031 05-10

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-5031 05-10

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	0	5	330
9:	1047	847	399	184	1727	586	103	120
17:	110	95	107	93	80	55	72	44
25:	66	52	46	57	46	42	39	55
33:	53	40	48	51	40	59	62	75
41:	46	53	56	61	59	66	135	56
49:	66	70	58	57	80	102	60	64
57:	69	89	75	85	78	92	119	166
65:	90	80	99	85	86	100	100	91
73:	104	118	356	127	429	236	79	86
81:	105	69	55	119	96	86	183	132
89:	94	146	76	93	218	113	71	37
97:	66	67	66	72	63	51	57	53
105:	48	75	46	64	55	56	58	41
113:	55	49	63	58	44	47	45	43
121:	51	46	50	42	54	44	44	52
129:	86	59	46	44	53	37	44	46
137:	49	52	57	52	43	46	72	70
145:	48	58	46	57	43	45	47	53
153:	48	60	57	47	33	42	32	48
161:	42	54	50	46	37	41	48	51
169:	37	52	38	40	46	40	44	35
177:	47	41	29	55	37	26	40	44
185:	56	169	61	42	37	29	41	35
193:	32	31	21	42	42	42	53	37
201:	47	47	43	48	27	45	31	39
209:	90	60	45	43	37	24	32	38
217:	35	39	37	47	34	30	26	34
225:	39	39	28	27	21	31	40	36
233:	25	32	38	48	20	217	563	50
241:	84	109	32	22	25	25	33	19
249:	18	22	20	21	29	23	24	45
257:	19	27	26	23	26	26	21	21
265:	22	24	25	27	45	51	42	29
273:	19	16	27	23	41	40	18	37
281:	25	24	19	26	21	24	28	26
289:	23	18	29	22	23	23	133	68
297:	19	25	25	60	28	16	28	20
305:	16	19	12	30	29	22	24	17
313:	24	25	21	12	16	28	18	23
321:	24	24	20	28	25	12	20	60
329:	30	20	23	14	23	17	17	22
337:	22	89	73	19	19	15	14	15
345:	16	18	14	22	20	20	60	218
353:	52	17	24	25	13	8	20	23
361:	16	9	17	16	18	15	15	19

369:	15	20	15	15	12	12	16	21

Sample Title: CP-5031 05-10

Channel								
377:	25	16	11	10	17	18	11	20
385:	9	16	18	12	14	16	19	12
393:	11	15	18	24	20	18	9	15
401:	16	17	18	16	11	20	13	13
409:	27	20	18	18	19	10	11	11
417:	18	18	15	11	10	12	19	15
425:	11	17	14	13	13	12	10	18
433:	10	9	20	12	13	9	16	16
441:	7	14	5	16	10	14	12	13
449:	10	18	14	15	16	14	12	15
457:	10	15	12	9	15	18	32	15
465:	13	11	11	8	7	10	14	8
473:	12	12	14	9	9	11	11	8
481:	12	15	10	9	18	13	9	9
489:	15	14	4	5	12	9	11	18
497:	16	10	8	15	13	12	5	10
505:	14	12	6	6	19	54	84	25
513:	18	14	13	18	16	12	13	9
521:	16	8	8	8	11	13	13	14
529:	5	10	12	4	15	8	9	14
537:	4	8	11	3	12	12	5	12
545:	13	13	3	7	8	7	8	10
553:	7	9	9	11	6	10	8	15
561:	9	15	19	11	9	9	11	9
569:	9	14	11	11	9	4	10	12
577:	14	5	14	13	2	23	136	65
585:	8	5	6	8	10	6	6	6
593:	13	9	9	12	10	8	15	23
601:	7	12	11	12	8	9	12	19
609:	168	91	14	11	8	11	3	11
617:	8	7	12	10	8	11	6	10
625:	11	4	5	8	6	5	12	9
633:	9	7	10	8	6	11	8	7
641:	7	11	9	8	5	11	12	10
649:	10	11	10	14	14	7	8	11
657:	4	11	8	11	9	13	5	7
665:	13	8	9	7	12	3	7	10
673:	9	9	8	8	6	1	10	11
681:	9	7	10	10	9	6	9	11
689:	10	7	9	7	10	12	10	16
697:	5	13	10	8	9	8	11	14
705:	7	8	15	6	10	3	6	6
713:	8	6	10	10	15	6	8	13
721:	8	8	14	12	7	10	28	16
729:	8	10	9	7	8	8	4	9
737:	7	6	11	11	10	8	7	9
745:	2	7	11	6	6	6	8	5
753:	7	7	12	11	9	4	15	7
761:	6	8	8	9	8	6	6	16
769:	14	4	7	14	11	7	9	6
777:	8	7	7	4	12	5	6	8
785:	7	13	5	6	3	9	7	10
793:	6	15	21	7	8	7	8	5

801:	4	5	7	9	6	7	8	3

Sample Title: CP-5031 05-10

Channel								
809:	2	5	4	6	4	8	2	3
817:	4	2	5	4	8	6	2	8
825:	7	8	10	6	3	5	11	6
833:	7	7	9	15	8	13	7	8
841:	10	3	6	6	2	6	4	8
849:	9	5	6	5	3	6	4	5
857:	3	6	5	10	15	5	4	5
865:	9	7	4	5	6	5	9	8
873:	7	8	5	5	8	2	4	5
881:	5	9	6	6	9	4	7	2
889:	7	6	2	8	8	3	4	7
897:	5	5	6	4	3	4	5	4
905:	4	5	8	8	7	25	96	41
913:	13	10	4	4	7	5	4	3
921:	5	6	4	5	7	8	8	1
929:	5	4	8	6	8	12	10	7
937:	1	2	5	6	3	5	5	1
945:	6	7	3	6	6	6	10	6
953:	3	6	11	5	5	10	5	4
961:	5	13	3	14	18	10	6	33
969:	55	22	5	7	7	5	1	5
977:	9	4	12	4	3	7	7	10
985:	4	5	5	5	5	6	4	5
993:	7	4	5	5	2	4	6	8
1001:	10	6	5	11	7	9	5	1
1009:	4	3	6	6	2	4	9	2
1017:	7	2	6	5	4	9	6	8
1025:	7	5	7	6	5	7	5	3
1033:	5	7	5	4	3	6	7	3
1041:	3	3	6	5	3	4	0	7
1049:	6	4	5	6	6	5	7	5
1057:	3	1	5	6	6	3	3	7
1065:	11	8	3	3	6	6	3	6
1073:	4	4	5	3	4	3	6	4
1081:	5	6	6	5	3	2	6	2
1089:	5	2	1	5	12	5	10	5
1097:	3	3	5	6	4	9	9	6
1105:	5	4	8	6	5	4	7	4
1113:	4	7	7	8	11	3	9	33
1121:	25	4	8	5	2	3	6	5
1129:	5	5	9	2	4	4	6	2
1137:	12	7	5	9	8	4	2	7
1145:	3	8	2	6	5	4	7	8
1153:	3	11	7	6	3	7	9	5
1161:	5	4	5	7	6	7	5	4
1169:	5	6	5	4	5	4	6	9
1177:	5	4	7	6	5	4	8	7
1185:	4	4	8	8	9	5	8	3
1193:	8	7	6	6	9	6	13	7
1201:	8	4	5	5	9	8	4	8
1209:	3	6	5	11	7	6	4	3
1217:	8	7	9	5	9	6	11	9
1225:	4	7	3	2	11	9	7	9

1233:	5	8	8	7	10	13	2	8

Sample Title: CP-5031 05-10

Channel								
1241:	6	3	3	9	4	6	8	9
1249:	4	4	7	3	7	8	5	8
1257:	4	10	6	4	2	4	6	3
1265:	5	6	6	4	4	6	9	3
1273:	3	4	6	5	5	5	4	3
1281:	4	4	4	6	2	5	5	1
1289:	6	1	5	5	3	3	6	4
1297:	4	7	5	2	4	3	3	4
1305:	4	2	2	6	4	4	3	5
1313:	0	6	5	2	2	3	7	2
1321:	1	2	1	4	5	2	3	1
1329:	1	3	3	3	4	4	2	2
1337:	1	4	2	2	8	5	3	3
1345:	3	5	1	4	0	3	3	1
1353:	4	0	1	4	7	0	0	1
1361:	1	2	3	4	3	3	2	4
1369:	3	1	1	1	4	4	3	5
1377:	5	9	4	1	2	1	1	1
1385:	2	3	1	3	3	1	2	1
1393:	2	1	1	2	0	2	2	0
1401:	3	6	1	2	0	0	1	7
1409:	7	2	3	0	2	2	3	0
1417:	1	3	1	4	3	3	0	1
1425:	1	3	1	3	1	3	1	2
1433:	1	3	4	2	3	2	1	1
1441:	4	2	1	0	2	4	1	0
1449:	1	2	4	1	0	3	2	4
1457:	2	4	42	179	238	80	10	2
1465:	3	1	0	2	1	0	3	0
1473:	3	1	1	3	0	0	2	2
1481:	2	2	1	0	1	1	2	1
1489:	1	2	1	2	1	0	2	2
1497:	2	2	0	3	2	2	2	2
1505:	2	0	2	1	1	5	2	1
1513:	1	1	1	1	1	2	1	1
1521:	1	1	0	3	2	1	1	1
1529:	0	1	0	2	3	1	1	3
1537:	3	1	1	1	0	2	1	1
1545:	0	1	4	2	3	1	2	1
1553:	1	2	0	1	0	0	0	3
1561:	2	1	0	5	0	2	1	0
1569:	0	1	2	0	2	3	1	1
1577:	1	1	2	3	2	3	3	3
1585:	1	0	1	3	2	2	1	4
1593:	4	4	1	4	3	2	0	1
1601:	1	0	0	1	0	1	2	0
1609:	1	2	0	0	3	1	2	2
1617:	0	0	2	2	4	2	0	3
1625:	0	2	1	2	3	2	2	0
1633:	0	1	0	1	0	2	0	2
1641:	0	0	0	1	0	1	1	1
1649:	2	1	1	0	0	0	1	0
1657:	1	0	1	5	1	2	0	3

1665:	1	2	3	1	0	0	1	0

Sample Title: CP-5031 05-10

Channel								
1673:	0	1	0	1	2	0	1	0
1681:	2	1	1	0	0	1	0	1
1689:	0	0	1	0	0	1	0	1
1697:	2	2	1	0	2	1	0	0
1705:	2	1	0	0	2	0	0	1
1713:	3	1	1	1	3	0	2	0
1721:	0	0	2	0	2	2	2	1
1729:	1	5	2	0	0	0	0	1
1737:	1	2	0	0	1	1	0	0
1745:	3	0	0	0	0	0	0	0
1753:	1	1	1	1	1	0	2	1
1761:	2	4	9	17	11	3	1	0
1769:	1	3	1	1	0	2	0	0
1777:	2	1	2	1	1	0	0	0
1785:	3	0	0	1	0	0	0	1
1793:	0	1	1	1	1	0	3	0
1801:	1	0	1	0	0	1	2	0
1809:	0	0	1	1	1	1	0	1
1817:	1	1	0	1	0	2	1	1
1825:	0	2	2	0	0	0	2	2
1833:	1	0	0	3	1	0	0	0
1841:	0	2	1	0	0	0	3	1
1849:	0	1	1	1	0	1	1	1
1857:	1	1	3	0	0	0	0	1
1865:	1	1	1	2	0	0	0	1
1873:	0	0	1	0	0	0	0	2
1881:	1	0	2	1	2	1	0	0
1889:	0	0	3	0	1	0	0	1
1897:	1	1	0	0	0	3	0	1
1905:	0	1	1	1	0	1	0	1
1913:	2	1	0	3	0	0	2	0
1921:	0	0	1	0	0	2	1	0
1929:	0	1	1	2	0	1	1	0
1937:	1	0	1	1	1	1	1	0
1945:	0	0	2	1	0	1	0	3
1953:	1	0	2	0	0	1	0	1
1961:	0	1	3	0	0	1	2	2
1969:	0	3	1	0	1	0	0	0
1977:	2	1	0	1	1	0	0	1
1985:	2	0	2	2	0	0	0	1
1993:	0	3	1	0	1	0	0	0
2001:	1	1	1	1	1	1	0	0
2009:	1	1	0	0	1	0	0	0
2017:	1	3	0	0	1	2	1	0
2025:	0	1	1	1	0	1	0	1
2033:	0	0	1	1	1	1	2	0
2041:	2	1	1	0	0	2	2	1
2049:	0	0	0	0	2	1	0	0
2057:	1	3	2	2	0	1	2	0
2065:	0	1	0	0	0	3	0	0
2073:	0	0	0	0	1	0	0	0
2081:	1	0	0	0	2	1	1	1
2089:	1	0	3	1	1	1	1	0

2097:	1	1	0	1	0	3	3	0

Sample Title: CP-5031 05-10

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

2529:	0	0	0	0	0	0	0	0

Sample Title: CP-5031 05-10

Channel								
2537:	0	0	0	0	1	0	0	0
2545:	0	1	1	0	0	0	0	1
2553:	0	1	0	1	0	0	0	0
2561:	1	0	2	0	0	0	0	0
2569:	0	1	0	0	1	1	0	0
2577:	1	0	0	0	0	1	0	3
2585:	0	0	1	1	0	0	0	0
2593:	1	1	0	1	0	1	0	0
2601:	0	0	0	0	0	0	1	0
2609:	1	1	0	9	19	25	14	3
2617:	0	1	0	0	0	0	0	0
2625:	0	0	0	0	0	0	0	1
2633:	0	0	0	0	1	1	0	0
2641:	0	0	0	0	1	0	0	0
2649:	0	0	2	0	1	0	0	0
2657:	1	0	0	0	0	0	0	0
2665:	0	0	0	0	1	2	0	0
2673:	0	0	2	0	1	0	0	0
2681:	1	0	0	0	1	0	0	0
2689:	0	0	0	1	0	0	1	1
2697:	1	0	2	0	0	1	0	0
2705:	2	1	0	1	0	0	0	0
2713:	0	1	0	0	0	0	0	0
2721:	1	0	0	0	0	0	0	0
2729:	0	0	0	0	0	0	0	0
2737:	1	0	0	0	0	0	1	0
2745:	0	0	0	0	0	1	0	0
2753:	0	0	0	0	0	0	0	0
2761:	2	0	0	2	0	0	1	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	0	0	0	1	1	0
2785:	1	0	0	0	0	0	0	0
2793:	0	0	0	1	0	1	0	1
2801:	0	0	0	0	0	0	0	0
2809:	0	0	1	1	0	0	0	1
2817:	0	0	0	1	0	0	0	0
2825:	0	1	0	0	1	0	0	0
2833:	0	0	1	0	0	0	0	0
2841:	0	0	1	0	0	0	0	0
2849:	2	0	1	0	0	1	0	0
2857:	0	0	0	0	0	0	1	0
2865:	1	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	1	0
2881:	0	0	1	1	0	1	0	0
2889:	0	0	0	0	0	0	1	0
2897:	0	0	0	0	0	0	1	0
2905:	0	1	1	0	0	0	2	0
2913:	0	0	1	0	0	0	0	1
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	0	1	0	0	0
2945:	0	0	0	0	0	0	1	0
2953:	0	0	0	0	0	0	0	1

2961:	0	0	1	0	0	0	0	0

Sample Title: CP-5031 05-10

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

3393:	0	0	0	0	0	0	0	0

Sample Title: CP-5031 05-10

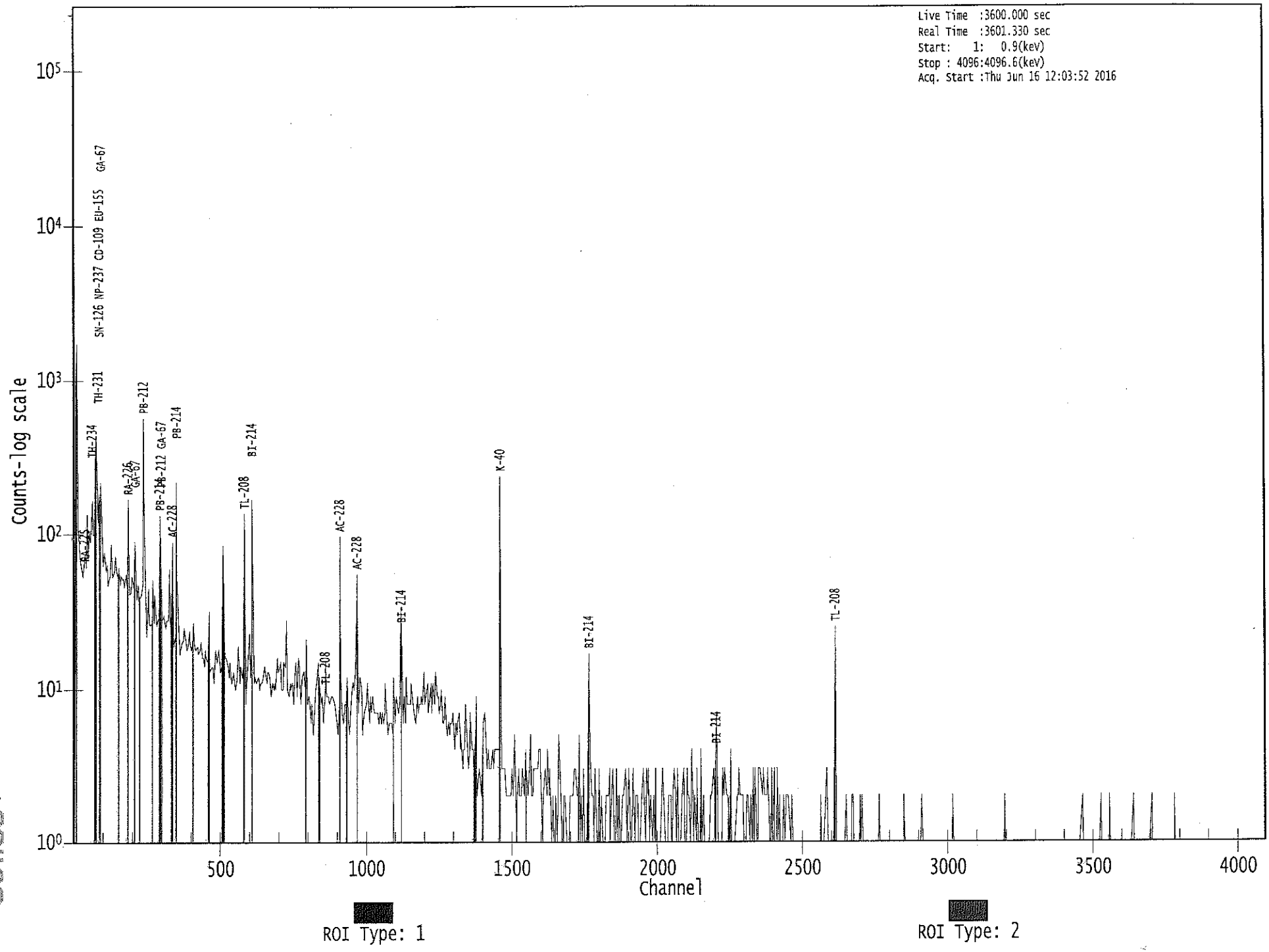
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	1	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	1	0	1	0	0	0	0	0
3433:	0	0	0	1	0	0	1	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	1	0	0
3457:	1	0	0	0	1	0	1	2
3465:	0	0	0	0	0	0	0	1
3473:	0	0	1	0	0	0	0	0
3481:	0	0	1	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0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

Sample Title: CP-5031 05-10

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	1	0	0
3849:	0	0	0	0	0	1	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	1	0	0	0	0	0
3873:	0	0	0	0	0	0	0	1
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	1	1	1	0	0
3897:	0	0	1	1	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	0	0	0	0
3937:	0	0	0	1	0	1	0	0
3945:	0	0	0	0	0	0	0	1
3953:	0	0	0	0	1	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	1	1
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	1	0	0
4001:	0	0	0	0	0	0	0	0
4009:	1	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	1	0	0	1
4041:	1	0	1	0	0	1	0	0
4049:	1	0	0	0	0	0	0	0
4057:	0	1	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	0	0	0	0	0	0	0

0000039005.CNF



Apex-Gamma

Analysis Report for 1606043-07
CP-5031 10-15

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-07
Sample Description	: CP-5031 10-15
Sample Type	: SOIL
Sample Size	: 3.847E+02 grams
Facility	: Countroom
Sample Taken On	: 6/1/2016 11:09:31AM
Acquisition Started	: 6/16/2016 12:04:06PM
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	: 39006

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/17/16

Analysis Report for 1606043-07

CP-5031 10-15

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 1:04:20PM
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	34.45	34.69	0.0000	0.00
2	46.57	46.81	0.0000	0.00
3	75.10	75.32	0.0000	0.00
4	77.48	77.70	0.0000	0.00
5	87.60	87.81	0.0000	0.00
6	92.83	93.04	0.0000	0.00
7	129.27	129.45	0.0000	0.00
8	153.35	153.52	0.0000	0.00
9	186.45	186.61	0.0000	0.00
10	209.88	210.03	0.0000	0.00
11	239.12	239.25	0.0000	0.00
12	242.21	242.34	0.0000	0.00
13	271.30	271.41	0.0000	0.00
14	277.37	277.48	0.0000	0.00
15	295.84	295.94	0.0000	0.00
16	300.91	301.01	0.0000	0.00
17	338.55	338.63	0.0000	0.00
18	352.52	352.59	0.0000	0.00
19	361.34	361.40	0.0000	0.00
20	409.88	409.92	0.0000	0.00
21	428.72	428.75	0.0000	0.00
22	455.95	455.97	0.0000	0.00
23	462.61	462.62	0.0000	0.00
24	511.42	511.41	0.0000	0.00
25	567.06	567.02	0.0000	0.00
26	583.66	583.61	0.0000	0.00
27	609.65	609.59	0.0000	0.00
28	727.33	727.21	0.0000	0.00
29	768.41	768.28	0.0000	0.00
30	865.36	865.18	0.0000	0.00
31	911.65	911.46	0.0000	0.00
32	919.64	919.44	0.0000	0.00
33	969.46	969.24	0.0000	0.00
34	993.90	993.66	0.0000	0.00
35	1018.87	1018.63	0.0000	0.00
36	1095.40	1095.13	0.0000	0.00
37	1120.79	1120.51	0.0000	0.00
38	1238.30	1237.96	0.0000	0.00
39	1303.45	1303.09	0.0000	0.00
40	1332.89	1332.52	0.0000	0.00
41	1454.66	1454.24	0.0000	0.00
42	1461.19	1460.77	0.0000	0.00

Analysis Report for 1606043-07

CP-5031 10-15

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1593.11	1592.64	0.0000	0.00
44	1757.06	1756.53	0.0000	0.00
45	1765.45	1764.92	0.0000	0.00
46	2206.96	2206.29	0.0000	0.00
47	2221.70	2221.02	0.0000	0.00
48	2237.07	2236.39	0.0000	0.00
49	2614.71	2613.93	0.0000	0.00

? = Adjacent peak noted.
Errors quoted at 2.000sigma

Analysis Report for 1606043-07

CP-5031 10-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 1:04:20PM

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	34.45	32 -	37	34.69	4.86E+01	54.52	5.61E+02	3.20
	2	46.57	44 -	50	46.81	1.49E+02	72.89	8.69E+02	1.66
M	3	75.10	71 -	81	75.32	3.76E+02	82.48	1.02E+03	1.83
m	4	77.48	71 -	81	77.70	6.06E+02	90.63	9.83E+02	1.83
	5	87.60	86 -	89	87.81	6.58E+01	62.80	9.24E+02	1.08
	6	92.83	90 -	97	93.04	2.76E+02	101.00	1.46E+03	1.45
	7	129.27	127 -	132	129.45	5.00E+01	58.91	6.54E+02	1.80
	8	153.35	151 -	157	153.52	5.68E+01	61.89	6.56E+02	3.58
	9	186.45	183 -	191	186.61	1.82E+02	72.54	6.98E+02	1.88
	10	209.88	207 -	213	210.03	6.87E+01	58.70	5.69E+02	1.30
M	11	239.12	235 -	246	239.25	7.36E+02	64.82	2.89E+02	1.79
m	12	242.21	235 -	246	242.34	1.53E+02	69.40	2.87E+02	2.08
	13	271.30	268 -	274	271.41	6.03E+01	45.21	3.25E+02	1.34
	14	277.37	275 -	280	277.48	3.73E+01	37.30	2.47E+02	1.28
M	15	295.84	292 -	305	295.94	1.57E+02	39.41	2.15E+02	1.54
m	16	300.91	292 -	305	301.01	5.51E+01	38.18	2.58E+02	2.02
	17	338.55	335 -	342	338.63	1.74E+02	47.46	2.59E+02	1.35
	18	352.52	347 -	358	352.59	3.04E+02	62.86	3.41E+02	1.91
	19	361.34	358 -	365	361.40	4.78E+01	34.99	1.73E+02	4.66
	20	409.88	408 -	412	409.92	2.37E+01	26.33	1.31E+02	2.23
	21	428.72	424 -	433	428.75	5.31E+01	38.74	1.82E+02	3.91
M	22	455.95	453 -	466	455.97	1.87E+01	21.97	9.23E+01	3.06
m	23	462.61	453 -	466	462.62	5.12E+01	35.22	1.52E+02	3.06
	24	511.42	507 -	517	511.41	1.48E+02	41.70	1.50E+02	2.50
	25	567.06	561 -	573	567.02	4.62E+01	44.95	2.00E+02	9.06
	26	583.66	580 -	588	583.61	1.79E+02	41.38	1.54E+02	2.11
	27	609.65	604 -	613	609.59	2.17E+02	46.88	1.90E+02	1.92
	28	727.33	724 -	730	727.21	5.74E+01	26.34	8.51E+01	1.35
	29	768.41	764 -	772	768.28	3.45E+01	28.95	1.07E+02	1.42
	30	865.36	857 -	872	865.18	4.92E+01	40.99	1.34E+02	11.78
	31	911.65	906 -	916	911.46	1.65E+02	36.22	8.43E+01	1.83
	32	919.64	917 -	924	919.44	2.12E+01	19.60	5.36E+01	3.85
	33	969.46	965 -	972	969.24	6.91E+01	32.19	1.24E+02	1.43
	34	993.90	991 -	997	993.66	1.87E+01	16.45	3.67E+01	2.99
	35	1018.87	1015 -	1022	1018.63	2.36E+01	19.60	4.87E+01	1.49
	36	1095.40	1093 -	1097	1095.13	1.13E+01	15.10	4.14E+01	2.64
	37	1120.79	1117 -	1125	1120.51	4.22E+01	28.45	9.76E+01	2.07
	38	1238.30	1233 -	1242	1237.96	2.29E+01	28.00	9.61E+01	2.17
	39	1303.45	1298 -	1308	1303.09	1.90E+01	20.15	4.40E+01	2.20
	40	1332.89	1328 -	1337	1332.52	2.17E+01	19.92	4.26E+01	1.85

Analysis Report for 1606043-07

CP-5031 10-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1454.66	1453 -	1468	1454.24	1.14E+01	5.00	1.99E+00	2.65
m	42	1461.19	1453 -	1468	1460.77	4.93E+02	44.46	3.74E+00	2.18
	43	1593.11	1590 -	1595	1592.64	9.41E+00	11.05	1.52E+01	1.31
	44	1757.06	1753 -	1761	1756.53	7.50E+00	9.41	9.00E+00	2.69
	45	1765.45	1761 -	1769	1764.92	3.21E+01	12.50	3.85E+00	3.13
	46	2206.96	2202 -	2210	2206.29	1.00E+01	8.26	4.00E+00	5.87
	47	2221.70	2218 -	2224	2221.02	5.50E+00	6.34	3.00E+00	2.48
	48	2237.07	2233 -	2239	2236.39	7.44E+00	6.95	3.11E+00	1.55
	49	2614.71	2608 -	2618	2613.93	5.50E+01	14.83	0.00E+00	2.92

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 1:04:20PM

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	34.45	32 -	37	4.86E+01	54.52	5.61E+02	4.33E+01
	2	46.57	44 -	50	1.49E+02	72.89	8.69E+02	5.64E+01
M	3	75.10	71 -	81	3.76E+02	82.48	1.02E+03	5.25E+01
m	4	77.48	71 -	81	6.06E+02	90.63	9.83E+02	5.16E+01
	5	87.60	86 -	89	6.58E+01	62.80	9.24E+02	4.99E+01
	6	92.83	90 -	97	2.76E+02	101.00	1.46E+03	7.84E+01
	7	129.27	127 -	132	5.00E+01	58.91	6.54E+02	4.70E+01
	8	153.35	151 -	157	5.68E+01	61.89	6.56E+02	4.93E+01
	9	186.45	183 -	191	1.82E+02	72.54	6.98E+02	5.54E+01
	10	209.88	207 -	213	6.87E+01	58.70	5.69E+02	4.63E+01
M	11	239.12	235 -	246	7.36E+02	64.82	2.89E+02	2.80E+01
m	12	242.21	235 -	246	1.53E+02	69.40	2.87E+02	2.79E+01
	13	271.30	268 -	274	6.03E+01	45.21	3.25E+02	3.49E+01
	14	277.37	275 -	280	3.73E+01	37.30	2.47E+02	2.90E+01
M	15	295.84	292 -	305	1.57E+02	39.41	2.15E+02	2.41E+01
m	16	300.91	292 -	305	5.51E+01	38.18	2.58E+02	2.64E+01
	17	338.55	335 -	342	1.74E+02	47.46	2.59E+02	3.24E+01
	18	352.52	347 -	358	3.04E+02	62.86	3.41E+02	4.30E+01

Analysis Report for 1606043-07

CP-5031 10-15

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	19	361.34	358 -	365	4.78E+01	34.99	1.73E+02	2.64E+01
	20	409.88	408 -	412	2.37E+01	26.33	1.31E+02	2.01E+01
	21	428.72	424 -	433	5.31E+01	38.74	1.82E+02	2.95E+01
M	22	455.95	453 -	466	1.87E+01	21.97	9.23E+01	1.58E+01
m	23	462.61	453 -	466	5.12E+01	35.22	1.52E+02	2.03E+01
	24	511.42	507 -	517	1.48E+02	41.70	1.50E+02	2.78E+01
	25	567.06	561 -	573	4.62E+01	44.95	2.00E+02	3.52E+01
	26	583.66	580 -	588	1.79E+02	41.38	1.54E+02	2.60E+01
	27	609.65	604 -	613	2.17E+02	46.88	1.90E+02	3.00E+01
	28	727.33	724 -	730	5.74E+01	26.34	8.51E+01	1.77E+01
	29	768.41	764 -	772	3.45E+01	28.95	1.07E+02	2.18E+01
	30	865.36	857 -	872	4.92E+01	40.99	1.34E+02	3.17E+01
	31	911.65	906 -	916	1.65E+02	36.22	8.43E+01	2.10E+01
	32	919.64	917 -	924	2.12E+01	19.60	5.36E+01	1.42E+01
	33	969.46	965 -	972	6.91E+01	32.19	1.24E+02	2.27E+01
	34	993.90	991 -	997	1.87E+01	16.45	3.67E+01	1.15E+01
	35	1018.87	1015 -	1022	2.36E+01	19.60	4.87E+01	1.40E+01
	36	1095.40	1093 -	1097	1.13E+01	15.10	4.14E+01	1.11E+01
	37	1120.79	1117 -	1125	4.22E+01	28.45	9.76E+01	2.08E+01
	38	1238.30	1233 -	1242	2.29E+01	28.00	9.61E+01	2.16E+01
	39	1303.45	1298 -	1308	1.90E+01	20.15	4.40E+01	1.49E+01
	40	1332.89	1328 -	1337	2.17E+01	19.92	4.26E+01	1.45E+01
M	41	1454.66	1453 -	1468	1.14E+01	5.00	1.99E+00	2.32E+00
m	42	1461.19	1453 -	1468	4.93E+02	44.46	3.74E+00	3.18E+00
	43	1593.11	1590 -	1595	9.41E+00	11.05	1.52E+01	7.55E+00
	44	1757.06	1753 -	1761	7.50E+00	9.41	9.00E+00	6.29E+00
	45	1765.45	1761 -	1769	3.21E+01	12.50	3.85E+00	4.35E+00
	46	2206.96	2202 -	2210	1.00E+01	8.26	4.00E+00	4.37E+00
	47	2221.70	2218 -	2224	5.50E+00	6.34	3.00E+00	3.51E+00
	48	2237.07	2233 -	2239	7.44E+00	6.95	3.11E+00	3.53E+00
	49	2614.71	2608 -	2618	5.50E+01	14.83	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 1:04:20PM

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 1606043-07

CP-5031 10-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	34.45	32 -	37	34.69	4.86E+01	54.52	5.61E+02	I-129
	2	46.57	44 -	50	46.81	1.49E+02	72.89	8.69E+02	PB-210
M	3	75.10	71 -	81	75.32	3.76E+02	82.48	1.02E+03	AM-243
m	4	77.48	71 -	81	77.70	6.06E+02	90.63	9.83E+02	TI-44
	5	87.60	86 -	89	87.81	6.58E+01	62.80	9.24E+02	SN-126
									CD-109
									LU-176
	6	92.83	90 -	97	93.04	2.76E+02	101.00	1.46E+03	GA-67
	7	129.27	127 -	132	129.45	5.00E+01	58.91	6.54E+02	.....
	8	153.35	151 -	157	153.52	5.68E+01	61.89	6.56E+02	CS-136
	9	186.45	183 -	191	186.61	1.82E+02	72.54	6.98E+02	RA-226
	10	209.88	207 -	213	210.03	6.87E+01	58.70	5.69E+02	CM-243
									GA-67
M	11	239.12	235 -	246	239.25	7.36E+02	64.82	2.89E+02	PB-212
m	12	242.21	235 -	246	242.34	1.53E+02	69.40	2.87E+02	.....
	13	271.30	268 -	274	271.41	6.03E+01	45.21	3.25E+02	LU-173
	14	277.37	275 -	280	277.48	3.73E+01	37.30	2.47E+02	CM-243
									NP-239
M	15	295.84	292 -	305	295.94	1.57E+02	39.41	2.15E+02	PB-214
m	16	300.91	292 -	305	301.01	5.51E+01	38.18	2.58E+02	GA-67
									PB-212
									BI-210M
	17	338.55	335 -	342	338.63	1.74E+02	47.46	2.59E+02	AC-228
	18	352.52	347 -	358	352.59	3.04E+02	62.86	3.41E+02	PB-214
	19	361.34	358 -	365	361.40	4.78E+01	34.99	1.73E+02	.....
	20	409.88	408 -	412	409.92	2.37E+01	26.33	1.31E+02	.....
	21	428.72	424 -	433	428.75	5.31E+01	38.74	1.82E+02	SB-125
M	22	455.95	453 -	466	455.97	1.87E+01	21.97	9.23E+01	.....
m	23	462.61	453 -	466	462.62	5.12E+01	35.22	1.52E+02	SB-125
	24	511.42	507 -	517	511.41	1.48E+02	41.70	1.50E+02	.....
	25	567.06	561 -	573	567.02	4.62E+01	44.95	2.00E+02	.....
	26	583.66	580 -	588	583.61	1.79E+02	41.38	1.54E+02	TL-208
	27	609.65	604 -	613	609.59	2.17E+02	46.88	1.90E+02	BI-214
	28	727.33	724 -	730	727.21	5.74E+01	26.34	8.51E+01	BI-212
	29	768.41	764 -	772	768.28	3.45E+01	28.95	1.07E+02	.....
	30	865.36	857 -	872	865.18	4.92E+01	40.99	1.34E+02	.....
	31	911.65	906 -	916	911.46	1.65E+02	36.22	8.43E+01	LU-172
									AC-228
	32	919.64	917 -	924	919.44	2.12E+01	19.60	5.36E+01	.....
	33	969.46	965 -	972	969.24	6.91E+01	32.19	1.24E+02	AC-228
	34	993.90	991 -	997	993.66	1.87E+01	16.45	3.67E+01	.....
	35	1018.87	1015 -	1022	1018.63	2.36E+01	19.60	4.87E+01	.....
	36	1095.40	1093 -	1097	1095.13	1.13E+01	15.10	4.14E+01	.....
	37	1120.79	1117 -	1125	1120.51	4.22E+01	28.45	9.76E+01	SC-46
									TA-182
									BI-214
	38	1238.30	1233 -	1242	1237.96	2.29E+01	28.00	9.61E+01	CO-56
	39	1303.45	1298 -	1308	1303.09	1.90E+01	20.15	4.40E+01	.....
	40	1332.89	1328 -	1337	1332.52	2.17E+01	19.92	4.26E+01	CO-60
M	41	1454.66	1453 -	1468	1454.24	1.14E+01	5.00	1.99E+00	.....
m	42	1461.19	1453 -	1468	1460.77	4.93E+02	44.46	3.74E+00	K-40

Analysis Report for 1606043-07

CP-5031 10-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
43	1593.11	1590 -	1595	1592.64	9.41E+00	11.05	1.52E+01	.....
44	1757.06	1753 -	1761	1756.53	7.50E+00	9.41	9.00E+00	.....
45	1765.45	1761 -	1769	1764.92	3.21E+01	12.50	3.85E+00	BI-214
46	2206.96	2202 -	2210	2206.29	1.00E+01	8.26	4.00E+00	.....
47	2221.70	2218 -	2224	2221.02	5.50E+00	6.34	3.00E+00	.....
48	2237.07	2233 -	2239	2236.39	7.44E+00	6.95	3.11E+00	.....
49	2614.71	2608 -	2618	2613.93	5.50E+01	14.83	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 1:04:20PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	34.45	4.86E+01	54.52	7.61E-03	1.58E-03
	2	46.57	1.49E+02	72.89	1.51E-02	1.58E-03
M	3	75.10	3.76E+02	82.48	2.37E-02	2.10E-03
m	4	77.48	6.06E+02	90.63	2.39E-02	2.18E-03
	5	87.60	6.58E+01	62.80	2.44E-02	2.51E-03
	6	92.83	2.76E+02	101.00	2.44E-02	2.41E-03
	7	129.27	5.00E+01	58.91	2.25E-02	1.70E-03
	8	153.35	5.68E+01	61.89	2.07E-02	1.57E-03
	9	186.45	1.82E+02	72.54	1.83E-02	1.42E-03
	10	209.88	6.87E+01	58.70	1.68E-02	1.31E-03
M	11	239.12	7.36E+02	64.82	1.52E-02	1.18E-03
m	12	242.21	1.53E+02	69.40	1.50E-02	1.16E-03
	13	271.30	6.03E+01	45.21	1.37E-02	1.03E-03
	14	277.37	3.73E+01	37.30	1.35E-02	1.01E-03
M	15	295.84	1.57E+02	39.41	1.28E-02	9.73E-04
m	16	300.91	5.51E+01	38.18	1.26E-02	9.66E-04
	17	338.55	1.74E+02	47.46	1.14E-02	9.13E-04
	18	352.52	3.04E+02	62.86	1.10E-02	8.93E-04
	19	361.34	4.78E+01	34.99	1.08E-02	8.80E-04
	20	409.88	2.37E+01	26.33	9.70E-03	8.19E-04
	21	428.72	5.31E+01	38.74	9.33E-03	8.00E-04
M	22	455.95	1.87E+01	21.97	8.85E-03	7.73E-04
m	23	462.61	5.12E+01	35.22	8.74E-03	7.66E-04

Analysis Report for 1606043-07

CP-5031 10-15

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	24	511.42	1.48E+02	41.70	8.01E-03	7.18E-04
	25	567.06	4.62E+01	44.95	7.32E-03	6.62E-04
	26	583.66	1.79E+02	41.38	7.13E-03	6.46E-04
	27	609.65	2.17E+02	46.88	6.87E-03	6.20E-04
	28	727.33	5.74E+01	26.34	5.89E-03	5.14E-04
	29	768.41	3.45E+01	28.95	5.62E-03	4.81E-04
	30	865.36	4.92E+01	40.99	5.07E-03	4.01E-04
	31	911.65	1.65E+02	36.22	4.85E-03	3.72E-04
	32	919.64	2.12E+01	19.60	4.81E-03	3.71E-04
	33	969.46	6.91E+01	32.19	4.60E-03	3.61E-04
	34	993.90	1.87E+01	16.45	4.51E-03	3.57E-04
	35	1018.87	2.36E+01	19.60	4.41E-03	3.52E-04
	36	1095.40	1.13E+01	15.10	4.15E-03	3.38E-04
	37	1120.79	4.22E+01	28.45	4.08E-03	3.33E-04
	38	1238.30	2.29E+01	28.00	3.76E-03	3.09E-04
	39	1303.45	1.90E+01	20.15	3.60E-03	2.95E-04
	40	1332.89	2.17E+01	19.92	3.54E-03	2.88E-04
M	41	1454.66	1.14E+01	5.00	3.30E-03	2.70E-04
m	42	1461.19	4.93E+02	44.46	3.29E-03	2.69E-04
	43	1593.11	9.41E+00	11.05	3.08E-03	2.50E-04
	44	1757.06	7.50E+00	9.41	2.87E-03	2.25E-04
	45	1765.45	3.21E+01	12.50	2.86E-03	2.24E-04
	46	2206.96	1.00E+01	8.26	2.46E-03	2.13E-04
	47	2221.70	5.50E+00	6.34	2.45E-03	2.13E-04
	48	2237.07	7.44E+00	6.95	2.44E-03	2.13E-04
	49	2614.71	5.50E+01	14.83	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 1:04:20PM

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	34.45	4.86E+01	54.52			4.86E+01	5.45E+01
	2	46.57	1.49E+02	72.89	4.97E+01	7.81E+00	9.97E+01	7.33E+01
M	3	75.10	3.76E+02	82.48			3.76E+02	8.25E+01
m	4	77.48	6.06E+02	90.63	6.70E+00	3.28E+00	5.99E+02	9.07E+01

Analysis Report for 1606043-07

CP-5031 10-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	5	87.60	6.58E+01	62.80	1.07E+01	3.99E+00	5.51E+01	6.29E+01
	6	92.83	2.76E+02	101.00	8.20E+01	2.30E+01	1.94E+02	1.04E+02
	7	129.27	5.00E+01	58.91			5.00E+01	5.89E+01
	8	153.35	5.68E+01	61.89			5.68E+01	6.19E+01
	9	186.45	1.82E+02	72.54	3.45E+01	5.92E+00	1.47E+02	7.28E+01
	10	209.88	6.87E+01	58.70			6.87E+01	5.87E+01
M	11	239.12	7.36E+02	64.82	1.33E+01	5.09E+00	7.23E+02	6.50E+01
m	12	242.21	1.53E+02	69.40			1.53E+02	6.94E+01
	13	271.30	6.03E+01	45.21			6.03E+01	4.52E+01
	14	277.37	3.73E+01	37.30			3.73E+01	3.73E+01
M	15	295.84	1.57E+02	39.41	1.94E+00	4.39E+00	1.55E+02	3.97E+01
m	16	300.91	5.51E+01	38.18			5.51E+01	3.82E+01
	17	338.55	1.74E+02	47.46			1.74E+02	4.75E+01
	18	352.52	3.04E+02	62.86	4.00E+00	3.58E+00	3.00E+02	6.30E+01
	19	361.34	4.78E+01	34.99			4.78E+01	3.50E+01
	20	409.88	2.37E+01	26.33			2.37E+01	2.63E+01
	21	428.72	5.31E+01	38.74			5.31E+01	3.87E+01
M	22	455.95	1.87E+01	21.97			1.87E+01	2.20E+01
m	23	462.61	5.12E+01	35.22			5.12E+01	3.52E+01
	24	511.42	1.48E+02	41.70	6.05E+01	4.93E+00	8.75E+01	4.20E+01
	25	567.06	4.62E+01	44.95			4.62E+01	4.49E+01
	26	583.66	1.79E+02	41.38	5.50E+00	3.61E+00	1.73E+02	4.15E+01
	27	609.65	2.17E+02	46.88	5.07E+00	3.83E+00	2.12E+02	4.70E+01
	28	727.33	5.74E+01	26.34			5.74E+01	2.63E+01
	29	768.41	3.45E+01	28.95			3.45E+01	2.89E+01
	30	865.36	4.92E+01	40.99			4.92E+01	4.10E+01
	31	911.65	1.65E+02	36.22			1.65E+02	3.62E+01
	32	919.64	2.12E+01	19.60			2.12E+01	1.96E+01
	33	969.46	6.91E+01	32.19			6.91E+01	3.22E+01
	34	993.90	1.87E+01	16.45			1.87E+01	1.64E+01
	35	1018.87	2.36E+01	19.60			2.36E+01	1.96E+01
	36	1095.40	1.13E+01	15.10			1.13E+01	1.51E+01
	37	1120.79	4.22E+01	28.45	1.09E+00	2.08E+00	4.11E+01	2.85E+01
	38	1238.30	2.29E+01	28.00			2.29E+01	2.80E+01
	39	1303.45	1.90E+01	20.15			1.90E+01	2.01E+01
	40	1332.89	2.17E+01	19.92	3.99E+00	2.37E+00	1.77E+01	2.01E+01
M	41	1454.66	1.14E+01	5.00			1.14E+01	5.00E+00
m	42	1461.19	4.93E+02	44.46	4.33E+00	2.02E+00	4.89E+02	4.45E+01
	43	1593.11	9.41E+00	11.05			9.41E+00	1.10E+01
	44	1757.06	7.50E+00	9.41			7.50E+00	9.41E+00
	45	1765.45	3.21E+01	12.50			3.21E+01	1.25E+01
	46	2206.96	1.00E+01	8.26			1.00E+01	8.26E+00
	47	2221.70	5.50E+00	6.34			5.50E+00	6.34E+00
	48	2237.07	7.44E+00	6.95			7.44E+00	6.95E+00
	49	2614.71	5.50E+01	14.83	2.52E+00	1.44E+00	5.25E+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

Analysis Report for 1606043-07

CP-5031 10-15

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 1:04:20PM

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	34.45	4.86E+01	54.52			4.86E+01	5.45E+01
	2	46.57	1.49E+02	72.89	4.97E+01	7.81E+00	9.97E+01	7.33E+01
M	3	75.10	3.76E+02	82.48			3.76E+02	8.25E+01
m	4	77.48	6.06E+02	90.63	6.70E+00	3.28E+00	5.99E+02	9.07E+01
	5	87.60	6.58E+01	62.80	1.07E+01	3.99E+00	5.51E+01	6.29E+01
	6	92.83	2.76E+02	101.00	8.20E+01	2.30E+01	1.94E+02	1.04E+02
	7	129.27	5.00E+01	58.91			5.00E+01	5.89E+01
	8	153.35	5.68E+01	61.89			5.68E+01	6.19E+01
	9	186.45	1.82E+02	72.54	3.45E+01	5.92E+00	1.47E+02	7.28E+01
	10	209.88	6.87E+01	58.70			6.87E+01	5.87E+01
M	11	239.12	7.36E+02	64.82	1.33E+01	5.09E+00	7.23E+02	6.50E+01
m	12	242.21	1.53E+02	69.40			1.53E+02	6.94E+01
	13	271.30	6.03E+01	45.21			6.03E+01	4.52E+01
	14	277.37	3.73E+01	37.30			3.73E+01	3.73E+01
M	15	295.84	1.57E+02	39.41	1.94E+00	4.39E+00	1.55E+02	3.97E+01
m	16	300.91	5.51E+01	38.18			5.51E+01	3.82E+01
	17	338.55	1.74E+02	47.46			1.74E+02	4.75E+01
	18	352.52	3.04E+02	62.86	4.00E+00	3.58E+00	3.00E+02	6.30E+01
	19	361.34	4.78E+01	34.99			4.78E+01	3.50E+01
	20	409.88	2.37E+01	26.33			2.37E+01	2.63E+01
	21	428.72	5.31E+01	38.74			5.31E+01	3.87E+01
M	22	455.95	1.87E+01	21.97			1.87E+01	2.20E+01
m	23	462.61	5.12E+01	35.22			5.12E+01	3.52E+01
	24	511.42	1.48E+02	41.70	6.05E+01	4.93E+00	8.75E+01	4.20E+01
	25	567.06	4.62E+01	44.95			4.62E+01	4.49E+01
	26	583.66	1.79E+02	41.38	5.50E+00	3.61E+00	1.73E+02	4.15E+01
	27	609.65	2.17E+02	46.88	5.07E+00	3.83E+00	2.12E+02	4.70E+01
	28	727.33	5.74E+01	26.34			5.74E+01	2.63E+01
	29	768.41	3.45E+01	28.95			3.45E+01	2.89E+01
	30	865.36	4.92E+01	40.99			4.92E+01	4.10E+01
	31	911.65	1.65E+02	36.22			1.65E+02	3.62E+01
	32	919.64	2.12E+01	19.60			2.12E+01	1.96E+01
	33	969.46	6.91E+01	32.19			6.91E+01	3.22E+01
	34	993.90	1.87E+01	16.45			1.87E+01	1.64E+01
	35	1018.87	2.36E+01	19.60			2.36E+01	1.96E+01
	36	1095.40	1.13E+01	15.10			1.13E+01	1.51E+01
	37	1120.79	4.22E+01	28.45	1.09E+00	2.08E+00	4.11E+01	2.85E+01
	38	1238.30	2.29E+01	28.00			2.29E+01	2.80E+01
	39	1303.45	1.90E+01	20.15			1.90E+01	2.01E+01

Analysis Report for 1606043-07

CP-5031 10-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	40	1332.89	2.17E+01	19.92	3.99E+00	2.37E+00	1.77E+01	2.01E+01
M	41	1454.66	1.14E+01	5.00			1.14E+01	5.00E+00
m	42	1461.19	4.93E+02	44.46	4.33E+00	2.02E+00	4.89E+02	4.45E+01
	43	1593.11	9.41E+00	11.05			9.41E+00	1.10E+01
	44	1757.06	7.50E+00	9.41			7.50E+00	9.41E+00
	45	1765.45	3.21E+01	12.50			3.21E+01	1.25E+01
	46	2206.96	1.00E+01	8.26			1.00E+01	8.26E+00
	47	2221.70	5.50E+00	6.34			5.50E+00	6.34E+00
	48	2237.07	7.44E+00	6.95			7.44E+00	6.95E+00
	49	2614.71	5.50E+01	14.83	2.52E+00	1.44E+00	5.25E+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

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.977	1460.81	*	10.67	2.72E+01	3.37E+00
GA-67	0.853	93.31	*	35.70	1.06E+01	2.47E+01
		208.95	*	2.24	8.75E+01	1.87E+02
		300.22	*	16.00	1.31E+01	3.09E+01
CD-109	0.971	88.03	*	3.72	1.21E+00	1.39E+00
SN-126	1.000	87.57	*	37.00	1.19E-01	1.37E-01
LU-173	0.524	100.72		5.24		
		272.11	*	21.20	4.12E-01	3.11E-01
TL-208	0.870	583.14	*	30.22	1.57E+00	4.02E-01
		860.37		4.48		
		2614.66	*	35.85	1.28E+00	3.82E-01
PB-210	0.999	46.50	*	4.25	3.04E+00	2.26E+00
BI-212	0.767	727.17	*	11.80	1.61E+00	7.53E-01
		1620.62		2.75		
PB-212	0.957	238.63	*	44.60	2.08E+00	2.47E-01
		300.09	*	3.41	2.50E+00	1.74E+00
BI-214	0.888	609.31	*	46.30	1.30E+00	3.12E-01
		1120.29	*	15.10	1.30E+00	9.11E-01
		1764.49	*	15.80	1.39E+00	5.51E-01
		2204.22		4.98		
PB-214	0.942	295.21	*	19.19	1.23E+00	3.29E-01

Analysis Report for 1606043-07

CP-5031 10-15

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.942	351.92	*	37.19	1.43E+00	3.21E-01
RA-226	0.991	186.21	*	3.28	4.80E+00	9.11E+00
AC-228	0.966	338.32	*	11.40	2.60E+00	7.40E-01
		911.07	*	27.70	2.39E+00	5.57E-01
		969.11	*	16.60	1.77E+00	8.34E-01
AM-243	0.971	74.67	*	66.00	4.70E-01	1.11E-01
CM-243	0.366	209.75	*	3.29	2.43E+00	2.09E+00
		228.14		10.60		
		277.60	*	14.00	3.86E-01	3.87E-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 1:04:20PM
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	34.45	1.34870E-02	56.14		
m	4	77.48	1.66380E-01	7.57	Tol.	TI-44
	7	129.27	1.38889E-02	58.91		
	8	153.35	1.57716E-02	54.50	Tol.	CS-136
m	12	242.21	4.25944E-02	22.63		
	19	361.34	1.32639E-02	36.63		
	20	409.88	6.59020E-03	55.50		
	21	428.72	1.47589E-02	36.46	Tol.	SB-125
M	22	455.95	5.19799E-03	58.71		
m	23	462.61	1.42304E-02	34.38	Tol.	SB-125
	24	511.42	2.43061E-02	23.99	Sum	
	25	567.06	1.28234E-02	48.68	Sum	
	29	768.41	9.57071E-03	42.01		
	30	865.36	1.36614E-02	41.67		
	32	919.64	5.88542E-03	46.24		
	34	993.90	5.18393E-03	44.06		
	35	1018.87	6.56829E-03	41.44		
	36	1095.40	3.14236E-03	66.74		
	38	1238.30	6.37324E-03	61.02	Tol.	CO-56
	39	1303.45	5.27778E-03	53.02		

Analysis Report for 1606043-07

CP-5031 10-15

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	40	1332.89	4.92505E-03	56.58		
M	41	1454.66	3.16834E-03	21.92	Sum	
	43	1593.11	2.61438E-03	58.68	D-Esc	
	44	1757.06	2.08333E-03	62.72	Sum	
	46	2206.96	2.77778E-03	41.31		
	47	2221.70	1.52778E-03	57.68		
	48	2237.07	2.06790E-03	46.65		

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	2.72E+01	3.37E+00
GA-67	0.85	93.31	*	35.70	1.06E+01	2.47E+01
		208.95	*	2.24	8.75E+01	1.87E+02
		300.22	*	16.00	1.31E+01	3.09E+01
CD-109	0.97	88.03	*	3.72	1.21E+00	1.39E+00
SN-126	1.00	87.57	*	37.00	1.19E-01	1.37E-01
LU-173	0.52	100.72		5.24		
		272.11	*	21.20	4.12E-01	3.11E-01
TL-208	0.87	583.14	*	30.22	1.57E+00	4.02E-01
		860.37		4.48		
		2614.66	*	35.85	1.28E+00	3.82E-01
PB-210	0.99	46.50	*	4.25	3.04E+00	2.26E+00
BI-212	0.76	727.17	*	11.80	1.61E+00	7.53E-01
		1620.62		2.75		
PB-212	0.95	238.63	*	44.60	2.08E+00	2.47E-01
		300.09	*	3.41	2.50E+00	1.74E+00
BI-214	0.88	609.31	*	46.30	1.30E+00	3.12E-01
		1120.29	*	15.10	1.30E+00	9.11E-01
		1764.49	*	15.80	1.39E+00	5.51E-01
		2204.22		4.98		
PB-214	0.94	295.21	*	19.19	1.23E+00	3.29E-01

Analysis Report for 1606043-07

CP-5031 10-15

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.94	351.92	*	37.19	1.43E+00	3.21E-01
RA-226	0.99	186.21	*	3.28	4.80E+00	9.11E+00
AC-228	0.96	338.32	*	11.40	2.60E+00	7.40E-01
		911.07	*	27.70	2.39E+00	5.57E-01
		969.11	*	16.60	1.77E+00	8.34E-01
AM-243	0.97	74.67	*	66.00	4.70E-01	1.11E-01
CM-243	0.36	209.75	*	3.29	2.43E+00	2.09E+00
		228.14		10.60		
		277.60	*	14.00	3.86E-01	3.87E-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	0.977	2.72E+01	3.37E+00	
	GA-67	0.853	8.52E+00	1.74E+01	
?	CD-109	0.971	1.21E+00	1.39E+00	
?	SN-126	1.000	1.19E-01	1.37E-01	
	LU-173	0.524	4.12E-01	3.11E-01	
	TL-208	0.870	1.41E+00	2.77E-01	
	PB-210	0.999	3.04E+00	2.26E+00	
	BI-212	0.767	1.61E+00	7.53E-01	
	PB-212	0.957	2.06E+00	2.45E-01	
	BI-214	0.888	1.32E+00	2.60E-01	
	PB-214	0.942	1.33E+00	2.30E-01	
	RA-226	0.991	4.80E+00	9.11E+00	
	AC-228	0.966	2.31E+00	3.93E-01	
	AM-243	0.971	4.70E-01	1.11E-01	
	CM-243	0.366	4.46E-01	3.80E-01	

Analysis Report for 1606043-07

CP-5031 10-15

? = 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 1606043-07

CP-5031 10-15

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 1:04:20PM
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	34.45	1.34870E-02	56.14		
m	4	77.48	1.66380E-01	7.57	Tol.	TI-44
	7	129.27	1.38889E-02	58.91		
	8	153.35	1.57716E-02	54.50	Tol.	CS-136
m	12	242.21	4.25944E-02	22.63		
	19	361.34	1.32639E-02	36.63		
	20	409.88	6.59020E-03	55.50		
	21	428.72	1.47589E-02	36.46	Tol.	SB-125
M	22	455.95	5.19799E-03	58.71		
m	23	462.61	1.42304E-02	34.38	Tol.	SB-125
	24	511.42	2.43061E-02	23.99	Sum	
	25	567.06	1.28234E-02	48.68	Sum	
	29	768.41	9.57071E-03	42.01		
	30	865.36	1.36614E-02	41.67		
	32	919.64	5.88542E-03	46.24		
	34	993.90	5.18393E-03	44.06		
	35	1018.87	6.56829E-03	41.44		
	36	1095.40	3.14236E-03	66.74		
	38	1238.30	6.37324E-03	61.02	Tol.	CO-56
	39	1303.45	5.27778E-03	53.02		
	40	1332.89	4.92505E-03	56.58		
M	41	1454.66	3.16834E-03	21.92	Sum	
	43	1593.11	2.61438E-03	58.68	D-Esc	
	44	1757.06	2.08333E-03	62.72	Sum	
	46	2206.96	2.77778E-03	41.31		
	47	2221.70	1.52778E-03	57.68		
	48	2237.07	2.06790E-03	46.65		

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 1606043-07

CP-5031 10-15

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	5.64E-01	1.32E+00	1.32E+00
+	NA-22	1274.54		99.94	6.27E-02	1.65E-01	1.65E-01
+	NA-24	1368.53		99.99	8.20E+05	4.33E+05	2.52E+06
		2754.09		99.86	0.00E+00		4.33E+05
+	AL-26	1808.65		99.76	-5.75E-02	8.37E-02	8.37E-02
+	K-40	1460.81	*	10.67	2.72E+01	1.03E+00	1.03E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-1.81E-02	9.90E-02	9.90E-02
		78.34		96.00	2.83E-01		1.29E-01
+	SC-46	889.25		99.98	9.15E-02	1.62E-01	1.62E-01
		1120.51		99.99	2.16E-01		2.40E-01
+	V-48	983.52		99.98	-1.30E-02	2.46E-01	2.46E-01
		1312.10		97.50	-5.70E-02		2.63E-01
+	CR-51	320.08		9.83	-3.62E-01	1.45E+00	1.45E+00
+	MN-54	834.83		99.97	7.66E-02	1.55E-01	1.55E-01
+	CO-56	846.75		99.96	-3.97E-03	1.35E-01	1.35E-01
		1037.75		14.03	-3.93E-01		1.12E+00
		1238.25		67.00	2.37E-01		3.35E-01
		1771.40		15.51	-5.88E-02		8.00E-01
		2598.48		16.90	-7.82E-02		4.32E-01
+	CO-57	122.06		85.51	-5.31E-02	8.28E-02	8.28E-02
		136.48		10.60	-5.92E-01		6.54E-01
+	CO-58	810.76		99.40	-4.51E-02	1.33E-01	1.33E-01
+	FE-59	1099.22		56.50	-4.01E-02	3.42E-01	3.42E-01
		1291.56		43.20	1.39E-01		5.17E-01
+	CO-60	1173.22		100.00	1.17E-01	1.64E-01	1.64E-01
		1332.49		100.00	1.31E-01		1.80E-01
+	ZN-65	1115.52		50.75	5.10E-03	2.89E-01	2.89E-01
+	GA-67	93.31	*	35.70	1.06E+01	9.17E+00	9.17E+00
		208.95	*	2.24	8.75E+01		1.22E+02
		300.22	*	16.00	1.31E+01		2.75E+01
+	SE-75	121.11		16.70	-3.55E-01	1.26E-01	4.37E-01
		136.00		59.20	-3.12E-02		1.26E-01
		264.65		59.80	2.61E-02		1.64E-01
		279.53		25.20	3.38E-02		4.14E-01
		400.65		11.40	-3.75E-01		9.89E-01
+	RB-82	776.52		13.00	8.85E-02	1.36E+00	1.36E+00
+	RB-83	520.41		46.00	-5.74E-02	2.33E-01	2.33E-01
		529.64		30.30	5.82E-02		4.25E-01
		552.65		16.40	-3.15E-01		6.90E-01

Analysis Report for 1606043-07

CP-5031 10-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	KR-85	513.99		0.43	4.31E+01	3.48E+01	3.48E+01
+	SR-85	513.99		99.27	2.21E-01	1.78E-01	1.78E-01
+	Y-88	898.02		93.40	-7.17E-03	1.24E-01	1.42E-01
		1836.01		99.38	1.56E-02		1.24E-01
+	NB-93M	16.57		9.43	-4.81E+01	1.19E+02	1.19E+02
+	NB-94	702.63		100.00	3.38E-02	1.17E-01	1.38E-01
		871.10		100.00	-1.47E-02		1.17E-01
+	NB-95	765.79		99.81	5.81E-02	1.95E-01	1.95E-01
+	NB-95M	235.69		25.00	-2.50E-01	1.13E+01	1.13E+01
+	ZR-95	724.18		43.70	5.56E-04	2.57E-01	3.75E-01
		756.72		55.30	-2.59E-02		2.57E-01
+	MO-99	181.06		6.20	-1.51E+01	3.88E+01	5.16E+01
		739.58		12.80	1.51E+00		3.88E+01
		778.00		4.50	-1.50E+00		1.16E+02
+	RU-103	497.08		89.00	-5.77E-02	1.46E-01	1.46E-01
+	RU-106	621.84		9.80	5.06E-03	1.18E+00	1.18E+00
+	AG-108M	433.93		89.90	4.24E-02	1.14E-01	1.14E-01
		614.37		90.40	1.35E-02		1.44E-01
		722.95		90.50	-2.83E-02		1.40E-01
+	CD-109	88.03	*	3.72	1.21E+00	2.27E+00	2.27E+00
+	AG-110M	657.75		93.14	5.64E-02	1.43E-01	1.43E-01
		677.61		10.53	1.96E-01		1.21E+00
		706.67		16.46	7.08E-02		8.63E-01
		763.93		21.98	2.69E-02		6.00E-01
		884.67		71.63	-3.57E-02		1.83E-01
		1384.27		23.94	-3.97E-02		5.69E-01
+	CD-113M	263.70		0.02	-1.10E+02	3.80E+02	3.80E+02
+	SN-113	255.12		1.93	-1.46E+00	1.74E-01	5.10E+00
		391.69		64.90	-1.04E-01		1.74E-01
+	TE123M	159.00		84.10	1.10E-02	9.08E-02	9.08E-02
+	SB-124	602.71		97.87	1.52E-02	1.40E-01	1.40E-01
		645.85		7.26	-6.93E-01		1.91E+00
		722.78		11.10	-2.74E-01		1.36E+00
		1691.02		49.00	-1.02E-01		2.55E-01
+	I-125	35.49		6.49	-3.66E-02	3.57E+00	3.57E+00
+	SB-125	176.33		6.89	5.54E-01	3.78E-01	1.12E+00
		427.89		29.33	3.40E-01		3.78E-01
		463.38		10.35	9.05E-01		1.15E+00
		600.56		17.80	3.82E-01		6.97E-01
		635.90		11.32	4.52E-01		1.03E+00
+	SB-126	414.70		83.30	-5.54E-02	2.57E-01	2.57E-01
		666.33		99.60	2.10E-02		2.88E-01
		695.00		99.60	4.55E-02		3.05E-01
		720.50		53.80	1.27E-04		5.32E-01
+	SN-126	87.57	*	37.00	1.19E-01	2.23E-01	2.23E-01
+	SB-127	473.00		25.00	-1.60E+00	4.76E+00	6.11E+00
		685.20		35.70	-3.75E+00		4.76E+00
		783.80		14.70	-8.82E-01		1.18E+01

Analysis Report for 1606043-07

CP-5031 10-15

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-129	29.78	57.00	1.77E-01	5.49E-01	5.49E-01
		33.60	13.20	1.50E+00		1.70E+00
		39.58	7.52	2.02E+00		2.04E+00
+	I-131	284.30	6.05	-4.61E-01	4.22E-01	5.40E+00
		364.48	81.20	4.92E-02		4.22E-01
		636.97	7.26	5.38E-01		5.82E+00
		722.89	1.80	-5.21E+00		2.58E+01
+	TE-132	49.72	13.10	-4.54E-01	2.61E+00	2.04E+01
		228.16	88.00	-1.20E-01		2.61E+00
+	BA-133	81.00	33.00	-1.00E-01	2.34E-01	2.65E-01
		302.84	17.80	6.82E-01		6.14E-01
		356.01	60.00	1.59E-01		2.34E-01
+	I-133	529.87	86.30	3.08E+03	2.25E+04	2.25E+04
+	XE-133	81.00	38.00	-6.36E-01	1.68E+00	1.68E+00
+	CS-134	563.23	8.38	1.67E+00	1.24E-01	1.62E+00
		569.32	15.43	-1.95E-01		7.12E-01
		604.70	97.60	-3.08E-04		1.24E-01
		795.84	85.40	6.63E-02		1.72E-01
		801.93	8.73	-5.09E-01		1.52E+00
+	CS-135	268.24	16.00	9.67E-02	6.24E-01	6.24E-01
+	I-135	1131.51	22.50	-2.92E+14	1.52E+16	1.94E+16
		1260.41	28.60	-2.06E+15		1.52E+16
		1678.03	9.54	-2.28E+16		2.39E+16
+	CS-136	153.22	7.46	2.24E+00	2.26E-01	2.35E+00
		163.89	4.61	1.93E+00		3.64E+00
		176.55	13.56	6.95E-01		1.25E+00
		273.65	12.66	3.66E-01		1.81E+00
		340.57	48.50	-2.98E-02		6.07E-01
		818.50	99.70	-6.27E-02		2.26E-01
		1048.07	79.60	-1.04E-01		3.49E-01
		1235.34	19.70	5.45E-01		2.17E+00
+	CS-137	661.65	85.12	-3.20E-02	1.41E-01	1.41E-01
+	LA-138	788.74	34.00	-3.50E-02	1.84E-01	3.58E-01
		1435.80	66.00	-4.52E-02		1.84E-01
+	CE-139	165.85	80.35	3.99E-02	1.01E-01	1.01E-01
+	BA-140	162.64	6.70	6.65E-01	9.06E-01	2.51E+00
		304.84	4.50	1.31E-01		4.94E+00
		423.70	3.20	5.04E-01		6.85E+00
		437.55	2.00	6.81E+00		1.20E+01
		537.32	25.00	-1.16E-01		9.06E-01
+	LA-140	328.77	20.50	3.65E-01	3.45E-01	1.20E+00
		487.03	45.50	1.43E-01		5.41E-01
		815.85	23.50	-6.74E-02		9.77E-01
		1596.49	95.49	-1.93E-02		3.45E-01
+	CE-141	145.44	48.40	4.37E-02	2.08E-01	2.08E-01
+	CE-143	57.36	11.80	-2.08E+02	5.68E+02	1.72E+03
		293.26	42.00	-3.84E+01		5.68E+02
		664.55	5.20	1.52E+03		4.82E+03
+	CE-144	133.54	10.80	4.03E-01	6.76E-01	6.76E-01

Analysis Report for 1606043-07

CP-5031 10-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-144	476.78		42.00	1.47E-01	1.14E-01	2.78E-01
		618.01		98.60	1.93E-02		1.14E-01
		696.49		99.49	-2.15E-04		1.36E-01
+	PM-145	36.85		21.70	-1.58E-02	4.37E-01	8.06E-01
		37.36		39.70	7.80E-02		4.37E-01
		42.30		15.10	8.75E-02		8.61E-01
		72.40		2.31	-1.03E+01		4.56E+00
+	PM-146	453.90		39.94	-1.46E-02	2.52E-01	2.52E-01
		735.90		14.01	2.64E-02		7.80E-01
		747.13		13.10	1.55E-01		9.60E-01
+	ND-147	91.11		28.90	-9.86E-01	8.72E-01	8.72E-01
		531.02		13.10	1.10E+00		2.28E+00
+	PM-149	285.90		3.10	-9.77E+01	3.14E+02	3.14E+02
+	EU-152	121.78		20.50	-2.13E-01	3.33E-01	3.33E-01
		244.69		5.40	-9.25E-02		2.05E+00
		344.27		19.13	-6.68E-02		4.71E-01
		778.89		9.20	5.13E-01		1.34E+00
		964.01		10.40	-1.71E-01		1.49E+00
		1085.78		7.22	1.51E-01		1.96E+00
		1112.02		9.60	-6.57E-01		1.46E+00
		1407.95		14.94	2.96E-01		9.67E-01
+	GD-153	97.43		31.30	9.22E-02	2.46E-01	2.46E-01
		103.18		22.20	-3.24E-01		3.13E-01
+	EU-154	123.07		40.50	9.94E-02	1.78E-01	1.78E-01
		723.30		19.70	-1.31E-01		6.45E-01
		873.19		11.50	-2.02E-01		9.68E-01
		996.32		10.30	-2.17E-01		1.31E+00
		1004.76		17.90	3.67E-02		7.69E-01
		1274.45		35.50	1.75E-01		4.60E-01
+	EU-155	86.50		30.90	1.55E-01	3.18E-01	3.18E-01
		105.30		20.70	1.73E-01		3.47E-01
+	EU-156	811.77		10.40	-1.15E+00	1.99E+00	1.99E+00
		1153.47		7.20	1.80E+00		4.82E+00
		1230.71		8.90	4.62E-01		3.88E+00
+	HO-166M	184.41		72.60	2.23E-01	1.34E-01	1.34E-01
		280.45		29.60	1.11E-01		3.25E-01
		410.94		11.10	2.42E-02		9.59E-01
		711.69		54.10	7.70E-02		2.42E-01
+	TM-171	66.72		0.14	-1.06E+02	6.87E+01	6.87E+01
+	HF-172	81.75		4.52	-3.70E-01	6.56E-01	1.85E+00
		125.81		11.30	4.11E-01		6.56E-01
+	LU-172	181.53		20.60	-3.09E-01	1.16E+00	1.66E+00
		810.06		16.63	2.27E-01		3.52E+00
		912.12		15.25	2.16E+01		8.40E+00
		1093.66		62.50	-1.60E-01		1.16E+00
+	LU-173	100.72		5.24	-2.78E-01	4.96E-01	1.34E+00
		272.11	*	21.20	4.12E-01		4.96E-01
+	HF-175	343.40		84.00	-1.76E-02	1.34E-01	1.34E-01
+	LU-176	88.34		13.30	6.19E-01	1.00E-01	7.67E-01

Analysis Report for 1606043-07

CP-5031 10-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-176	201.83		86.00	-1.13E-02	1.00E-01	1.11E-01
		306.78		94.00	-3.37E-02		1.00E-01
+	TA-182	67.75		41.20	-4.53E-02	2.49E-01	2.49E-01
		1121.30		34.90	6.66E-01		6.74E-01
		1189.05		16.23	-3.76E-01		1.04E+00
		1221.41		26.98	3.11E-01		7.76E-01
		1231.02		11.44	-1.98E-01		1.55E+00
+	IR-192	308.46		29.68	2.56E-02	2.31E-01	3.74E-01
		468.07		48.10	7.83E-02		2.31E-01
+	HG-203	279.19		77.30	3.13E-02	1.59E-01	1.59E-01
+	BI-207	569.67		97.72	-6.05E-02	1.05E-01	1.05E-01
		1063.62		74.90	5.51E-02		2.10E-01
+	TL-208	583.14	*	30.22	1.57E+00	2.05E-01	5.03E-01
		860.37		4.48	6.71E-01		3.36E+00
		2614.66	*	35.85	1.28E+00		2.05E-01
+	BI-210M	262.00		45.00	-6.29E-02	1.95E-01	1.95E-01
		300.00		23.00	-9.26E-01		4.77E-01
+	PB-210	46.50	*	4.25	3.04E+00	3.63E+00	3.63E+00
+	PB-211	404.84		2.90	2.06E-01	3.53E+00	3.53E+00
		831.96		2.90	1.07E+00		5.20E+00
+	BI-212	727.17	*	11.80	1.61E+00	1.07E+00	1.07E+00
		1620.62		2.75	9.24E-01		4.55E+00
+	PB-212	238.63	*	44.60	2.08E+00	3.33E-01	3.33E-01
		300.09	*	3.41	2.50E+00		5.25E+00
+	BI-214	609.31	*	46.30	1.30E+00	3.90E-01	3.90E-01
		1120.29	*	15.10	1.30E+00		1.41E+00
		1764.49	*	15.80	1.39E+00		4.93E-01
		2204.22		4.98	0.00E+00		3.10E+00
+	PB-214	295.21	*	19.19	1.23E+00	4.24E-01	9.15E-01
		351.92	*	37.19	1.43E+00		4.24E-01
+	RN-219	401.80		6.50	-4.89E-01	1.59E+00	1.59E+00
+	RA-223	323.87		3.88	-2.32E+00	2.70E+00	2.70E+00
+	RA-224	240.98		3.95	2.77E+01	5.00E+00	5.00E+00
+	RA-225	40.00		31.00	9.71E-01	9.79E-01	9.79E-01
+	RA-226	186.21	*	3.28	4.80E+00	3.77E+00	3.77E+00
+	TH-227	50.10		8.40	-2.84E-02	1.28E+00	1.28E+00
		236.00		11.50	-3.01E-02		1.36E+00
		256.20		6.30	7.00E-01		1.46E+00
+	AC-228	338.32	*	11.40	2.60E+00	6.50E-01	1.01E+00
		911.07	*	27.70	2.39E+00		6.50E-01
		969.11	*	16.60	1.77E+00		1.23E+00
+	TH-230	48.44		16.90	5.58E-01	7.31E-01	7.31E-01
		62.85		4.60	8.29E-01		2.30E+00
		67.67		0.37	-4.61E+00		2.53E+01
+	PA-231	283.67		1.60	-4.75E-01	4.74E+00	5.56E+00
		302.67		2.30	5.26E+00		4.74E+00
+	TH-231	25.64		14.70	-2.99E+00	1.34E+00	4.49E+00
		84.21		6.40	1.34E-01		1.34E+00

Analysis Report for 1606043-07

CP-5031 10-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-233	311.98		38.60	1.49E-01	3.67E-01	3.67E-01
+	PA-234	131.20		20.40	2.24E-01	3.78E-01	3.78E-01
		733.99		8.80	-3.46E-01		1.23E+00
		946.00		12.00	-2.41E-01		1.10E+00
+	PA-234M	1001.03		0.92	-5.61E-01	1.49E+01	1.49E+01
+	TH-234	63.29		3.80	1.72E+00	2.74E+00	2.74E+00
+	U-235	143.76		10.50	-4.24E-02	6.91E-01	6.91E-01
		163.35		4.70	8.55E-01		1.61E+00
		205.31		4.70	6.05E-01		2.04E+00
+	NP-237	86.50		12.60	3.77E-01	7.75E-01	7.75E-01
+	NP-239	106.10		22.70	2.88E+00	2.64E+01	2.64E+01
		228.18		10.70	-3.37E+00		7.32E+01
		277.60		14.10	8.63E-01		5.67E+01
+	AM-241	59.54		35.90	1.66E-02	2.85E-01	2.85E-01
+	AM-243	74.67	*	66.00	4.70E-01	2.48E-01	2.48E-01
+	CM-243	209.75	*	3.29	2.43E+00	6.27E-01	3.37E+00
		228.14		10.60	-4.05E-02		8.80E-01
		277.60	*	14.00	3.86E-01		6.27E-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	1.32E+00	1.32E+00	5.64E-01	6.23E-01
NA-22	1274.54	99.94	1.65E-01	1.65E-01	6.27E-02	7.51E-02
NA-24	1368.53	99.99	2.52E+06	4.33E+05	8.20E+05	1.13E+06
	2754.09	99.86	4.33E+05		0.00E+00	0.00E+00

Analysis Report for 1606043-07

CP-5031 10-15

	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	8.37E-02	8.37E-02	-5.75E-02	3.24E-02
+	K-40	1460.81	*	10.67	1.03E+00	1.03E+00	2.72E+01	4.40E-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	9.90E-02	9.90E-02	-1.81E-02	4.83E-02
		78.34		96.00	1.29E-01		2.83E-01	6.35E-02
	SC-46	889.25		99.98	1.62E-01	1.62E-01	9.15E-02	7.49E-02
		1120.51		99.99	2.40E-01		2.16E-01	1.13E-01
	V-48	983.52		99.98	2.46E-01	2.46E-01	-1.30E-02	1.12E-01
		1312.10		97.50	2.63E-01		-5.70E-02	1.17E-01
	CR-51	320.08		9.83	1.45E+00	1.45E+00	-3.62E-01	6.90E-01
	MN-54	834.83		99.97	1.55E-01	1.55E-01	7.66E-02	7.24E-02
	CO-56	846.75		99.96	1.35E-01	1.35E-01	-3.97E-03	6.19E-02
		1037.75		14.03	1.12E+00		-3.93E-01	5.10E-01
		1238.25		67.00	3.35E-01		2.37E-01	1.56E-01
		1771.40		15.51	8.00E-01		-5.88E-02	3.32E-01
		2598.48		16.90	4.32E-01		-7.82E-02	1.37E-01
	CO-57	122.06		85.51	8.28E-02	8.28E-02	-5.31E-02	4.00E-02
		136.48		10.60	6.54E-01		-5.92E-01	3.15E-01
	CO-58	810.76		99.40	1.33E-01	1.33E-01	-4.51E-02	6.08E-02
	FE-59	1099.22		56.50	3.42E-01	3.42E-01	-4.01E-02	1.57E-01
		1291.56		43.20	5.17E-01		1.39E-01	2.37E-01
	CO-60	1173.22		100.00	1.64E-01	1.64E-01	1.17E-01	7.54E-02
		1332.49		100.00	1.80E-01		1.31E-01	8.26E-02
	ZN-65	1115.52		50.75	2.89E-01	2.89E-01	5.10E-03	1.31E-01
+	GA-67	93.31	*	35.70	9.17E+00	9.17E+00	1.06E+01	4.51E+00
		208.95	*	2.24	1.22E+02		8.75E+01	5.90E+01
		300.22	*	16.00	2.75E+01		1.31E+01	1.34E+01
	SE-75	121.11		16.70	4.37E-01	1.26E-01	-3.55E-01	2.11E-01
		136.00		59.20	1.26E-01		-3.12E-02	6.07E-02
		264.65		59.80	1.64E-01		2.61E-02	7.84E-02
		279.53		25.20	4.14E-01		3.38E-02	1.98E-01
		400.65		11.40	9.89E-01		-3.75E-01	4.69E-01
	RB-82	776.52		13.00	1.36E+00	1.36E+00	8.85E-02	6.26E-01
	RB-83	520.41		46.00	2.33E-01	2.33E-01	-5.74E-02	1.09E-01
		529.64		30.30	4.25E-01		5.82E-02	2.00E-01
		552.65		16.40	6.90E-01		-3.15E-01	3.21E-01
	KR-85	513.99		0.43	3.48E+01	3.48E+01	4.31E+01	1.66E+01
	SR-85	513.99		99.27	1.78E-01	1.78E-01	2.21E-01	8.52E-02
	Y-88	898.02		93.40	1.42E-01	1.24E-01	-7.17E-03	6.46E-02
		1836.01		99.38	1.24E-01		1.56E-02	5.13E-02
	NB-93M	16.57		9.43	1.19E+02	1.19E+02	-4.81E+01	5.77E+01
	NB-94	702.63		100.00	1.38E-01	1.17E-01	3.38E-02	6.48E-02
		871.10		100.00	1.17E-01		-1.47E-02	5.33E-02
	NB-95	765.79		99.81	1.95E-01	1.95E-01	5.81E-02	9.10E-02
	NB-95M	235.69		25.00	1.13E+01	1.13E+01	-2.50E-01	5.53E+00
	ZR-95	724.18		43.70	3.75E-01	2.57E-01	5.56E-04	1.75E-01
		756.72		55.30	2.57E-01		-2.59E-02	1.19E-01
	MO-99	181.06		6.20	5.16E+01	3.88E+01	-1.51E+01	2.48E+01
		739.58		12.80	3.88E+01		1.51E+00	1.78E+01
		778.00		4.50	1.16E+02		-1.50E+00	5.35E+01
	RU-103	497.08		89.00	1.46E-01	1.46E-01	-5.77E-02	6.83E-02
	RU-106	621.84		9.80	1.18E+00	1.18E+00	5.06E-03	5.47E-01
	AG-108M	433.93		89.90	1.14E-01	1.14E-01	4.24E-02	5.39E-02

Analysis Report for 1606043-07

CP-5031 10-15

	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	1.44E-01	1.14E-01	1.35E-02	6.75E-02
		722.95		90.50	1.40E-01		-2.83E-02	6.51E-02
+	CD-109	88.03	*	3.72	2.27E+00	2.27E+00	1.21E+00	1.11E+00
	AG-110M	657.75		93.14	1.43E-01	1.43E-01	5.64E-02	6.71E-02
		677.61		10.53	1.21E+00		1.96E-01	5.65E-01
		706.67		16.46	8.63E-01		7.08E-02	4.04E-01
		763.93		21.98	6.00E-01		2.69E-02	2.78E-01
		884.67		71.63	1.83E-01		-3.57E-02	8.40E-02
		1384.27		23.94	5.69E-01		-3.97E-02	2.51E-01
	CD-113M	263.70		0.02	3.80E+02	3.80E+02	-1.10E+02	1.82E+02
	SN-113	255.12		1.93	5.10E+00	1.74E-01	-1.46E+00	2.45E+00
		391.69		64.90	1.74E-01		-1.04E-01	8.24E-02
	TE123M	159.00		84.10	9.08E-02	9.08E-02	1.10E-02	4.37E-02
	SB-124	602.71		97.87	1.40E-01	1.40E-01	1.52E-02	6.56E-02
		645.85		7.26	1.91E+00		-6.93E-01	8.89E-01
		722.78		11.10	1.36E+00		-2.74E-01	6.31E-01
		1691.02		49.00	2.55E-01		-1.02E-01	1.06E-01
	I-125	35.49		6.49	3.57E+00	3.57E+00	-3.66E-02	1.73E+00
	SB-125	176.33		6.89	1.12E+00	3.78E-01	5.54E-01	5.37E-01
		427.89		29.33	3.78E-01		3.40E-01	1.79E-01
		463.38		10.35	1.15E+00		9.05E-01	5.45E-01
		600.56		17.80	6.97E-01		3.82E-01	3.27E-01
		635.90		11.32	1.03E+00		4.52E-01	4.78E-01
	SB-126	414.70		83.30	2.57E-01	2.57E-01	-5.54E-02	1.21E-01
		666.33		99.60	2.88E-01		2.10E-02	1.34E-01
		695.00		99.60	3.05E-01		4.55E-02	1.42E-01
		720.50		53.80	5.32E-01		1.27E-04	2.47E-01
+	SN-126	87.57	*	37.00	2.23E-01	2.23E-01	1.19E-01	1.09E-01
	SB-127	473.00		25.00	6.11E+00	4.76E+00	-1.60E+00	2.87E+00
		685.20		35.70	4.76E+00		-3.75E+00	2.20E+00
		783.80		14.70	1.18E+01		-8.82E-01	5.39E+00
	I-129	29.78		57.00	5.49E-01	5.49E-01	1.77E-01	2.65E-01
		33.60		13.20	1.70E+00		1.50E+00	8.23E-01
		39.58		7.52	2.04E+00		2.02E+00	9.89E-01
	I-131	284.30		6.05	5.40E+00	4.22E-01	-4.61E-01	2.58E+00
		364.48		81.20	4.22E-01		4.92E-02	2.00E-01
		636.97		7.26	5.82E+00		5.38E-01	2.71E+00
		722.89		1.80	2.58E+01		-5.21E+00	1.20E+01
	TE-132	49.72		13.10	2.04E+01	2.61E+00	-4.54E-01	9.90E+00
		228.16		88.00	2.61E+00		-1.20E-01	1.26E+00
	BA-133	81.00		33.00	2.65E-01	2.34E-01	-1.00E-01	1.29E-01
		302.84		17.80	6.14E-01		6.82E-01	2.95E-01
		356.01		60.00	2.34E-01		1.59E-01	1.13E-01
	I-133	529.87		86.30	2.25E+04	2.25E+04	3.08E+03	1.06E+04
	XE-133	81.00		38.00	1.68E+00	1.68E+00	-6.36E-01	8.19E-01
	CS-134	563.23		8.38	1.62E+00	1.24E-01	1.67E+00	7.68E-01
		569.32		15.43	7.12E-01		-1.95E-01	3.32E-01
		604.70		97.60	1.24E-01		-3.08E-04	5.83E-02
		795.84		85.40	1.72E-01		6.63E-02	8.04E-02
		801.93		8.73	1.52E+00		-5.09E-01	7.02E-01
	CS-135	268.24		16.00	6.24E-01	6.24E-01	9.67E-02	3.00E-01
	I-135	1131.51		22.50	1.94E+16	1.52E+16	-2.92E+14	8.85E+15
		1260.41		28.60	1.52E+16		-2.06E+15	6.87E+15

Analysis Report for 1606043-07

CP-5031 10-15

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	2.39E+16	1.52E+16	-2.28E+16	9.24E+15
CS-136	153.22	7.46	2.35E+00	2.26E-01	2.24E+00	1.13E+00
	163.89	4.61	3.64E+00		1.93E+00	1.76E+00
	176.55	13.56	1.25E+00		6.95E-01	6.02E-01
	273.65	12.66	1.81E+00		3.66E-01	8.71E-01
	340.57	48.50	6.07E-01		-2.98E-02	2.93E-01
	818.50	99.70	2.26E-01		-6.27E-02	1.02E-01
	1048.07	79.60	3.49E-01		-1.04E-01	1.57E-01
	1235.34	19.70	2.17E+00		5.45E-01	1.00E+00
CS-137	661.65	85.12	1.41E-01	1.41E-01	-3.20E-02	6.57E-02
LA-138	788.74	34.00	3.58E-01	1.84E-01	-3.50E-02	1.65E-01
	1435.80	66.00	1.84E-01		-4.52E-02	7.98E-02
CE-139	165.85	80.35	1.01E-01	1.01E-01	3.99E-02	4.86E-02
BA-140	162.64	6.70	2.51E+00	9.06E-01	6.65E-01	1.21E+00
	304.84	4.50	4.94E+00		1.31E-01	2.36E+00
	423.70	3.20	6.85E+00		5.04E-01	3.23E+00
	437.55	2.00	1.20E+01		6.81E+00	5.68E+00
	537.32	25.00	9.06E-01		-1.16E-01	4.22E-01
LA-140	328.77	20.50	1.20E+00	3.45E-01	3.65E-01	5.73E-01
	487.03	45.50	5.41E-01		1.43E-01	2.55E-01
	815.85	23.50	9.77E-01		-6.74E-02	4.41E-01
	1596.49	95.49	3.45E-01		-1.93E-02	1.52E-01
CE-141	145.44	48.40	2.08E-01	2.08E-01	4.37E-02	1.00E-01
CE-143	57.36	11.80	1.72E+03	5.68E+02	-2.08E+02	8.35E+02
	293.26	42.00	5.68E+02		-3.84E+01	2.74E+02
	664.55	5.20	4.82E+03		1.52E+03	2.25E+03
CE-144	133.54	10.80	6.76E-01	6.76E-01	4.03E-01	3.27E-01
PM-144	476.78	42.00	2.78E-01	1.14E-01	1.47E-01	1.31E-01
	618.01	98.60	1.14E-01		1.93E-02	5.27E-02
	696.49	99.49	1.36E-01		-2.15E-04	6.38E-02
PM-145	36.85	21.70	8.06E-01	4.37E-01	-1.58E-02	3.89E-01
	37.36	39.70	4.37E-01		7.80E-02	2.11E-01
	42.30	15.10	8.61E-01		8.75E-02	4.16E-01
	72.40	2.31	4.56E+00		-1.03E+01	2.23E+00
PM-146	453.90	39.94	2.52E-01	2.52E-01	-1.46E-02	1.19E-01
	735.90	14.01	7.80E-01		2.64E-02	3.58E-01
	747.13	13.10	9.60E-01		1.55E-01	4.45E-01
ND-147	91.11	28.90	8.72E-01	8.72E-01	-9.86E-01	4.26E-01
	531.02	13.10	2.28E+00		1.10E+00	1.07E+00
PM-149	285.90	3.10	3.14E+02	3.14E+02	-9.77E+01	1.50E+02
EU-152	121.78	20.50	3.33E-01	3.33E-01	-2.13E-01	1.61E-01
	244.69	5.40	2.05E+00		-9.25E-02	9.91E-01
	344.27	19.13	4.71E-01		-6.68E-02	2.23E-01
	778.89	9.20	1.34E+00		5.13E-01	6.17E-01
	964.01	10.40	1.49E+00		-1.71E-01	6.89E-01
	1085.78	7.22	1.96E+00		1.51E-01	8.91E-01
	1112.02	9.60	1.46E+00		-6.57E-01	6.64E-01
	1407.95	14.94	9.67E-01		2.96E-01	4.31E-01
GD-153	97.43	31.30	2.46E-01	2.46E-01	9.22E-02	1.19E-01
	103.18	22.20	3.13E-01		-3.24E-01	1.51E-01
EU-154	123.07	40.50	1.78E-01	1.78E-01	9.94E-02	8.63E-02
	723.30	19.70	6.45E-01		-1.31E-01	3.00E-01
	873.19	11.50	9.68E-01		-2.02E-01	4.38E-01

Analysis Report for 1606043-07

CP-5031 10-15

	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	1.31E+00	1.78E-01	-2.17E-01	5.98E-01
		1004.76		17.90	7.69E-01		3.67E-02	3.51E-01
		1274.45		35.50	4.60E-01		1.75E-01	2.10E-01
	EU-155	86.50		30.90	3.18E-01	3.18E-01	1.55E-01	1.55E-01
		105.30		20.70	3.47E-01		1.73E-01	1.68E-01
	EU-156	811.77		10.40	1.99E+00	1.99E+00	-1.15E+00	9.02E-01
		1153.47		7.20	4.82E+00		1.80E+00	2.23E+00
		1230.71		8.90	3.88E+00		4.62E-01	1.78E+00
	HO-166M	184.41		72.60	1.34E-01	1.34E-01	2.23E-01	6.50E-02
		280.45		29.60	3.25E-01		1.11E-01	1.56E-01
		410.94		11.10	9.59E-01		2.42E-02	4.55E-01
		711.69		54.10	2.42E-01		7.70E-02	1.13E-01
	TM-171	66.72		0.14	6.87E+01	6.87E+01	-1.06E+02	3.35E+01
	HF-172	81.75		4.52	1.85E+00	6.56E-01	-3.70E-01	8.98E-01
		125.81		11.30	6.56E-01		4.11E-01	3.17E-01
	LU-172	181.53		20.60	1.66E+00	1.16E+00	-3.09E-01	7.98E-01
		810.06		16.63	3.52E+00		2.27E-01	1.62E+00
		912.12		15.25	8.40E+00		2.16E+01	4.03E+00
		1093.66		62.50	1.16E+00		-1.60E-01	5.31E-01
+	LU-173	100.72		5.24	1.34E+00	4.96E-01	-2.78E-01	6.46E-01
		272.11	*	21.20	4.96E-01		4.12E-01	2.39E-01
	HF-175	343.40		84.00	1.34E-01	1.34E-01	-1.76E-02	6.38E-02
	LU-176	88.34		13.30	7.67E-01	1.00E-01	6.19E-01	3.75E-01
		201.83		86.00	1.11E-01		-1.13E-02	5.37E-02
		306.78		94.00	1.00E-01		-3.37E-02	4.79E-02
	TA-182	67.75		41.20	2.49E-01	2.49E-01	-4.53E-02	1.21E-01
		1121.30		34.90	6.74E-01		6.66E-01	3.17E-01
		1189.05		16.23	1.04E+00		-3.76E-01	4.74E-01
		1221.41		26.98	7.76E-01		3.11E-01	3.60E-01
		1231.02		11.44	1.55E+00		-1.98E-01	7.10E-01
	IR-192	308.46		29.68	3.74E-01	2.31E-01	2.56E-02	1.78E-01
		468.07		48.10	2.31E-01		7.83E-02	1.08E-01
	HG-203	279.19		77.30	1.59E-01	1.59E-01	3.13E-02	7.64E-02
	BI-207	569.67		97.72	1.05E-01	1.05E-01	-6.05E-02	4.86E-02
		1063.62		74.90	2.10E-01		5.51E-02	9.66E-02
+	TL-208	583.14	*	30.22	5.03E-01	2.05E-01	1.57E+00	2.39E-01
		860.37		4.48	3.36E+00		6.71E-01	1.57E+00
		2614.66	*	35.85	2.05E-01		1.28E+00	6.97E-02
	BI-210M	262.00		45.00	1.95E-01	1.95E-01	-6.29E-02	9.36E-02
		300.00		23.00	4.77E-01		-9.26E-01	2.29E-01
+	PB-210	46.50	*	4.25	3.63E+00	3.63E+00	3.04E+00	1.77E+00
	PB-211	404.84		2.90	3.53E+00	3.53E+00	2.06E-01	1.67E+00
		831.96		2.90	5.20E+00		1.07E+00	2.42E+00
+	BI-212	727.17	*	11.80	1.07E+00	1.07E+00	1.61E+00	4.98E-01
		1620.62		2.75	4.55E+00		9.24E-01	1.96E+00
+	PB-212	238.63	*	44.60	3.33E-01	3.33E-01	2.08E+00	1.63E-01
		300.09	*	3.41	5.25E+00		2.50E+00	2.56E+00
+	BI-214	609.31	*	46.30	3.90E-01	3.90E-01	1.30E+00	1.86E-01
		1120.29	*	15.10	1.41E+00		1.30E+00	6.65E-01
		1764.49	*	15.80	4.93E-01		1.39E+00	1.88E-01
		2204.22		4.98	3.10E+00		0.00E+00	1.33E+00
+	PB-214	295.21	*	19.19	9.15E-01	4.24E-01	1.23E+00	4.47E-01
		351.92	*	37.19	4.24E-01		1.43E+00	2.05E-01

Analysis Report for 1606043-07

CP-5031 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	1.59E+00	1.59E+00	-4.89E-01	7.52E-01
	RA-223	323.87		3.88	2.70E+00	2.70E+00	-2.32E+00	1.29E+00
	RA-224	240.98		3.95	5.00E+00	5.00E+00	2.77E+01	2.46E+00
	RA-225	40.00		31.00	9.79E-01	9.79E-01	9.71E-01	4.74E-01
+	RA-226	186.21	*	3.28	3.77E+00	3.77E+00	4.80E+00	1.84E+00
	TH-227	50.10		8.40	1.28E+00	1.28E+00	-2.84E-02	6.21E-01
		236.00		11.50	1.36E+00		-3.01E-02	6.67E-01
		256.20		6.30	1.46E+00		7.00E-01	6.99E-01
+	AC-228	338.32	*	11.40	1.01E+00	6.50E-01	2.60E+00	4.86E-01
		911.07	*	27.70	6.50E-01		2.39E+00	3.05E-01
		969.11	*	16.60	1.23E+00		1.77E+00	5.79E-01
	TH-230	48.44		16.90	7.31E-01	7.31E-01	5.58E-01	3.56E-01
		62.85		4.60	2.30E+00		8.29E-01	1.12E+00
		67.67		0.37	2.53E+01		-4.61E+00	1.23E+01
	PA-231	283.67		1.60	5.56E+00	4.74E+00	-4.75E-01	2.66E+00
		302.67		2.30	4.74E+00		5.26E+00	2.28E+00
	TH-231	25.64		14.70	4.49E+00	1.34E+00	-2.99E+00	2.17E+00
		84.21		6.40	1.34E+00		1.34E-01	6.53E-01
	PA-233	311.98		38.60	3.67E-01	3.67E-01	1.49E-01	1.75E-01
	PA-234	131.20		20.40	3.78E-01	3.78E-01	2.24E-01	1.83E-01
		733.99		8.80	1.23E+00		-3.46E-01	5.65E-01
		946.00		12.00	1.10E+00		-2.41E-01	5.03E-01
	PA-234M	1001.03		0.92	1.49E+01	1.49E+01	-5.61E-01	6.79E+00
	TH-234	63.29		3.80	2.74E+00	2.74E+00	1.72E+00	1.34E+00
	U-235	143.76		10.50	6.91E-01	6.91E-01	-4.24E-02	3.34E-01
		163.35		4.70	1.61E+00		8.55E-01	7.78E-01
		205.31		4.70	2.04E+00		6.05E-01	9.89E-01
	NP-237	86.50		12.60	7.75E-01	7.75E-01	3.77E-01	3.79E-01
	NP-239	106.10		22.70	2.64E+01	2.64E+01	2.88E+00	1.28E+01
		228.18		10.70	7.32E+01		-3.37E+00	3.53E+01
		277.60		14.10	5.67E+01		8.63E-01	2.72E+01
	AM-241	59.54		35.90	2.85E-01	2.85E-01	1.66E-02	1.39E-01
+	AM-243	74.67	*	66.00	2.48E-01	2.48E-01	4.70E-01	1.22E-01
+	CM-243	209.75	*	3.29	3.37E+00	6.27E-01	2.43E+00	1.64E+00
		228.14		10.60	8.80E-01		-4.05E-02	4.24E-01
		277.60	*	14.00	6.27E-01		3.86E-01	3.00E-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 1606043-07

CP-5031 10-15

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-5031 10-15

Elapsed Live time: 3600
Elapsed Real Time: 3613

Channel								
1:	0	0	0	0	0	0	0	0
9:	1	149	143	130	103	109	84	81
17:	91	76	83	79	67	57	103	62
25:	69	70	55	62	57	44	41	40
33:	53	68	51	73	44	59	63	68
41:	66	64	49	52	73	88	144	101
49:	63	63	79	68	78	70	76	76
57:	80	91	101	124	114	79	114	168
65:	122	101	94	107	94	118	96	104
73:	115	121	263	302	273	428	161	87
81:	84	103	76	104	129	89	132	198
89:	109	131	151	97	169	233	76	77
97:	72	74	72	74	59	52	57	60
105:	65	75	80	53	69	74	64	57
113:	67	61	52	61	68	54	50	51
121:	60	48	61	59	83	69	40	63
129:	80	94	56	44	65	59	62	46
137:	47	41	46	64	60	50	54	75
145:	50	44	47	56	53	48	44	70
153:	52	73	65	41	40	55	37	53
161:	40	51	41	69	47	49	43	39
169:	42	42	34	35	34	40	51	42
177:	52	49	43	43	38	36	41	43
185:	46	106	130	50	48	34	33	45
193:	44	35	35	36	44	42	43	39
201:	48	38	42	51	47	50	44	33
209:	58	94	48	41	35	37	41	46
217:	39	44	38	32	39	38	35	32
225:	38	30	42	23	35	41	34	46
233:	27	39	32	32	36	92	416	260
241:	70	97	79	28	33	18	24	29
249:	24	35	23	24	32	24	34	19
257:	26	29	31	29	17	26	25	19
265:	25	30	25	26	21	28	60	36
273:	32	20	23	29	25	41	25	18
281:	22	35	17	27	20	17	16	21
289:	26	17	21	22	20	19	56	118
297:	45	16	16	38	46	31	24	28
305:	19	24	20	21	20	20	26	26
313:	18	23	21	16	18	13	25	24
321:	14	27	30	34	23	21	23	38
329:	39	18	20	21	27	11	23	27
337:	23	47	111	34	21	17	14	15
345:	16	15	14	17	16	20	25	136
353:	157	24	23	22	11	10	18	18
361:	20	20	24	13	11	11	14	17

369:	17	7	8	17	11	12	9	24

Sample Title: CP-5031 10-15

Channel								
377:	14	12	24	14	12	13	15	21
385:	17	16	22	16	20	19	24	12
393:	13	11	19	29	17	21	14	16
401:	17	20	11	15	20	13	23	8
409:	25	28	20	8	15	12	11	14
417:	13	11	14	15	19	9	10	11
425:	10	17	14	24	22	11	17	13
433:	5	11	14	18	19	9	16	16
441:	11	14	11	13	10	14	9	18
449:	11	18	9	10	9	10	19	12
457:	16	9	9	13	14	25	20	26
465:	11	6	10	13	9	11	14	9
473:	8	14	13	12	14	16	16	16
481:	13	12	11	10	14	8	12	17
489:	15	13	8	13	19	12	5	6
497:	14	10	13	11	13	6	10	14
505:	9	9	7	9	15	32	58	53
513:	18	5	11	9	6	6	12	10
521:	8	8	9	11	14	6	10	14
529:	8	15	14	8	15	12	12	8
537:	9	10	5	6	5	12	2	7
545:	18	9	14	11	15	6	11	12
553:	9	8	3	10	9	10	11	18
561:	8	11	19	19	19	12	6	5
569:	10	5	18	10	4	4	12	6
577:	11	11	10	6	11	17	85	78
585:	31	7	11	10	8	12	9	7
593:	7	8	12	1	11	9	16	12
601:	13	9	10	9	8	7	16	14
609:	92	118	29	10	9	10	9	6
617:	11	5	9	9	8	6	5	11
625:	12	8	10	6	10	16	5	7
633:	4	7	11	9	9	14	7	4
641:	9	11	4	6	14	3	11	8
649:	15	10	13	8	9	8	13	14
657:	6	11	1	15	12	8	7	7
665:	12	13	10	9	7	7	9	8
673:	8	10	8	6	6	13	8	9
681:	12	6	8	7	6	4	15	5
689:	18	6	10	8	12	9	9	7
697:	13	10	9	10	11	7	16	11
705:	13	7	6	12	14	9	9	8
713:	10	7	8	5	8	13	6	5
721:	7	13	4	6	12	12	18	36
729:	8	8	6	7	6	4	3	7
737:	8	7	6	4	6	5	5	10
745:	9	9	6	8	6	6	6	10
753:	7	13	8	5	7	7	5	4
761:	6	8	7	6	9	8	9	20
769:	11	12	7	6	5	6	5	5
777:	7	9	7	6	5	9	5	4
785:	8	5	5	4	8	9	10	5
793:	4	12	15	16	7	6	6	8

801:	6	6	9	6	11	12	11	10

Sample Title: CP-5031 10-15

Channel								
809:	6	4	4	7	3	4	3	6
817:	3	7	3	2	5	5	8	11
825:	8	9	11	9	5	10	6	9
833:	14	8	14	6	7	7	5	6
841:	8	5	5	4	8	4	3	8
849:	6	5	6	6	6	1	5	11
857:	6	4	7	16	14	8	7	10
865:	5	3	6	4	8	8	9	1
873:	1	4	3	5	6	3	6	5
881:	6	7	4	3	6	7	7	4
889:	11	10	5	8	4	5	9	10
897:	4	4	4	1	3	7	4	3
905:	8	5	3	7	11	16	85	56
913:	12	6	5	1	2	11	6	9
921:	10	5	3	2	7	7	5	4
929:	5	8	4	3	7	5	11	7
937:	6	8	8	4	2	8	7	8
945:	6	6	3	2	7	8	7	2
953:	5	9	6	4	6	2	9	3
961:	7	6	5	12	11	10	2	20
969:	51	21	11	5	4	8	3	6
977:	6	10	3	4	7	3	7	2
985:	5	6	4	4	3	2	1	6
993:	8	8	5	6	3	4	3	5
1001:	8	10	5	3	7	6	3	4
1009:	5	4	4	8	5	2	3	5
1017:	5	8	13	3	8	3	4	4
1025:	4	5	5	6	3	4	5	6
1033:	7	5	6	11	5	5	2	5
1041:	2	9	5	8	5	4	4	5
1049:	2	5	4	3	6	6	3	2
1057:	5	5	5	7	5	9	6	7
1065:	4	8	3	8	10	5	3	7
1073:	5	5	5	5	5	8	4	6
1081:	3	8	7	3	6	1	7	3
1089:	8	2	6	4	2	9	6	12
1097:	3	7	3	4	9	3	7	3
1105:	8	6	7	8	4	6	6	4
1113:	6	3	4	8	4	4	10	26
1121:	24	8	4	6	5	5	5	4
1129:	5	4	3	8	4	10	5	7
1137:	6	5	5	3	7	6	2	7
1145:	5	8	4	7	4	6	6	4
1153:	5	10	14	5	5	5	2	3
1161:	8	3	5	7	5	7	6	2
1169:	0	3	7	8	6	4	10	4
1177:	2	6	3	4	7	8	9	7
1185:	7	4	5	5	6	5	6	5
1193:	5	8	8	6	8	3	4	4
1201:	7	9	6	9	1	2	6	4
1209:	4	4	7	3	7	5	12	6
1217:	6	5	6	8	10	12	6	8
1225:	7	4	10	1	6	9	5	6

1233:	7	4	5	9	10	14	9	3

Sample Title: CP-5031 10-15

Channel								
1241:	7	3	4	3	3	9	7	5
1249:	7	4	4	7	5	4	6	5
1257:	1	6	7	2	3	5	7	3
1265:	6	4	5	2	4	4	7	4
1273:	3	5	2	2	5	4	3	2
1281:	5	1	4	9	6	4	3	5
1289:	3	7	3	7	2	8	4	1
1297:	4	0	3	4	3	7	8	4
1305:	3	3	5	1	3	3	2	4
1313:	1	3	2	3	3	4	1	2
1321:	3	0	3	4	6	2	3	3
1329:	3	4	7	10	4	4	2	4
1337:	2	1	5	2	4	2	3	6
1345:	0	0	5	3	2	1	1	2
1353:	2	3	1	0	2	4	0	3
1361:	1	1	1	6	2	3	2	2
1369:	1	5	1	1	1	3	0	1
1377:	8	4	2	0	2	1	4	1
1385:	5	1	1	4	2	1	2	2
1393:	2	2	4	1	0	1	1	1
1401:	2	3	4	3	4	1	2	4
1409:	4	2	1	2	1	0	1	3
1417:	2	3	2	1	0	1	3	1
1425:	2	0	2	3	3	3	1	1
1433:	2	1	2	3	2	1	2	2
1441:	1	1	0	2	3	3	2	3
1449:	1	2	5	0	1	5	1	1
1457:	1	6	32	132	234	74	12	1
1465:	2	2	2	0	0	0	1	1
1473:	1	1	0	2	2	3	2	1
1481:	3	1	3	2	4	2	0	0
1489:	2	2	0	1	2	0	2	5
1497:	0	2	0	1	2	3	1	0
1505:	3	0	1	4	2	1	1	2
1513:	1	3	0	3	1	3	0	4
1521:	2	1	1	2	1	0	0	1
1529:	4	1	0	5	0	1	5	4
1537:	3	1	0	1	1	1	2	2
1545:	0	2	2	0	1	4	1	1
1553:	0	0	2	0	3	0	1	0
1561:	4	1	1	2	2	1	1	1
1569:	2	1	0	1	2	1	2	2
1577:	0	0	5	1	2	4	3	1
1585:	3	1	2	3	4	1	4	3
1593:	7	2	0	1	2	2	2	0
1601:	2	2	2	1	1	2	0	1
1609:	0	1	1	0	3	0	1	0
1617:	1	1	3	0	4	2	2	0
1625:	2	1	1	0	0	1	1	3
1633:	1	0	0	1	0	1	1	0
1641:	2	0	2	0	1	1	1	1
1649:	1	0	1	1	1	0	1	0
1657:	0	0	1	0	1	1	1	0

1665:	1	1	0	3	0	0	0	1

Sample Title: CP-5031 10-15

Channel								
1673:	1	1	1	1	0	0	0	0
1681:	1	0	1	3	2	1	0	1
1689:	1	3	0	2	1	0	0	1
1697:	0	3	1	1	0	1	0	0
1705:	1	0	2	2	1	1	0	1
1713:	0	2	0	2	2	1	0	2
1721:	0	1	2	1	2	0	0	3
1729:	3	4	1	1	0	0	0	2
1737:	1	0	3	1	1	1	0	0
1745:	1	0	1	1	1	1	0	1
1753:	0	1	2	3	3	1	1	1
1761:	0	1	5	8	10	6	2	2
1769:	0	0	2	1	1	0	0	0
1777:	0	2	0	0	0	0	2	2
1785:	1	0	0	1	1	2	0	0
1793:	1	1	2	0	1	1	2	1
1801:	1	0	1	1	1	0	0	0
1809:	2	0	0	0	3	1	1	0
1817:	1	1	0	0	2	1	0	0
1825:	1	0	0	0	1	1	0	2
1833:	1	0	1	0	1	3	0	2
1841:	0	0	1	0	0	1	1	1
1849:	2	2	0	0	2	1	1	1
1857:	0	0	0	0	0	0	0	1
1865:	0	0	0	2	0	0	1	0
1873:	1	1	1	1	0	0	0	0
1881:	0	0	0	0	2	0	1	0
1889:	0	1	1	1	2	1	1	2
1897:	2	0	0	3	0	0	2	0
1905:	0	1	0	0	0	0	1	0
1913:	0	1	0	1	0	1	1	0
1921:	0	0	1	0	0	0	2	0
1929:	2	0	0	1	0	1	0	2
1937:	1	0	0	1	2	1	2	0
1945:	0	0	1	0	0	0	1	0
1953:	0	0	1	1	1	1	1	0
1961:	0	1	0	0	0	0	1	0
1969:	0	0	0	1	1	1	0	1
1977:	1	1	0	0	1	2	0	0
1985:	0	0	1	0	0	1	0	0
1993:	0	1	0	1	2	1	0	1
2001:	0	2	1	0	0	0	2	0
2009:	0	1	3	1	0	2	1	2
2017:	1	1	1	2	0	0	1	0
2025:	1	2	0	0	0	0	1	1
2033:	1	1	1	1	1	0	0	1
2041:	1	0	0	1	0	0	0	0
2049:	1	0	0	2	1	0	0	0
2057:	1	1	0	0	2	1	0	1
2065:	1	0	0	1	0	0	1	0
2073:	0	0	1	0	0	1	0	2
2081:	2	1	1	1	2	0	0	0
2089:	2	0	1	2	0	0	0	0

2097:	0	1	1	0	2	0	3	2

Sample Title: CP-5031 10-15

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

2529:	1	0	0	0	0	0	2	0

Sample Title: CP-5031 10-15

Channel								
2537:	0	0	1	0	0	1	1	0
2545:	0	0	2	2	2	0	0	0
2553:	1	1	0	0	0	0	0	0
2561:	0	0	2	1	0	0	1	0
2569:	0	0	1	0	0	0	0	2
2577:	0	0	0	0	0	0	0	0
2585:	2	1	0	0	0	0	0	0
2593:	0	0	0	1	0	0	0	0
2601:	0	0	0	0	1	1	0	0
2609:	1	1	0	4	14	13	19	1
2617:	2	0	0	0	0	0	0	0
2625:	0	0	0	1	0	0	0	0
2633:	0	0	0	0	0	1	0	0
2641:	1	2	0	1	1	0	0	0
2649:	0	0	1	0	0	0	1	0
2657:	0	1	1	0	0	0	0	1
2665:	0	0	0	0	0	0	0	0
2673:	1	0	0	0	0	1	0	0
2681:	0	2	0	1	0	0	0	0
2689:	1	1	0	2	1	0	0	0
2697:	1	0	0	0	1	0	0	0
2705:	0	0	0	0	0	0	1	0
2713:	0	0	0	0	1	1	0	0
2721:	1	1	0	0	0	0	1	0
2729:	0	0	0	0	0	0	0	0
2737:	0	0	0	0	0	1	2	0
2745:	0	1	1	0	0	0	0	0
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	0	0	0	0	0
2769:	0	0	0	0	0	0	1	1
2777:	0	0	0	0	0	2	1	0
2785:	0	0	3	0	0	0	1	0
2793:	0	0	0	0	0	1	0	0
2801:	0	0	0	0	1	0	0	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	0	0	1	0	0
2825:	0	0	0	0	0	0	0	0
2833:	1	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	1	0
2849:	0	0	1	1	0	0	1	0
2857:	0	0	0	0	0	0	1	1
2865:	0	0	1	0	0	1	0	0
2873:	0	0	0	0	1	0	1	0
2881:	0	0	0	0	1	0	1	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	1	1	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	1	0	0	0	1	0	0	0
2937:	1	0	0	0	2	0	0	0
2945:	0	1	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961:	1	0	0	0	0	0	0	0

Sample Title: CP-5031 10-15

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

3393:	0	0	0	0	0	0	0	0

Sample Title: CP-5031 10-15

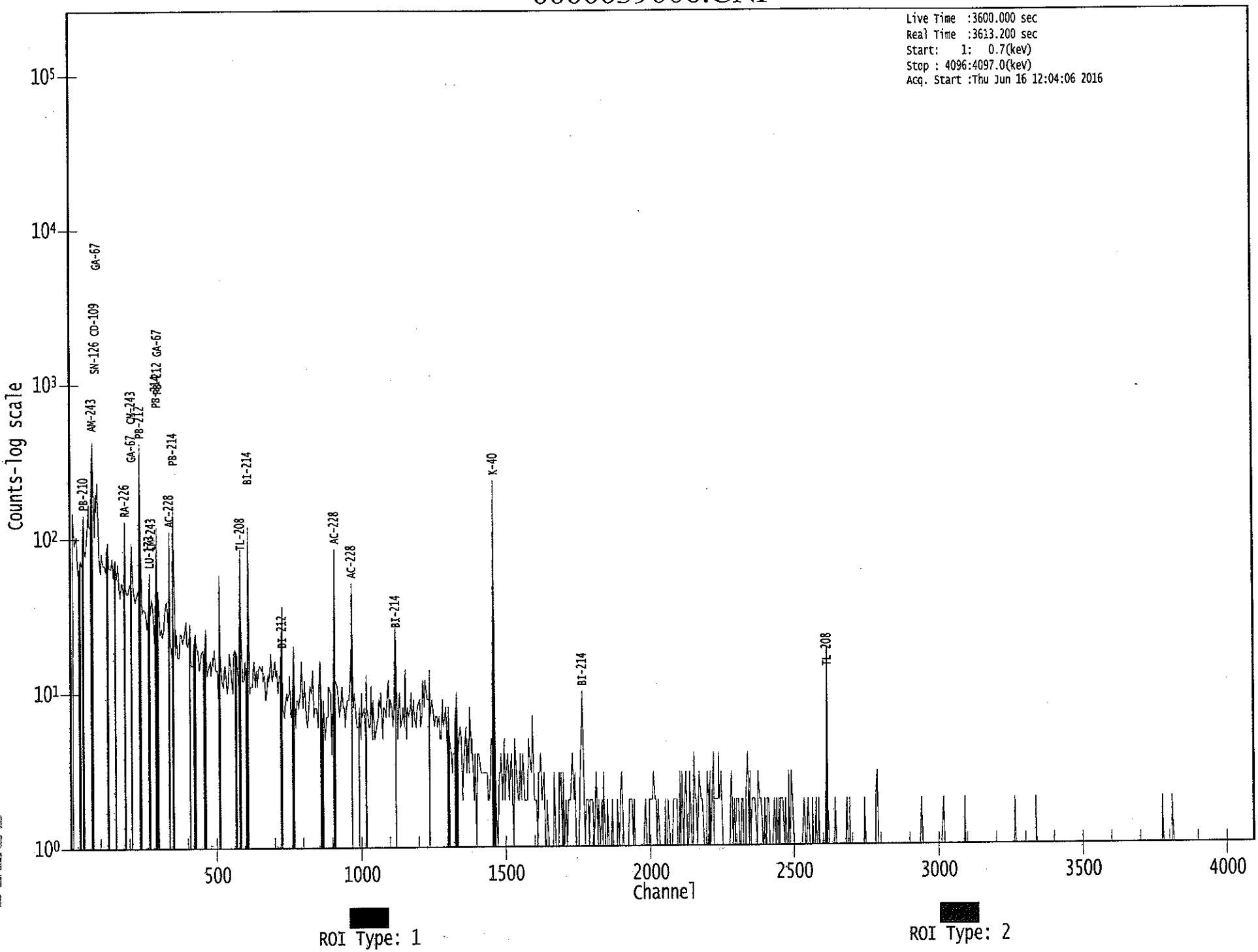
Channel								
3401:	0	0	0	0	0	1	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	1	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	1	0	1	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	1	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	1	0	0	0	0	0	1
3489:	0	0	0	0	0	0	1	0
3497:	0	0	1	0	0	0	0	0
3505:	0	1	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	1	0	0	0	0	1
3537:	0	0	1	0	0	0	0	0
3545:	1	0	0	0	0	1	0	1
3553:	0	1	0	0	0	0	0	0
3561:	0	1	0	0	0	0	0	0
3569:	0	1	0	0	0	1	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	1	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	1	0	0	0	0	0	0
3609:	0	0	0	0	1	0	1	1
3617:	0	1	0	0	0	0	0	0
3625:	0	1	0	0	0	1	0	0
3633:	0	0	0	0	1	1	0	0
3641:	0	0	1	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	1	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	1	0	0	1	0	1	1
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	1	0	0	0	0
3705:	0	0	0	0	1	0	0	1
3713:	0	0	0	0	0	0	0	0
3721:	0	1	0	0	1	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	0
3753:	0	0	0	0	0	0	0	0
3761:	1	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	2
3777:	1	0	1	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	1	0	0	0	0	0	0
3809:	0	2	0	0	0	0	1	0
3817:	0	0	0	0	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: CP-5031 10-15

Channel								
3833:	0	0	0	0	1	0	0	1
3841:	0	0	0	0	0	0	0	0
3849:	0	0	1	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	1	1	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	1	0
3889:	1	0	0	0	0	1	0	0
3897:	0	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	0	1	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	1	0	0	0	1	0	0
3945:	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0
3985:	0	0	0	0	1	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	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	1	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	0	0	0	1	0	0	0

0000039006.CNF



Apex-Gamma

Analysis Report for 1606043-08
CP-5010 00-02

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-08
Sample Description	: CP-5010 00-02
Sample Type	: SOIL
Sample Size	: 5.404E+02 grams
Facility	: Countroom
Sample Taken On	: 6/7/2016 11:11:16AM
Acquisition Started	: 6/16/2016 12:53:19PM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3619.5 seconds
Dead Time	: 0.54 %
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	: 39012

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

6/17/16

Analysis Report for 1606043-08

CP-5010 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 1:53:40PM
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	63.75	63.01	0.0000	0.00
2	76.04	75.31	0.0000	0.00
3	88.74	88.02	0.0000	0.00
4	93.37	92.65	0.0000	0.00
5	186.61	185.92	0.0000	0.00
6	210.19	209.51	0.0000	0.00
7	216.44	215.77	0.0000	0.00
8	239.75	239.09	0.0000	0.00
9	295.63	295.00	0.0000	0.00
10	338.52	337.90	0.0000	0.00
11	351.89	351.27	0.0000	0.00
12	583.45	582.94	0.0000	0.00
13	609.27	608.78	0.0000	0.00
14	726.12	725.69	0.0000	0.00
15	769.66	769.24	0.0000	0.00
16	787.16	786.75	0.0000	0.00
17	822.38	822.00	0.0000	0.00
18	903.15	902.80	0.0000	0.00
19	911.38	911.04	0.0000	0.00
20	968.55	968.24	0.0000	0.00
21	1119.67	1119.44	0.0000	0.00
22	1409.32	1409.26	0.0000	0.00
23	1460.64	1460.61	0.0000	0.00
24	1522.50	1522.51	0.0000	0.00
25	1763.59	1763.75	0.0000	0.00
26	2122.05	2122.46	0.0000	0.00
27	2612.98	2613.75	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606043-08

CP-5010 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 1:53:40PM

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	63.75	60 -	66	63.01	1.28E+02	84.49	1.21E+03	2.61
	2	76.04	68 -	82	75.31	6.73E+02	166.97	2.64E+03	4.45
M	3	88.74	82 -	96	88.02	2.19E+02	113.74	1.54E+03	3.78
m	4	93.37	82 -	96	92.65	2.35E+02	87.80	1.03E+03	2.71
	5	186.61	182 -	190	185.92	1.55E+02	74.04	7.40E+02	2.15
	6	210.19	207 -	213	209.51	4.64E+01	53.70	4.85E+02	1.21
	7	216.44	213 -	219	215.77	4.02E+01	48.55	3.94E+02	2.22
	8	239.75	234 -	245	239.09	4.82E+02	89.17	7.25E+02	2.66
	9	295.63	289 -	301	295.00	2.21E+02	74.33	5.47E+02	2.24
	10	338.52	332 -	343	337.90	1.16E+02	57.72	3.53E+02	2.40
	11	351.89	345 -	357	351.27	2.97E+02	65.47	3.66E+02	2.27
	12	583.45	579 -	588	582.94	1.02E+02	35.33	1.20E+02	2.48
	13	609.27	603 -	613	608.78	2.31E+02	42.32	1.15E+02	2.51
	14	726.12	722 -	729	725.69	2.02E+01	25.14	9.15E+01	3.18
	15	769.66	763 -	774	769.24	3.70E+01	32.50	1.12E+02	2.25
	16	787.16	780 -	791	786.75	3.44E+01	28.43	8.33E+01	5.47
	17	822.38	817 -	826	822.00	2.44E+01	24.12	6.72E+01	4.57
M	18	903.15	899 -	923	902.80	1.45E+01	16.95	4.27E+01	3.79
m	19	911.38	899 -	923	911.04	7.39E+01	27.44	6.49E+01	3.22
	20	968.55	962 -	974	968.24	8.08E+01	25.49	3.63E+01	6.16
	21	1119.67	1114 -	1122	1119.44	4.00E+01	22.61	5.40E+01	2.15
	22	1409.32	1404 -	1414	1409.26	1.67E+01	16.35	2.47E+01	3.03
	23	1460.64	1454 -	1469	1460.61	2.35E+02	34.41	2.53E+01	3.16
	24	1522.50	1516 -	1527	1522.51	1.59E+01	10.58	6.16E+00	9.25
	25	1763.59	1759 -	1768	1763.75	2.94E+01	12.37	5.16E+00	1.59
	26	2122.05	2118 -	2126	2122.46	5.81E+00	7.23	4.38E+00	6.86
	27	2612.98	2609 -	2617	2613.75	2.39E+01	13.44	1.23E+01	2.91

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 1606043-08

CP-5010 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 1:53:40PM

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	63.75	60 -	66	1.28E+02	84.49	1.21E+03	6.69E+01
	2	76.04	68 -	82	6.73E+02	166.97	2.64E+03	1.30E+02
M	3	88.74	82 -	96	2.19E+02	113.74	1.54E+03	6.46E+01
m	4	93.37	82 -	96	2.35E+02	87.80	1.03E+03	5.27E+01
	5	186.61	182 -	190	1.55E+02	74.04	7.40E+02	5.73E+01
	6	210.19	207 -	213	4.64E+01	53.70	4.85E+02	4.27E+01
	7	216.44	213 -	219	4.02E+01	48.55	3.94E+02	3.85E+01
	8	239.75	234 -	245	4.82E+02	89.17	7.25E+02	6.38E+01
	9	295.63	289 -	301	2.21E+02	74.33	5.47E+02	5.60E+01
	10	338.52	332 -	343	1.16E+02	57.72	3.53E+02	4.40E+01
	11	351.89	345 -	357	2.97E+02	65.47	3.66E+02	4.57E+01
	12	583.45	579 -	588	1.02E+02	35.33	1.20E+02	2.38E+01
	13	609.27	603 -	613	2.31E+02	42.32	1.15E+02	2.42E+01
	14	726.12	722 -	729	2.02E+01	25.14	9.15E+01	1.93E+01
	15	769.66	763 -	774	3.70E+01	32.50	1.12E+02	2.48E+01
	16	787.16	780 -	791	3.44E+01	28.43	8.33E+01	2.13E+01
	17	822.38	817 -	826	2.44E+01	24.12	6.72E+01	1.81E+01
M	18	903.15	899 -	923	1.45E+01	16.95	4.27E+01	1.07E+01
m	19	911.38	899 -	923	7.39E+01	27.44	6.49E+01	1.32E+01
	20	968.55	962 -	974	8.08E+01	25.49	3.63E+01	1.48E+01
	21	1119.67	1114 -	1122	4.00E+01	22.61	5.40E+01	1.54E+01
	22	1409.32	1404 -	1414	1.67E+01	16.35	2.47E+01	1.16E+01
	23	1460.64	1454 -	1469	2.35E+02	34.41	2.53E+01	1.28E+01
	24	1522.50	1516 -	1527	1.59E+01	10.58	6.16E+00	5.71E+00
	25	1763.59	1759 -	1768	2.94E+01	12.37	5.16E+00	4.88E+00
	26	2122.05	2118 -	2126	5.81E+00	7.23	4.38E+00	4.43E+00
	27	2612.98	2609 -	2617	2.39E+01	13.44	1.23E+01	7.59E+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 1606043-08

CP-5010 00-02

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 1:53:40PM

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	63.75	60 -	66	63.01	1.28E+02	84.49	1.21E+03	TH-234 TH-230
	2	76.04	68 -	82	75.31	6.73E+02	166.97	2.64E+03	.....
M	3	88.74	82 -	96	88.02	2.19E+02	113.74	1.54E+03	LU-176 CD-109
m	4	93.37	82 -	96	92.65	2.35E+02	87.80	1.03E+03	GA-67
	5	186.61	182 -	190	185.92	1.55E+02	74.04	7.40E+02	RA-226
	6	210.19	207 -	213	209.51	4.64E+01	53.70	4.85E+02	CM-243
	7	216.44	213 -	219	215.77	4.02E+01	48.55	3.94E+02	.....
	8	239.75	234 -	245	239.09	4.82E+02	89.17	7.25E+02	.....
	9	295.63	289 -	301	295.00	2.21E+02	74.33	5.47E+02	PB-214
	10	338.52	332 -	343	337.90	1.16E+02	57.72	3.53E+02	AC-228
	11	351.89	345 -	357	351.27	2.97E+02	65.47	3.66E+02	PB-214
	12	583.45	579 -	588	582.94	1.02E+02	35.33	1.20E+02	TL-208
	13	609.27	603 -	613	608.78	2.31E+02	42.32	1.15E+02	BI-214
	14	726.12	722 -	729	725.69	2.02E+01	25.14	9.15E+01	.....
	15	769.66	763 -	774	769.24	3.70E+01	32.50	1.12E+02	.....
	16	787.16	780 -	791	786.75	3.44E+01	28.43	8.33E+01	.....
	17	822.38	817 -	826	822.00	2.44E+01	24.12	6.72E+01	.....
M	18	903.15	899 -	923	902.80	1.45E+01	16.95	4.27E+01	.....
m	19	911.38	899 -	923	911.04	7.39E+01	27.44	6.49E+01	AC-228 LU-172
	20	968.55	962 -	974	968.24	8.08E+01	25.49	3.63E+01	AC-228
	21	1119.67	1114 -	1122	1119.44	4.00E+01	22.61	5.40E+01	BI-214 SC-46
	22	1409.32	1404 -	1414	1409.26	1.67E+01	16.35	2.47E+01	.....
	23	1460.64	1454 -	1469	1460.61	2.35E+02	34.41	2.53E+01	K-40
	24	1522.50	1516 -	1527	1522.51	1.59E+01	10.58	6.16E+00	.....
	25	1763.59	1759 -	1768	1763.75	2.94E+01	12.37	5.16E+00	BI-214
	26	2122.05	2118 -	2126	2122.46	5.81E+00	7.23	4.38E+00	.....
	27	2612.98	2609 -	2617	2613.75	2.39E+01	13.44	1.23E+01	.....

Analysis Report for 1606043-08

CP-5010 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 EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 1:53:40PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	63.75	1.28E+02	84.49	2.32E-02	1.76E-03
	2	76.04	6.73E+02	166.97	2.13E-02	1.69E-03
M	3	88.74	2.19E+02	113.74	1.95E-02	1.63E-03
m	4	93.37	2.35E+02	87.80	1.89E-02	1.61E-03
	5	186.61	1.55E+02	74.04	1.16E-02	1.15E-03
	6	210.19	4.64E+01	53.70	1.05E-02	1.08E-03
	7	216.44	4.02E+01	48.55	1.02E-02	1.06E-03
	8	239.75	4.82E+02	89.17	9.38E-03	9.84E-04
	9	295.63	2.21E+02	74.33	7.77E-03	8.43E-04
	10	338.52	1.16E+02	57.72	6.86E-03	7.95E-04
	11	351.89	2.97E+02	65.47	6.61E-03	7.80E-04
	12	583.45	1.02E+02	35.33	4.04E-03	4.55E-04
	13	609.27	2.31E+02	42.32	3.88E-03	4.17E-04
	14	726.12	2.02E+01	25.14	3.26E-03	3.04E-04
	15	769.66	3.70E+01	32.50	3.08E-03	2.80E-04
	16	787.16	3.44E+01	28.43	3.01E-03	2.70E-04
	17	822.38	2.44E+01	24.12	2.88E-03	2.50E-04
M	18	903.15	1.45E+01	16.95	2.63E-03	2.07E-04
m	19	911.38	7.39E+01	27.44	2.61E-03	2.06E-04
	20	968.55	8.08E+01	25.49	2.46E-03	1.99E-04
	21	1119.67	4.00E+01	22.61	2.14E-03	1.79E-04
	22	1409.32	1.67E+01	16.35	1.74E-03	2.00E-04
	23	1460.64	2.35E+02	34.41	1.68E-03	1.89E-04
	24	1522.50	1.59E+01	10.58	1.62E-03	1.76E-04
	25	1763.59	2.94E+01	12.37	1.44E-03	1.26E-04
	26	2122.05	5.81E+00	7.23	1.24E-03	1.11E-04
	27	2612.98	2.39E+01	13.44	1.07E-03	1.11E-04

Analysis Report for 1606043-08

CP-5010 00-02

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 1:53:40PM

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	63.75	1.28E+02	84.49	3.84E+01	6.93E+00	8.91E+01	8.48E+01
	2	76.04	6.73E+02	166.97	1.70E+01	4.04E+00	6.56E+02	1.67E+02
M	3	88.74	2.19E+02	113.74			2.19E+02	1.14E+02
m	4	93.37	2.35E+02	87.80	5.93E+01	9.62E+00	1.76E+02	8.83E+01
	5	186.61	1.55E+02	74.04	2.90E+01	7.24E+00	1.26E+02	7.44E+01
	6	210.19	4.64E+01	53.70			4.64E+01	5.37E+01
	7	216.44	4.02E+01	48.55			4.02E+01	4.85E+01
	8	239.75	4.82E+02	89.17	7.10E+00	5.46E+00	4.75E+02	8.93E+01
	9	295.63	2.21E+02	74.33			2.21E+02	7.43E+01
	10	338.52	1.16E+02	57.72			1.16E+02	5.77E+01
	11	351.89	2.97E+02	65.47	1.61E+00	4.34E+00	2.96E+02	6.56E+01
	12	583.45	1.02E+02	35.33	2.37E+00	3.72E+00	9.96E+01	3.55E+01
	13	609.27	2.31E+02	42.32			2.31E+02	4.23E+01
	14	726.12	2.02E+01	25.14			2.02E+01	2.51E+01
	15	769.66	3.70E+01	32.50			3.70E+01	3.25E+01
	16	787.16	3.44E+01	28.43			3.44E+01	2.84E+01
	17	822.38	2.44E+01	24.12			2.44E+01	2.41E+01
M	18	903.15	1.45E+01	16.95			1.45E+01	1.69E+01
m	19	911.38	7.39E+01	27.44			7.39E+01	2.74E+01
	20	968.55	8.08E+01	25.49			8.08E+01	2.55E+01
	21	1119.67	4.00E+01	22.61			4.00E+01	2.26E+01
	22	1409.32	1.67E+01	16.35			1.67E+01	1.63E+01
	23	1460.64	2.35E+02	34.41	9.79E-01	1.85E+00	2.34E+02	3.45E+01
	24	1522.50	1.59E+01	10.58			1.59E+01	1.06E+01
	25	1763.59	2.94E+01	12.37			2.94E+01	1.24E+01
	26	2122.05	5.81E+00	7.23			5.81E+00	7.23E+00
	27	2612.98	2.39E+01	13.44			2.39E+01	1.34E+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 1606043-08

CP-5010 00-02

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 1:53:40PM

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	63.75	1.28E+02	84.49	3.84E+01	6.93E+00	8.91E+01	8.48E+01
	2	76.04	6.73E+02	166.97	1.70E+01	4.04E+00	6.56E+02	1.67E+02
M	3	88.74	2.19E+02	113.74			2.19E+02	1.14E+02
m	4	93.37	2.35E+02	87.80	5.93E+01	9.62E+00	1.76E+02	8.83E+01
	5	186.61	1.55E+02	74.04	2.90E+01	7.24E+00	1.26E+02	7.44E+01
	6	210.19	4.64E+01	53.70			4.64E+01	5.37E+01
	7	216.44	4.02E+01	48.55			4.02E+01	4.85E+01
	8	239.75	4.82E+02	89.17	7.10E+00	5.46E+00	4.75E+02	8.93E+01
	9	295.63	2.21E+02	74.33			2.21E+02	7.43E+01
	10	338.52	1.16E+02	57.72			1.16E+02	5.77E+01
	11	351.89	2.97E+02	65.47	1.61E+00	4.34E+00	2.96E+02	6.56E+01
	12	583.45	1.02E+02	35.33	2.37E+00	3.72E+00	9.96E+01	3.55E+01
	13	609.27	2.31E+02	42.32			2.31E+02	4.23E+01
	14	726.12	2.02E+01	25.14			2.02E+01	2.51E+01
	15	769.66	3.70E+01	32.50			3.70E+01	3.25E+01
	16	787.16	3.44E+01	28.43			3.44E+01	2.84E+01
	17	822.38	2.44E+01	24.12			2.44E+01	2.41E+01
M	18	903.15	1.45E+01	16.95			1.45E+01	1.69E+01
m	19	911.38	7.39E+01	27.44			7.39E+01	2.74E+01
	20	968.55	8.08E+01	25.49			8.08E+01	2.55E+01
	21	1119.67	4.00E+01	22.61			4.00E+01	2.26E+01
	22	1409.32	1.67E+01	16.35			1.67E+01	1.63E+01
	23	1460.64	2.35E+02	34.41	9.79E-01	1.85E+00	2.34E+02	3.45E+01
	24	1522.50	1.59E+01	10.58			1.59E+01	1.06E+01
	25	1763.59	2.94E+01	12.37			2.94E+01	1.24E+01
	26	2122.05	5.81E+00	7.23			5.81E+00	7.23E+00
	27	2612.98	2.39E+01	13.44			2.39E+01	1.34E+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 1606043-08

CP-5010 00-02

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	0.995	1460.81	*	10.67	1.81E+01	3.37E+00
GA-67	0.578	93.31	*	35.70	2.49E+00	4.25E+00
		208.95		2.24		
		300.22		16.00		
CD-109	0.923	88.03	*	3.72	4.25E+00	2.25E+00
TL-208	0.317	583.14	*	30.22	1.13E+00	4.23E-01
		860.37		4.48		
		2614.66		35.85		
BI-214	0.900	609.31	*	46.30	1.79E+00	3.80E-01
		1120.29	*	15.10	1.72E+00	9.80E-01
		1764.49	*	15.80	1.80E+00	7.74E-01
		2204.22		4.98		
PB-214	0.990	295.21	*	19.19	2.05E+00	7.27E-01
		351.92	*	37.19	1.67E+00	4.20E-01
RA-226	0.975	186.21	*	3.28	4.61E+00	8.88E+00
AC-228	0.976	338.32	*	11.40	2.07E+00	1.05E+00
		911.07	*	27.70	1.42E+00	5.39E-01
		969.11	*	16.60	2.75E+00	8.94E-01
TH-234	0.967	63.29	*	3.80	1.40E+00	1.34E+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 1:53:40PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1606043-08
CP-5010 00-02

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	76.04	1.82231E-01	12.73		
	6	210.19	1.28888E-02	57.86	Tol.	CM-243
	7	216.44	1.11685E-02	60.37		
	8	239.75	1.32026E-01	9.40		
	14	726.12	5.61869E-03	62.14		
	15	769.66	1.02838E-02	43.89	Sum	
	16	787.16	9.54678E-03	41.35		
	17	822.38	6.78161E-03	49.41		
M	18	903.15	4.01640E-03	58.61		
	22	1409.32	4.63123E-03	49.03		
	24	1522.50	4.42251E-03	33.24		
	26	2122.05	1.61458E-03	62.18		
	27	2612.98	6.62500E-03	28.19		

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	1.81E+01	3.37E+00
GA-67	0.57	93.31	*	35.70	2.49E+00	4.25E+00
		208.95		2.24		
		300.22		16.00		
CD-109	0.92	88.03	*	3.72	4.25E+00	2.25E+00
TL-208	0.31	583.14	*	30.22	1.13E+00	4.23E-01
		860.37		4.48		
		2614.66		35.85		
BI-214	0.90	609.31	*	46.30	1.79E+00	3.80E-01
		1120.29	*	15.10	1.72E+00	9.80E-01
		1764.49	*	15.80	1.80E+00	7.74E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	2.05E+00	7.27E-01
		351.92	*	37.19	1.67E+00	4.20E-01
RA-226	0.97	186.21	*	3.28	4.61E+00	8.88E+00

Analysis Report for 1606043-08

CP-5010 00-02

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AC-228	0.97	338.32	*	11.40	2.07E+00	1.05E+00
		911.07	*	27.70	1.42E+00	5.39E-01
		969.11	*	16.60	2.75E+00	8.94E-01
TH-234	0.96	63.29	*	3.80	1.40E+00	1.34E+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	0.995	1.81E+01	3.37E+00	
GA-67	0.578	2.49E+00	4.25E+00	
CD-109	0.923	4.25E+00	2.25E+00	
TL-208	0.317	1.13E+00	4.23E-01	
BI-214	0.900	1.78E+00	3.22E-01	
PB-214	0.990	1.77E+00	3.64E-01	
RA-226	0.975	4.61E+00	8.88E+00	
AC-228	0.976	1.82E+00	4.23E-01	
TH-234	0.967	1.40E+00	1.34E+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 1606043-08
CP-5010 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 1:53:40PM
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	76.04	1.82231E-01	12.73		
	6	210.19	1.28888E-02	57.86	Tol.	CM-243
	7	216.44	1.11685E-02	60.37		
	8	239.75	1.32026E-01	9.40		
	14	726.12	5.61869E-03	62.14		
	15	769.66	1.02838E-02	43.89	Sum	
	16	787.16	9.54678E-03	41.35		
	17	822.38	6.78161E-03	49.41		
M	18	903.15	4.01640E-03	58.61		
	22	1409.32	4.63123E-03	49.03		
	24	1522.50	4.42251E-03	33.24		
	26	2122.05	1.61458E-03	62.18		
	27	2612.98	6.62500E-03	28.19		

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	4.73E-01	1.47E+00	1.47E+00
+	NA-22	1274.54	99.94	-2.64E-02	2.01E-01	2.01E-01
+	NA-24	1368.53	99.99	-8.03E+02	2.36E+03	3.63E+03
		2754.09	99.86	-8.56E+02		2.36E+03

Analysis Report for 1606043-08

CP-5010 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	AL-26	1808.65		99.76	-1.98E-02	1.65E-01	1.65E-01
+	K-40	1460.81	*	10.67	1.81E+01	2.22E+00	2.22E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-1.43E-01	9.53E-02	9.53E-02
		78.34		96.00	3.11E-01		1.19E-01
+	SC-46	889.25		99.98	3.43E-02	1.67E-01	1.67E-01
		1120.51		99.99	-4.31E-02		2.85E-01
+	V-48	983.52		99.98	-2.23E-02	2.25E-01	2.25E-01
		1312.10		97.50	-1.26E-01		3.07E-01
+	CR-51	320.08		9.83	-5.80E-01	1.44E+00	1.44E+00
+	MN-54	834.83		99.97	1.59E-02	1.67E-01	1.67E-01
+	CO-56	846.75		99.96	-5.53E-02	1.73E-01	1.73E-01
		1037.75		14.03	-7.66E-01		1.21E+00
		1238.25		67.00	2.46E-01		4.52E-01
		1771.40		15.51	-3.05E-01		8.90E-01
		2598.48		16.90	-1.38E-01		7.68E-01
+	CO-57	122.06		85.51	-2.08E-03	1.11E-01	1.11E-01
		136.48		10.60	-2.79E-01		9.41E-01
+	CO-58	810.76		99.40	-1.84E-02	1.75E-01	1.75E-01
+	FE-59	1099.22		56.50	6.92E-02	3.66E-01	3.66E-01
		1291.56		43.20	-2.83E-01		4.83E-01
+	CO-60	1173.22		100.00	-1.84E-02	1.94E-01	2.13E-01
		1332.49		100.00	7.20E-02		1.94E-01
+	ZN-65	1115.52		50.75	-2.35E-02	4.33E-01	4.33E-01
+	GA-67	93.31	*	35.70	2.49E+00	3.15E+00	3.15E+00
		208.95		2.24	-3.24E+00		3.79E+01
		300.22		16.00	-9.29E-01		5.97E+00
+	SE-75	121.11		16.70	1.69E-02	1.71E-01	5.81E-01
		136.00		59.20	-1.20E-01		1.71E-01
		264.65		59.80	-1.79E-01		2.07E-01
		279.53		25.20	-1.00E-01		4.77E-01
		400.65		11.40	3.35E-01		1.25E+00
+	RB-82	776.52		13.00	-3.35E-02	1.58E+00	1.58E+00
+	RB-83	520.41		46.00	-1.66E-02	3.22E-01	3.22E-01
		529.64		30.30	-2.81E-02		4.71E-01
		552.65		16.40	-1.12E-02		9.18E-01
+	KR-85	513.99		0.43	4.03E+01	4.20E+01	4.20E+01
+	SR-85	513.99		99.27	1.94E-01	2.02E-01	2.02E-01
+	Y-88	898.02		93.40	-3.50E-02	1.51E-01	1.58E-01
		1836.01		99.38	-5.34E-02		1.51E-01
+	NB-93M	16.57		9.43	8.42E-01	4.52E-01	4.52E-01
+	NB-94	702.63		100.00	5.73E-02	1.58E-01	1.66E-01
		871.10		100.00	1.38E-04		1.58E-01
+	NB-95	765.79		99.81	1.08E-02	2.32E-01	2.32E-01
+	NB-95M	235.69		25.00	8.08E-02	4.04E+00	4.04E+00
+	ZR-95	724.18		43.70	2.15E-02	3.12E-01	4.70E-01
		756.72		55.30	-1.33E-01		3.12E-01

Analysis Report for 1606043-08

CP-5010 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	MO-99	181.06		6.20	1.03E+00	1.22E+01	1.83E+01
		739.58		12.80	3.82E+00		1.22E+01
		778.00		4.50	-7.48E-01		3.26E+01
+	RU-103	497.08		89.00	6.15E-02	1.79E-01	1.79E-01
+	RU-106	621.84		9.80	-4.32E-01	1.49E+00	1.49E+00
+	AG-108M	433.93		89.90	-1.91E-02	1.48E-01	1.48E-01
		614.37		90.40	-8.91E-03		2.06E-01
		722.95		90.50	-1.14E-02		2.02E-01
+	CD-109	88.03	*	3.72	4.25E+00	4.39E+00	4.39E+00
+	AG-110M	657.75		93.14	5.65E-02	1.88E-01	1.88E-01
		677.61		10.53	3.96E-01		1.47E+00
		706.67		16.46	-2.51E-01		1.01E+00
		763.93		21.98	-3.44E-02		8.41E-01
		884.67		71.63	-2.67E-02		2.27E-01
		1384.27		23.94	-4.50E-01		6.98E-01
+	CD-113M	263.70		0.02	-4.86E+02	5.01E+02	5.01E+02
+	SN-113	255.12		1.93	-1.10E+00	2.10E-01	6.23E+00
		391.69		64.90	-8.17E-02		2.10E-01
+	TE123M	159.00		84.10	-3.69E-02	1.29E-01	1.29E-01
+	SB-124	602.71		97.87	-1.23E-02	1.63E-01	1.63E-01
		645.85		7.26	-5.01E-01		2.32E+00
		722.78		11.10	-1.10E-01		1.73E+00
		1691.02		49.00	1.11E-01		3.18E-01
+	I-125	35.49		6.49	-1.53E-01	9.13E-01	9.13E-01
+	SB-125	176.33		6.89	-3.21E-01	4.67E-01	1.59E+00
		427.89		29.33	1.89E-01		4.67E-01
		463.38		10.35	1.60E-01		1.38E+00
		600.56		17.80	8.23E-03		8.03E-01
		635.90		11.32	-7.59E-01		1.32E+00
+	SB-126	414.70		83.30	6.98E-03	2.36E-01	2.80E-01
		666.33		99.60	-3.50E-02		2.68E-01
		695.00		99.60	-8.68E-02		2.36E-01
		720.50		53.80	-4.72E-02		5.14E-01
+	SN-126	87.57		37.00	1.87E-02	2.80E-01	2.80E-01
+	SB-127	473.00		25.00	6.34E-02	2.17E+00	2.77E+00
		685.20		35.70	2.50E-01		2.17E+00
		783.80		14.70	-9.10E-01		5.93E+00
+	I-129	29.78		57.00	-2.51E-02	8.92E-02	8.92E-02
		33.60		13.20	-5.75E-02		3.96E-01
		39.58		7.52	-7.14E-01		7.35E-01
+	I-131	284.30		6.05	2.88E-01	2.98E-01	4.22E+00
		364.48		81.20	-3.10E-01		2.98E-01
		636.97		7.26	-1.31E+00		4.54E+00
		722.89		1.80	-1.34E+00		2.11E+01
+	TE-132	49.72		13.10	3.86E+00	9.30E-01	3.62E+00
		228.16		88.00	3.79E-02		9.30E-01
+	BA-133	81.00		33.00	-2.03E-01	3.23E-01	3.23E-01
		302.84		17.80	-7.20E-02		7.01E-01
		356.01		60.00	2.91E-02		3.31E-01

Analysis Report for 1606043-08

CP-5010 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-133	529.87	86.30	-1.32E+01	2.21E+02	2.21E+02
+	XE-133	81.00	38.00	-5.85E-01	9.31E-01	9.31E-01
+	CS-134	563.23	8.38	2.30E-01	1.87E-01	1.83E+00
		569.32	15.43	2.23E-01		1.00E+00
		604.70	97.60	1.53E-02		2.26E-01
		795.84	85.40	-1.59E-02		1.87E-01
		801.93	8.73	-1.16E-01		1.93E+00
+	CS-135	268.24	16.00	6.35E-01	8.02E-01	8.02E-01
+	I-135	1131.51	22.50	-3.54E+09	6.16E+09	7.30E+09
		1260.41	28.60	1.97E+09		6.16E+09
		1678.03	9.54	7.91E+09		1.59E+10
+	CS-136	153.22	7.46	1.25E+00	2.86E-01	2.25E+00
		163.89	4.61	9.35E-01		3.68E+00
		176.55	13.56	-2.62E-01		1.30E+00
		273.65	12.66	7.98E-01		1.62E+00
		340.57	48.50	5.44E-01		4.97E-01
		818.50	99.70	9.95E-03		2.86E-01
		1048.07	79.60	1.19E-01		3.63E-01
		1235.34	19.70	4.83E-01		2.27E+00
+	CS-137	661.65	85.12	3.39E-02	1.98E-01	1.98E-01
+	LA-138	788.74	34.00	1.57E-01	2.55E-01	5.31E-01
		1435.80	66.00	-5.09E-02		2.55E-01
+	CE-139	165.85	80.35	8.76E-02	1.39E-01	1.39E-01
+	BA-140	162.64	6.70	-5.25E-01	8.09E-01	2.52E+00
		304.84	4.50	-1.87E+00		4.41E+00
		423.70	3.20	-1.93E+00		6.64E+00
		437.55	2.00	1.22E+00		1.10E+01
		537.32	25.00	-3.83E-01		8.09E-01
+	LA-140	328.77	20.50	3.82E-01	2.66E-01	1.05E+00
		487.03	45.50	-8.16E-02		4.69E-01
		815.85	23.50	-1.16E-01		1.02E+00
		1596.49	95.49	-6.11E-02		2.66E-01
+	CE-141	145.44	48.40	5.11E-03	2.55E-01	2.55E-01
+	CE-143	57.36	11.80	-2.40E+01	3.92E+01	6.09E+01
		293.26	42.00	7.25E+01		3.92E+01
		664.55	5.20	2.11E+01		3.10E+02
+	CE-144	133.54	10.80	-5.93E-02	9.23E-01	9.23E-01
+	PM-144	476.78	42.00	7.68E-02	1.46E-01	3.28E-01
		618.01	98.60	-4.95E-02		1.49E-01
		696.49	99.49	-6.28E-02		1.46E-01
+	PM-145	36.85	21.70	8.10E-04	1.36E-01	2.49E-01
		37.36	39.70	-2.45E-02		1.36E-01
		42.30	15.10	1.05E-01		3.99E-01
		72.40	2.31	7.73E+00		4.73E+00
+	PM-146	453.90	39.94	1.85E-01	3.52E-01	3.52E-01
		735.90	14.01	6.18E-02		1.13E+00
		747.13	13.10	3.53E-01		1.30E+00
+	ND-147	91.11	28.90	1.62E+00	6.85E-01	6.85E-01
		531.02	13.10	3.53E-01		1.80E+00

Analysis Report for 1606043-08

CP-5010 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-149	285.90	3.10	7.22E+00	6.51E+01	6.51E+01
+	EU-152	121.78	20.50	-8.49E-03	4.52E-01	4.52E-01
		244.69	5.40	1.73E-01		2.66E+00
		344.27	19.13	-3.79E+00		6.33E-01
		778.89	9.20	-3.71E-02		1.62E+00
		964.01	10.40	-4.21E-02		2.18E+00
		1085.78	7.22	2.85E-01		2.84E+00
		1112.02	9.60	3.91E-01		2.06E+00
		1407.95	14.94	6.62E-01		1.44E+00
+	GD-153	97.43	31.30	-5.89E-03	3.04E-01	3.04E-01
		103.18	22.20	-1.29E-01		3.89E-01
+	EU-154	123.07	40.50	-4.20E-02	2.31E-01	2.31E-01
		723.30	19.70	-5.23E-02		9.29E-01
		873.19	11.50	-4.33E-01		1.31E+00
		996.32	10.30	-1.00E-01		1.77E+00
		1004.76	17.90	4.47E-01		1.05E+00
		1274.45	35.50	-7.41E-02		5.63E-01
+	EU-155	86.50	30.90	-1.74E-01	3.26E-01	3.26E-01
		105.30	20.70	-1.63E-01		4.09E-01
+	EU-156	811.77	10.40	-9.01E-02	2.25E+00	2.25E+00
		1153.47	7.20	7.48E-01		4.34E+00
		1230.71	8.90	-2.12E+00		4.28E+00
+	HO-166M	184.41	72.60	1.08E-02	1.82E-01	1.82E-01
		280.45	29.60	-1.69E-01		3.83E-01
		410.94	11.10	8.72E-01		1.35E+00
		711.69	54.10	-7.39E-02		3.04E-01
+	TM-171	66.72	0.14	-2.47E+01	6.44E+01	6.44E+01
+	HF-172	81.75	4.52	-6.50E+00	8.64E-01	2.22E+00
		125.81	11.30	2.29E-01		8.64E-01
+	LU-172	181.53	20.60	2.34E-01	7.85E-01	1.52E+00
		810.06	16.63	-2.57E-01		2.45E+00
		912.12	15.25	5.86E+00		4.53E+00
		1093.66	62.50	-1.23E-01		7.85E-01
+	LU-173	100.72	5.24	-8.01E-01	6.03E-01	1.60E+00
		272.11	21.20	1.46E-01		6.03E-01
+	HF-175	343.40	84.00	-3.51E-01	1.65E-01	1.65E-01
+	LU-176	88.34	13.30	7.50E-01	1.26E-01	7.99E-01
		201.83	86.00	-8.89E-03		1.34E-01
		306.78	94.00	-1.33E-02		1.26E-01
+	TA-182	67.75	41.20	-3.46E-01	2.30E-01	2.30E-01
		1121.30	34.90	-2.42E-01		7.78E-01
		1189.05	16.23	2.09E-01		1.56E+00
		1221.41	26.98	-7.33E-03		9.79E-01
		1231.02	11.44	-1.15E+00		2.33E+00
+	IR-192	308.46	29.68	2.15E-01	3.20E-01	4.33E-01
		468.07	48.10	2.68E-02		3.20E-01
+	HG-203	279.19	77.30	-3.54E-02	1.69E-01	1.69E-01
+	BI-207	569.67	97.72	3.50E-02	1.57E-01	1.57E-01
		1063.62	74.90	-2.15E-02		2.43E-01

Analysis Report for 1606043-08

CP-5010 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TL-208	583.14	*	30.22	1.13E+00	5.80E-01	5.80E-01
		860.37		4.48	-2.12E-01		4.11E+00
		2614.66		35.85	3.62E-02		1.06E+00
+	BI-210M	262.00		45.00	-4.63E-03	2.57E-01	2.57E-01
		300.00		23.00	-1.05E-01		6.80E-01
+	PB-210	46.50		4.25	-1.03E-01	1.50E+00	1.50E+00
+	PB-211	404.84		2.90	5.94E-01	4.87E+00	4.87E+00
		831.96		2.90	6.27E-01		5.40E+00
+	BI-212	727.17		11.80	2.09E-01	1.59E+00	1.59E+00
		1620.62		2.75	-1.53E-01		5.71E+00
+	PB-212	238.63		44.60	1.64E+00	4.36E-01	4.36E-01
		300.09		3.41	-7.08E-01		4.59E+00
+	BI-214	609.31	*	46.30	1.79E+00	3.96E-01	3.96E-01
		1120.29	*	15.10	1.72E+00		1.44E+00
		1764.49	*	15.80	1.80E+00		7.65E-01
		2204.22		4.98	1.51E+00		5.19E+00
+	PB-214	295.21	*	19.19	2.05E+00	5.35E-01	1.07E+00
		351.92	*	37.19	1.67E+00		5.35E-01
+	RN-219	401.80		6.50	-6.14E-01	2.04E+00	2.04E+00
+	RA-223	323.87		3.88	2.38E+00	3.37E+00	3.37E+00
+	RA-224	240.98		3.95	1.88E+01	4.94E+00	4.94E+00
+	RA-225	40.00		31.00	-2.66E-01	2.74E-01	2.74E-01
+	RA-226	186.21	*	3.28	4.61E+00	4.36E+00	4.36E+00
+	TH-227	50.10		8.40	8.73E-01	8.17E-01	8.17E-01
		236.00		11.50	3.07E-02		1.53E+00
		256.20		6.30	-1.56E-01		1.78E+00
+	AC-228	338.32	*	11.40	2.07E+00	1.10E+00	1.61E+00
		911.07	*	27.70	1.42E+00		1.52E+00
		969.11	*	16.60	2.75E+00		1.10E+00
+	TH-230	48.44		16.90	2.67E-01	3.94E-01	3.94E-01
		62.85		4.60	-2.66E-01		1.84E+00
		67.67		0.37	-3.64E+01		2.43E+01
+	PA-231	283.67		1.60	-1.75E+00	5.41E+00	7.22E+00
		302.67		2.30	-5.56E-01		5.41E+00
+	TH-231	25.64		14.70	-1.05E-01	3.47E-01	3.47E-01
		84.21		6.40	-5.81E+00		1.48E+00
+	PA-233	311.98		38.60	-4.79E-02	3.61E-01	3.61E-01
+	PA-234	131.20		20.40	1.14E-02	4.78E-01	4.78E-01
		733.99		8.80	-6.91E-01		1.77E+00
		946.00		12.00	1.59E-01		1.39E+00
+	PA-234M	1001.03		0.92	5.56E+00	2.01E+01	2.01E+01
+	TH-234	63.29	*	3.80	1.40E+00	2.19E+00	2.19E+00
+	U-235	143.76		10.50	1.74E-01	9.61E-01	9.61E-01
		163.35		4.70	5.67E-01		2.23E+00
		205.31		4.70	-6.90E-01		2.58E+00
+	NP-237	86.50		12.60	-4.26E-01	7.97E-01	7.97E-01
+	NP-239	106.10		22.70	-2.16E+00	5.43E+00	5.43E+00

Analysis Report for 1606043-08

CP-5010 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	NP-239	228.18	10.70	-8.75E-01	5.43E+00	1.59E+01
		277.60	14.10	-3.38E+00		1.19E+01
+	AM-241	59.54	35.90	-8.24E-02	2.22E-01	2.22E-01
+	AM-243	74.67	66.00	6.25E-01	1.78E-01	1.78E-01
+	CM-243	209.75	3.29	-2.56E-01	8.22E-01	3.71E+00
		228.14	10.60	4.55E-02		1.12E+00
		277.60	14.00	-2.35E-01		8.22E-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	1.47E+00	1.47E+00	4.73E-01	6.94E-01
	NA-22	1274.54		99.94	2.01E-01	2.01E-01	-2.64E-02	9.05E-02
	NA-24	1368.53		99.99	3.63E+03	2.36E+03	-8.03E+02	1.56E+03
		2754.09		99.86	2.36E+03		-8.56E+02	7.47E+02
	AL-26	1808.65		99.76	1.65E-01	1.65E-01	-1.98E-02	6.91E-02
+	K-40	1460.81	*	10.67	2.22E+00	2.22E+00	1.81E+01	1.01E+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	9.53E-02	9.53E-02	-1.43E-01	4.68E-02
		78.34		96.00	1.19E-01		3.11E-01	5.83E-02
	SC-46	889.25		99.98	1.67E-01	1.67E-01	3.43E-02	7.60E-02
		1120.51		99.99	2.85E-01		-4.31E-02	1.33E-01
	V-48	983.52		99.98	2.25E-01	2.25E-01	-2.23E-02	1.01E-01
		1312.10		97.50	3.07E-01		-1.26E-01	1.38E-01
	CR-51	320.08		9.83	1.44E+00	1.44E+00	-5.80E-01	6.86E-01
	MN-54	834.83		99.97	1.67E-01	1.67E-01	1.59E-02	7.70E-02
	CO-56	846.75		99.96	1.73E-01	1.73E-01	-5.53E-02	7.90E-02

Analysis Report for 1606043-08

CP-5010 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	CO-56	1037.75		14.03	1.21E+00	1.73E-01	-7.66E-01	5.41E-01
		1238.25		67.00	4.52E-01		2.46E-01	2.11E-01
		1771.40		15.51	8.90E-01		-3.05E-01	3.53E-01
		2598.48		16.90	7.68E-01		-1.38E-01	2.72E-01
	CO-57	122.06		85.51	1.11E-01	1.11E-01	-2.08E-03	5.41E-02
		136.48		10.60	9.41E-01		-2.79E-01	4.58E-01
	CO-58	810.76		99.40	1.75E-01	1.75E-01	-1.84E-02	8.06E-02
	FE-59	1099.22		56.50	3.66E-01	3.66E-01	6.92E-02	1.65E-01
		1291.56		43.20	4.83E-01		-2.83E-01	2.15E-01
	CO-60	1173.22		100.00	2.13E-01	1.94E-01	-1.84E-02	9.73E-02
		1332.49		100.00	1.94E-01		7.20E-02	8.69E-02
	ZN-65	1115.52		50.75	4.33E-01	4.33E-01	-2.35E-02	1.99E-01
+	GA-67	93.31	*	35.70	3.15E+00	3.15E+00	2.49E+00	1.56E+00
		208.95		2.24	3.79E+01		-3.24E+00	1.84E+01
		300.22		16.00	5.97E+00		-9.29E-01	2.88E+00
	SE-75	121.11		16.70	5.81E-01	1.71E-01	1.69E-02	2.83E-01
		136.00		59.20	1.71E-01		-1.20E-01	8.34E-02
		264.65		59.80	2.07E-01		-1.79E-01	9.94E-02
		279.53		25.20	4.77E-01		-1.00E-01	2.29E-01
		400.65		11.40	1.25E+00		3.35E-01	5.97E-01
	RB-82	776.52		13.00	1.58E+00	1.58E+00	-3.35E-02	7.30E-01
	RB-83	520.41		46.00	3.22E-01	3.22E-01	-1.66E-02	1.51E-01
		529.64		30.30	4.71E-01		-2.81E-02	2.20E-01
		552.65		16.40	9.18E-01		-1.12E-02	4.30E-01
	KR-85	513.99		0.43	4.20E+01	4.20E+01	4.03E+01	2.01E+01
	SR-85	513.99		99.27	2.02E-01	2.02E-01	1.94E-01	9.65E-02
	Y-88	898.02		93.40	1.58E-01	1.51E-01	-3.50E-02	7.07E-02
		1836.01		99.38	1.51E-01		-5.34E-02	6.08E-02
	NB-93M	16.57		9.43	4.52E-01	4.52E-01	8.42E-01	2.19E-01
	NB-94	702.63		100.00	1.66E-01	1.58E-01	5.73E-02	7.74E-02
		871.10		100.00	1.58E-01		1.38E-04	7.21E-02
	NB-95	765.79		99.81	2.32E-01	2.32E-01	1.08E-02	1.09E-01
	NB-95M	235.69		25.00	4.04E+00	4.04E+00	8.08E-02	1.97E+00
	ZR-95	724.18		43.70	4.70E-01	3.12E-01	2.15E-02	2.21E-01
		756.72		55.30	3.12E-01		-1.33E-01	1.44E-01
	MO-99	181.06		6.20	1.83E+01	1.22E+01	1.03E+00	8.88E+00
		739.58		12.80	1.22E+01		3.82E+00	5.62E+00
		778.00		4.50	3.26E+01		-7.48E-01	1.49E+01
	RU-103	497.08		89.00	1.79E-01	1.79E-01	6.15E-02	8.44E-02
	RU-106	621.84		9.80	1.49E+00	1.49E+00	-4.32E-01	6.95E-01
	AG-108M	433.93		89.90	1.48E-01	1.48E-01	-1.91E-02	7.04E-02
		614.37		90.40	2.06E-01		-8.91E-03	9.76E-02
		722.95		90.50	2.02E-01		-1.14E-02	9.45E-02
+	CD-109	88.03	*	3.72	4.39E+00	4.39E+00	4.25E+00	2.17E+00
	AG-110M	657.75		93.14	1.88E-01	1.88E-01	5.65E-02	8.80E-02
		677.61		10.53	1.47E+00		3.96E-01	6.81E-01
		706.67		16.46	1.01E+00		-2.51E-01	4.70E-01
		763.93		21.98	8.41E-01		-3.44E-02	3.92E-01
		884.67		71.63	2.27E-01		-2.67E-02	1.03E-01
		1384.27		23.94	6.98E-01		-4.50E-01	3.04E-01
	CD-113M	263.70		0.02	5.01E+02	5.01E+02	-4.86E+02	2.41E+02
	SN-113	255.12		1.93	6.23E+00	2.10E-01	-1.10E+00	3.00E+00
		391.69		64.90	2.10E-01		-8.17E-02	9.97E-02

Analysis Report for 1606043-08

CP-5010 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TE123M	159.00	84.10	1.29E-01	1.29E-01	-3.69E-02	6.28E-02
SB-124	602.71	97.87	1.63E-01	1.63E-01	-1.23E-02	7.60E-02
	645.85	7.26	2.32E+00		-5.01E-01	1.08E+00
	722.78	11.10	1.73E+00		-1.10E-01	8.08E-01
	1691.02	49.00	3.18E-01		1.11E-01	1.30E-01
I-125	35.49	6.49	9.13E-01	9.13E-01	-1.53E-01	4.45E-01
SB-125	176.33	6.89	1.59E+00	4.67E-01	-3.21E-01	7.73E-01
	427.89	29.33	4.67E-01		1.89E-01	2.22E-01
	463.38	10.35	1.38E+00		1.60E-01	6.55E-01
	600.56	17.80	8.03E-01		8.23E-03	3.75E-01
	635.90	11.32	1.32E+00		-7.59E-01	6.14E-01
SB-126	414.70	83.30	2.80E-01	2.36E-01	6.98E-03	1.34E-01
	666.33	99.60	2.68E-01		-3.50E-02	1.25E-01
	695.00	99.60	2.36E-01		-8.68E-02	1.09E-01
	720.50	53.80	5.14E-01		-4.72E-02	2.39E-01
SN-126	87.57	37.00	2.80E-01	2.80E-01	1.87E-02	1.38E-01
SB-127	473.00	25.00	2.77E+00	2.17E+00	6.34E-02	1.31E+00
	685.20	35.70	2.17E+00		2.50E-01	1.01E+00
	783.80	14.70	5.93E+00		-9.10E-01	2.75E+00
I-129	29.78	57.00	8.92E-02	8.92E-02	-2.51E-02	4.35E-02
	33.60	13.20	3.96E-01		-5.75E-02	1.93E-01
	39.58	7.52	7.35E-01		-7.14E-01	3.59E-01
I-131	284.30	6.05	4.22E+00	2.98E-01	2.88E-01	2.03E+00
	364.48	81.20	2.98E-01		-3.10E-01	1.41E-01
	636.97	7.26	4.54E+00		-1.31E+00	2.12E+00
	722.89	1.80	2.11E+01		-1.34E+00	9.83E+00
TE-132	49.72	13.10	3.62E+00	9.30E-01	3.86E+00	1.77E+00
	228.16	88.00	9.30E-01		3.79E-02	4.50E-01
BA-133	81.00	33.00	3.23E-01	3.23E-01	-2.03E-01	1.59E-01
	302.84	17.80	7.01E-01		-7.20E-02	3.37E-01
	356.01	60.00	3.31E-01		2.91E-02	1.61E-01
I-133	529.87	86.30	2.21E+02	2.21E+02	-1.32E+01	1.03E+02
XE-133	81.00	38.00	9.31E-01	9.31E-01	-5.85E-01	4.58E-01
CS-134	563.23	8.38	1.83E+00	1.87E-01	2.30E-01	8.61E-01
	569.32	15.43	1.00E+00		2.23E-01	4.73E-01
	604.70	97.60	2.26E-01		1.53E-02	1.08E-01
	795.84	85.40	1.87E-01		-1.59E-02	8.59E-02
	801.93	8.73	1.93E+00		-1.16E-01	8.93E-01
CS-135	268.24	16.00	8.02E-01	8.02E-01	6.35E-01	3.87E-01
I-135	1131.51	22.50	7.30E+09	6.16E+09	-3.54E+09	3.31E+09
	1260.41	28.60	6.16E+09		1.97E+09	2.79E+09
	1678.03	9.54	1.59E+10		7.91E+09	6.79E+09
CS-136	153.22	7.46	2.25E+00	2.86E-01	1.25E+00	1.10E+00
	163.89	4.61	3.68E+00		9.35E-01	1.79E+00
	176.55	13.56	1.30E+00		-2.62E-01	6.31E-01
	273.65	12.66	1.62E+00		7.98E-01	7.81E-01
	340.57	48.50	4.97E-01		5.44E-01	2.39E-01
	818.50	99.70	2.86E-01		9.95E-03	1.33E-01
	1048.07	79.60	3.63E-01		1.19E-01	1.65E-01
	1235.34	19.70	2.27E+00		4.83E-01	1.06E+00
CS-137	661.65	85.12	1.98E-01	1.98E-01	3.39E-02	9.27E-02
LA-138	788.74	34.00	5.31E-01	2.55E-01	1.57E-01	2.47E-01
	1435.80	66.00	2.55E-01		-5.09E-02	1.11E-01

Analysis Report for 1606043-08

CP-5010 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CE-139	165.85	80.35	1.39E-01	1.39E-01	8.76E-02	6.75E-02
BA-140	162.64	6.70	2.52E+00	8.09E-01	-5.25E-01	1.22E+00
	304.84	4.50	4.41E+00		-1.87E+00	2.12E+00
	423.70	3.20	6.64E+00		-1.93E+00	3.15E+00
	437.55	2.00	1.10E+01		1.22E+00	5.19E+00
	537.32	25.00	8.09E-01		-3.83E-01	3.77E-01
LA-140	328.77	20.50	1.05E+00	2.66E-01	3.82E-01	5.05E-01
	487.03	45.50	4.69E-01		-8.16E-02	2.21E-01
	815.85	23.50	1.02E+00		-1.16E-01	4.65E-01
	1596.49	95.49	2.66E-01		-6.11E-02	1.12E-01
CE-141	145.44	48.40	2.55E-01	2.55E-01	5.11E-03	1.24E-01
CE-143	57.36	11.80	6.09E+01	3.92E+01	-2.40E+01	2.98E+01
	293.26	42.00	3.92E+01		7.25E+01	1.90E+01
	664.55	5.20	3.10E+02		2.11E+01	1.45E+02
CE-144	133.54	10.80	9.23E-01	9.23E-01	-5.93E-02	4.50E-01
PM-144	476.78	42.00	3.28E-01	1.46E-01	7.68E-02	1.55E-01
	618.01	98.60	1.49E-01		-4.95E-02	6.93E-02
	696.49	99.49	1.46E-01		-6.28E-02	6.74E-02
PM-145	36.85	21.70	2.49E-01	1.36E-01	8.10E-04	1.22E-01
	37.36	39.70	1.36E-01		-2.45E-02	6.61E-02
	42.30	15.10	3.99E-01		1.05E-01	1.95E-01
	72.40	2.31	4.73E+00		7.73E+00	2.33E+00
PM-146	453.90	39.94	3.52E-01	3.52E-01	1.85E-01	1.67E-01
	735.90	14.01	1.13E+00		6.18E-02	5.24E-01
	747.13	13.10	1.30E+00		3.53E-01	6.05E-01
ND-147	91.11	28.90	6.85E-01	6.85E-01	1.62E+00	3.37E-01
	531.02	13.10	1.80E+00		3.53E-01	8.43E-01
PM-149	285.90	3.10	6.51E+01	6.51E+01	7.22E+00	3.12E+01
EU-152	121.78	20.50	4.52E-01	4.52E-01	-8.49E-03	2.20E-01
	244.69	5.40	2.66E+00		1.73E-01	1.29E+00
	344.27	19.13	6.33E-01		-3.79E+00	3.02E-01
	778.89	9.20	1.62E+00		-3.71E-02	7.40E-01
	964.01	10.40	2.18E+00		-4.21E-02	1.01E+00
	1085.78	7.22	2.84E+00		2.85E-01	1.30E+00
	1112.02	9.60	2.06E+00		3.91E-01	9.37E-01
	1407.95	14.94	1.44E+00		6.62E-01	6.47E-01
GD-153	97.43	31.30	3.04E-01	3.04E-01	-5.89E-03	1.49E-01
	103.18	22.20	3.89E-01		-1.29E-01	1.90E-01
EU-154	123.07	40.50	2.31E-01	2.31E-01	-4.20E-02	1.13E-01
	723.30	19.70	9.29E-01		-5.23E-02	4.35E-01
	873.19	11.50	1.31E+00		-4.33E-01	5.95E-01
	996.32	10.30	1.77E+00		-1.00E-01	8.09E-01
	1004.76	17.90	1.05E+00		4.47E-01	4.81E-01
	1274.45	35.50	5.63E-01		-7.41E-02	2.54E-01
EU-155	86.50	30.90	3.26E-01	3.26E-01	-1.74E-01	1.60E-01
	105.30	20.70	4.09E-01		-1.63E-01	1.99E-01
EU-156	811.77	10.40	2.25E+00	2.25E+00	-9.01E-02	1.03E+00
	1153.47	7.20	4.34E+00		7.48E-01	1.98E+00
	1230.71	8.90	4.28E+00		-2.12E+00	1.98E+00
HO-166M	184.41	72.60	1.82E-01	1.82E-01	1.08E-02	8.90E-02
	280.45	29.60	3.83E-01		-1.69E-01	1.84E-01
	410.94	11.10	1.35E+00		8.72E-01	6.46E-01
	711.69	54.10	3.04E-01		-7.39E-02	1.41E-01

Analysis Report for 1606043-08

CP-5010 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TM-171	66.72		0.14	6.44E+01	6.44E+01	-2.47E+01	3.16E+01
	HF-172	81.75		4.52	2.22E+00	8.64E-01	-6.50E+00	1.09E+00
		125.81		11.30	8.64E-01		2.29E-01	4.21E-01
	LU-172	181.53		20.60	1.52E+00	7.85E-01	2.34E-01	7.40E-01
		810.06		16.63	2.45E+00		-2.57E-01	1.13E+00
		912.12		15.25	4.53E+00		5.86E+00	2.14E+00
		1093.66		62.50	7.85E-01		-1.23E-01	3.57E-01
	LU-173	100.72		5.24	1.60E+00	6.03E-01	-8.01E-01	7.82E-01
		272.11		21.20	6.03E-01		1.46E-01	2.91E-01
	HF-175	343.40		84.00	1.65E-01	1.65E-01	-3.51E-01	7.87E-02
	LU-176	88.34		13.30	7.99E-01	1.26E-01	7.50E-01	3.92E-01
		201.83		86.00	1.34E-01		-8.89E-03	6.52E-02
		306.78		94.00	1.26E-01		-1.33E-02	6.04E-02
	TA-182	67.75		41.20	2.30E-01	2.30E-01	-3.46E-01	1.13E-01
		1121.30		34.90	7.78E-01		-2.42E-01	3.63E-01
		1189.05		16.23	1.56E+00		2.09E-01	7.19E-01
		1221.41		26.98	9.79E-01		-7.33E-03	4.52E-01
		1231.02		11.44	2.33E+00		-1.15E+00	1.07E+00
	IR-192	308.46		29.68	4.33E-01	3.20E-01	2.15E-01	2.07E-01
		468.07		48.10	3.20E-01		2.68E-02	1.51E-01
	HG-203	279.19		77.30	1.69E-01	1.69E-01	-3.54E-02	8.10E-02
	BI-207	569.67		97.72	1.57E-01	1.57E-01	3.50E-02	7.41E-02
		1063.62		74.90	2.43E-01		-2.15E-02	1.10E-01
+	TL-208	583.14	*	30.22	5.80E-01	5.80E-01	1.13E+00	2.75E-01
		860.37		4.48	4.11E+00		-2.12E-01	1.90E+00
		2614.66		35.85	1.06E+00		3.62E-02	4.83E-01
	BI-210M	262.00		45.00	2.57E-01	2.57E-01	-4.63E-03	1.24E-01
		300.00		23.00	6.80E-01		-1.05E-01	3.29E-01
	PB-210	46.50		4.25	1.50E+00	1.50E+00	-1.03E-01	7.35E-01
	PB-211	404.84		2.90	4.87E+00	4.87E+00	5.94E-01	2.32E+00
		831.96		2.90	5.40E+00		6.27E-01	2.47E+00
	BI-212	727.17		11.80	1.59E+00	1.59E+00	2.09E-01	7.48E-01
		1620.62		2.75	5.71E+00		-1.53E-01	2.41E+00
	PB-212	238.63		44.60	4.36E-01	4.36E-01	1.64E+00	2.13E-01
		300.09		3.41	4.59E+00		-7.08E-01	2.22E+00
+	BI-214	609.31	*	46.30	3.96E-01	3.96E-01	1.79E+00	1.87E-01
		1120.29	*	15.10	1.44E+00		1.72E+00	6.61E-01
		1764.49	*	15.80	7.65E-01		1.80E+00	2.99E-01
		2204.22		4.98	5.19E+00		1.51E+00	2.28E+00
+	PB-214	295.21	*	19.19	1.07E+00	5.35E-01	2.05E+00	5.22E-01
		351.92	*	37.19	5.35E-01		1.67E+00	2.60E-01
	RN-219	401.80		6.50	2.04E+00	2.04E+00	-6.14E-01	9.69E-01
	RA-223	323.87		3.88	3.37E+00	3.37E+00	2.38E+00	1.62E+00
	RA-224	240.98		3.95	4.94E+00	4.94E+00	1.88E+01	2.42E+00
	RA-225	40.00		31.00	2.74E-01	2.74E-01	-2.66E-01	1.34E-01
+	RA-226	186.21	*	3.28	4.36E+00	4.36E+00	4.61E+00	2.13E+00
	TH-227	50.10		8.40	8.17E-01	8.17E-01	8.73E-01	4.00E-01
		236.00		11.50	1.53E+00		3.07E-02	7.50E-01
		256.20		6.30	1.78E+00		-1.56E-01	8.56E-01
+	AC-228	338.32	*	11.40	1.61E+00	1.10E+00	2.07E+00	7.83E-01
		911.07	*	27.70	1.52E+00		1.42E+00	7.35E-01
		969.11	*	16.60	1.10E+00		2.75E+00	5.05E-01
	TH-230	48.44		16.90	3.94E-01	3.94E-01	2.67E-01	1.93E-01

Analysis Report for 1606043-08

CP-5010 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TH-230	62.85		4.60	1.84E+00	3.94E-01	-2.66E-01	9.01E-01
		67.67		0.37	2.43E+01		-3.64E+01	1.19E+01
	PA-231	283.67		1.60	7.22E+00	5.41E+00	-1.75E+00	3.47E+00
		302.67		2.30	5.41E+00		-5.56E-01	2.60E+00
	TH-231	25.64		14.70	3.47E-01	3.47E-01	-1.05E-01	1.69E-01
		84.21		6.40	1.48E+00		-5.81E+00	7.26E-01
	PA-233	311.98		38.60	3.61E-01	3.61E-01	-4.79E-02	1.72E-01
	PA-234	131.20		20.40	4.78E-01	4.78E-01	1.14E-02	2.33E-01
		733.99		8.80	1.77E+00		-6.91E-01	8.21E-01
		946.00		12.00	1.39E+00		1.59E-01	6.33E-01
	PA-234M	1001.03		0.92	2.01E+01	2.01E+01	5.56E+00	9.20E+00
+	TH-234	63.29	*	3.80	2.19E+00	2.19E+00	1.40E+00	1.07E+00
	U-235	143.76		10.50	9.61E-01	9.61E-01	1.74E-01	4.68E-01
		163.35		4.70	2.23E+00		5.67E-01	1.08E+00
		205.31		4.70	2.58E+00		-6.90E-01	1.25E+00
	NP-237	86.50		12.60	7.97E-01	7.97E-01	-4.26E-01	3.91E-01
	NP-239	106.10		22.70	5.43E+00	5.43E+00	-2.16E+00	2.64E+00
		228.18		10.70	1.59E+01		-8.75E-01	7.71E+00
		277.60		14.10	1.19E+01		-3.38E+00	5.69E+00
	AM-241	59.54		35.90	2.22E-01	2.22E-01	-8.24E-02	1.09E-01
	AM-243	74.67		66.00	1.78E-01	1.78E-01	6.25E-01	8.75E-02
	CM-243	209.75		3.29	3.71E+00	8.22E-01	-2.56E-01	1.80E+00
		228.14		10.60	1.12E+00		4.55E-02	5.41E-01
		277.60		14.00	8.22E-01		-2.35E-01	3.95E-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

Analysis Report for 1606043-08

CP-5010 00-02

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-5010 00-02

Elapsed Live time: 3600
Elapsed Real Time: 3619

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	9	85
17:	81	76	62	66	66	63	62	66
25:	51	56	53	57	62	50	63	66
33:	52	53	56	62	52	58	62	66
41:	58	66	52	62	86	99	84	61
49:	69	66	67	89	88	68	62	70
57:	106	72	92	77	94	121	142	124
65:	96	77	98	93	105	94	116	112
73:	158	189	209	238	216	138	77	95
81:	87	65	98	91	86	118	119	121
89:	121	93	114	136	144	97	77	49
97:	73	56	58	65	52	53	55	52
105:	69	51	54	60	55	66	58	59
113:	56	57	57	57	53	57	55	43
121:	54	54	62	60	60	53	46	64
129:	67	60	53	58	46	49	58	45
137:	48	58	44	62	55	49	51	44
145:	59	57	44	57	48	42	55	49
153:	41	57	64	51	43	30	42	37
161:	48	44	57	39	54	50	42	42
169:	40	52	38	35	40	45	50	37
177:	51	45	47	45	55	38	52	49
185:	94	102	60	52	45	33	41	37
193:	30	38	46	42	42	45	44	31
201:	40	37	38	41	37	46	31	39
209:	71	44	40	30	34	30	44	43
217:	33	30	23	28	31	29	32	24
225:	40	24	30	42	42	30	37	27
233:	42	40	25	33	108	181	151	85
241:	85	61	36	21	19	26	31	31
249:	29	32	24	20	30	22	19	18
257:	25	37	22	25	24	27	15	26
265:	22	37	20	29	40	40	26	25
273:	27	19	23	25	25	21	18	22
281:	18	17	23	19	27	21	27	21
289:	20	27	16	28	47	65	97	55
297:	37	21	25	30	26	17	15	24
305:	14	26	20	13	14	31	12	17
313:	13	15	10	16	16	10	16	23
321:	18	20	15	28	19	19	34	22
329:	11	21	21	15	29	15	17	21
337:	40	53	35	18	17	22	11	13
345:	12	16	16	20	19	48	128	119
353:	46	14	12	12	18	13	18	11
361:	10	10	14	12	15	7	14	14

369:	16	18	23	9	12	12	14	19

Sample Title: CP-5010 00-02

Channel								
377:	19	17	13	15	16	15	13	13
385:	21	14	17	18	17	13	21	14
393:	10	9	9	21	16	14	10	24
401:	10	11	16	14	14	19	16	21
409:	17	14	20	18	16	19	8	18
417:	11	13	11	15	13	8	14	12
425:	8	12	18	13	18	11	14	9
433:	12	9	12	16	11	10	14	13
441:	14	20	5	11	8	9	9	10
449:	12	9	10	12	16	13	12	11
457:	18	9	8	12	10	18	9	20
465:	10	13	12	14	10	9	10	10
473:	9	12	12	10	8	10	11	13
481:	11	11	5	9	9	11	12	10
489:	7	10	9	8	10	8	17	9
497:	11	12	6	7	8	3	12	7
505:	7	19	11	14	15	32	33	24
513:	9	9	9	7	14	5	10	10
521:	6	11	12	7	8	11	10	7
529:	10	6	11	7	3	8	6	8
537:	4	5	8	10	9	6	17	6
545:	6	3	14	8	8	10	7	6
553:	9	8	10	9	5	8	14	8
561:	14	10	5	5	14	8	8	12
569:	12	6	8	9	9	15	6	8
577:	9	8	4	9	12	35	44	26
585:	12	6	9	5	7	4	9	6
593:	7	4	9	9	6	9	2	7
601:	9	9	5	9	9	7	20	85
609:	82	46	20	4	2	5	14	7
617:	4	8	6	9	8	2	4	9
625:	12	11	4	8	7	9	9	7
633:	3	13	6	4	9	6	6	11
641:	10	11	5	6	9	5	4	9
649:	5	10	8	7	7	9	8	7
657:	9	6	11	9	13	5	8	6
665:	9	10	7	5	11	7	3	5
673:	9	6	6	10	5	5	5	4
681:	7	5	4	7	7	6	7	5
689:	8	8	5	7	6	2	2	8
697:	5	6	6	6	8	5	8	6
705:	11	9	10	4	5	3	12	4
713:	10	4	10	4	10	8	3	8
721:	8	4	7	10	13	6	16	6
729:	4	7	10	3	7	3	4	3
737:	4	11	8	6	5	6	5	7
745:	5	2	10	7	8	7	9	6
753:	7	3	1	8	3	6	12	3
761:	7	7	5	5	7	3	11	17
769:	13	5	8	7	9	3	4	6
777:	4	7	4	5	3	5	4	7
785:	10	13	3	8	7	8	3	2
793:	10	3	6	9	5	4	3	9

801:	4	3	10	6	5	6	5	6

Sample Title: CP-5010 00-02

Channel								
809:	4	6	3	3	5	6	3	4
817:	5	3	4	8	11	10	4	8
825:	5	0	5	3	4	3	6	4
833:	6	4	6	4	6	5	3	7
841:	5	4	5	6	7	4	2	4
849:	4	4	2	6	10	7	3	6
857:	6	9	5	3	9	3	4	8
865:	8	6	3	4	1	7	6	4
873:	5	3	4	2	1	1	10	4
881:	6	1	9	4	1	6	3	2
889:	5	7	2	3	5	1	0	4
897:	2	3	3	3	3	7	8	4
905:	4	3	4	2	10	24	33	15
913:	8	4	4	6	6	6	3	6
921:	5	6	3	4	4	6	4	2
929:	4	4	3	7	7	9	5	2
937:	2	7	2	3	6	3	0	3
945:	7	4	3	6	5	4	4	4
953:	2	5	4	6	3	3	6	7
961:	2	3	5	7	9	6	12	14
969:	14	12	7	4	6	0	1	6
977:	6	2	6	2	4	4	2	1
985:	2	2	3	3	2	2	5	9
993:	5	2	3	4	3	4	3	5
1001:	6	5	5	5	3	4	5	2
1009:	4	1	3	4	7	3	4	6
1017:	6	3	5	2	1	5	7	4
1025:	4	1	1	1	7	6	2	7
1033:	5	3	2	0	2	5	6	0
1041:	2	2	5	6	4	1	5	4
1049:	4	5	2	2	3	2	2	3
1057:	4	6	3	6	2	3	4	3
1065:	7	3	2	6	1	4	6	4
1073:	4	6	2	1	5	5	5	4
1081:	3	3	5	6	3	9	5	3
1089:	5	2	3	5	5	2	4	3
1097:	6	4	4	2	3	3	1	6
1105:	0	0	7	3	7	5	6	2
1113:	2	4	2	5	5	8	9	17
1121:	12	5	1	5	1	3	3	6
1129:	5	3	6	3	3	1	2	7
1137:	6	6	4	3	5	2	2	4
1145:	4	1	4	2	6	2	2	3
1153:	3	4	6	7	4	5	5	4
1161:	2	4	3	2	4	4	3	5
1169:	4	5	3	1	4	5	7	6
1177:	3	6	4	5	1	6	6	5
1185:	12	5	4	6	3	5	7	3
1193:	3	5	5	3	3	8	2	6
1201:	5	7	5	8	3	6	4	6
1209:	4	4	5	5	4	2	5	4
1217:	4	9	5	6	5	5	5	9
1225:	2	7	6	8	5	3	6	4

1233:	8	5	5	10	10	6	7	6

Sample Title: CP-5010 00-02

Channel								
1241:	7	6	2	4	4	3	4	4
1249:	2	1	3	6	1	3	3	3
1257:	0	2	1	5	6	3	5	5
1265:	2	3	2	5	4	3	2	2
1273:	2	3	1	6	3	6	4	3
1281:	3	2	3	5	3	6	6	1
1289:	3	3	1	1	1	5	1	4
1297:	6	1	2	1	2	1	4	3
1305:	5	3	3	2	5	2	4	1
1313:	4	3	5	1	6	3	5	2
1321:	1	2	6	1	1	0	5	2
1329:	5	2	2	3	2	4	1	3
1337:	1	2	1	1	3	3	0	0
1345:	2	6	1	1	3	3	4	1
1353:	3	1	3	0	1	0	2	1
1361:	2	1	1	2	2	0	2	0
1369:	3	3	1	0	0	6	1	4
1377:	4	4	4	3	1	1	3	2
1385:	2	2	1	0	3	2	3	2
1393:	0	3	2	1	2	0	1	2
1401:	1	4	2	2	2	1	6	3
1409:	6	2	2	3	2	0	1	3
1417:	1	0	1	1	0	1	2	1
1425:	2	0	1	2	3	1	3	4
1433:	1	0	4	0	3	0	1	2
1441:	0	3	3	0	2	1	4	2
1449:	0	2	2	2	1	0	1	2
1457:	2	11	39	71	57	38	12	4
1465:	3	2	1	4	1	1	1	2
1473:	1	1	1	1	1	1	1	1
1481:	1	2	0	1	1	0	1	2
1489:	2	0	0	1	3	3	0	6
1497:	1	1	1	3	1	2	0	2
1505:	1	3	2	0	2	4	2	1
1513:	1	1	1	0	2	1	1	2
1521:	2	0	3	3	3	2	0	0
1529:	2	1	0	0	0	0	1	0
1537:	2	0	2	1	0	0	1	1
1545:	0	1	0	1	0	1	0	2
1553:	2	1	2	0	0	2	1	1
1561:	3	2	1	3	3	0	2	2
1569:	1	1	0	2	1	1	2	4
1577:	1	0	1	1	3	0	1	0
1585:	1	4	3	1	3	3	1	2
1593:	1	1	1	0	0	0	3	3
1601:	1	1	2	0	2	0	0	2
1609:	1	3	0	0	2	1	0	3
1617:	1	0	1	2	2	1	0	1
1625:	2	0	2	1	0	4	1	1
1633:	2	1	1	1	0	2	1	0
1641:	2	0	0	0	3	1	0	1
1649:	3	0	0	0	1	1	0	0
1657:	2	0	2	0	0	1	1	0

1665:	0	1	2	1	0	0	1	0

Sample Title: CP-5010 00-02

Channel								
1673:	1	2	2	0	1	2	1	0
1681:	3	1	0	0	0	0	2	0
1689:	0	1	1	0	2	1	0	1
1697:	0	0	1	1	1	1	2	0
1705:	1	1	1	0	1	1	0	0
1713:	1	1	0	0	0	1	2	0
1721:	1	0	1	0	0	1	0	1
1729:	2	3	2	2	1	3	0	1
1737:	1	0	0	0	1	0	1	0
1745:	0	1	0	2	0	0	0	0
1753:	0	0	1	1	1	0	0	1
1761:	2	2	5	13	5	3	1	0
1769:	1	0	1	0	0	1	0	0
1777:	1	1	1	0	0	0	0	0
1785:	0	0	1	0	0	2	0	0
1793:	1	0	0	0	0	0	0	1
1801:	0	2	1	0	1	1	2	0
1809:	1	1	1	0	0	2	1	1
1817:	1	0	1	0	2	1	1	1
1825:	1	1	2	2	0	1	0	0
1833:	0	0	1	1	0	2	1	0
1841:	1	1	2	0	0	1	1	2
1849:	1	1	0	0	0	0	0	1
1857:	0	1	0	0	1	1	0	1
1865:	1	1	0	0	0	1	1	0
1873:	0	1	1	3	2	0	0	3
1881:	0	2	2	0	2	1	1	1
1889:	0	0	1	0	2	1	0	0
1897:	2	0	0	0	0	1	0	0
1905:	0	0	0	1	0	2	0	0
1913:	0	0	1	2	1	1	0	1
1921:	0	0	0	0	2	0	0	0
1929:	0	0	0	0	0	1	0	0
1937:	2	0	0	0	0	2	1	0
1945:	0	1	0	0	1	0	0	0
1953:	0	0	3	0	0	0	1	0
1961:	0	1	0	0	0	0	0	0
1969:	0	2	2	0	1	1	1	1
1977:	0	1	1	1	0	0	0	0
1985:	1	0	1	1	1	1	0	0
1993:	0	1	1	1	1	0	1	1
2001:	0	0	0	2	2	0	1	0
2009:	1	0	2	0	0	0	0	0
2017:	0	0	1	0	1	0	0	1
2025:	0	0	0	0	1	0	0	0
2033:	1	0	0	2	2	0	0	0
2041:	1	0	0	0	0	0	0	3
2049:	0	0	0	0	0	1	1	1
2057:	0	2	1	2	1	1	2	2
2065:	0	1	0	0	2	0	0	2
2073:	0	1	0	1	0	0	0	0
2081:	0	0	0	1	1	0	1	1
2089:	0	1	0	1	1	0	0	0

2097:	0	0	4	2	0	1	4	1

Sample Title: CP-5010 00-02

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

2529:	0	0	0	1	2	0	2	0

Sample Title: CP-5010 00-02

Channel								
2537:	1	0	1	0	1	0	1	0
2545:	0	0	0	0	1	1	1	1
2553:	0	0	0	0	1	0	1	0
2561:	0	0	0	0	0	0	0	0
2569:	0	3	0	0	0	0	0	0
2577:	0	0	0	1	0	0	0	0
2585:	0	1	0	0	0	1	0	1
2593:	0	0	0	0	0	0	1	0
2601:	0	0	0	1	0	0	1	0
2609:	0	0	1	2	9	8	7	3
2617:	0	3	0	0	1	0	1	0
2625:	0	0	1	0	0	2	1	1
2633:	0	0	0	0	0	0	0	0
2641:	0	0	0	1	0	0	0	0
2649:	0	0	0	0	1	0	0	0
2657:	0	0	0	0	0	0	0	0
2665:	1	0	1	0	0	0	0	1
2673:	0	0	0	0	0	0	0	0
2681:	0	0	0	0	0	0	1	0
2689:	0	1	1	0	1	0	0	2
2697:	0	0	0	0	0	0	0	0
2705:	1	0	1	0	0	0	1	0
2713:	2	0	0	0	0	1	0	0
2721:	0	0	0	0	0	0	0	0
2729:	0	0	0	0	0	0	0	0
2737:	0	0	1	0	0	0	0	0
2745:	0	1	0	0	0	1	0	0
2753:	0	0	0	0	0	0	0	0
2761:	1	0	0	1	1	0	1	1
2769:	0	0	1	0	0	0	0	0
2777:	1	0	0	0	0	0	0	0
2785:	1	0	0	0	0	0	1	0
2793:	0	1	1	1	0	0	0	0
2801:	0	1	0	0	0	1	0	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	1	0	0	0	0
2825:	0	0	0	0	1	0	0	0
2833:	0	0	0	1	0	0	0	0
2841:	1	0	0	1	0	1	0	0
2849:	1	0	1	0	0	0	0	0
2857:	0	0	0	0	0	0	0	1
2865:	1	0	0	0	0	0	0	0
2873:	0	1	0	0	0	0	1	0
2881:	1	0	1	0	0	0	1	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	1	0	0	0	0	0	3
2913:	0	0	0	1	0	1	1	0
2921:	0	1	0	0	0	0	0	0
2929:	0	0	0	1	0	0	0	0
2937:	1	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961:	0	0	1	0	0	0	0	0

Sample Title: CP-5010 00-02

Channel								
2969:	0	0	0	0	0	0	0	1
2977:	1	0	0	0	1	0	0	0
2985:	0	0	1	0	0	0	0	0
2993:	1	1	0	0	0	0	0	0
3001:	0	0	0	1	0	0	0	0
3009:	0	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:	1	0	0	0	0	0	0	0
3041:	0	1	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	0	0	0	0	0	0	0
3073:	0	1	0	0	0	0	1	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	1	0	0
3105:	1	0	0	0	0	1	0	0
3113:	0	0	1	0	0	0	1	0
3121:	0	0	0	0	0	0	1	0
3129:	0	0	1	0	0	0	0	0
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	1	0
3169:	0	1	0	0	0	0	0	0
3177:	0	0	0	0	0	1	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	1	1	0	0
3201:	0	0	1	0	0	0	1	0
3209:	0	1	0	0	0	1	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	1	0	0	0	0	0
3233:	1	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	1	1
3249:	0	0	0	0	0	0	0	0
3257:	1	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	1	0	0	0	0	0	0
3281:	0	0	0	0	0	0	1	0
3289:	0	0	1	0	0	1	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	1	0	0
3313:	0	0	1	0	0	0	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	1	0	0	0	0	0	0
3337:	0	1	0	0	1	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	1	0	0	0	0	0	0
3361:	1	0	0	0	0	0	1	1
3369:	0	1	1	0	0	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	1	0	0	0	0	0	0	1

3393:	2	0	0	0	0	0	0	0

Sample Title: CP-5010 00-02

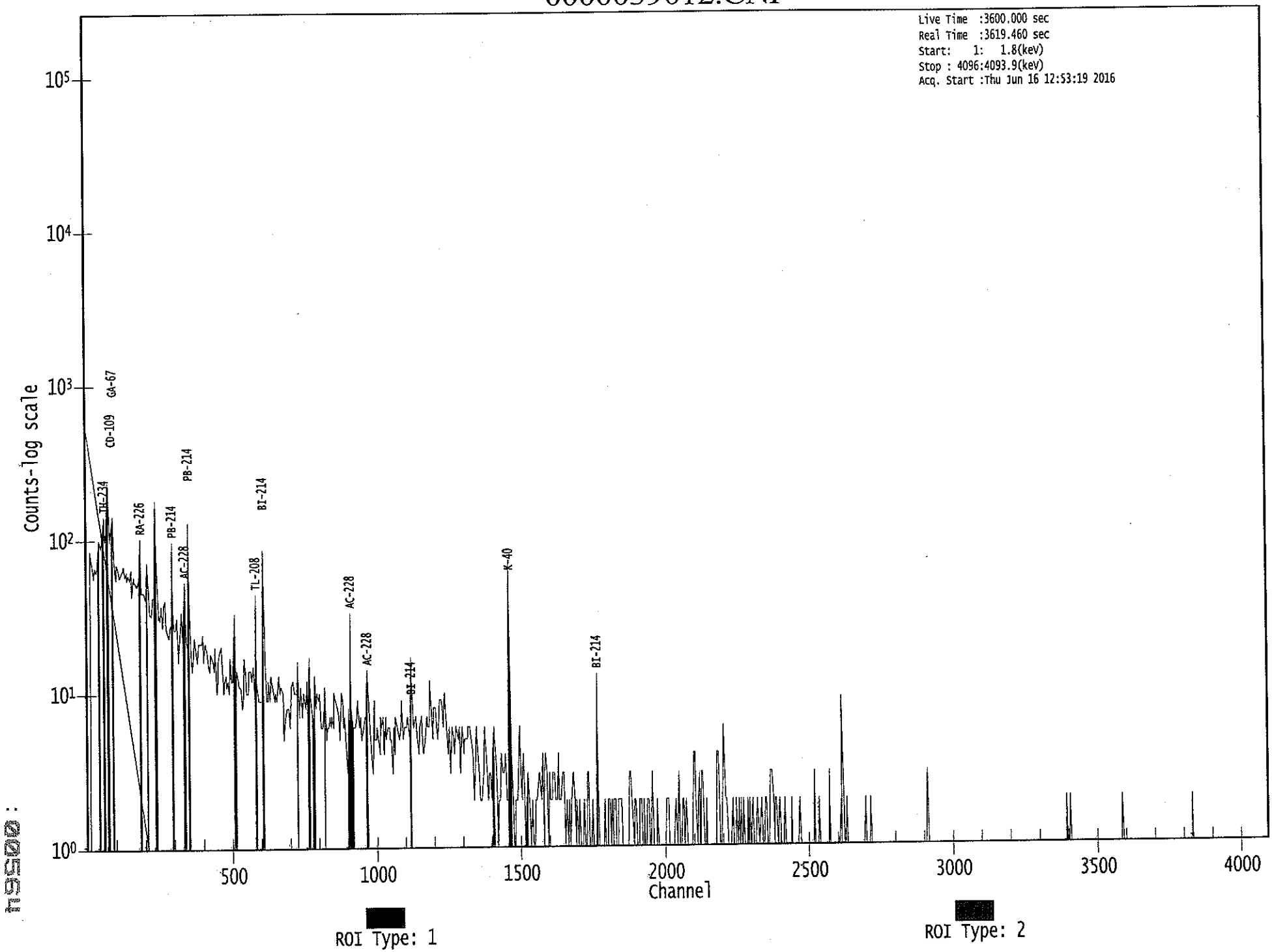
Channel								
3401:	0	1	0	0	0	2	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	1	1	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	1	0	0	0	0
3441:	0	0	1	0	1	0	0	0
3449:	0	0	0	0	0	0	0	1
3457:	0	0	0	1	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	1	0	0	0	0	1
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	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	1	0	0	0	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	0	0	0	0	0	0
3569:	1	0	0	1	0	1	0	1
3577:	0	0	0	0	0	0	0	1
3585:	2	0	1	0	0	0	1	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	1	0	0	0	0	0	0	0
3617:	0	0	0	1	1	0	0	0
3625:	1	0	0	0	0	0	0	0
3633:	1	0	0	0	0	0	0	0
3641:	0	0	0	0	1	0	0	0
3649:	1	1	1	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	1	0	1	0	0	0
3673:	1	0	0	0	0	0	0	0
3681:	0	1	0	0	0	0	0	0
3689:	0	0	1	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	1	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	1	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	1	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	1	0	0	0	0
3801:	0	1	0	0	0	1	0	0
3809:	0	0	0	0	0	1	0	0
3817:	0	0	0	0	0	0	0	1

3825:	0	0	0	0	2	0	0	0

Sample Title: CP-5010 00-02

Channel								
3833:	0	0	0	0	0	0	1	0
3841:	0	0	1	0	0	0	0	0
3849:	0	0	0	0	0	0	0	1
3857:	0	0	0	1	0	0	0	0
3865:	1	0	0	0	1	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	1	0	0	0	0	1	0
3897:	1	0	0	0	0	0	0	0
3905:	0	0	0	1	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	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	1	0	0	0	0	0
3969:	0	1	0	0	0	0	1	0
3977:	0	0	0	1	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	1	0	1	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	1	0	0	1	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	1	0	0	0	0	0
4049:	1	0	0	0	0	1	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	1	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	1	0
4089:	0	0	0	0	0	0	0	0

0000039012.CNF



Apex-Gamma

Analysis Report for 1606043-09
CP-5010 02-05

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-09
Sample Description	: CP-5010 02-05
Sample Type	: SOIL
Sample Size	: 5.127E+02 grams
Facility	: Countroom
Sample Taken On	: 6/7/2016 11:11:41AM
Acquisition Started	: 6/16/2016 1:04:48PM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3601.6 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	: 39070

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/17/16

Analysis Report for 1606043-09

CP-5010 02-05

PEAK LOCATE REPORT

Peak Locate Performed on : 6/17/2016 8:26:33AM
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	13.11	13.24	0.0000	0.00
2	46.40	46.51	0.0000	0.00
3	63.04	63.14	0.0000	0.00
4	76.26	76.35	0.0000	0.00
5	88.32	88.40	0.0000	0.00
6	93.27	93.34	0.0000	0.00
7	129.19	129.25	0.0000	0.00
8	186.08	186.10	0.0000	0.00
9	208.92	208.93	0.0000	0.00
10	239.04	239.04	0.0000	0.00
11	242.09	242.09	0.0000	0.00
12	277.79	277.77	0.0000	0.00
13	284.31	284.28	0.0000	0.00
14	287.31	287.28	0.0000	0.00
15	295.24	295.21	0.0000	0.00
16	303.19	303.16	0.0000	0.00
17	327.92	327.86	0.0000	0.00
18	338.29	338.24	0.0000	0.00
19	351.98	351.91	0.0000	0.00
20	463.68	463.55	0.0000	0.00
21	510.99	510.84	0.0000	0.00
22	583.59	583.41	0.0000	0.00
23	597.89	597.70	0.0000	0.00
24	609.56	609.37	0.0000	0.00
25	727.29	727.04	0.0000	0.00
26	767.85	767.59	0.0000	0.00
27	860.78	860.48	0.0000	0.00
28	911.79	911.46	0.0000	0.00
29	964.74	964.40	0.0000	0.00
30	969.62	969.27	0.0000	0.00
31	1090.14	1089.74	0.0000	0.00
32	1121.19	1120.78	0.0000	0.00
33	1194.90	1194.47	0.0000	0.00
34	1239.13	1238.68	0.0000	0.00
35	1280.98	1280.52	0.0000	0.00
36	1377.94	1377.44	0.0000	0.00
37	1405.14	1404.64	0.0000	0.00
38	1423.66	1423.15	0.0000	0.00
39	1438.88	1438.36	0.0000	0.00
40	1461.30	1460.78	0.0000	0.00
41	1510.69	1510.15	0.0000	0.00
42	1519.16	1518.62	0.0000	0.00

Analysis Report for 1606043-09

CP-5010 02-05

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1589.09	1588.53	0.0000	0.00
44	1729.50	1728.90	0.0000	0.00
45	1765.23	1764.62	0.0000	0.00
46	1787.79	1787.18	0.0000	0.00
47	1839.59	1838.97	0.0000	0.00
48	1847.77	1847.14	0.0000	0.00
49	2103.96	2103.28	0.0000	0.00
50	2119.05	2118.38	0.0000	0.00
51	2172.81	2172.13	0.0000	0.00
52	2204.56	2203.87	0.0000	0.00
53	2261.51	2260.81	0.0000	0.00
54	2275.00	2274.30	0.0000	0.00
55	2614.75	2614.01	0.0000	0.00
56	2870.69	2869.93	0.0000	0.00
57	2923.95	2923.20	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606043-09

CP-5010 02-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/17/2016 8:26:33AM

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	13.11	12 -	15	13.24	1.96E+03	121.31	1.57E+03	1.18
	2	46.40	43 -	49	46.51	1.66E+02	77.47	9.73E+02	1.31
	3	63.04	59 -	66	63.14	2.50E+02	103.52	1.62E+03	1.86
	4	76.26	72 -	81	76.35	9.81E+02	140.24	2.23E+03	3.46
	5	88.32	86 -	91	88.40	2.74E+02	92.23	1.48E+03	3.92
	6	93.27	91 -	96	93.34	1.65E+02	90.47	1.42E+03	1.05
	7	129.19	125 -	132	129.25	7.14E+01	83.98	1.13E+03	1.21
	8	186.08	183 -	189	186.10	3.19E+02	72.02	7.12E+02	1.26
	9	208.92	204 -	215	208.93	1.42E+02	90.88	9.48E+02	4.60
M	10	239.04	235 -	246	239.04	6.69E+02	62.16	2.80E+02	1.41
m	11	242.09	235 -	246	242.09	1.97E+02	45.87	2.70E+02	1.42
	12	277.79	274 -	281	277.77	4.70E+01	54.63	4.54E+02	2.02
M	13	284.31	283 -	291	284.28	2.27E+01	22.52	1.28E+02	1.63
m	14	287.31	283 -	291	287.28	4.36E+01	34.80	2.12E+02	1.63
	15	295.24	292 -	299	295.21	3.45E+02	62.26	4.24E+02	1.44
	16	303.19	300 -	308	303.16	6.82E+01	52.25	3.48E+02	8.33
	17	327.92	325 -	331	327.86	3.80E+01	43.25	3.14E+02	1.12
	18	338.29	333 -	342	338.24	1.65E+02	60.55	4.27E+02	1.90
	19	351.98	348 -	355	351.91	6.02E+02	66.33	3.32E+02	1.22
	20	463.68	460 -	467	463.55	5.08E+01	36.44	1.86E+02	1.30
	21	510.99	507 -	515	510.84	1.29E+02	42.56	2.01E+02	1.42
	22	583.59	579 -	588	583.41	2.43E+02	50.73	2.26E+02	1.91
	23	597.89	595 -	600	597.70	2.43E+01	22.43	8.14E+01	2.84
	24	609.56	606 -	613	609.37	4.71E+02	53.10	1.55E+02	1.78
	25	727.29	724 -	731	727.04	4.75E+01	29.12	1.13E+02	2.20
	26	767.85	763 -	770	767.59	3.20E+01	30.33	1.32E+02	1.82
	27	860.78	856 -	865	860.48	3.36E+01	31.18	1.19E+02	1.95
	28	911.79	907 -	916	911.46	1.44E+02	37.52	1.16E+02	1.91
M	29	964.74	961 -	979	964.40	2.98E+01	23.01	7.59E+01	2.19
m	30	969.62	961 -	979	969.27	8.49E+01	26.25	6.29E+01	2.12
	31	1090.14	1088 -	1092	1089.74	1.34E+01	14.68	3.71E+01	2.11
	32	1121.19	1116 -	1132	1120.78	7.72E+01	56.00	2.58E+02	2.33
	33	1194.90	1191 -	1197	1194.47	2.63E+01	19.38	4.93E+01	3.17
	34	1239.13	1234 -	1244	1238.68	5.18E+01	34.99	1.30E+02	2.46
	35	1280.98	1275 -	1286	1280.52	3.17E+01	24.58	5.86E+01	5.26
	36	1377.94	1374 -	1380	1377.44	2.60E+01	13.45	1.40E+01	1.83
	37	1405.14	1397 -	1411	1404.64	3.93E+01	22.66	3.73E+01	8.89
	38	1423.66	1420 -	1428	1423.15	1.30E+01	13.00	1.80E+01	3.96
	39	1438.88	1436 -	1441	1438.36	1.00E+01	10.00	1.20E+01	3.63
	40	1461.30	1455 -	1466	1460.78	5.58E+02	50.68	4.22E+01	2.03

Analysis Report for 1606043-09

CP-5010 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1510.69	1507 -	1516	1510.15	1.79E+01	13.38	1.62E+01	3.36
42	1519.16	1516 -	1520	1518.62	6.40E+00	7.66	7.20E+00	1.41
43	1589.09	1583 -	1595	1588.53	2.48E+01	22.09	4.64E+01	1.08
44	1729.50	1725 -	1732	1728.90	2.01E+01	12.33	1.18E+01	1.83
45	1765.23	1761 -	1770	1764.62	7.28E+01	20.88	2.25E+01	2.39
46	1787.79	1784 -	1790	1787.18	1.10E+01	6.63	0.00E+00	3.00
47	1839.59	1836 -	1841	1838.97	8.50E+00	7.00	3.00E+00	1.66
48	1847.77	1843 -	1850	1847.14	2.50E+01	11.14	4.04E+00	2.04
49	2103.96	2100 -	2106	2103.28	9.38E+00	8.75	7.23E+00	4.45
50	2119.05	2115 -	2121	2118.38	8.00E+00	5.66	0.00E+00	1.66
51	2172.81	2169 -	2174	2172.13	8.00E+00	5.66	0.00E+00	2.60
52	2204.56	2200 -	2208	2203.87	2.43E+01	15.66	2.34E+01	1.30
53	2261.51	2256 -	2264	2260.81	7.65E+00	7.76	4.70E+00	6.76
54	2275.00	2270 -	2278	2274.30	8.50E+00	9.62	9.00E+00	1.79
55	2614.75	2609 -	2618	2614.01	8.00E+01	17.89	0.00E+00	2.22
56	2870.69	2866 -	2872	2869.93	4.50E+00	6.02	3.00E+00	2.70
57	2923.95	2919 -	2925	2923.20	5.00E+00	4.47	0.00E+00	2.31

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 : 6/17/2016 8:26:33AM

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	13.11	12 -	15	1.96E+03	121.31	1.57E+03	6.81E+01
	2	46.40	43 -	49	1.66E+02	77.47	9.73E+02	6.01E+01
	3	63.04	59 -	66	2.50E+02	103.52	1.62E+03	8.10E+01
	4	76.26	72 -	81	9.81E+02	140.24	2.23E+03	1.03E+02
	5	88.32	86 -	91	2.74E+02	92.23	1.48E+03	7.08E+01
	6	93.27	91 -	96	1.65E+02	90.47	1.42E+03	7.13E+01
	7	129.19	125 -	132	7.14E+01	83.98	1.13E+03	6.76E+01
	8	186.08	183 -	189	3.19E+02	72.02	7.12E+02	5.14E+01
	9	208.92	204 -	215	1.42E+02	90.88	9.48E+02	7.21E+01
M	10	239.04	235 -	246	6.69E+02	62.16	2.80E+02	2.75E+01
m	11	242.09	235 -	246	1.97E+02	45.87	2.70E+02	2.70E+01

Analysis Report for 1606043-09

CP-5010 02-05

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	12	277.79	274 -	281	4.70E+01	54.63	4.54E+02	4.35E+01
M	13	284.31	283 -	291	2.27E+01	22.52	1.28E+02	1.86E+01
m	14	287.31	283 -	291	4.36E+01	34.80	2.12E+02	2.40E+01
	15	295.24	292 -	299	3.45E+02	62.26	4.24E+02	4.11E+01
	16	303.19	300 -	308	6.82E+01	52.25	3.48E+02	4.07E+01
	17	327.92	325 -	331	3.80E+01	43.25	3.14E+02	3.41E+01
	18	338.29	333 -	342	1.65E+02	60.55	4.27E+02	1.95E+01
	19	351.98	348 -	355	6.02E+02	66.33	3.32E+02	3.67E+01
	20	463.68	460 -	467	5.08E+01	36.44	1.86E+02	2.76E+01
	21	510.99	507 -	515	1.29E+02	42.56	2.01E+02	2.96E+01
	22	583.59	579 -	588	2.43E+02	50.73	2.26E+02	3.29E+01
	23	597.89	595 -	600	2.43E+01	22.43	8.14E+01	1.66E+01
	24	609.56	606 -	613	4.71E+02	53.10	1.55E+02	2.51E+01
	25	727.29	724 -	731	4.75E+01	29.12	1.13E+02	2.11E+01
	26	767.85	763 -	770	3.20E+01	30.33	1.32E+02	2.31E+01
	27	860.78	856 -	865	3.36E+01	31.18	1.19E+02	2.38E+01
	28	911.79	907 -	916	1.44E+02	37.52	1.16E+02	2.37E+01
M	29	964.74	961 -	979	2.98E+01	23.01	7.59E+01	1.43E+01
m	30	969.62	961 -	979	8.49E+01	26.25	6.29E+01	1.30E+01
	31	1090.14	1088 -	1092	1.34E+01	14.68	3.71E+01	1.05E+01
	32	1121.19	1116 -	1132	7.72E+01	56.00	2.58E+02	1.80E+01
	33	1194.90	1191 -	1197	2.63E+01	19.38	4.93E+01	1.35E+01
	34	1239.13	1234 -	1244	5.18E+01	34.99	1.30E+02	2.62E+01
	35	1280.98	1275 -	1286	3.17E+01	24.58	5.86E+01	1.80E+01
	36	1377.94	1374 -	1380	2.60E+01	13.45	1.40E+01	7.21E+00
	37	1405.14	1397 -	1411	3.93E+01	22.66	3.73E+01	1.55E+01
	38	1423.66	1420 -	1428	1.30E+01	13.00	1.80E+01	8.89E+00
	39	1438.88	1436 -	1441	1.00E+01	10.00	1.20E+01	6.37E+00
	40	1461.30	1455 -	1466	5.58E+02	50.68	4.22E+01	1.51E+01
	41	1510.69	1507 -	1516	1.79E+01	13.38	1.62E+01	8.52E+00
	42	1519.16	1516 -	1520	6.40E+00	7.66	7.20E+00	4.73E+00
	43	1589.09	1583 -	1595	2.48E+01	22.09	4.64E+01	1.62E+01
	44	1729.50	1725 -	1732	2.01E+01	12.33	1.18E+01	6.95E+00
	45	1765.23	1761 -	1770	7.28E+01	20.88	2.25E+01	9.90E+00
	46	1787.79	1784 -	1790	1.10E+01	6.63	0.00E+00	0.00E+00
	47	1839.59	1836 -	1841	8.50E+00	7.00	3.00E+00	3.18E+00
	48	1847.77	1843 -	1850	2.50E+01	11.14	4.04E+00	4.03E+00
	49	2103.96	2100 -	2106	9.38E+00	8.75	7.23E+00	5.13E+00
	50	2119.05	2115 -	2121	8.00E+00	5.66	0.00E+00	0.00E+00
	51	2172.81	2169 -	2174	8.00E+00	5.66	0.00E+00	0.00E+00
	52	2204.56	2200 -	2208	2.43E+01	15.66	2.34E+01	1.00E+01
	53	2261.51	2256 -	2264	7.65E+00	7.76	4.70E+00	4.48E+00
	54	2275.00	2270 -	2278	8.50E+00	9.62	9.00E+00	6.29E+00
	55	2614.75	2609 -	2618	8.00E+01	17.89	0.00E+00	0.00E+00
	56	2870.69	2866 -	2872	4.50E+00	6.02	3.00E+00	3.51E+00
	57	2923.95	2919 -	2925	5.00E+00	4.47	0.00E+00	0.00E+00

Analysis Report for 1606043-09

CP-5010 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 WITH NID REPORT

Peak Analysis Performed on : 6/17/2016 8:26:33AM

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	13.11	12 -	15	13.24	1.96E+03	121.31	1.57E+03	.....
	2	46.40	43 -	49	46.51	1.66E+02	77.47	9.73E+02	PB-210
	3	63.04	59 -	66	63.14	2.50E+02	103.52	1.62E+03	TH-230
									TH-234
	4	76.26	72 -	81	76.35	9.81E+02	140.24	2.23E+03	.....
	5	88.32	86 -	91	88.40	2.74E+02	92.23	1.48E+03	LU-176
									CD-109
									SN-126
	6	93.27	91 -	96	93.34	1.65E+02	90.47	1.42E+03	GA-67
	7	129.19	125 -	132	129.25	7.14E+01	83.98	1.13E+03	.....
	8	186.08	183 -	189	186.10	3.19E+02	72.02	7.12E+02	RA-226
	9	208.92	204 -	215	208.93	1.42E+02	90.88	9.48E+02	GA-67
									CM-243
M	10	239.04	235 -	246	239.04	6.69E+02	62.16	2.80E+02	PB-212
m	11	242.09	235 -	246	242.09	1.97E+02	45.87	2.70E+02	.....
	12	277.79	274 -	281	277.77	4.70E+01	54.63	4.54E+02	CM-243
									NP-239
M	13	284.31	283 -	291	284.28	2.27E+01	22.52	1.28E+02	I-131
									PA-231
m	14	287.31	283 -	291	287.28	4.36E+01	34.80	2.12E+02	.....
	15	295.24	292 -	299	295.21	3.45E+02	62.26	4.24E+02	PB-214
	16	303.19	300 -	308	303.16	6.82E+01	52.25	3.48E+02	BA-133
									PA-231
	17	327.92	325 -	331	327.86	3.80E+01	43.25	3.14E+02	LA-140
	18	338.29	333 -	342	338.24	1.65E+02	60.55	4.27E+02	AC-228
	19	351.98	348 -	355	351.91	6.02E+02	66.33	3.32E+02	PB-214
	20	463.68	460 -	467	463.55	5.08E+01	36.44	1.86E+02	SB-125
	21	510.99	507 -	515	510.84	1.29E+02	42.56	2.01E+02	.....
	22	583.59	579 -	588	583.41	2.43E+02	50.73	2.26E+02	TL-208
	23	597.89	595 -	600	597.70	2.43E+01	22.43	8.14E+01	.....

Analysis Report for 1606043-09

CP-5010 02-05

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	24	609.56	606 -	613	609.37	4.71E+02	53.10	1.55E+02	BI-214
	25	727.29	724 -	731	727.04	4.75E+01	29.12	1.13E+02	BI-212
	26	767.85	763 -	770	767.59	3.20E+01	30.33	1.32E+02	.....
	27	860.78	856 -	865	860.48	3.36E+01	31.18	1.19E+02	TL-208
	28	911.79	907 -	916	911.46	1.44E+02	37.52	1.16E+02	LU-172
									AC-228
M	29	964.74	961 -	979	964.40	2.98E+01	23.01	7.59E+01	EU-152
m	30	969.62	961 -	979	969.27	8.49E+01	26.25	6.29E+01	AC-228
	31	1090.14	1088 -	1092	1089.74	1.34E+01	14.68	3.71E+01	.....
	32	1121.19	1116 -	1132	1120.78	7.72E+01	56.00	2.58E+02	TA-182
									SC-46
									BI-214
	33	1194.90	1191 -	1197	1194.47	2.63E+01	19.38	4.93E+01	.....
	34	1239.13	1234 -	1244	1238.68	5.18E+01	34.99	1.30E+02	CO-56
	35	1280.98	1275 -	1286	1280.52	3.17E+01	24.58	5.86E+01	.....
	36	1377.94	1374 -	1380	1377.44	2.60E+01	13.45	1.40E+01	.....
	37	1405.14	1397 -	1411	1404.64	3.93E+01	22.66	3.73E+01	.....
	38	1423.66	1420 -	1428	1423.15	1.30E+01	13.00	1.80E+01	.....
	39	1438.88	1436 -	1441	1438.36	1.00E+01	10.00	1.20E+01	.....
	40	1461.30	1455 -	1466	1460.78	5.58E+02	50.68	4.22E+01	K-40
	41	1510.69	1507 -	1516	1510.15	1.79E+01	13.38	1.62E+01	.....
	42	1519.16	1516 -	1520	1518.62	6.40E+00	7.66	7.20E+00	.....
	43	1589.09	1583 -	1595	1588.53	2.48E+01	22.09	4.64E+01	.....
	44	1729.50	1725 -	1732	1728.90	2.01E+01	12.33	1.18E+01	.....
	45	1765.23	1761 -	1770	1764.62	7.28E+01	20.88	2.25E+01	BI-214
	46	1787.79	1784 -	1790	1787.18	1.10E+01	6.63	0.00E+00	.....
	47	1839.59	1836 -	1841	1838.97	8.50E+00	7.00	3.00E+00	.....
	48	1847.77	1843 -	1850	1847.14	2.50E+01	11.14	4.04E+00	.....
	49	2103.96	2100 -	2106	2103.28	9.38E+00	8.75	7.23E+00	.....
	50	2119.05	2115 -	2121	2118.38	8.00E+00	5.66	0.00E+00	.....
	51	2172.81	2169 -	2174	2172.13	8.00E+00	5.66	0.00E+00	.....
	52	2204.56	2200 -	2208	2203.87	2.43E+01	15.66	2.34E+01	BI-214
	53	2261.51	2256 -	2264	2260.81	7.65E+00	7.76	4.70E+00	.....
	54	2275.00	2270 -	2278	2274.30	8.50E+00	9.62	9.00E+00	.....
	55	2614.75	2609 -	2618	2614.01	8.00E+01	17.89	0.00E+00	TL-208
	56	2870.69	2866 -	2872	2869.93	4.50E+00	6.02	3.00E+00	.....
	57	2923.95	2919 -	2925	2923.20	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 : 6/17/2016 8:26:33AM

Analysis Report for 1606043-09

CP-5010 02-05

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	13.11	1.96E+03	121.31	1.39E-05	1.66E-03
	2	46.40	1.66E+02	77.47	1.70E-02	1.66E-03
	3	63.04	2.50E+02	103.52	2.36E-02	1.74E-03
	4	76.26	9.81E+02	140.24	2.56E-02	2.02E-03
	5	88.32	2.74E+02	92.23	2.60E-02	2.27E-03
	6	93.27	1.65E+02	90.47	2.60E-02	2.27E-03
	7	129.19	7.14E+01	83.98	2.39E-02	2.29E-03
	8	186.08	3.19E+02	72.02	1.99E-02	2.40E-03
	9	208.92	1.42E+02	90.88	1.85E-02	2.36E-03
M	10	239.04	6.69E+02	62.16	1.70E-02	2.31E-03
m	11	242.09	1.97E+02	45.87	1.69E-02	2.30E-03
	12	277.79	4.70E+01	54.63	1.54E-02	2.24E-03
M	13	284.31	2.27E+01	22.52	1.51E-02	2.23E-03
m	14	287.31	4.36E+01	34.80	1.50E-02	2.23E-03
	15	295.24	3.45E+02	62.26	1.47E-02	2.21E-03
	16	303.19	6.82E+01	52.25	1.44E-02	2.20E-03
	17	327.92	3.80E+01	43.25	1.37E-02	2.16E-03
	18	338.29	1.65E+02	60.55	1.34E-02	2.14E-03
	19	351.98	6.02E+02	66.33	1.30E-02	2.12E-03
	20	463.68	5.08E+01	36.44	1.05E-02	1.68E-03
	21	510.99	1.29E+02	42.56	9.77E-03	1.43E-03
	22	583.59	2.43E+02	50.73	8.79E-03	1.06E-03
	23	597.89	2.43E+01	22.43	8.62E-03	9.82E-04
	24	609.56	4.71E+02	53.10	8.48E-03	9.21E-04
	25	727.29	4.75E+01	29.12	7.34E-03	7.36E-04
	26	767.85	3.20E+01	30.33	7.02E-03	7.88E-04
	27	860.78	3.36E+01	31.18	6.39E-03	9.08E-04
	28	911.79	1.44E+02	37.52	6.09E-03	9.28E-04
M	29	964.74	2.98E+01	23.01	5.81E-03	8.20E-04
m	30	969.62	8.49E+01	26.25	5.79E-03	8.11E-04
	31	1090.14	1.34E+01	14.68	5.27E-03	5.67E-04
	32	1121.19	7.72E+01	56.00	5.15E-03	5.04E-04
	33	1194.90	2.63E+01	19.38	4.90E-03	3.94E-04
	34	1239.13	5.18E+01	34.99	4.77E-03	3.84E-04
	35	1280.98	3.17E+01	24.58	4.65E-03	3.74E-04
	36	1377.94	2.60E+01	13.45	4.41E-03	3.66E-04
	37	1405.14	3.93E+01	22.66	4.35E-03	3.68E-04
	38	1423.66	1.30E+01	13.00	4.31E-03	3.70E-04
	39	1438.88	1.00E+01	10.00	4.28E-03	3.71E-04
	40	1461.30	5.58E+02	50.68	4.23E-03	3.72E-04
	41	1510.69	1.79E+01	13.38	4.14E-03	3.76E-04
	42	1519.16	6.40E+00	7.66	4.12E-03	3.77E-04
	43	1589.09	2.48E+01	22.09	4.01E-03	3.82E-04
	44	1729.50	2.01E+01	12.33	3.81E-03	3.93E-04
	45	1765.23	7.28E+01	20.88	3.77E-03	3.96E-04
	46	1787.79	1.10E+01	6.63	3.75E-03	3.97E-04
	47	1839.59	8.50E+00	7.00	3.69E-03	4.01E-04
	48	1847.77	2.50E+01	11.14	3.69E-03	4.01E-04
	49	2103.96	9.38E+00	8.75	3.50E-03	4.01E-04
	50	2119.05	8.00E+00	5.66	3.49E-03	4.01E-04

Analysis Report for 1606043-09

CP-5010 02-05

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
51	2172.81	8.00E+00	5.66	3.47E-03	4.01E-04
52	2204.56	2.43E+01	15.66	3.45E-03	4.01E-04
53	2261.51	7.65E+00	7.76	3.43E-03	4.01E-04
54	2275.00	8.50E+00	9.62	3.43E-03	4.01E-04
55	2614.75	8.00E+01	17.89	3.40E-03	4.01E-04
56	2870.69	4.50E+00	6.02	3.45E-03	4.01E-04
57	2923.95	5.00E+00	4.47	3.47E-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 : 6/17/2016 8:26:33AM

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	13.11	1.96E+03	121.31			1.96E+03	1.21E+02
	2	46.40	1.66E+02	77.47	2.17E+01	5.74E+00	1.44E+02	7.77E+01
	3	63.04	2.50E+02	103.52	2.91E+01	8.34E+00	2.20E+02	1.04E+02
	4	76.26	9.81E+02	140.24			9.81E+02	1.40E+02
	5	88.32	2.74E+02	92.23			2.74E+02	9.22E+01
	6	93.27	1.65E+02	90.47	4.47E+01	7.30E+00	1.20E+02	9.08E+01
	7	129.19	7.14E+01	83.98			7.14E+01	8.40E+01
	8	186.08	3.19E+02	72.02	3.13E+01	6.95E+00	2.88E+02	7.24E+01
	9	208.92	1.42E+02	90.88			1.42E+02	9.09E+01
M	10	239.04	6.69E+02	62.16	1.19E+01	7.10E+00	6.57E+02	6.26E+01
m	11	242.09	1.97E+02	45.87	2.33E+00	1.42E+00	1.95E+02	4.59E+01
	12	277.79	4.70E+01	54.63			4.70E+01	5.46E+01
M	13	284.31	2.27E+01	22.52			2.27E+01	2.25E+01
m	14	287.31	4.36E+01	34.80			4.36E+01	3.48E+01
	15	295.24	3.45E+02	62.26			3.45E+02	6.23E+01
	16	303.19	6.82E+01	52.25			6.82E+01	5.22E+01
	17	327.92	3.80E+01	43.25			3.80E+01	4.32E+01
	18	338.29	1.65E+02	60.55			1.65E+02	6.05E+01
	19	351.98	6.02E+02	66.33	9.12E+00	4.79E+00	5.93E+02	6.65E+01
	20	463.68	5.08E+01	36.44			5.08E+01	3.64E+01
	21	510.99	1.29E+02	42.56	6.97E+01	5.00E+00	5.98E+01	4.28E+01
	22	583.59	2.43E+02	50.73	3.98E+00	3.57E+00	2.39E+02	5.09E+01
	23	597.89	2.43E+01	22.43			2.43E+01	2.24E+01

Analysis Report for 1606043-09

CP-5010 02-05

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	24	609.56	4.71E+02	53.10	8.66E+00	3.90E+00	4.63E+02	5.32E+01
	25	727.29	4.75E+01	29.12			4.75E+01	2.91E+01
	26	767.85	3.20E+01	30.33			3.20E+01	3.03E+01
	27	860.78	3.36E+01	31.18			3.36E+01	3.12E+01
	28	911.79	1.44E+02	37.52	2.01E+00	2.72E+00	1.42E+02	3.76E+01
M	29	964.74	2.98E+01	23.01			2.98E+01	2.30E+01
m	30	969.62	8.49E+01	26.25			8.49E+01	2.62E+01
	31	1090.14	1.34E+01	14.68			1.34E+01	1.47E+01
	32	1121.19	7.72E+01	56.00			7.72E+01	5.60E+01
	33	1194.90	2.63E+01	19.38			2.63E+01	1.94E+01
	34	1239.13	5.18E+01	34.99			5.18E+01	3.50E+01
	35	1280.98	3.17E+01	24.58			3.17E+01	2.46E+01
	36	1377.94	2.60E+01	13.45			2.60E+01	1.35E+01
	37	1405.14	3.93E+01	22.66			3.93E+01	2.27E+01
	38	1423.66	1.30E+01	13.00			1.30E+01	1.30E+01
	39	1438.88	1.00E+01	10.00			1.00E+01	1.00E+01
	40	1461.30	5.58E+02	50.68	3.09E+00	1.97E+00	5.55E+02	5.07E+01
	41	1510.69	1.79E+01	13.38			1.79E+01	1.34E+01
	42	1519.16	6.40E+00	7.66			6.40E+00	7.66E+00
	43	1589.09	2.48E+01	22.09			2.48E+01	2.21E+01
	44	1729.50	2.01E+01	12.33			2.01E+01	1.23E+01
	45	1765.23	7.28E+01	20.88	2.70E+00	1.86E+00	7.00E+01	2.10E+01
	46	1787.79	1.10E+01	6.63			1.10E+01	6.63E+00
	47	1839.59	8.50E+00	7.00			8.50E+00	7.00E+00
	48	1847.77	2.50E+01	11.14			2.50E+01	1.11E+01
	49	2103.96	9.38E+00	8.75			9.38E+00	8.75E+00
	50	2119.05	8.00E+00	5.66			8.00E+00	5.66E+00
	51	2172.81	8.00E+00	5.66			8.00E+00	5.66E+00
	52	2204.56	2.43E+01	15.66			2.43E+01	1.57E+01
	53	2261.51	7.65E+00	7.76			7.65E+00	7.76E+00
	54	2275.00	8.50E+00	9.62			8.50E+00	9.62E+00
	55	2614.75	8.00E+01	17.89	3.07E+00	1.34E+00	7.69E+01	1.79E+01
	56	2870.69	4.50E+00	6.02			4.50E+00	6.02E+00
	57	2923.95	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

Analysis Report for 1606043-09

CP-5010 02-05

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/17/2016 8:26:33AM

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	13.11	1.96E+03	121.31			1.96E+03	1.21E+02
	2	46.40	1.66E+02	77.47	2.17E+01	5.74E+00	1.44E+02	7.77E+01
	3	63.04	2.50E+02	103.52	2.91E+01	8.34E+00	2.20E+02	1.04E+02
	4	76.26	9.81E+02	140.24			9.81E+02	1.40E+02
	5	88.32	2.74E+02	92.23			2.74E+02	9.22E+01
	6	93.27	1.65E+02	90.47	4.47E+01	7.30E+00	1.20E+02	9.08E+01
	7	129.19	7.14E+01	83.98			7.14E+01	8.40E+01
	8	186.08	3.19E+02	72.02	3.13E+01	6.95E+00	2.88E+02	7.24E+01
	9	208.92	1.42E+02	90.88			1.42E+02	9.09E+01
M	10	239.04	6.69E+02	62.16	1.19E+01	7.10E+00	6.57E+02	6.26E+01
m	11	242.09	1.97E+02	45.87	2.33E+00	1.42E+00	1.95E+02	4.59E+01
	12	277.79	4.70E+01	54.63			4.70E+01	5.46E+01
M	13	284.31	2.27E+01	22.52			2.27E+01	2.25E+01
m	14	287.31	4.36E+01	34.80			4.36E+01	3.48E+01
	15	295.24	3.45E+02	62.26			3.45E+02	6.23E+01
	16	303.19	6.82E+01	52.25			6.82E+01	5.22E+01
	17	327.92	3.80E+01	43.25			3.80E+01	4.32E+01
	18	338.29	1.65E+02	60.55			1.65E+02	6.05E+01
	19	351.98	6.02E+02	66.33	9.12E+00	4.79E+00	5.93E+02	6.65E+01
	20	463.68	5.08E+01	36.44			5.08E+01	3.64E+01
	21	510.99	1.29E+02	42.56	6.97E+01	5.00E+00	5.98E+01	4.28E+01
	22	583.59	2.43E+02	50.73	3.98E+00	3.57E+00	2.39E+02	5.09E+01
	23	597.89	2.43E+01	22.43			2.43E+01	2.24E+01
	24	609.56	4.71E+02	53.10	8.66E+00	3.90E+00	4.63E+02	5.32E+01
	25	727.29	4.75E+01	29.12			4.75E+01	2.91E+01
	26	767.85	3.20E+01	30.33			3.20E+01	3.03E+01
	27	860.78	3.36E+01	31.18			3.36E+01	3.12E+01
	28	911.79	1.44E+02	37.52	2.01E+00	2.72E+00	1.42E+02	3.76E+01
M	29	964.74	2.98E+01	23.01			2.98E+01	2.30E+01
m	30	969.62	8.49E+01	26.25			8.49E+01	2.62E+01
	31	1090.14	1.34E+01	14.68			1.34E+01	1.47E+01
	32	1121.19	7.72E+01	56.00			7.72E+01	5.60E+01
	33	1194.90	2.63E+01	19.38			2.63E+01	1.94E+01
	34	1239.13	5.18E+01	34.99			5.18E+01	3.50E+01
	35	1280.98	3.17E+01	24.58			3.17E+01	2.46E+01
	36	1377.94	2.60E+01	13.45			2.60E+01	1.35E+01
	37	1405.14	3.93E+01	22.66			3.93E+01	2.27E+01
	38	1423.66	1.30E+01	13.00			1.30E+01	1.30E+01
	39	1438.88	1.00E+01	10.00			1.00E+01	1.00E+01
	40	1461.30	5.58E+02	50.68	3.09E+00	1.97E+00	5.55E+02	5.07E+01
	41	1510.69	1.79E+01	13.38			1.79E+01	1.34E+01

Analysis Report for 1606043-09

CP-5010 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1519.16	6.40E+00	7.66			6.40E+00	7.66E+00
43	1589.09	2.48E+01	22.09			2.48E+01	2.21E+01
44	1729.50	2.01E+01	12.33			2.01E+01	1.23E+01
45	1765.23	7.28E+01	20.88	2.70E+00	1.86E+00	7.00E+01	2.10E+01
46	1787.79	1.10E+01	6.63			1.10E+01	6.63E+00
47	1839.59	8.50E+00	7.00			8.50E+00	7.00E+00
48	1847.77	2.50E+01	11.14			2.50E+01	1.11E+01
49	2103.96	9.38E+00	8.75			9.38E+00	8.75E+00
50	2119.05	8.00E+00	5.66			8.00E+00	5.66E+00
51	2172.81	8.00E+00	5.66			8.00E+00	5.66E+00
52	2204.56	2.43E+01	15.66			2.43E+01	1.57E+01
53	2261.51	7.65E+00	7.76			7.65E+00	7.76E+00
54	2275.00	8.50E+00	9.62			8.50E+00	9.62E+00
55	2614.75	8.00E+01	17.89	3.07E+00	1.34E+00	7.69E+01	1.79E+01
56	2870.69	4.50E+00	6.02			4.50E+00	6.02E+00
57	2923.95	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

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.962	1460.81	*	10.67	1.80E+01	2.31E+00
GA-67	0.590	93.31	*	35.70	1.31E+00	2.36E+00
		208.95	*	2.24	3.47E+01	4.69E+01
		300.22		16.00		
CD-109	0.987	88.03	*	3.72	4.20E+00	1.48E+00
SN-126	0.914	87.57	*	37.00	4.16E-01	1.45E-01
TL-208	0.984	583.14	*	30.22	1.32E+00	3.22E-01
		860.37	*	4.48	1.72E+00	1.61E+00
		2614.66	*	35.85	9.25E-01	2.42E-01
PB-210	0.999	46.50	*	4.25	2.92E+00	1.60E+00
BI-212	0.764	727.17	*	11.80	8.03E-01	4.99E-01
		1620.62		2.75		
PB-212	0.869	238.63	*	44.60	1.27E+00	2.10E-01
		300.09		3.41		
BI-214	0.954	609.31	*	46.30	1.73E+00	2.73E-01

Analysis Report for 1606043-09
CP-5010 02-05

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.954	1120.29	*	15.10	1.45E+00	1.06E+00
		1764.49	*	15.80	1.72E+00	5.46E-01
		2204.22	*	4.98	2.07E+00	1.35E+00
PB-214	1.000	295.21	*	19.19	1.79E+00	4.20E-01
		351.92	*	37.19	1.80E+00	3.56E-01
RA-226	0.997	186.21	*	3.28	6.46E+00	1.20E+01
AC-228	0.948	338.32	*	11.40	1.59E+00	6.36E-01
		911.07	*	27.70	1.23E+00	3.77E-01
		969.11	*	16.60	1.29E+00	4.39E-01
PA-231	0.949	283.67	*	1.60	1.37E+00	1.38E+00
		302.67	*	2.30	3.01E+00	2.35E+00
TH-234	0.990	63.29	*	3.80	3.60E+00	1.72E+00
CM-243	0.358	209.75	*	3.29	3.41E+00	2.23E+00
		228.14		10.60		
		277.60	*	14.00	3.20E-01	3.75E-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 : 6/17/2016 8:26:33AM
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	13.11	5.45472E-01	3.09		
	4	76.26	2.72374E-01	7.15		
	7	129.19	1.98285E-02	58.82		
m	11	242.09	5.41018E-02	11.78		
m	14	287.31	1.21206E-02	39.88		
	17	327.92	1.05591E-02	56.88	Sum	
	20	463.68	1.41204E-02	35.84	Sum	
	21	510.99	1.66058E-02	35.84		
	23	597.89	6.75000E-03	46.15	Sum	
	26	767.85	8.90023E-03	47.33		
M	29	964.74	8.28963E-03	38.54	Tol.	EU-152
	31	1090.14	3.73264E-03	54.62		
	33	1194.90	7.31481E-03	36.79		
	34	1239.13	1.43792E-02	33.80		

Analysis Report for 1606043-09

CP-5010 02-05

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
35	1280.98	8.81148E-03	38.74		
36	1377.94	7.22222E-03	25.87		
37	1405.14	1.09291E-02	28.79	Sum	
38	1423.66	3.61111E-03	50.00	Sum	
39	1438.88	2.77778E-03	50.00		
41	1510.69	4.97329E-03	37.36		
42	1519.16	1.77778E-03	59.88		
43	1589.09	6.89236E-03	44.50		
44	1729.50	5.58761E-03	30.65		
46	1787.79	3.05556E-03	30.15		
47	1839.59	2.36111E-03	41.18		
48	1847.77	6.93930E-03	22.29	Sum	
49	2103.96	2.60684E-03	46.60	S-Esc	
50	2119.05	2.22222E-03	35.36		
51	2172.81	2.22222E-03	35.36		
53	2261.51	2.12500E-03	50.73		
54	2275.00	2.36111E-03	56.57		
56	2870.69	1.25000E-03	66.90		
57	2923.95	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	0.96	1460.81	*	10.67	1.80E+01	2.31E+00
GA-67	0.59	93.31	*	35.70	1.31E+00	2.36E+00
		208.95	*	2.24	3.47E+01	4.69E+01
		300.22		16.00		
CD-109	0.98	88.03	*	3.72	4.20E+00	1.48E+00
SN-126	0.91	87.57	*	37.00	4.16E-01	1.45E-01
TL-208	0.98	583.14	*	30.22	1.32E+00	3.22E-01
		860.37	*	4.48	1.72E+00	1.61E+00
		2614.66	*	35.85	9.25E-01	2.42E-01

Analysis Report for 1606043-09

CP-5010 02-05

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-210	0.99	46.50	*	4.25	2.92E+00	1.60E+00
BI-212	0.76	727.17	*	11.80	8.03E-01	4.99E-01
		1620.62		2.75		
PB-212	0.86	238.63	*	44.60	1.27E+00	2.10E-01
		300.09		3.41		
BI-214	0.95	609.31	*	46.30	1.73E+00	2.73E-01
		1120.29	*	15.10	1.45E+00	1.06E+00
		1764.49	*	15.80	1.72E+00	5.46E-01
		2204.22	*	4.98	2.07E+00	1.35E+00
PB-214	1.00	295.21	*	19.19	1.79E+00	4.20E-01
		351.92	*	37.19	1.80E+00	3.56E-01
RA-226	0.99	186.21	*	3.28	6.46E+00	1.20E+01
AC-228	0.94	338.32	*	11.40	1.59E+00	6.36E-01
		911.07	*	27.70	1.23E+00	3.77E-01
		969.11	*	16.60	1.29E+00	4.39E-01
PA-231	0.94	283.67	*	1.60	1.37E+00	1.38E+00
		302.67	*	2.30	3.01E+00	2.35E+00
TH-234	0.99	63.29	*	3.80	3.60E+00	1.72E+00
CM-243	0.35	209.75	*	3.29	3.41E+00	2.23E+00
		228.14		10.60		
		277.60	*	14.00	3.20E-01	3.75E-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	0.962	1.80E+01	2.31E+00	
	GA-67	0.590	1.37E+00	1.90E+00	
?	CD-109	0.987	4.20E+00	1.48E+00	
?	SN-126	0.914	4.16E-01	1.45E-01	
	TL-208	0.984	1.08E+00	1.92E-01	
	PB-210	0.999	2.92E+00	1.60E+00	

Analysis Report for 1606043-09

CP-5010 02-05

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BI-212	0.764	8.03E-01	4.99E-01	
PB-212	0.869	1.27E+00	2.10E-01	
BI-214	0.954	1.72E+00	2.34E-01	
PB-214	1.000	1.80E+00	2.72E-01	
RA-226	0.997	6.46E+00	1.20E+01	
AC-228	0.948	1.31E+00	2.61E-01	
PA-231	0.949	1.79E+00	1.19E+00	
TH-234	0.990	3.60E+00	1.72E+00	
CM-243	0.358	4.02E-01	3.70E-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 1606043-09
CP-5010 02-05

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/17/2016 8:26:33AM
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	13.11	5.45472E-01	3.09		
	4	76.26	2.72374E-01	7.15		
	7	129.19	1.98285E-02	58.82		
m	11	242.09	5.41018E-02	11.78		
m	14	287.31	1.21206E-02	39.88		
	17	327.92	1.05591E-02	56.88	Sum	
	20	463.68	1.41204E-02	35.84	Sum	
	21	510.99	1.66058E-02	35.84		
	23	597.89	6.75000E-03	46.15	Sum	
	26	767.85	8.90023E-03	47.33		
M	29	964.74	8.28963E-03	38.54	Tol.	EU-152
	31	1090.14	3.73264E-03	54.62		
	33	1194.90	7.31481E-03	36.79		
	34	1239.13	1.43792E-02	33.80		
	35	1280.98	8.81148E-03	38.74		
	36	1377.94	7.22222E-03	25.87		
	37	1405.14	1.09291E-02	28.79	Sum	
	38	1423.66	3.61111E-03	50.00	Sum	
	39	1438.88	2.77778E-03	50.00		
	41	1510.69	4.97329E-03	37.36		
	42	1519.16	1.77778E-03	59.88		
	43	1589.09	6.89236E-03	44.50		
	44	1729.50	5.58761E-03	30.65		
	46	1787.79	3.05556E-03	30.15		
	47	1839.59	2.36111E-03	41.18		
	48	1847.77	6.93930E-03	22.29	Sum	
	49	2103.96	2.60684E-03	46.60	S-Esc	
	50	2119.05	2.22222E-03	35.36		
	51	2172.81	2.22222E-03	35.36		
	53	2261.51	2.12500E-03	50.73		
	54	2275.00	2.36111E-03	56.57		
	56	2870.69	1.25000E-03	66.90		
	57	2923.95	1.38889E-03	44.72		

Analysis Report for 1606043-09

CP-5010 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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	-5.58E-02	6.26E-01	6.26E-01
+	NA-22	1274.54		99.94	-2.37E-03	8.21E-02	8.21E-02
+	NA-24	1368.53		99.99	-8.87E+00	1.11E+03	1.79E+03
		2754.09		99.86	1.38E+02		1.11E+03
+	AL-26	1808.65		99.76	2.55E-02	6.57E-02	6.57E-02
+	K-40	1460.81	*	10.67	1.80E+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	2.40E-02	5.71E-02	5.71E-02
		78.34		96.00	3.26E-01		8.40E-02
+	SC-46	889.25		99.98	-1.14E-03	8.16E-02	8.16E-02
		1120.51		99.99	3.02E-01		1.79E-01
+	V-48	983.52		99.98	-7.03E-03	1.22E-01	1.31E-01
		1312.10		97.50	-3.67E-02		1.22E-01
+	CR-51	320.08		9.83	-3.39E-01	7.56E-01	7.56E-01
+	MN-54	834.83		99.97	-1.99E-02	8.20E-02	8.20E-02
+	CO-56	846.75		99.96	2.51E-03	7.97E-02	7.97E-02
		1037.75		14.03	2.06E-02		7.35E-01
		1238.25		67.00	2.07E-01		2.35E-01
		1771.40		15.51	4.75E-02		4.93E-01
		2598.48		16.90	3.99E-02		3.90E-01
+	CO-57	122.06		85.51	2.21E-02	6.41E-02	6.41E-02
		136.48		10.60	-1.54E-02		5.41E-01
+	CO-58	810.76		99.40	-7.20E-02	7.53E-02	7.53E-02
+	FE-59	1099.22		56.50	-2.56E-03	1.81E-01	1.81E-01
		1291.56		43.20	5.36E-02		2.23E-01
+	CO-60	1173.22		100.00	1.98E-02	8.45E-02	1.02E-01
		1332.49		100.00	-4.39E-02		8.45E-02
+	ZN-65	1115.52		50.75	3.21E-02	1.96E-01	1.96E-01
+	GA-67	93.31	*	35.70	1.31E+00	1.61E+00	1.61E+00
		208.95	*	2.24	3.47E+01		3.58E+01
		300.22		16.00	7.29E-01		2.67E+00
+	SE-75	121.11		16.70	-8.45E-02	9.90E-02	3.29E-01

Analysis Report for 1606043-09

CP-5010 02-05

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	-2.59E-02	9.90E-02	9.90E-02
		264.65		59.80	7.64E-02		1.04E-01
		279.53		25.20	1.79E-02		2.40E-01
		400.65		11.40	1.19E-01		6.34E-01
+	RB-82	776.52		13.00	1.58E-01	8.34E-01	8.34E-01
+	RB-83	520.41		46.00	1.60E-02	1.38E-01	1.38E-01
		529.64		30.30	1.71E-02		2.12E-01
		552.65		16.40	-5.67E-02		4.12E-01
+	KR-85	513.99		0.43	-1.40E+01	1.58E+01	1.58E+01
+	SR-85	513.99		99.27	-6.76E-02	7.58E-02	7.58E-02
+	Y-88	898.02		93.40	5.78E-03	7.05E-02	9.87E-02
		1836.01		99.38	-9.87E-03		7.05E-02
+	NB-93M	16.57		9.43	4.72E+01	9.59E+01	9.59E+01
+	NB-94	702.63		100.00	6.16E-03	7.93E-02	8.13E-02
		871.10		100.00	5.56E-03		7.93E-02
+	NB-95	765.79		99.81	9.66E-02	1.18E-01	1.18E-01
+	NB-95M	235.69		25.00	-1.53E+01	1.85E+00	1.85E+00
+	ZR-95	724.18		43.70	-5.73E-02	1.54E-01	2.10E-01
		756.72		55.30	3.17E-02		1.54E-01
+	MO-99	181.06		6.20	3.11E+00	6.20E+00	9.18E+00
		739.58		12.80	1.31E+00		6.20E+00
		778.00		4.50	-6.17E+00		1.74E+01
+	RU-103	497.08		89.00	1.39E-02	7.78E-02	7.78E-02
+	RU-106	621.84		9.80	3.06E-01	8.66E-01	8.66E-01
+	AG-108M	433.93		89.90	1.41E-02	6.47E-02	6.47E-02
		614.37		90.40	-2.14E-03		8.72E-02
		722.95		90.50	-1.35E-02		8.50E-02
+	CD-109	88.03	*	3.72	4.20E+00	2.21E+00	2.21E+00
+	AG-110M	657.75		93.14	5.06E-03	8.75E-02	8.75E-02
		677.61		10.53	2.11E-01		7.21E-01
		706.67		16.46	-1.63E-01		5.05E-01
		763.93		21.98	-3.12E-02		3.81E-01
		884.67		71.63	9.40E-03		1.08E-01
		1384.27		23.94	1.26E-01		3.90E-01
+	CD-113M	263.70		0.02	-4.29E+01	2.47E+02	2.47E+02
+	SN-113	255.12		1.93	-1.51E+00	1.01E-01	2.92E+00
		391.69		64.90	-2.18E-02		1.01E-01
+	TE123M	159.00		84.10	-4.83E-02	7.11E-02	7.11E-02
+	SB-124	602.71		97.87	1.34E-02	8.29E-02	8.29E-02
		645.85		7.26	-1.89E-01		1.20E+00
		722.78		11.10	-1.22E-01		7.69E-01
		1691.02		49.00	-7.73E-02		1.43E-01
+	I-125	35.49		6.49	-2.83E-01	1.68E+00	1.68E+00
+	SB-125	176.33		6.89	7.61E-02	1.88E-01	8.29E-01
		427.89		29.33	-1.09E-01		1.88E-01
		463.38		10.35	4.58E-01		6.77E-01
		600.56		17.80	-1.42E-03		4.37E-01
		635.90		11.32	-1.50E-01		6.70E-01

Analysis Report for 1606043-09

CP-5010 02-05

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70		83.30	-1.39E-02	1.16E-01	1.16E-01
		666.33		99.60	8.38E-02		1.42E-01
		695.00		99.60	1.09E-01		1.46E-01
		720.50		53.80	-3.89E-03		2.48E-01
+	SN-126	87.57	*	37.00	4.16E-01	2.19E-01	2.19E-01
+	SB-127	473.00		25.00	6.14E-02	1.02E+00	1.22E+00
		685.20		35.70	1.45E-01		1.02E+00
		783.80		14.70	1.80E+00		3.05E+00
+	I-129	29.78		57.00	-3.86E-03	3.16E-01	3.16E-01
		33.60		13.20	-8.54E-01		8.10E-01
		39.58		7.52	-2.00E-02		1.07E+00
+	I-131	284.30		6.05	-1.55E+00	1.51E-01	1.99E+00
		364.48		81.20	-4.80E-02		1.51E-01
		636.97		7.26	-2.30E+00		2.14E+00
		722.89		1.80	-1.49E+00		9.36E+00
+	TE-132	49.72		13.10	4.87E-02	4.42E-01	2.98E+00
		228.16		88.00	-2.33E-03		4.42E-01
+	BA-133	81.00		33.00	-2.74E-02	9.53E-02	1.48E-01
		302.84		17.80	1.58E-01		3.41E-01
		356.01		60.00	2.07E-02		9.53E-02
+	I-133	529.87		86.30	9.60E+00	1.02E+02	1.02E+02
+	XE-133	81.00		38.00	-7.92E-02	4.26E-01	4.26E-01
+	CS-134	563.23		8.38	4.77E-01	8.97E-02	8.54E-01
		569.32		15.43	-5.90E-02		4.33E-01
		604.70		97.60	2.72E-02		8.97E-02
		795.84		85.40	5.98E-02		1.07E-01
		801.93		8.73	-2.43E-01		9.22E-01
+	CS-135	268.24		16.00	-2.17E-03	4.07E-01	4.07E-01
+	I-135	1131.51		22.50	1.80E+08	2.90E+09	3.92E+09
		1260.41		28.60	-1.17E+09		2.90E+09
		1678.03		9.54	-2.37E+09		5.82E+09
+	CS-136	153.22		7.46	-2.14E-01	1.31E-01	1.26E+00
		163.89		4.61	8.77E-01		2.07E+00
		176.55		13.56	-4.25E-01		6.62E-01
		273.65		12.66	-1.25E-02		7.61E-01
		340.57		48.50	-1.35E-01		2.26E-01
		818.50		99.70	7.12E-03		1.31E-01
		1048.07		79.60	-4.70E-02		1.80E-01
		1235.34		19.70	-1.33E-02		1.09E+00
+	CS-137	661.65		85.12	-5.57E-03	9.56E-02	9.56E-02
+	LA-138	788.74		34.00	8.37E-02	1.19E-01	2.56E-01
		1435.80		66.00	2.33E-03		1.19E-01
+	CE-139	165.85		80.35	3.81E-02	7.45E-02	7.45E-02
+	BA-140	162.64		6.70	-8.34E-02	4.20E-01	1.41E+00
		304.84		4.50	7.20E-01		2.00E+00
		423.70		3.20	-5.39E-01		2.89E+00
		437.55		2.00	7.12E-02		4.93E+00
		537.32		25.00	1.27E-01		4.20E-01
+	LA-140	328.77		20.50	2.52E-01	1.54E-01	5.11E-01

Analysis Report for 1606043-09

CP-5010 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	487.03	45.50	-6.08E-02	1.54E-01	2.04E-01
		815.85	23.50	5.41E-02		5.59E-01
		1596.49	95.49	-3.23E-02		1.54E-01
+	CE-141	145.44	48.40	-8.26E-04	1.50E-01	1.50E-01
+	CE-143	57.36	11.80	9.23E+00	2.13E+01	4.54E+01
		293.26	42.00	1.39E+01		2.13E+01
		664.55	5.20	2.94E+00		1.54E+02
+	CE-144	133.54	10.80	-1.82E-01	5.23E-01	5.23E-01
+	PM-144	476.78	42.00	-1.25E-02	8.70E-02	1.40E-01
		618.01	98.60	4.28E-02		8.70E-02
		696.49	99.49	7.19E-02		8.98E-02
+	PM-145	36.85	21.70	3.75E-01	2.34E-01	4.43E-01
		37.36	39.70	1.98E-01		2.34E-01
		42.30	15.10	-3.29E-02		4.64E-01
		72.40	2.31	-2.32E-01		2.33E+00
+	PM-146	453.90	39.94	-3.07E-02	1.38E-01	1.38E-01
		735.90	14.01	4.19E-02		5.67E-01
		747.13	13.10	1.00E-01		6.10E-01
+	ND-147	91.11	28.90	2.66E-01	4.92E-01	4.92E-01
		531.02	13.10	-1.46E-01		7.73E-01
+	PM-149	285.90	3.10	1.72E+01	3.44E+01	3.44E+01
+	EU-152	121.78	20.50	9.00E-02	2.61E-01	2.61E-01
		244.69	5.40	-3.69E+00		1.13E+00
		344.27	19.13	-3.25E-02		2.89E-01
		778.89	9.20	5.40E-02		8.48E-01
		964.01	10.40	-2.48E+00		9.95E-01
		1085.78	7.22	-2.79E-01		1.13E+00
		1112.02	9.60	2.16E-01		9.78E-01
		1407.95	14.94	1.78E-01		6.47E-01
+	GD-153	97.43	31.30	3.21E-02	1.86E-01	1.86E-01
		103.18	22.20	-1.40E-01		2.38E-01
+	EU-154	123.07	40.50	-2.00E-02	1.31E-01	1.31E-01
		723.30	19.70	-6.22E-02		3.91E-01
		873.19	11.50	1.61E-01		6.93E-01
		996.32	10.30	-5.81E-01		8.35E-01
		1004.76	17.90	1.02E-01		5.28E-01
		1274.45	35.50	-6.64E-03		2.30E-01
+	EU-155	86.50	30.90	-5.41E-01	2.44E-01	2.44E-01
		105.30	20.70	-2.35E-02		2.50E-01
+	EU-156	811.77	10.40	-4.72E-01	1.06E+00	1.06E+00
		1153.47	7.20	3.16E-01		2.16E+00
		1230.71	8.90	6.98E-01		2.06E+00
+	HO-166M	184.41	72.60	1.10E-01	1.08E-01	1.08E-01
		280.45	29.60	1.45E-02		1.94E-01
		410.94	11.10	2.81E-01		5.73E-01
		711.69	54.10	6.71E-02		1.65E-01
+	TM-171	66.72	0.14	9.45E+00	3.73E+01	3.73E+01
+	HF-172	81.75	4.52	-1.40E+00	4.96E-01	1.09E+00
		125.81	11.30	-5.18E-01		4.96E-01

Analysis Report for 1606043-09

CP-5010 02-05

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53		20.60	1.02E-01	4.14E-01	7.04E-01
		810.06		16.63	-1.01E+00		1.05E+00
		912.12		15.25	6.00E+00		2.67E+00
		1093.66		62.50	1.23E-01		4.14E-01
+	LU-173	100.72		5.24	2.00E-01	3.17E-01	1.02E+00
		272.11		21.20	1.41E-01		3.17E-01
+	HF-175	343.40		84.00	1.74E-02	7.34E-02	7.34E-02
+	LU-176	88.34		13.30	1.18E+00	5.20E-02	6.01E-01
		201.83		86.00	1.90E-02		6.75E-02
		306.78		94.00	-4.08E-02		5.20E-02
+	TA-182	67.75		41.20	5.81E-02	1.38E-01	1.38E-01
		1121.30		34.90	8.89E-01		5.02E-01
		1189.05		16.23	4.43E-02		6.01E-01
		1221.41		26.98	1.18E-01		4.61E-01
		1231.02		11.44	5.90E-02		1.09E+00
+	IR-192	308.46		29.68	1.94E-02	1.35E-01	1.83E-01
		468.07		48.10	-1.44E-04		1.35E-01
+	HG-203	279.19		77.30	6.95E-02	9.16E-02	9.16E-02
+	BI-207	569.67		97.72	-9.24E-03	6.78E-02	6.78E-02
		1063.62		74.90	-6.17E-02		1.18E-01
+	TL-208	583.14	*	30.22	1.32E+00	1.07E-01	3.81E-01
		860.37	*	4.48	1.72E+00		2.57E+00
		2614.66	*	35.85	9.25E-01		1.07E-01
+	BI-210M	262.00		45.00	-3.89E-02	1.23E-01	1.23E-01
		300.00		23.00	7.33E-02		2.69E-01
+	PB-210	46.50	*	4.25	2.92E+00	2.52E+00	2.52E+00
+	PB-211	404.84		2.90	1.21E-01	2.18E+00	2.18E+00
		831.96		2.90	1.20E-01		2.76E+00
+	BI-212	727.17	*	11.80	8.03E-01	7.59E-01	7.59E-01
		1620.62		2.75	1.20E+00		3.09E+00
+	PB-212	238.63	*	44.60	1.27E+00	2.44E-01	2.44E-01
		300.09		3.41	4.95E-01		1.81E+00
+	BI-214	609.31	*	46.30	1.73E+00	2.03E-01	2.03E-01
		1120.29	*	15.10	1.45E+00		1.70E+00
		1764.49	*	15.80	1.72E+00		5.77E-01
		2204.22	*	4.98	2.07E+00		1.93E+00
+	PB-214	295.21	*	19.19	1.79E+00	2.34E-01	4.40E-01
		351.92	*	37.19	1.80E+00		2.34E-01
+	RN-219	401.80		6.50	4.89E-01	1.05E+00	1.05E+00
+	RA-223	323.87		3.88	-7.68E-02	1.45E+00	1.45E+00
+	RA-224	240.98		3.95	1.12E+01	3.12E+00	3.12E+00
+	RA-225	40.00		31.00	-7.27E-03	3.89E-01	3.89E-01
+	RA-226	186.21	*	3.28	6.46E+00	2.42E+00	2.42E+00
+	TH-227	50.10		8.40	1.08E-02	6.64E-01	6.64E-01
		236.00		11.50	-5.79E+00		7.00E-01
		256.20		6.30	-1.31E-01		8.49E-01
+	AC-228	338.32	*	11.40	1.59E+00	4.39E-01	8.93E-01
		911.07	*	27.70	1.23E+00		4.39E-01

Analysis Report for 1606043-09

CP-5010 02-05

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.29E+00	4.39E-01	1.17E+00
+	TH-230	48.44		16.90	-5.16E-01	3.46E-01	3.46E-01
		62.85		4.60	3.04E+00		1.51E+00
		67.67		0.37	6.12E+00		1.46E+01
+	PA-231	283.67	*	1.60	1.37E+00	3.71E+00	4.60E+00
		302.67	*	2.30	3.01E+00		3.71E+00
+	TH-231	25.64		14.70	-5.21E-01	8.75E-01	2.30E+00
		84.21		6.40	8.47E-01		8.75E-01
+	PA-233	311.98		38.60	1.76E-01	1.92E-01	1.92E-01
+	PA-234	131.20		20.40	9.72E-02	2.93E-01	2.93E-01
		733.99		8.80	3.50E-01		9.25E-01
		946.00		12.00	-3.78E-01		5.99E-01
+	PA-234M	1001.03		0.92	7.99E+00	1.12E+01	1.12E+01
+	TH-234	63.29	*	3.80	3.60E+00	2.72E+00	2.72E+00
+	U-235	143.76		10.50	2.37E-01	5.71E-01	5.71E-01
		163.35		4.70	-7.28E-02		1.23E+00
		205.31		4.70	-1.12E-01		1.29E+00
+	NP-237	86.50		12.60	-1.32E+00	5.96E-01	5.96E-01
+	NP-239	106.10		22.70	6.62E-01	3.39E+00	3.39E+00
		228.18		10.70	-4.03E-02		7.64E+00
		277.60		14.10	4.86E+00		6.48E+00
+	AM-241	59.54		35.90	-3.77E-02	1.57E-01	1.57E-01
+	AM-243	74.67		66.00	-3.28E-01	1.12E-01	1.12E-01
+	CM-243	209.75	*	3.29	3.41E+00	5.30E-01	3.53E+00
		228.14		10.60	-2.79E-03		5.30E-01
		277.60	*	14.00	3.20E-01		6.11E-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

00587A

Analysis Report for 1606043-09

CP-5010 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	6.26E-01	6.26E-01	-5.58E-02	2.92E-01
	NA-22	1274.54		99.94	8.21E-02	8.21E-02	-2.37E-03	3.68E-02
	NA-24	1368.53		99.99	1.79E+03	1.11E+03	-8.87E+00	7.88E+02
		2754.09		99.86	1.11E+03		1.38E+02	4.17E+02
	AL-26	1808.65		99.76	6.57E-02	6.57E-02	2.55E-02	2.75E-02
+	K-40	1460.81	*	10.67	1.09E+00	1.09E+00	1.80E+01	5.01E-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	5.71E-02	5.71E-02	2.40E-02	2.77E-02
		78.34		96.00	8.40E-02		3.26E-01	4.12E-02
	SC-46	889.25		99.98	8.16E-02	8.16E-02	-1.14E-03	3.74E-02
		1120.51		99.99	1.79E-01		3.02E-01	8.55E-02
	V-48	983.52		99.98	1.31E-01	1.22E-01	-7.03E-03	6.06E-02
		1312.10		97.50	1.22E-01		-3.67E-02	5.45E-02
	CR-51	320.08		9.83	7.56E-01	7.56E-01	-3.39E-01	3.60E-01
	MN-54	834.83		99.97	8.20E-02	8.20E-02	-1.99E-02	3.79E-02
	CO-56	846.75		99.96	7.97E-02	7.97E-02	2.51E-03	3.65E-02
		1037.75		14.03	7.35E-01		2.06E-02	3.39E-01
		1238.25		67.00	2.35E-01		2.07E-01	1.11E-01
		1771.40		15.51	4.93E-01		4.75E-02	2.10E-01
		2598.48		16.90	3.90E-01		3.99E-02	1.57E-01
	CO-57	122.06		85.51	6.41E-02	6.41E-02	2.21E-02	3.11E-02
		136.48		10.60	5.41E-01		-1.54E-02	2.62E-01
	CO-58	810.76		99.40	7.53E-02	7.53E-02	-7.20E-02	3.44E-02
	FE-59	1099.22		56.50	1.81E-01	1.81E-01	-2.56E-03	8.29E-02
		1291.56		43.20	2.23E-01		5.36E-02	1.00E-01
	CO-60	1173.22		100.00	1.02E-01	8.45E-02	1.98E-02	4.71E-02
		1332.49		100.00	8.45E-02		-4.39E-02	3.78E-02
	ZN-65	1115.52		50.75	1.96E-01	1.96E-01	3.21E-02	9.03E-02
+	GA-67	93.31	*	35.70	1.61E+00	1.61E+00	1.31E+00	7.91E-01
		208.95	*	2.24	3.58E+01		3.47E+01	1.76E+01
		300.22		16.00	2.67E+00		7.29E-01	1.28E+00
	SE-75	121.11		16.70	3.29E-01	9.90E-02	-8.45E-02	1.59E-01
		136.00		59.20	9.90E-02		-2.59E-02	4.80E-02
		264.65		59.80	1.04E-01		7.64E-02	5.00E-02
		279.53		25.20	2.40E-01		1.79E-02	1.15E-01
		400.65		11.40	6.34E-01		1.19E-01	3.01E-01
	RB-82	776.52		13.00	8.34E-01	8.34E-01	1.58E-01	3.89E-01
	RB-83	520.41		46.00	1.38E-01	1.38E-01	1.60E-02	6.41E-02
		529.64		30.30	2.12E-01		1.71E-02	9.87E-02
		552.65		16.40	4.12E-01		-5.67E-02	1.92E-01
	KR-85	513.99		0.43	1.58E+01	1.58E+01	-1.40E+01	7.41E+00
	SR-85	513.99		99.27	7.58E-02	7.58E-02	-6.76E-02	3.57E-02
	Y-88	898.02		93.40	9.87E-02	7.05E-02	5.78E-03	4.57E-02
		1836.01		99.38	7.05E-02		-9.87E-03	2.95E-02
	NB-93M	16.57		9.43	9.59E+01	9.59E+01	4.72E+01	4.66E+01
	NB-94	702.63		100.00	8.13E-02	7.93E-02	6.16E-03	3.80E-02
		871.10		100.00	7.93E-02		5.56E-03	3.65E-02
	NB-95	765.79		99.81	1.18E-01	1.18E-01	9.66E-02	5.54E-02
	NB-95M	235.69		25.00	1.85E+00	1.85E+00	-1.53E+01	8.96E-01
	ZR-95	724.18		43.70	2.10E-01	1.54E-01	-5.73E-02	9.84E-02
		756.72		55.30	1.54E-01		3.17E-02	7.16E-02

Analysis Report for 1606043-09

CP-5010 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	9.18E+00	6.20E+00	3.11E+00	4.43E+00
		739.58		12.80	6.20E+00		1.31E+00	2.89E+00
		778.00		4.50	1.74E+01		-6.17E+00	8.08E+00
	RU-103	497.08		89.00	7.78E-02	7.78E-02	1.39E-02	3.63E-02
	RU-106	621.84		9.80	8.66E-01	8.66E-01	3.06E-01	4.09E-01
	AG-108M	433.93		89.90	6.47E-02	6.47E-02	1.41E-02	3.04E-02
		614.37		90.40	8.72E-02		-2.14E-03	4.10E-02
		722.95		90.50	8.50E-02		-1.35E-02	3.95E-02
+	CD-109	88.03	*	3.72	2.21E+00	2.21E+00	4.20E+00	1.08E+00
	AG-110M	657.75		93.14	8.75E-02	8.75E-02	5.06E-03	4.10E-02
		677.61		10.53	7.21E-01		2.11E-01	3.36E-01
		706.67		16.46	5.05E-01		-1.63E-01	2.36E-01
		763.93		21.98	3.81E-01		-3.12E-02	1.78E-01
		884.67		71.63	1.08E-01		9.40E-03	4.94E-02
		1384.27		23.94	3.90E-01		1.26E-01	1.76E-01
	CD-113M	263.70		0.02	2.47E+02	2.47E+02	-4.29E+01	1.18E+02
	SN-113	255.12		1.93	2.92E+00	1.01E-01	-1.51E+00	1.39E+00
		391.69		64.90	1.01E-01		-2.18E-02	4.76E-02
	TE123M	159.00		84.10	7.11E-02	7.11E-02	-4.83E-02	3.44E-02
	SB-124	602.71		97.87	8.29E-02	8.29E-02	1.34E-02	3.88E-02
		645.85		7.26	1.20E+00		-1.89E-01	5.65E-01
		722.78		11.10	7.69E-01		-1.22E-01	3.58E-01
		1691.02		49.00	1.43E-01		-7.73E-02	6.00E-02
	I-125	35.49		6.49	1.68E+00	1.68E+00	-2.83E-01	8.02E-01
	SB-125	176.33		6.89	8.29E-01	1.88E-01	7.61E-02	4.01E-01
		427.89		29.33	1.88E-01		-1.09E-01	8.79E-02
		463.38		10.35	6.77E-01		4.58E-01	3.20E-01
		600.56		17.80	4.37E-01		-1.42E-03	2.06E-01
		635.90		11.32	6.70E-01		-1.50E-01	3.14E-01
	SB-126	414.70		83.30	1.16E-01	1.16E-01	-1.39E-02	5.43E-02
		666.33		99.60	1.42E-01		8.38E-02	6.69E-02
		695.00		99.60	1.46E-01		1.09E-01	6.88E-02
		720.50		53.80	2.48E-01		-3.89E-03	1.16E-01
+	SN-126	87.57	*	37.00	2.19E-01	2.19E-01	4.16E-01	1.08E-01
	SB-127	473.00		25.00	1.22E+00	1.02E+00	6.14E-02	5.70E-01
		685.20		35.70	1.02E+00		1.45E-01	4.72E-01
		783.80		14.70	3.05E+00		1.80E+00	1.42E+00
	I-129	29.78		57.00	3.16E-01	3.16E-01	-3.86E-03	1.52E-01
		33.60		13.20	8.10E-01		-8.54E-01	3.87E-01
		39.58		7.52	1.07E+00		-2.00E-02	5.15E-01
	I-131	284.30		6.05	1.99E+00	1.51E-01	-1.55E+00	9.45E-01
		364.48		81.20	1.51E-01		-4.80E-02	7.12E-02
		636.97		7.26	2.14E+00		-2.30E+00	9.97E-01
		722.89		1.80	9.36E+00		-1.49E+00	4.35E+00
	TE-132	49.72		13.10	2.98E+00	4.42E-01	4.87E-02	1.43E+00
		228.16		88.00	4.42E-01		-2.33E-03	2.12E-01
	BA-133	81.00		33.00	1.48E-01	9.53E-02	-2.74E-02	7.15E-02
		302.84		17.80	3.41E-01		1.58E-01	1.63E-01
		356.01		60.00	9.53E-02		2.07E-02	4.51E-02
	I-133	529.87		86.30	1.02E+02	1.02E+02	9.60E+00	4.74E+01
	XE-133	81.00		38.00	4.26E-01	4.26E-01	-7.92E-02	2.06E-01
	CS-134	563.23		8.38	8.54E-01	8.97E-02	4.77E-01	4.01E-01
		569.32		15.43	4.33E-01		-5.90E-02	2.02E-01

Analysis Report for 1606043-09

CP-5010 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	8.97E-02	8.97E-02	2.72E-02	4.24E-02
	795.84	85.40	1.07E-01		5.98E-02	5.01E-02
	801.93	8.73	9.22E-01		-2.43E-01	4.27E-01
CS-135	268.24	16.00	4.07E-01	4.07E-01	-2.17E-03	1.96E-01
I-135	1131.51	22.50	3.92E+09	2.90E+09	1.80E+08	1.81E+09
	1260.41	28.60	2.90E+09		-1.17E+09	1.32E+09
	1678.03	9.54	5.82E+09		-2.37E+09	2.44E+09
CS-136	153.22	7.46	1.26E+00	1.31E-01	-2.14E-01	6.10E-01
	163.89	4.61	2.07E+00		8.77E-01	1.00E+00
	176.55	13.56	6.62E-01		-4.25E-01	3.20E-01
	273.65	12.66	7.61E-01		-1.25E-02	3.64E-01
	340.57	48.50	2.26E-01		-1.35E-01	1.08E-01
	818.50	99.70	1.31E-01		7.12E-03	6.09E-02
	1048.07	79.60	1.80E-01		-4.70E-02	8.24E-02
	1235.34	19.70	1.09E+00		-1.33E-02	5.13E-01
CS-137	661.65	85.12	9.56E-02	9.56E-02	-5.57E-03	4.49E-02
LA-138	788.74	34.00	2.56E-01	1.19E-01	8.37E-02	1.19E-01
	1435.80	66.00	1.19E-01		2.33E-03	5.25E-02
CE-139	165.85	80.35	7.45E-02	7.45E-02	3.81E-02	3.60E-02
BA-140	162.64	6.70	1.41E+00	4.20E-01	-8.34E-02	6.83E-01
	304.84	4.50	2.00E+00		7.20E-01	9.48E-01
	423.70	3.20	2.89E+00		-5.39E-01	1.35E+00
	437.55	2.00	4.93E+00		7.12E-02	2.32E+00
	537.32	25.00	4.20E-01		1.27E-01	1.96E-01
LA-140	328.77	20.50	5.11E-01	1.54E-01	2.52E-01	2.44E-01
	487.03	45.50	2.04E-01		-6.08E-02	9.52E-02
	815.85	23.50	5.59E-01		5.41E-02	2.59E-01
	1596.49	95.49	1.54E-01		-3.23E-02	6.86E-02
CE-141	145.44	48.40	1.50E-01	1.50E-01	-8.26E-04	7.30E-02
CE-143	57.36	11.80	4.54E+01	2.13E+01	9.23E+00	2.20E+01
	293.26	42.00	2.13E+01		1.39E+01	1.03E+01
	664.55	5.20	1.54E+02		2.94E+00	7.23E+01
CE-144	133.54	10.80	5.23E-01	5.23E-01	-1.82E-01	2.53E-01
PM-144	476.78	42.00	1.40E-01	8.70E-02	-1.25E-02	6.55E-02
	618.01	98.60	8.70E-02		4.28E-02	4.11E-02
	696.49	99.49	8.98E-02		7.19E-02	4.22E-02
PM-145	36.85	21.70	4.43E-01	2.34E-01	3.75E-01	2.13E-01
	37.36	39.70	2.34E-01		1.98E-01	1.12E-01
	42.30	15.10	4.64E-01		-3.29E-02	2.23E-01
	72.40	2.31	2.33E+00		-2.32E-01	1.13E+00
PM-146	453.90	39.94	1.38E-01	1.38E-01	-3.07E-02	6.44E-02
	735.90	14.01	5.67E-01		4.19E-02	2.64E-01
	747.13	13.10	6.10E-01		1.00E-01	2.84E-01
ND-147	91.11	28.90	4.92E-01	4.92E-01	2.66E-01	2.41E-01
	531.02	13.10	7.73E-01		-1.46E-01	3.58E-01
PM-149	285.90	3.10	3.44E+01	3.44E+01	1.72E+01	1.65E+01
EU-152	121.78	20.50	2.61E-01	2.61E-01	9.00E-02	1.27E-01
	244.69	5.40	1.13E+00		-3.69E+00	5.43E-01
	344.27	19.13	2.89E-01		-3.25E-02	1.37E-01
	778.89	9.20	8.48E-01		5.40E-02	3.93E-01
	964.01	10.40	9.95E-01		-2.48E+00	4.65E-01
	1085.78	7.22	1.13E+00		-2.79E-01	5.14E-01
	1112.02	9.60	9.78E-01		2.16E-01	4.49E-01

Analysis Report for 1606043-09

CP-5010 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	6.47E-01	2.61E-01	1.78E-01	2.93E-01
	GD-153	97.43		31.30	1.86E-01	1.86E-01	3.21E-02	9.04E-02
		103.18		22.20	2.38E-01		-1.40E-01	1.15E-01
	EU-154	123.07		40.50	1.31E-01	1.31E-01	-2.00E-02	6.33E-02
		723.30		19.70	3.91E-01		-6.22E-02	1.82E-01
		873.19		11.50	6.93E-01		1.61E-01	3.19E-01
		996.32		10.30	8.35E-01		-5.81E-01	3.84E-01
		1004.76		17.90	5.28E-01		1.02E-01	2.44E-01
		1274.45		35.50	2.30E-01		-6.64E-03	1.03E-01
	EU-155	86.50		30.90	2.44E-01	2.44E-01	-5.41E-01	1.20E-01
		105.30		20.70	2.50E-01		-2.35E-02	1.21E-01
	EU-156	811.77		10.40	1.06E+00	1.06E+00	-4.72E-01	4.85E-01
		1153.47		7.20	2.16E+00		3.16E-01	9.96E-01
		1230.71		8.90	2.06E+00		6.98E-01	9.61E-01
	HO-166M	184.41		72.60	1.08E-01	1.08E-01	1.10E-01	5.29E-02
		280.45		29.60	1.94E-01		1.45E-02	9.27E-02
		410.94		11.10	5.73E-01		2.81E-01	2.71E-01
		711.69		54.10	1.65E-01		6.71E-02	7.77E-02
	TM-171	66.72		0.14	3.73E+01	3.73E+01	9.45E+00	1.81E+01
	HF-172	81.75		4.52	1.09E+00	4.96E-01	-1.40E+00	5.26E-01
		125.81		11.30	4.96E-01		-5.18E-01	2.41E-01
	LU-172	181.53		20.60	7.04E-01	4.14E-01	1.02E-01	3.40E-01
		810.06		16.63	1.05E+00		-1.01E+00	4.82E-01
		912.12		15.25	2.67E+00		6.00E+00	1.28E+00
		1093.66		62.50	4.14E-01		1.23E-01	1.92E-01
	LU-173	100.72		5.24	1.02E+00	3.17E-01	2.00E-01	4.93E-01
		272.11		21.20	3.17E-01		1.41E-01	1.52E-01
	HF-175	343.40		84.00	7.34E-02	7.34E-02	1.74E-02	3.48E-02
	LU-176	88.34		13.30	6.01E-01	5.20E-02	1.18E+00	2.95E-01
		201.83		86.00	6.75E-02		1.90E-02	3.25E-02
		306.78		94.00	5.20E-02		-4.08E-02	2.45E-02
	TA-182	67.75		41.20	1.38E-01	1.38E-01	5.81E-02	6.71E-02
		1121.30		34.90	5.02E-01		8.89E-01	2.39E-01
		1189.05		16.23	6.01E-01		4.43E-02	2.74E-01
		1221.41		26.98	4.61E-01		1.18E-01	2.14E-01
		1231.02		11.44	1.09E+00		5.90E-02	5.09E-01
	IR-192	308.46		29.68	1.83E-01	1.35E-01	1.94E-02	8.63E-02
		468.07		48.10	1.35E-01		-1.44E-04	6.34E-02
	HG-203	279.19		77.30	9.16E-02	9.16E-02	6.95E-02	4.39E-02
	BI-207	569.67		97.72	6.78E-02	6.78E-02	-9.24E-03	3.16E-02
		1063.62		74.90	1.18E-01		-6.17E-02	5.42E-02
+	TL-208	583.14	*	30.22	3.81E-01	1.07E-01	1.32E+00	1.83E-01
		860.37	*	4.48	2.57E+00		1.72E+00	1.22E+00
		2614.66	*	35.85	1.07E-01		9.25E-01	3.71E-02
	BI-210M	262.00		45.00	1.23E-01	1.23E-01	-3.89E-02	5.88E-02
		300.00		23.00	2.69E-01		7.33E-02	1.28E-01
+	PB-210	46.50	*	4.25	2.52E+00	2.52E+00	2.92E+00	1.23E+00
	PB-211	404.84		2.90	2.18E+00	2.18E+00	1.21E-01	1.03E+00
		831.96		2.90	2.76E+00		1.20E-01	1.28E+00
+	BI-212	727.17	*	11.80	7.59E-01	7.59E-01	8.03E-01	3.57E-01
		1620.62		2.75	3.09E+00		1.20E+00	1.36E+00
+	PB-212	238.63	*	44.60	2.44E-01	2.44E-01	1.27E+00	1.20E-01
		300.09		3.41	1.81E+00		4.95E-01	8.66E-01

Analysis Report for 1606043-09

CP-5010 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	2.03E-01	2.03E-01	1.73E+00	9.62E-02
		1120.29	*	15.10	1.70E+00		1.45E+00	8.23E-01
		1764.49	*	15.80	5.77E-01		1.72E+00	2.55E-01
		2204.22	*	4.98	1.93E+00		2.07E+00	8.52E-01
+	PB-214	295.21	*	19.19	4.40E-01	2.34E-01	1.79E+00	2.13E-01
		351.92	*	37.19	2.34E-01		1.80E+00	1.13E-01
	RN-219	401.80		6.50	1.05E+00	1.05E+00	4.89E-01	5.00E-01
	RA-223	323.87		3.88	1.45E+00	1.45E+00	-7.68E-02	6.89E-01
	RA-224	240.98		3.95	3.12E+00	3.12E+00	1.12E+01	1.53E+00
	RA-225	40.00		31.00	3.89E-01	3.89E-01	-7.27E-03	1.87E-01
+	RA-226	186.21	*	3.28	2.42E+00	2.42E+00	6.46E+00	1.18E+00
	TH-227	50.10		8.40	6.64E-01	6.64E-01	1.08E-02	3.19E-01
		236.00		11.50	7.00E-01		-5.79E+00	3.40E-01
		256.20		6.30	8.49E-01		-1.31E-01	4.05E-01
+	AC-228	338.32	*	11.40	8.93E-01	4.39E-01	1.59E+00	4.34E-01
		911.07	*	27.70	4.39E-01		1.23E+00	2.08E-01
		969.11	*	16.60	1.17E+00		1.29E+00	5.63E-01
	TH-230	48.44		16.90	3.46E-01	3.46E-01	-5.16E-01	1.67E-01
		62.85		4.60	1.51E+00		3.04E+00	7.35E-01
		67.67		0.37	1.46E+01		6.12E+00	7.07E+00
+	PA-231	283.67	*	1.60	4.60E+00	3.71E+00	1.37E+00	2.22E+00
		302.67	*	2.30	3.71E+00		3.01E+00	1.80E+00
	TH-231	25.64		14.70	2.30E+00	8.75E-01	-5.21E-01	1.10E+00
		84.21		6.40	8.75E-01		8.47E-01	4.25E-01
	PA-233	311.98		38.60	1.92E-01	1.92E-01	1.76E-01	9.15E-02
	PA-234	131.20		20.40	2.93E-01	2.93E-01	9.72E-02	1.42E-01
		733.99		8.80	9.25E-01		3.50E-01	4.32E-01
		946.00		12.00	5.99E-01		-3.78E-01	2.72E-01
	PA-234M	1001.03		0.92	1.12E+01	1.12E+01	7.99E+00	5.21E+00
+	TH-234	63.29	*	3.80	2.72E+00	2.72E+00	3.60E+00	1.34E+00
	U-235	143.76		10.50	5.71E-01	5.71E-01	2.37E-01	2.77E-01
		163.35		4.70	1.23E+00		-7.28E-02	5.96E-01
		205.31		4.70	1.29E+00		-1.12E-01	6.22E-01
	NP-237	86.50		12.60	5.96E-01	5.96E-01	-1.32E+00	2.92E-01
	NP-239	106.10		22.70	3.39E+00	3.39E+00	6.62E-01	1.65E+00
		228.18		10.70	7.64E+00		-4.03E-02	3.66E+00
		277.60		14.10	6.48E+00		4.86E+00	3.11E+00
	AM-241	59.54		35.90	1.57E-01	1.57E-01	-3.77E-02	7.59E-02
	AM-243	74.67		66.00	1.12E-01	1.12E-01	-3.28E-01	5.48E-02
+	CM-243	209.75	*	3.29	3.53E+00	5.30E-01	3.41E+00	1.73E+00
		228.14		10.60	5.30E-01		-2.79E-03	2.54E-01
		277.60	*	14.00	6.11E-01		3.20E-01	2.96E-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 1606043-09

CP-5010 02-05

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-5010 02-05

Elapsed Live time: 3600
Elapsed Real Time: 3602

Channel								
1:	0	0	0	0	0	0	5	327
9:	989	841	453	211	1773	631	132	136
17:	161	100	110	112	99	70	67	73
25:	73	60	52	64	81	62	46	63
33:	65	46	39	74	61	71	54	81
41:	69	67	67	83	75	105	174	81
49:	67	76	80	81	103	88	80	96
57:	87	107	97	112	120	122	198	227
65:	99	84	117	122	117	117	117	124
73:	134	134	466	132	487	295	113	111
81:	102	108	112	187	133	114	234	199
89:	112	239	117	130	301	135	100	93
97:	71	98	95	81	75	61	60	56
105:	100	81	53	79	77	60	96	81
113:	81	58	80	77	68	62	59	78
121:	68	64	61	76	66	69	76	79
129:	114	77	80	74	66	74	62	68
137:	76	63	78	67	76	68	58	103
145:	75	77	63	80	66	59	64	74
153:	70	69	58	77	62	80	49	63
161:	52	70	61	71	56	63	60	47
169:	45	55	62	56	50	67	45	66
177:	49	46	55	59	57	50	50	46
185:	82	280	113	52	52	51	56	71
193:	56	51	57	67	47	49	47	52
201:	51	48	48	43	50	61	57	57
209:	75	66	49	49	39	39	31	39
217:	52	39	42	46	37	41	46	45
225:	46	31	44	33	42	42	33	58
233:	46	32	41	49	42	223	512	50
241:	88	179	70	34	37	33	33	42
249:	36	31	29	41	32	29	17	37
257:	33	32	31	32	36	19	37	30
265:	37	38	33	30	46	62	46	33
273:	39	33	35	29	50	44	33	28
281:	22	24	19	34	26	31	46	33
289:	34	23	27	15	33	34	260	138
297:	29	24	24	37	37	37	28	25
305:	24	18	26	10	16	27	23	29
313:	28	28	17	34	37	29	30	22
321:	26	25	28	18	24	22	24	52
329:	27	24	22	25	23	23	34	23
337:	33	98	79	24	19	23	15	21
345:	29	14	20	21	22	24	120	463
353:	78	23	17	25	21	18	18	15
361:	12	21	18	21	14	22	29	30

369:	23	22	26	28	21	20	14	10

Sample Title: CP-5010 02-05

Channel								
377:	25	16	17	15	25	20	24	16
385:	24	12	18	21	24	24	17	24
393:	23	18	23	19	22	25	23	21
401:	20	33	30	22	18	20	15	14
409:	29	30	16	14	15	21	12	12
417:	24	18	22	16	21	17	12	15
425:	16	17	15	17	12	10	25	17
433:	17	10	20	15	10	13	26	16
441:	22	10	13	15	16	13	12	21
449:	18	12	14	11	15	15	10	14
457:	14	18	15	10	15	19	39	17
465:	14	22	8	14	12	18	17	12
473:	15	12	15	14	12	17	9	18
481:	11	10	12	15	12	12	18	10
489:	10	17	14	10	13	12	12	16
497:	16	9	12	12	10	11	12	17
505:	8	12	6	12	23	37	79	23
513:	20	15	15	11	10	7	18	13
521:	13	9	8	15	11	13	9	19
529:	11	12	9	11	11	13	9	16
537:	16	17	10	10	11	10	14	13
545:	9	15	18	10	9	13	13	13
553:	11	12	25	7	11	11	11	11
561:	15	15	16	14	18	10	11	16
569:	13	17	9	13	16	8	7	8
577:	13	13	13	16	11	38	127	89
585:	21	19	10	12	8	10	11	11
593:	3	6	7	8	17	12	14	7
601:	7	12	15	13	11	9	11	35
609:	270	188	12	13	11	8	9	17
617:	14	9	16	16	15	12	10	14
625:	10	12	9	13	8	7	5	14
633:	13	10	12	11	10	7	9	4
641:	22	10	11	13	11	8	12	10
649:	12	9	9	9	11	10	12	12
657:	6	17	10	9	10	8	13	12
665:	13	14	9	10	15	9	7	11
673:	14	10	15	6	7	10	8	6
681:	2	6	11	8	5	8	8	9
689:	12	7	6	9	11	14	10	16
697:	9	16	9	7	6	11	10	17
705:	11	8	6	10	8	17	11	16
713:	12	11	16	7	11	12	12	14
721:	8	7	2	7	10	12	25	23
729:	11	10	6	12	8	8	7	10
737:	15	4	10	8	8	8	7	9
745:	8	10	10	11	8	5	9	7
753:	3	11	12	5	6	12	7	9
761:	3	11	6	12	11	11	8	22
769:	21	7	9	12	17	6	10	11
777:	11	7	3	9	5	8	10	4
785:	14	17	10	6	7	4	9	6
793:	10	12	12	8	7	14	9	3

801:	10	8	9	6	9	11	5	7

Sample Title: CP-5010 02-05

Channel								
809:	4	6	4	6	6	10	9	8
817:	7	6	7	8	9	3	11	5
825:	5	3	10	3	6	8	6	8
833:	10	6	7	10	5	5	14	5
841:	8	4	7	9	3	2	7	6
849:	7	3	8	3	8	4	7	6
857:	7	7	10	17	21	7	7	6
865:	5	6	7	6	6	7	7	4
873:	6	10	6	6	2	8	5	8
881:	9	6	4	4	4	6	7	5
889:	4	8	7	3	5	9	5	8
897:	8	4	10	10	8	9	6	7
905:	5	8	7	6	5	17	79	63
913:	8	6	7	4	5	10	8	7
921:	5	3	9	4	6	7	4	7
929:	5	7	7	6	13	21	7	4
937:	2	10	10	5	3	9	6	5
945:	5	3	4	3	6	9	7	6
953:	7	4	4	8	10	5	10	4
961:	7	5	6	14	23	7	6	22
969:	57	24	9	6	5	3	4	7
977:	7	13	5	5	12	8	3	2
985:	8	9	9	2	6	12	4	5
993:	7	6	7	7	4	3	9	12
1001:	14	7	10	8	3	6	4	2
1009:	7	3	4	5	6	7	6	7
1017:	5	8	4	7	4	7	9	6
1025:	9	7	7	8	10	2	6	11
1033:	3	9	3	9	10	7	6	6
1041:	6	8	11	4	5	5	10	1
1049:	7	6	8	4	10	7	8	6
1057:	5	11	5	7	5	4	6	4
1065:	9	6	11	6	7	10	6	9
1073:	5	7	3	7	5	5	6	8
1081:	6	6	4	9	3	6	3	2
1089:	10	10	7	3	6	11	7	8
1097:	4	7	7	3	5	5	5	2
1105:	4	5	6	2	9	5	3	7
1113:	3	4	12	7	5	8	25	46
1121:	42	12	6	4	4	7	7	12
1129:	7	6	7	1	12	3	3	11
1137:	10	5	3	5	7	3	4	5
1145:	7	6	4	5	8	4	4	5
1153:	10	3	15	8	5	7	12	6
1161:	6	4	4	10	4	7	5	4
1169:	5	9	8	7	9	3	5	6
1177:	6	7	5	7	6	11	8	6
1185:	7	6	10	3	7	2	4	5
1193:	6	11	9	12	4	4	8	6
1201:	7	6	12	4	3	6	8	6
1209:	5	9	5	9	7	4	6	7
1217:	9	7	7	11	8	11	9	7
1225:	7	6	12	5	8	12	10	9

1233:	7	9	6	10	14	22	21	9

Sample Title: CP-5010 02-05

Channel								
1241:	10	6	7	3	6	7	8	6
1249:	3	6	5	6	10	6	7	11
1257:	5	7	6	7	5	3	2	5
1265:	6	5	7	3	3	5	4	3
1273:	3	4	2	5	4	6	8	6
1281:	12	3	4	7	3	1	3	4
1289:	2	4	4	4	2	6	4	3
1297:	6	6	2	3	2	6	5	5
1305:	7	3	6	4	2	4	6	5
1313:	4	1	1	2	6	2	2	7
1321:	4	6	4	3	4	4	4	7
1329:	7	4	3	5	4	1	1	7
1337:	4	3	2	3	4	6	2	0
1345:	6	5	6	1	2	1	4	3
1353:	5	2	5	4	5	0	4	3
1361:	1	1	1	3	3	0	6	2
1369:	3	2	2	5	1	1	4	4
1377:	6	12	6	0	2	3	4	6
1385:	6	3	4	3	2	2	3	4
1393:	1	0	2	2	0	2	2	5
1401:	7	6	4	2	3	3	3	10
1409:	6	4	1	2	5	4	4	5
1417:	3	3	1	1	2	5	4	3
1425:	4	1	1	1	1	3	1	5
1433:	2	2	1	1	4	4	4	3
1441:	0	2	2	3	0	6	0	3
1449:	3	1	1	0	3	2	1	1
1457:	0	4	27	176	264	91	10	1
1465:	1	3	1	3	2	2	1	3
1473:	2	2	1	1	2	1	0	2
1481:	3	1	1	2	2	0	1	3
1489:	2	3	2	3	5	1	4	5
1497:	3	0	1	1	1	6	4	2
1505:	3	1	0	4	6	4	4	1
1513:	2	3	1	1	1	3	5	0
1521:	1	0	5	1	0	3	4	0
1529:	2	1	1	0	2	0	1	2
1537:	3	4	1	4	2	3	1	2
1545:	3	3	2	0	1	2	2	3
1553:	1	0	1	2	2	2	1	2
1561:	3	3	2	0	1	1	1	2
1569:	0	0	1	4	2	3	1	1
1577:	2	0	1	3	2	1	1	4
1585:	3	2	3	14	2	1	3	4
1593:	4	3	4	1	1	0	1	4
1601:	0	2	1	0	0	1	3	0
1609:	2	1	0	2	3	1	3	1
1617:	0	3	5	4	4	1	0	1
1625:	1	0	3	2	1	2	3	1
1633:	2	0	0	1	1	4	4	1
1641:	1	1	1	2	2	1	2	1
1649:	2	0	1	2	3	0	1	2
1657:	2	3	1	1	2	1	1	1

1665:	1	0	0	1	0	1	2	2

Sample Title: CP-5010 02-05

Channel								
1673:	1	1	0	1	2	0	1	1
1681:	2	0	3	3	1	2	0	0
1689:	0	0	4	1	1	1	3	1
1697:	2	1	3	0	0	2	2	2
1705:	4	2	2	0	1	0	1	1
1713:	2	0	3	3	2	1	0	1
1721:	0	0	2	2	0	3	2	3
1729:	10	6	2	0	1	0	0	1
1737:	2	1	2	0	0	0	2	0
1745:	1	0	0	0	1	1	0	1
1753:	0	1	1	2	1	0	0	1
1761:	0	3	5	30	26	15	3	1
1769:	1	0	3	1	0	0	2	1
1777:	1	1	0	0	2	0	0	0
1785:	2	1	4	1	3	0	0	0
1793:	1	0	1	1	1	3	1	1
1801:	0	0	0	0	0	2	0	2
1809:	1	0	2	2	0	0	2	0
1817:	1	1	1	1	2	0	0	1
1825:	0	0	1	1	2	1	0	1
1833:	1	0	0	0	1	1	5	3
1841:	0	1	0	2	1	3	11	8
1849:	2	0	0	2	0	3	1	1
1857:	2	0	2	0	2	2	0	1
1865:	0	2	1	1	2	0	1	2
1873:	2	0	1	2	0	1	1	0
1881:	0	4	0	3	1	0	1	2
1889:	0	1	0	0	0	0	1	0
1897:	0	2	2	0	1	1	0	2
1905:	0	1	0	1	2	1	2	3
1913:	1	1	1	0	0	1	3	0
1921:	1	0	2	0	2	1	2	1
1929:	3	1	1	2	0	0	1	1
1937:	1	0	3	0	1	1	0	0
1945:	3	0	0	1	0	2	1	0
1953:	3	0	2	2	1	0	1	1
1961:	1	0	1	2	1	2	1	1
1969:	2	1	0	2	0	0	0	0
1977:	1	0	0	3	0	0	1	2
1985:	1	1	0	2	0	0	2	1
1993:	2	2	0	1	0	0	0	0
2001:	0	0	1	1	1	0	0	2
2009:	0	2	3	0	1	1	1	1
2017:	0	1	0	1	0	0	1	4
2025:	0	0	0	2	0	1	1	2
2033:	1	1	1	0	1	1	2	0
2041:	1	0	0	1	0	1	0	1
2049:	0	0	2	2	2	3	2	2
2057:	1	1	1	0	0	0	0	0
2065:	0	0	0	0	0	0	1	0
2073:	0	0	3	1	0	1	0	1
2081:	3	1	1	1	2	1	0	3
2089:	3	2	1	0	0	0	1	1

2097:	1	0	0	0	2	2	2	3

Sample Title: CP-5010 02-05

Channel								
2105:	4	0	2	1	1	1	0	0
2113:	1	0	0	0	1	4	2	1
2121:	0	0	0	0	0	0	2	0
2129:	1	1	0	2	1	1	1	2
2137:	2	1	0	1	4	1	0	0
2145:	2	2	0	0	2	0	0	3
2153:	0	1	1	0	0	0	1	1
2161:	1	1	1	0	3	2	0	0
2169:	0	0	2	3	3	0	0	1
2177:	2	1	2	1	1	1	0	1
2185:	0	0	0	1	0	0	1	0
2193:	1	0	1	1	1	1	1	0
2201:	0	4	3	18	7	2	1	1
2209:	3	2	0	0	0	1	2	1
2217:	0	0	1	0	0	0	1	1
2225:	0	0	2	0	0	1	0	0
2233:	1	2	0	1	3	2	1	0
2241:	0	0	0	0	1	0	0	2
2249:	1	1	2	0	0	0	1	0
2257:	3	0	0	0	1	3	3	0
2265:	0	0	3	0	0	1	2	0
2273:	2	0	3	4	1	0	1	0
2281:	1	2	1	1	1	3	0	0
2289:	0	1	1	0	1	1	4	1
2297:	0	1	0	0	2	0	1	0
2305:	0	0	0	0	1	0	2	1
2313:	0	3	0	1	0	2	1	1
2321:	0	0	1	1	0	2	0	1
2329:	0	0	1	2	0	2	0	1
2337:	1	0	0	0	0	0	0	1
2345:	1	1	0	0	2	1	2	2
2353:	1	0	1	0	0	0	2	2
2361:	1	2	0	2	0	2	0	1
2369:	1	3	1	1	1	1	1	0
2377:	1	1	2	0	0	0	0	0
2385:	0	0	0	0	1	0	0	1
2393:	0	1	1	0	0	0	0	1
2401:	0	1	1	1	4	1	0	1
2409:	0	0	0	0	0	0	1	2
2417:	1	0	0	2	2	1	0	1
2425:	1	1	1	0	0	0	1	2
2433:	2	1	1	0	0	1	1	1
2441:	1	0	2	1	0	4	2	2
2449:	2	1	1	0	0	1	0	3
2457:	0	1	0	0	1	0	0	1
2465:	0	0	1	1	0	0	0	1
2473:	0	0	1	0	1	0	1	0
2481:	0	0	0	2	0	1	0	1
2489:	0	0	0	0	0	0	0	0
2497:	0	0	0	1	2	0	1	2
2505:	0	0	1	0	0	0	0	1
2513:	1	0	0	1	1	0	0	1
2521:	0	1	2	0	0	0	0	2

2529:	0	0	0	0	1	0	1	0

Sample Title: CP-5010 02-05

Channel								
2537:	0	1	1	0	0	0	3	0
2545:	0	0	1	1	0	2	0	0
2553:	1	0	4	0	1	0	1	0
2561:	0	1	2	0	0	0	0	0
2569:	0	1	0	0	0	0	1	0
2577:	0	1	0	0	0	0	2	0
2585:	0	0	0	0	0	1	2	0
2593:	0	0	0	2	0	0	2	0
2601:	2	0	1	0	0	1	0	0
2609:	0	0	0	10	16	29	14	10
2617:	1	0	0	0	0	1	0	0
2625:	0	0	0	0	1	1	1	1
2633:	0	0	0	0	1	0	0	0
2641:	0	0	0	1	0	0	0	0
2649:	1	0	1	0	1	0	2	0
2657:	0	1	1	1	0	0	1	0
2665:	0	1	0	0	0	2	1	0
2673:	0	0	0	0	1	0	1	1
2681:	0	0	0	1	0	0	0	1
2689:	0	0	0	0	0	0	0	0
2697:	0	0	0	0	0	0	0	1
2705:	0	0	0	0	0	1	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	1	1	0	1	0
2729:	0	1	0	0	0	0	0	1
2737:	0	0	0	0	0	0	0	0
2745:	0	0	0	0	0	1	0	0
2753:	0	1	1	0	0	0	0	1
2761:	0	0	0	0	0	0	0	0
2769:	0	0	1	0	0	0	1	0
2777:	0	0	0	0	0	0	0	0
2785:	2	1	0	0	0	1	0	0
2793:	1	0	0	1	0	2	0	0
2801:	1	0	1	0	0	1	0	0
2809:	0	1	1	1	1	0	0	0
2817:	0	2	0	0	0	0	0	0
2825:	0	0	0	0	0	1	0	0
2833:	1	1	1	0	0	0	0	1
2841:	0	0	0	0	0	1	0	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	1	0	0	2	0	0
2865:	0	0	0	0	2	2	2	0
2873:	1	0	0	1	0	0	0	0
2881:	1	0	0	0	0	1	0	1
2889:	0	1	2	0	0	0	0	1
2897:	0	1	0	0	1	0	0	0
2905:	0	1	0	0	0	0	0	1
2913:	0	0	0	0	0	0	0	0
2921:	0	1	2	2	0	0	0	0
2929:	0	0	0	0	0	1	0	1
2937:	1	0	1	0	0	0	1	0
2945:	0	0	0	0	0	1	1	0
2953:	1	0	1	0	0	0	0	0

2961:	0	0	0	0	0	0	1	0

Sample Title: CP-5010 02-05

Channel								
2969:	2	0	0	0	0	0	0	0
2977:	1	0	0	0	1	0	0	1
2985:	0	0	0	0	1	0	0	1
2993:	0	0	0	0	0	0	1	0
3001:	0	1	0	0	0	0	0	0
3009:	0	0	0	0	0	0	1	0
3017:	0	0	0	1	0	0	2	1
3025:	0	0	0	0	0	1	0	0
3033:	0	0	0	0	0	0	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	1	1	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	2	0	0
3073:	1	0	0	0	0	1	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	1	0	0	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	0	0	1	0	0	0
3113:	0	0	0	0	0	0	1	0
3121:	0	0	0	0	0	0	0	0
3129:	0	0	0	0	1	0	0	0
3137:	0	0	0	0	0	0	2	0
3145:	0	0	0	1	0	0	3	1
3153:	0	0	1	0	0	0	0	0
3161:	0	1	0	0	1	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	1	0	0	0	0	1	0	1
3185:	0	0	0	0	0	0	0	0
3193:	1	0	0	0	0	0	1	0
3201:	0	0	1	0	0	0	0	1
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	1	0	0
3225:	0	1	0	0	0	0	1	1
3233:	0	0	1	0	1	1	0	0
3241:	0	0	0	0	0	0	0	0
3249:	2	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	0	1
3265:	0	0	0	1	0	0	0	0
3273:	0	0	0	0	0	1	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	1	0	0	0	0	0	1
3297:	1	0	0	0	0	0	0	0
3305:	0	0	0	1	0	0	0	1
3313:	0	0	0	0	0	0	1	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	1	0
3345:	0	1	0	0	2	0	0	0
3353:	0	0	0	0	0	0	1	0
3361:	0	0	0	0	0	0	1	0
3369:	0	0	0	1	1	0	0	0
3377:	0	0	0	1	0	1	0	0
3385:	0	0	0	0	0	0	0	0

3393:	0	0	0	0	0	0	0	0

Sample Title: CP-5010 02-05

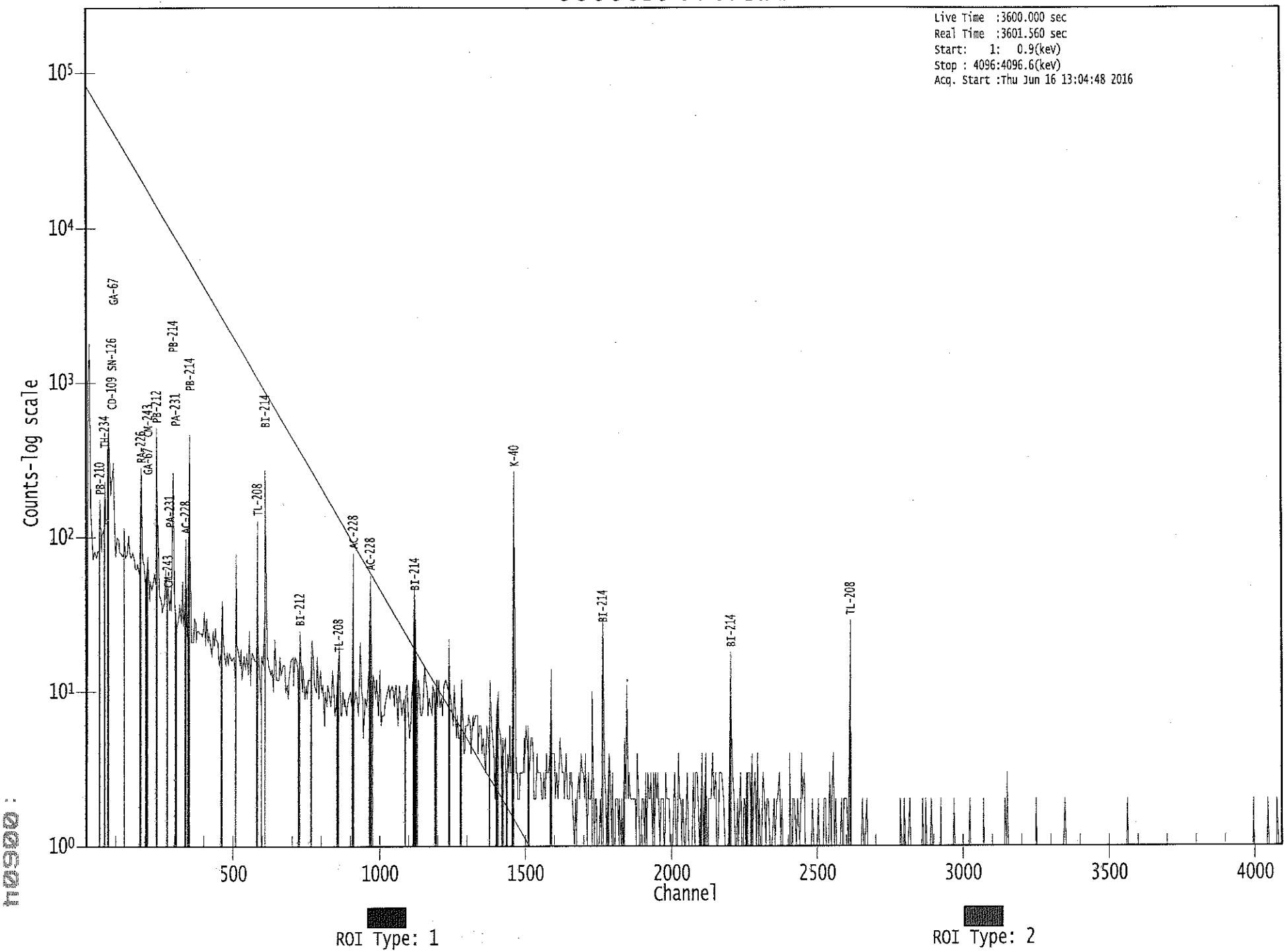
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	1	0	0	1	0	0	1	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	1	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	1	0	0	0	0	0	1	0
3489:	0	0	0	1	0	0	1	0
3497:	0	0	0	0	1	0	0	0
3505:	0	0	0	1	0	0	0	0
3513:	0	0	0	0	0	0	0	1
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	1	0	0	0
3537:	1	1	0	0	1	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	1	0	0	0	0	1
3561:	0	0	2	0	0	0	0	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:	0	1	0	0	0	0	0	0
3601:	0	0	0	0	0	1	0	0
3609:	0	1	0	0	0	0	1	0
3617:	0	0	0	0	0	1	0	0
3625:	0	0	0	0	0	0	0	0
3633:	1	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	1	0	0	0	1
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	1	0	0	0	0
3681:	1	1	0	0	0	0	1	0
3689:	0	1	0	0	0	0	0	0
3697:	1	0	0	0	1	1	0	1
3705:	0	1	0	0	0	0	1	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	1	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	1	0	0	0
3745:	1	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	1	0	0	0	0	0	1
3777:	0	1	0	0	0	0	0	1
3785:	0	0	0	0	1	0	1	0
3793:	0	0	0	0	0	1	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	1	1	0

3825:	0	1	0	0	0	0	0	1

Sample Title: CP-5010 02-05

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	1	0
3849:	0	0	0	0	0	0	1	1
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	1	0
3873:	0	0	0	0	0	1	1	0
3881:	1	1	0	1	0	0	0	0
3889:	0	0	0	0	1	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	1
3921:	1	0	0	0	0	0	0	1
3929:	0	1	0	0	0	0	0	1
3937:	0	1	0	0	1	0	1	0
3945:	0	1	0	0	0	0	0	0
3953:	0	0	0	1	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	1	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	1	2	0	0	0	0
4001:	0	0	0	0	1	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	1	0	0	0	0	0	0	0
4025:	0	0	0	1	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	1	0	0	2	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	1	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	2	0	0	0	1	1
4081:	0	0	1	0	0	0	0	0
4089:	0	0	0	0	2	0	1	0

0000039070.CNF



Apex-Gamma

Analysis Report for 1606043-10
CP-5010 05-09

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-10
Sample Description	: CP-5010 05-09
Sample Type	: SOIL
Sample Size	: 3.888E+02 grams
Facility	: Countroom
Sample Taken On	: 6/7/2016 11:12:06AM
Acquisition Started	: 6/16/2016 1:05:04PM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3614.8 seconds
Dead Time	: 0.41 %
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	: 39014

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/17/16

Analysis Report for 1606043-10

CP-5010 05-09

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 2:05:20PM
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	46.99	47.22	0.0000	0.00
2	74.94	75.15	0.0000	0.00
3	77.63	77.85	0.0000	0.00
4	87.72	87.93	0.0000	0.00
5	106.64	106.84	0.0000	0.00
6	129.91	130.10	0.0000	0.00
7	186.44	186.59	0.0000	0.00
8	209.88	210.02	0.0000	0.00
9	239.06	239.19	0.0000	0.00
10	242.35	242.48	0.0000	0.00
11	270.85	270.96	0.0000	0.00
12	277.05	277.15	0.0000	0.00
13	295.48	295.58	0.0000	0.00
14	300.59	300.69	0.0000	0.00
15	327.69	327.77	0.0000	0.00
16	338.72	338.80	0.0000	0.00
17	348.06	348.14	0.0000	0.00
18	352.43	352.50	0.0000	0.00
19	410.06	410.10	0.0000	0.00
20	463.83	463.85	0.0000	0.00
21	511.31	511.30	0.0000	0.00
22	550.31	550.28	0.0000	0.00
23	583.90	583.85	0.0000	0.00
24	606.25	606.20	0.0000	0.00
25	609.86	609.80	0.0000	0.00
26	705.11	705.00	0.0000	0.00
27	727.02	726.91	0.0000	0.00
28	768.69	768.56	0.0000	0.00
29	773.57	773.44	0.0000	0.00
30	794.92	794.78	0.0000	0.00
31	830.86	830.70	0.0000	0.00
32	839.16	839.00	0.0000	0.00
33	860.37	860.19	0.0000	0.00
34	899.56	899.37	0.0000	0.00
35	911.88	911.68	0.0000	0.00
36	969.59	969.37	0.0000	0.00
37	1121.13	1120.85	0.0000	0.00
38	1238.80	1238.46	0.0000	0.00
39	1242.81	1242.48	0.0000	0.00
40	1372.78	1372.40	0.0000	0.00
41	1378.39	1378.00	0.0000	0.00
42	1456.66	1456.24	0.0000	0.00

Analysis Report for 1606043-10

CP-5010 05-09

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1461.18	1460.76	0.0000	0.00
44	1496.96	1496.53	0.0000	0.00
45	1503.09	1502.66	0.0000	0.00
46	1510.09	1509.66	0.0000	0.00
47	1524.04	1523.59	0.0000	0.00
48	1583.98	1583.52	0.0000	0.00
49	1588.99	1588.52	0.0000	0.00
50	1629.70	1629.22	0.0000	0.00
51	1649.22	1648.73	0.0000	0.00
52	1747.77	1747.25	0.0000	0.00
53	1764.65	1764.12	0.0000	0.00
54	2062.56	2061.93	0.0000	0.00
55	2103.74	2103.10	0.0000	0.00
56	2188.16	2187.50	0.0000	0.00
57	2203.88	2203.21	0.0000	0.00
58	2358.03	2357.32	0.0000	0.00
59	2614.70	2613.92	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606043-10

CP-5010 05-09

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 2:05:20PM

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	46.99	44 -	51	47.22	1.26E+02	82.80	1.06E+03	2.04
M	2	74.94	71 -	83	75.15	3.29E+02	85.00	1.12E+03	1.66
m	3	77.63	71 -	83	77.85	6.52E+02	93.41	1.03E+03	1.67
	4	87.72	86 -	90	87.93	7.81E+01	75.04	1.19E+03	1.12
	5	106.64	104 -	110	106.84	6.60E+01	68.36	8.02E+02	1.95
	6	129.91	127 -	133	130.10	7.67E+01	66.00	7.39E+02	1.43
	7	186.44	183 -	190	186.59	2.01E+02	71.67	7.18E+02	1.80
	8	209.88	207 -	212	210.02	6.47E+01	48.06	4.05E+02	2.22
M	9	239.06	234 -	246	239.19	8.06E+02	65.26	2.94E+02	1.80
m	10	242.35	234 -	246	242.48	1.72E+02	74.29	3.35E+02	2.29
	11	270.85	267 -	274	270.96	6.56E+01	53.07	4.21E+02	1.78
	12	277.05	275 -	280	277.15	4.35E+01	38.79	2.65E+02	2.64
	13	295.48	291 -	299	295.58	9.54E+01	57.31	4.49E+02	1.47
	14	300.59	299 -	304	300.69	3.50E+01	37.42	2.52E+02	1.94
	15	327.69	324 -	332	327.77	5.23E+01	47.60	3.19E+02	1.81
	16	338.72	334 -	342	338.80	1.51E+02	53.66	3.49E+02	1.58
M	17	348.06	346 -	357	348.14	2.28E+01	27.80	1.61E+02	2.18
m	18	352.43	346 -	357	352.50	3.21E+02	43.04	1.46E+02	1.73
	19	410.06	408 -	414	410.10	3.43E+01	32.62	1.69E+02	2.68
	20	463.83	460 -	469	463.85	7.33E+01	40.78	1.97E+02	2.49
	21	511.31	506 -	515	511.30	1.32E+02	43.49	1.95E+02	2.09
	22	550.31	548 -	554	550.28	2.29E+01	25.91	1.06E+02	1.65
	23	583.90	579 -	589	583.85	2.06E+02	48.45	2.01E+02	1.97
M	24	606.25	605 -	614	606.20	2.16E+01	13.04	3.34E+01	2.20
m	25	609.86	605 -	614	609.80	2.22E+02	37.01	8.39E+01	2.20
	26	705.11	692 -	722	705.00	1.02E+02	83.22	3.76E+02	1.25
	27	727.02	723 -	730	726.91	5.88E+01	30.53	1.16E+02	2.26
M	28	768.69	763 -	776	768.56	2.61E+01	22.74	7.49E+01	2.42
m	29	773.57	763 -	776	773.44	1.89E+01	18.68	5.17E+01	2.54
	30	794.92	790 -	799	794.78	3.55E+01	29.90	1.01E+02	1.58
M	31	830.86	828 -	845	830.70	1.58E+01	13.42	3.85E+01	2.83
m	32	839.16	828 -	845	839.00	1.83E+01	18.68	4.78E+01	2.13
	33	860.37	856 -	864	860.19	3.26E+01	25.06	7.68E+01	2.72
	34	899.56	897 -	901	899.37	1.73E+01	15.08	3.55E+01	1.26
	35	911.88	907 -	917	911.68	1.16E+02	39.02	1.36E+02	2.05
	36	969.59	966 -	974	969.37	7.71E+01	35.73	1.40E+02	2.14
	37	1121.13	1117 -	1127	1120.85	4.63E+01	29.64	8.94E+01	2.30
M	38	1238.80	1235 -	1248	1238.46	2.10E+01	18.41	6.52E+01	2.81
m	39	1242.81	1235 -	1248	1242.48	1.78E+01	23.83	7.36E+01	2.68
M	40	1372.78	1369 -	1383	1372.40	1.87E+01	12.54	1.91E+01	3.17

Analysis Report for 1606043-10

CP-5010 05-09

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
m	41	1378.39	1369 -	1383	1378.00	2.00E+01	12.54	1.62E+01	2.38
M	42	1456.66	1453 -	1469	1456.24	1.14E+01	9.27	6.00E+00	2.66
m	43	1461.18	1453 -	1469	1460.76	4.78E+02	43.73	7.00E+00	2.30
	44	1496.96	1494 -	1498	1496.53	8.50E+00	7.52	5.00E+00	1.65
	45	1503.09	1500 -	1507	1502.66	7.69E+00	10.00	1.06E+01	2.78
	46	1510.09	1507 -	1512	1509.66	7.72E+00	6.71	2.56E+00	1.98
	47	1524.04	1521 -	1526	1523.59	8.80E+00	7.00	2.40E+00	2.85
M	48	1583.98	1582 -	1594	1583.52	6.40E+00	4.53	3.00E+00	2.98
m	49	1588.99	1582 -	1594	1588.52	2.43E+01	12.51	9.00E+00	2.98
	50	1629.70	1625 -	1634	1629.22	1.62E+01	10.05	5.58E+00	3.84
	51	1649.22	1645 -	1651	1648.73	6.25E+00	6.65	3.50E+00	2.40
	52	1747.77	1744 -	1749	1747.25	8.00E+00	5.66	0.00E+00	1.96
	53	1764.65	1760 -	1768	1764.12	3.10E+01	12.34	4.03E+00	2.11
	54	2062.56	2059 -	2064	2061.93	4.50E+00	5.74	3.00E+00	2.70
	55	2103.74	2100 -	2106	2103.10	9.04E+00	9.63	9.93E+00	1.94
	56	2188.16	2184 -	2190	2187.50	8.00E+00	5.66	0.00E+00	3.88
	57	2203.88	2199 -	2207	2203.21	1.27E+01	8.96	4.67E+00	1.29
	58	2358.03	2353 -	2360	2357.32	8.95E+00	7.75	4.09E+00	1.39
	59	2614.70	2609 -	2618	2613.92	7.20E+01	16.97	0.00E+00	2.52

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 2:05:20PM

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	46.99	44 -	51	1.26E+02	82.80	1.06E+03	6.55E+01
M	2	74.94	71 -	83	3.29E+02	85.00	1.12E+03	5.51E+01
m	3	77.63	71 -	83	6.52E+02	93.41	1.03E+03	5.28E+01
	4	87.72	86 -	90	7.81E+01	75.04	1.19E+03	6.00E+01
	5	106.64	104 -	110	6.60E+01	68.36	8.02E+02	5.46E+01
	6	129.91	127 -	133	7.67E+01	66.00	7.39E+02	5.23E+01
	7	186.44	183 -	190	2.01E+02	71.67	7.18E+02	5.41E+01
	8	209.88	207 -	212	6.47E+01	48.06	4.05E+02	3.72E+01
M	9	239.06	234 -	246	8.06E+02	65.26	2.94E+02	2.82E+01

Analysis Report for 1606043-10

CP-5010 05-09

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	10	242.35	234 -	246	1.72E+02	74.29	3.35E+02	3.01E+01
	11	270.85	267 -	274	6.56E+01	53.07	4.21E+02	4.15E+01
	12	277.05	275 -	280	4.35E+01	38.79	2.65E+02	3.00E+01
	13	295.48	291 -	299	9.54E+01	57.31	4.49E+02	4.43E+01
	14	300.59	299 -	304	3.50E+01	37.42	2.52E+02	2.92E+01
	15	327.69	324 -	332	5.23E+01	47.60	3.19E+02	3.73E+01
	16	338.72	334 -	342	1.51E+02	53.66	3.49E+02	3.92E+01
M	17	348.06	346 -	357	2.28E+01	27.80	1.61E+02	2.08E+01
m	18	352.43	346 -	357	3.21E+02	43.04	1.46E+02	1.98E+01
	19	410.06	408 -	414	3.43E+01	32.62	1.69E+02	2.50E+01
	20	463.83	460 -	469	7.33E+01	40.78	1.97E+02	3.04E+01
	21	511.31	506 -	515	1.32E+02	43.49	1.95E+02	3.04E+01
	22	550.31	548 -	554	2.29E+01	25.91	1.06E+02	1.98E+01
	23	583.90	579 -	589	2.06E+02	48.45	2.01E+02	3.21E+01
M	24	606.25	605 -	614	2.16E+01	13.04	3.34E+01	9.50E+00
m	25	609.86	605 -	614	2.22E+02	37.01	8.39E+01	1.51E+01
	26	705.11	692 -	722	1.02E+02	83.22	3.76E+02	1.52E+01
	27	727.02	723 -	730	5.88E+01	30.53	1.16E+02	2.17E+01
M	28	768.69	763 -	776	2.61E+01	22.74	7.49E+01	1.42E+01
m	29	773.57	763 -	776	1.89E+01	18.68	5.17E+01	1.18E+01
	30	794.92	790 -	799	3.55E+01	29.90	1.01E+02	2.25E+01
M	31	830.86	828 -	845	1.58E+01	13.42	3.85E+01	1.02E+01
m	32	839.16	828 -	845	1.83E+01	18.68	4.78E+01	1.14E+01
	33	860.37	856 -	864	3.26E+01	25.06	7.68E+01	1.83E+01
	34	899.56	897 -	901	1.73E+01	15.08	3.55E+01	1.03E+01
	35	911.88	907 -	917	1.16E+02	39.02	1.36E+02	2.67E+01
	36	969.59	966 -	974	7.71E+01	35.73	1.40E+02	1.78E+01
	37	1121.13	1117 -	1127	4.63E+01	29.64	8.94E+01	2.16E+01
M	38	1238.80	1235 -	1248	2.10E+01	18.41	6.52E+01	1.33E+01
m	39	1242.81	1235 -	1248	1.78E+01	23.83	7.36E+01	1.41E+01
M	40	1372.78	1369 -	1383	1.87E+01	12.54	1.91E+01	7.19E+00
m	41	1378.39	1369 -	1383	2.00E+01	12.54	1.62E+01	6.62E+00
M	42	1456.66	1453 -	1469	1.14E+01	9.27	6.00E+00	4.03E+00
m	43	1461.18	1453 -	1469	4.78E+02	43.73	7.00E+00	4.35E+00
	44	1496.96	1494 -	1498	8.50E+00	7.52	5.00E+00	3.90E+00
	45	1503.09	1500 -	1507	7.69E+00	10.00	1.06E+01	6.84E+00
	46	1510.09	1507 -	1512	7.72E+00	6.71	2.56E+00	3.09E+00
	47	1524.04	1521 -	1526	8.80E+00	7.00	2.40E+00	3.05E+00
M	48	1583.98	1582 -	1594	6.40E+00	4.53	3.00E+00	2.85E+00
m	49	1588.99	1582 -	1594	2.43E+01	12.51	9.00E+00	4.93E+00
	50	1629.70	1625 -	1634	1.62E+01	10.05	5.58E+00	4.94E+00
	51	1649.22	1645 -	1651	6.25E+00	6.65	3.50E+00	3.61E+00
	52	1747.77	1744 -	1749	8.00E+00	5.66	0.00E+00	0.00E+00
	53	1764.65	1760 -	1768	3.10E+01	12.34	4.03E+00	4.37E+00
	54	2062.56	2059 -	2064	4.50E+00	5.74	3.00E+00	3.18E+00
	55	2103.74	2100 -	2106	9.04E+00	9.63	9.93E+00	6.18E+00
	56	2188.16	2184 -	2190	8.00E+00	5.66	0.00E+00	0.00E+00
	57	2203.88	2199 -	2207	1.27E+01	8.96	4.67E+00	4.47E+00
	58	2358.03	2353 -	2360	8.95E+00	7.75	4.09E+00	4.04E+00
	59	2614.70	2609 -	2618	7.20E+01	16.97	0.00E+00	0.00E+00

Analysis Report for 1606043-10

CP-5010 05-09

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 2:05:20PM

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	46.99	44 -	51	47.22	1.26E+02	82.80	1.06E+03	PB-210
M	2	74.94	71 -	83	75.15	3.29E+02	85.00	1.12E+03	AM-243
m	3	77.63	71 -	83	77.85	6.52E+02	93.41	1.03E+03	TI-44
	4	87.72	86 -	90	87.93	7.81E+01	75.04	1.19E+03	SN-126
									CD-109
									LU-176
	5	106.64	104 -	110	106.84	6.60E+01	68.36	8.02E+02	NP-239
	6	129.91	127 -	133	130.10	7.67E+01	66.00	7.39E+02	.....
	7	186.44	183 -	190	186.59	2.01E+02	71.67	7.18E+02	RA-226
	8	209.88	207 -	212	210.02	6.47E+01	48.06	4.05E+02	CM-243
									GA-67
M	9	239.06	234 -	246	239.19	8.06E+02	65.26	2.94E+02	PB-212
m	10	242.35	234 -	246	242.48	1.72E+02	74.29	3.35E+02	.....
	11	270.85	267 -	274	270.96	6.56E+01	53.07	4.21E+02	.....
	12	277.05	275 -	280	277.15	4.35E+01	38.79	2.65E+02	CM-243
									NP-239
	13	295.48	291 -	299	295.58	9.54E+01	57.31	4.49E+02	PB-214
	14	300.59	299 -	304	300.69	3.50E+01	37.42	2.52E+02	GA-67
									PB-212
									BI-210M
	15	327.69	324 -	332	327.77	5.23E+01	47.60	3.19E+02	.....
	16	338.72	334 -	342	338.80	1.51E+02	53.66	3.49E+02	AC-228
M	17	348.06	346 -	357	348.14	2.28E+01	27.80	1.61E+02	.....
m	18	352.43	346 -	357	352.50	3.21E+02	43.04	1.46E+02	PB-214
	19	410.06	408 -	414	410.10	3.43E+01	32.62	1.69E+02	HO-166M
	20	463.83	460 -	469	463.85	7.33E+01	40.78	1.97E+02	SB-125
	21	511.31	506 -	515	511.30	1.32E+02	43.49	1.95E+02	.....
	22	550.31	548 -	554	550.28	2.29E+01	25.91	1.06E+02	.....
	23	583.90	579 -	589	583.85	2.06E+02	48.45	2.01E+02	TL-208
M	24	606.25	605 -	614	606.20	2.16E+01	13.04	3.34E+01	.....

Analysis Report for 1606043-10

CP-5010 05-09

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	25	609.86	605 -	614	609.80	2.22E+02	37.01	8.39E+01	BI-214
	26	705.11	692 -	722	705.00	1.02E+02	83.22	3.76E+02	.....
	27	727.02	723 -	730	726.91	5.88E+01	30.53	1.16E+02	BI-212
M	28	768.69	763 -	776	768.56	2.61E+01	22.74	7.49E+01	.....
m	29	773.57	763 -	776	773.44	1.89E+01	18.68	5.17E+01	.....
	30	794.92	790 -	799	794.78	3.55E+01	29.90	1.01E+02	CS-134
M	31	830.86	828 -	845	830.70	1.58E+01	13.42	3.85E+01	.....
m	32	839.16	828 -	845	839.00	1.83E+01	18.68	4.78E+01	.....
	33	860.37	856 -	864	860.19	3.26E+01	25.06	7.68E+01	TL-208
	34	899.56	897 -	901	899.37	1.73E+01	15.08	3.55E+01	.....
	35	911.88	907 -	917	911.68	1.16E+02	39.02	1.36E+02	LU-172
									AC-228
	36	969.59	966 -	974	969.37	7.71E+01	35.73	1.40E+02	AC-228
	37	1121.13	1117 -	1127	1120.85	4.63E+01	29.64	8.94E+01	TA-182
									SC-46
									BI-214
M	38	1238.80	1235 -	1248	1238.46	2.10E+01	18.41	6.52E+01	CO-56
m	39	1242.81	1235 -	1248	1242.48	1.78E+01	23.83	7.36E+01	.....
M	40	1372.78	1369 -	1383	1372.40	1.87E+01	12.54	1.91E+01	.....
m	41	1378.39	1369 -	1383	1378.00	2.00E+01	12.54	1.62E+01	.....
M	42	1456.66	1453 -	1469	1456.24	1.14E+01	9.27	6.00E+00	.....
m	43	1461.18	1453 -	1469	1460.76	4.78E+02	43.73	7.00E+00	K-40
	44	1496.96	1494 -	1498	1496.53	8.50E+00	7.52	5.00E+00	.....
	45	1503.09	1500 -	1507	1502.66	7.69E+00	10.00	1.06E+01	.....
	46	1510.09	1507 -	1512	1509.66	7.72E+00	6.71	2.56E+00	.....
	47	1524.04	1521 -	1526	1523.59	8.80E+00	7.00	2.40E+00	.....
M	48	1583.98	1582 -	1594	1583.52	6.40E+00	4.53	3.00E+00	.....
m	49	1588.99	1582 -	1594	1588.52	2.43E+01	12.51	9.00E+00	.....
	50	1629.70	1625 -	1634	1629.22	1.62E+01	10.05	5.58E+00	.....
	51	1649.22	1645 -	1651	1648.73	6.25E+00	6.65	3.50E+00	.....
	52	1747.77	1744 -	1749	1747.25	8.00E+00	5.66	0.00E+00	.....
	53	1764.65	1760 -	1768	1764.12	3.10E+01	12.34	4.03E+00	BI-214
	54	2062.56	2059 -	2064	2061.93	4.50E+00	5.74	3.00E+00	.....
	55	2103.74	2100 -	2106	2103.10	9.04E+00	9.63	9.93E+00	.....
	56	2188.16	2184 -	2190	2187.50	8.00E+00	5.66	0.00E+00	.....
	57	2203.88	2199 -	2207	2203.21	1.27E+01	8.96	4.67E+00	BI-214
	58	2358.03	2353 -	2360	2357.32	8.95E+00	7.75	4.09E+00	.....
	59	2614.70	2609 -	2618	2613.92	7.20E+01	16.97	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 1606043-10

CP-5010 05-09

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 2:05:20PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.99	1.26E+02	82.80	1.53E-02	1.58E-03
M	2	74.94	3.29E+02	85.00	2.36E-02	2.09E-03
m	3	77.63	6.52E+02	93.41	2.39E-02	2.18E-03
	4	87.72	7.81E+01	75.04	2.44E-02	2.51E-03
	5	106.64	6.60E+01	68.36	2.40E-02	2.09E-03
	6	129.91	7.67E+01	66.00	2.25E-02	1.69E-03
	7	186.44	2.01E+02	71.67	1.83E-02	1.42E-03
	8	209.88	6.47E+01	48.06	1.68E-02	1.31E-03
M	9	239.06	8.06E+02	65.26	1.52E-02	1.18E-03
m	10	242.35	1.72E+02	74.29	1.50E-02	1.16E-03
	11	270.85	6.56E+01	53.07	1.38E-02	1.03E-03
	12	277.05	4.35E+01	38.79	1.35E-02	1.01E-03
	13	295.48	9.54E+01	57.31	1.28E-02	9.74E-04
	14	300.59	3.50E+01	37.42	1.26E-02	9.66E-04
	15	327.69	5.23E+01	47.60	1.18E-02	9.28E-04
	16	338.72	1.51E+02	53.66	1.14E-02	9.12E-04
M	17	348.06	2.28E+01	27.80	1.12E-02	8.99E-04
m	18	352.43	3.21E+02	43.04	1.10E-02	8.93E-04
	19	410.06	3.43E+01	32.62	9.70E-03	8.19E-04
	20	463.83	7.33E+01	40.78	8.72E-03	7.65E-04
	21	511.31	1.32E+02	43.49	8.01E-03	7.18E-04
	22	550.31	2.29E+01	25.91	7.51E-03	6.79E-04
	23	583.90	2.06E+02	48.45	7.13E-03	6.45E-04
M	24	606.25	2.16E+01	13.04	6.90E-03	6.23E-04
m	25	609.86	2.22E+02	37.01	6.87E-03	6.20E-04
	26	705.11	1.02E+02	83.22	6.05E-03	5.32E-04
	27	727.02	5.88E+01	30.53	5.89E-03	5.14E-04
M	28	768.69	2.61E+01	22.74	5.62E-03	4.80E-04
m	29	773.57	1.89E+01	18.68	5.58E-03	4.76E-04
	30	794.92	3.55E+01	29.90	5.45E-03	4.59E-04
M	31	830.86	1.58E+01	13.42	5.25E-03	4.30E-04
m	32	839.16	1.83E+01	18.68	5.21E-03	4.23E-04
	33	860.37	3.26E+01	25.06	5.10E-03	4.05E-04
	34	899.56	1.73E+01	15.08	4.91E-03	3.74E-04
	35	911.88	1.16E+02	39.02	4.85E-03	3.72E-04
	36	969.59	7.71E+01	35.73	4.60E-03	3.61E-04
	37	1121.13	4.63E+01	29.64	4.07E-03	3.33E-04
M	38	1238.80	2.10E+01	18.41	3.75E-03	3.09E-04
m	39	1242.81	1.78E+01	23.83	3.74E-03	3.08E-04
M	40	1372.78	1.87E+01	12.54	3.46E-03	2.83E-04
m	41	1378.39	2.00E+01	12.54	3.45E-03	2.82E-04
M	42	1456.66	1.14E+01	9.27	3.30E-03	2.70E-04
m	43	1461.18	4.78E+02	43.73	3.29E-03	2.69E-04
	44	1496.96	8.50E+00	7.52	3.23E-03	2.64E-04
	45	1503.09	7.69E+00	10.00	3.22E-03	2.63E-04

Analysis Report for 1606043-10

CP-5010 05-09

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	46	1510.09	7.72E+00	6.71	3.21E-03	2.62E-04
	47	1524.04	8.80E+00	7.00	3.19E-03	2.60E-04
M	48	1583.98	6.40E+00	4.53	3.09E-03	2.51E-04
m	49	1588.99	2.43E+01	12.51	3.09E-03	2.50E-04
	50	1629.70	1.62E+01	10.05	3.03E-03	2.44E-04
	51	1649.22	6.25E+00	6.65	3.00E-03	2.41E-04
	52	1747.77	8.00E+00	5.66	2.88E-03	2.26E-04
	53	1764.65	3.10E+01	12.34	2.86E-03	2.24E-04
	54	2062.56	4.50E+00	5.74	2.57E-03	2.13E-04
	55	2103.74	9.04E+00	9.63	2.54E-03	2.13E-04
	56	2188.16	8.00E+00	5.66	2.47E-03	2.13E-04
	57	2203.88	1.27E+01	8.96	2.46E-03	2.13E-04
	58	2358.03	8.95E+00	7.75	2.37E-03	2.13E-04
	59	2614.70	7.20E+01	16.97	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 2:05:20PM

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	46.99	1.26E+02	82.80	4.97E+01	7.81E+00	7.67E+01	8.32E+01
M	2	74.94	3.29E+02	85.00			3.29E+02	8.50E+01
m	3	77.63	6.52E+02	93.41	6.70E+00	3.28E+00	6.45E+02	9.35E+01
	4	87.72	7.81E+01	75.04	1.07E+01	3.99E+00	6.74E+01	7.52E+01
	5	106.64	6.60E+01	68.36			6.60E+01	6.84E+01
	6	129.91	7.67E+01	66.00			7.67E+01	6.60E+01
	7	186.44	2.01E+02	71.67	3.45E+01	5.92E+00	1.67E+02	7.19E+01
	8	209.88	6.47E+01	48.06			6.47E+01	4.81E+01
M	9	239.06	8.06E+02	65.26	1.33E+01	5.09E+00	7.93E+02	6.55E+01
m	10	242.35	1.72E+02	74.29			1.72E+02	7.43E+01
	11	270.85	6.56E+01	53.07			6.56E+01	5.31E+01
	12	277.05	4.35E+01	38.79			4.35E+01	3.88E+01
	13	295.48	9.54E+01	57.31	1.94E+00	4.39E+00	9.35E+01	5.75E+01
	14	300.59	3.50E+01	37.42			3.50E+01	3.74E+01
	15	327.69	5.23E+01	47.60			5.23E+01	4.76E+01
	16	338.72	1.51E+02	53.66			1.51E+02	5.37E+01

Analysis Report for 1606043-10

CP-5010 05-09

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	17	348.06	2.28E+01	27.80			2.28E+01	2.78E+01
m	18	352.43	3.21E+02	43.04	4.00E+00	3.58E+00	3.17E+02	4.32E+01
	19	410.06	3.43E+01	32.62			3.43E+01	3.26E+01
	20	463.83	7.33E+01	40.78			7.33E+01	4.08E+01
	21	511.31	1.32E+02	43.49	6.05E+01	4.93E+00	7.12E+01	4.38E+01
	22	550.31	2.29E+01	25.91			2.29E+01	2.59E+01
	23	583.90	2.06E+02	48.45	5.50E+00	3.61E+00	2.01E+02	4.86E+01
M	24	606.25	2.16E+01	13.04			2.16E+01	1.30E+01
m	25	609.86	2.22E+02	37.01	5.07E+00	3.83E+00	2.17E+02	3.72E+01
	26	705.11	1.02E+02	83.22			1.02E+02	8.32E+01
	27	727.02	5.88E+01	30.53			5.88E+01	3.05E+01
M	28	768.69	2.61E+01	22.74			2.61E+01	2.27E+01
m	29	773.57	1.89E+01	18.68			1.89E+01	1.87E+01
	30	794.92	3.55E+01	29.90			3.55E+01	2.99E+01
M	31	830.86	1.58E+01	13.42			1.58E+01	1.34E+01
m	32	839.16	1.83E+01	18.68			1.83E+01	1.87E+01
	33	860.37	3.26E+01	25.06			3.26E+01	2.51E+01
	34	899.56	1.73E+01	15.08			1.73E+01	1.51E+01
	35	911.88	1.16E+02	39.02			1.16E+02	3.90E+01
	36	969.59	7.71E+01	35.73			7.71E+01	3.57E+01
	37	1121.13	4.63E+01	29.64	1.09E+00	2.08E+00	4.52E+01	2.97E+01
M	38	1238.80	2.10E+01	18.41			2.10E+01	1.84E+01
m	39	1242.81	1.78E+01	23.83			1.78E+01	2.38E+01
M	40	1372.78	1.87E+01	12.54			1.87E+01	1.25E+01
m	41	1378.39	2.00E+01	12.54			2.00E+01	1.25E+01
M	42	1456.66	1.14E+01	9.27			1.14E+01	9.27E+00
m	43	1461.18	4.78E+02	43.73	4.33E+00	2.02E+00	4.74E+02	4.38E+01
	44	1496.96	8.50E+00	7.52			8.50E+00	7.52E+00
	45	1503.09	7.69E+00	10.00			7.69E+00	1.00E+01
	46	1510.09	7.72E+00	6.71			7.72E+00	6.71E+00
	47	1524.04	8.80E+00	7.00			8.80E+00	7.00E+00
M	48	1583.98	6.40E+00	4.53			6.40E+00	4.53E+00
m	49	1588.99	2.43E+01	12.51			2.43E+01	1.25E+01
	50	1629.70	1.62E+01	10.05			1.62E+01	1.00E+01
	51	1649.22	6.25E+00	6.65			6.25E+00	6.65E+00
	52	1747.77	8.00E+00	5.66			8.00E+00	5.66E+00
	53	1764.65	3.10E+01	12.34			3.10E+01	1.23E+01
	54	2062.56	4.50E+00	5.74			4.50E+00	5.74E+00
	55	2103.74	9.04E+00	9.63			9.04E+00	9.63E+00
	56	2188.16	8.00E+00	5.66			8.00E+00	5.66E+00
	57	2203.88	1.27E+01	8.96			1.27E+01	8.96E+00
	58	2358.03	8.95E+00	7.75			8.95E+00	7.75E+00
	59	2614.70	7.20E+01	16.97	2.52E+00	1.44E+00	6.95E+01	1.70E+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 1606043-10

CP-5010 05-09

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 2:05:20PM

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	46.99	1.26E+02	82.80	4.97E+01	7.81E+00	7.67E+01	8.32E+01
M	2	74.94	3.29E+02	85.00			3.29E+02	8.50E+01
m	3	77.63	6.52E+02	93.41	6.70E+00	3.28E+00	6.45E+02	9.35E+01
	4	87.72	7.81E+01	75.04	1.07E+01	3.99E+00	6.74E+01	7.52E+01
	5	106.64	6.60E+01	68.36			6.60E+01	6.84E+01
	6	129.91	7.67E+01	66.00			7.67E+01	6.60E+01
	7	186.44	2.01E+02	71.67	3.45E+01	5.92E+00	1.67E+02	7.19E+01
	8	209.88	6.47E+01	48.06			6.47E+01	4.81E+01
M	9	239.06	8.06E+02	65.26	1.33E+01	5.09E+00	7.93E+02	6.55E+01
m	10	242.35	1.72E+02	74.29			1.72E+02	7.43E+01
	11	270.85	6.56E+01	53.07			6.56E+01	5.31E+01
	12	277.05	4.35E+01	38.79			4.35E+01	3.88E+01
	13	295.48	9.54E+01	57.31	1.94E+00	4.39E+00	9.35E+01	5.75E+01
	14	300.59	3.50E+01	37.42			3.50E+01	3.74E+01
	15	327.69	5.23E+01	47.60			5.23E+01	4.76E+01
	16	338.72	1.51E+02	53.66			1.51E+02	5.37E+01
M	17	348.06	2.28E+01	27.80			2.28E+01	2.78E+01
m	18	352.43	3.21E+02	43.04	4.00E+00	3.58E+00	3.17E+02	4.32E+01
	19	410.06	3.43E+01	32.62			3.43E+01	3.26E+01
	20	463.83	7.33E+01	40.78			7.33E+01	4.08E+01
	21	511.31	1.32E+02	43.49	6.05E+01	4.93E+00	7.12E+01	4.38E+01
	22	550.31	2.29E+01	25.91			2.29E+01	2.59E+01
	23	583.90	2.06E+02	48.45	5.50E+00	3.61E+00	2.01E+02	4.86E+01
M	24	606.25	2.16E+01	13.04			2.16E+01	1.30E+01
m	25	609.86	2.22E+02	37.01	5.07E+00	3.83E+00	2.17E+02	3.72E+01
	26	705.11	1.02E+02	83.22			1.02E+02	8.32E+01
	27	727.02	5.88E+01	30.53			5.88E+01	3.05E+01
M	28	768.69	2.61E+01	22.74			2.61E+01	2.27E+01
m	29	773.57	1.89E+01	18.68			1.89E+01	1.87E+01
	30	794.92	3.55E+01	29.90			3.55E+01	2.99E+01
M	31	830.86	1.58E+01	13.42			1.58E+01	1.34E+01
m	32	839.16	1.83E+01	18.68			1.83E+01	1.87E+01
	33	860.37	3.26E+01	25.06			3.26E+01	2.51E+01
	34	899.56	1.73E+01	15.08			1.73E+01	1.51E+01
	35	911.88	1.16E+02	39.02			1.16E+02	3.90E+01
	36	969.59	7.71E+01	35.73			7.71E+01	3.57E+01
	37	1121.13	4.63E+01	29.64	1.09E+00	2.08E+00	4.52E+01	2.97E+01
M	38	1238.80	2.10E+01	18.41			2.10E+01	1.84E+01
m	39	1242.81	1.78E+01	23.83			1.78E+01	2.38E+01
M	40	1372.78	1.87E+01	12.54			1.87E+01	1.25E+01
m	41	1378.39	2.00E+01	12.54			2.00E+01	1.25E+01

Analysis Report for 1606043-10

CP-5010 05-09

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	42	1456.66	1.14E+01	9.27			1.14E+01	9.27E+00
m	43	1461.18	4.78E+02	43.73	4.33E+00	2.02E+00	4.74E+02	4.38E+01
	44	1496.96	8.50E+00	7.52			8.50E+00	7.52E+00
	45	1503.09	7.69E+00	10.00			7.69E+00	1.00E+01
	46	1510.09	7.72E+00	6.71			7.72E+00	6.71E+00
	47	1524.04	8.80E+00	7.00			8.80E+00	7.00E+00
M	48	1583.98	6.40E+00	4.53			6.40E+00	4.53E+00
m	49	1588.99	2.43E+01	12.51			2.43E+01	1.25E+01
	50	1629.70	1.62E+01	10.05			1.62E+01	1.00E+01
	51	1649.22	6.25E+00	6.65			6.25E+00	6.65E+00
	52	1747.77	8.00E+00	5.66			8.00E+00	5.66E+00
	53	1764.65	3.10E+01	12.34			3.10E+01	1.23E+01
	54	2062.56	4.50E+00	5.74			4.50E+00	5.74E+00
	55	2103.74	9.04E+00	9.63			9.04E+00	9.63E+00
	56	2188.16	8.00E+00	5.66			8.00E+00	5.66E+00
	57	2203.88	1.27E+01	8.96			1.27E+01	8.96E+00
	58	2358.03	8.95E+00	7.75			8.95E+00	7.75E+00
	59	2614.70	7.20E+01	16.97	2.52E+00	1.44E+00	6.95E+01	1.70E+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	0.978	1460.81	*	10.67	2.60E+01	3.26E+00
CD-109	0.984	88.03	*	3.72	1.45E+00	1.63E+00
SN-126	0.997	87.57	*	37.00	1.44E-01	1.61E-01
TL-208	0.961	583.14	*	30.22	1.80E+00	4.65E-01
		860.37	*	4.48	2.76E+00	2.13E+00
		2614.66	*	35.85	1.67E+00	4.39E-01
PB-210	0.963	46.50	*	4.25	2.28E+00	2.49E+00
BI-212	0.768	727.17	*	11.80	1.63E+00	8.60E-01
		1620.62		2.75		
PB-212	0.970	238.63	*	44.60	2.26E+00	2.56E-01
		300.09	*	3.41	1.57E+00	1.68E+00
BI-214	0.951	609.31	*	46.30	1.32E+00	2.55E-01
		1120.29	*	15.10	1.42E+00	9.40E-01

Analysis Report for 1606043-10

CP-5010 05-09

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.951	1764.49	*	15.80	1.33E+00	5.38E-01
		2204.22	*	4.98	1.99E+00	1.42E+00
PB-214	0.969	295.21	*	19.19	7.34E-01	4.55E-01
		351.92	*	37.19	1.49E+00	2.36E-01
RA-226	0.992	186.21	*	3.28	5.38E+00	1.01E+01
AC-228	0.934	338.32	*	11.40	2.23E+00	8.15E-01
		911.07	*	27.70	1.67E+00	5.75E-01
		969.11	*	16.60	1.95E+00	9.16E-01
AM-243	0.989	74.67	*	66.00	4.08E-01	1.11E-01
CM-243	0.346	209.75	*	3.29	2.26E+00	1.69E+00
		228.14		10.60		
		277.60	*	14.00	4.44E-01	3.98E-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 2:05:20PM
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	77.63	1.79274E-01	7.24		
	5	106.64	1.83238E-02	51.82	Tol.	NP-239
	6	129.91	2.13173E-02	43.00		
m	10	242.35	4.78117E-02	21.58		
	11	270.85	1.82261E-02	40.44		
	15	327.69	1.45178E-02	45.54	Sum	
M	17	348.06	6.34419E-03	60.86	Sum	
	19	410.06	9.52031E-03	47.59	Tol.	HO-166M
	20	463.83	2.03723E-02	27.80	Sum	
	21	511.31	1.97677E-02	30.75	Sum	
	22	550.31	6.35965E-03	56.59		
M	24	606.25	6.00249E-03	30.17		
	26	705.11	2.83965E-02	40.70	Sum	
M	28	768.69	7.25771E-03	43.52		
m	29	773.57	5.24816E-03	49.44	Sum	
	30	794.92	9.85465E-03	42.14	Tol.	CS-134
M	31	830.86	4.40048E-03	42.35		

Analysis Report for 1606043-10

CP-5010 05-09

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	32	839.16	5.08867E-03	50.99		
	34	899.56	4.79365E-03	43.70		
M	38	1238.80	5.83524E-03	43.82		
m	39	1242.81	4.95186E-03	66.85		
M	40	1372.78	5.20318E-03	33.47		
m	41	1378.39	5.55062E-03	31.38		
M	42	1456.66	3.16428E-03	40.70		
	44	1496.96	2.36111E-03	44.22		
	45	1503.09	2.13675E-03	65.00		
	46	1510.09	2.14506E-03	43.43		
	47	1524.04	2.44444E-03	39.77		
M	48	1583.98	1.77685E-03	35.39		
m	49	1588.99	6.75758E-03	25.71		
	50	1629.70	4.50292E-03	31.00		
	51	1649.22	1.73611E-03	53.22		
	52	1747.77	2.22222E-03	35.36		
	54	2062.56	1.25000E-03	63.83		
	55	2103.74	2.50992E-03	53.29	S-Esc	
	56	2188.16	2.22222E-03	35.36	Sum	
	58	2358.03	2.48737E-03	43.25		

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	0.97	1460.81	*	10.67	2.60E+01	3.26E+00
CD-109	0.98	88.03	*	3.72	1.45E+00	1.63E+00
SN-126	0.99	87.57	*	37.00	1.44E-01	1.61E-01
TL-208	0.96	583.14	*	30.22	1.80E+00	4.65E-01
		860.37	*	4.48	2.76E+00	2.13E+00
		2614.66	*	35.85	1.67E+00	4.39E-01
PB-210	0.96	46.50	*	4.25	2.28E+00	2.49E+00
BI-212	0.76	727.17	*	11.80	1.63E+00	8.60E-01

Analysis Report for 1606043-10

CP-5010 05-09

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-212	0.76	1620.62		2.75		
PB-212	0.97	238.63	*	44.60	2.26E+00	2.56E-01
		300.09	*	3.41	1.57E+00	1.68E+00
BI-214	0.95	609.31	*	46.30	1.32E+00	2.55E-01
		1120.29	*	15.10	1.42E+00	9.40E-01
		1764.49	*	15.80	1.33E+00	5.38E-01
		2204.22	*	4.98	1.99E+00	1.42E+00
PB-214	0.96	295.21	*	19.19	7.34E-01	4.55E-01
		351.92	*	37.19	1.49E+00	2.36E-01
RA-226	0.99	186.21	*	3.28	5.38E+00	1.01E+01
AC-228	0.93	338.32	*	11.40	2.23E+00	8.15E-01
		911.07	*	27.70	1.67E+00	5.75E-01
		969.11	*	16.60	1.95E+00	9.16E-01
AM-243	0.98	74.67	*	66.00	4.08E-01	1.11E-01
CM-243	0.34	209.75	*	3.29	2.26E+00	1.69E+00
		228.14		10.60		
		277.60	*	14.00	4.44E-01	3.98E-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	0.978	2.60E+01	3.26E+00	
?	CD-109	0.984	1.45E+00	1.63E+00	
?	SN-126	0.997	1.44E-01	1.61E-01	
	TL-208	0.961	1.75E+00	3.16E-01	
	PB-210	0.963	2.28E+00	2.49E+00	
	BI-212	0.768	1.63E+00	8.60E-01	
	PB-212	0.970	2.24E+00	2.53E-01	
	BI-214	0.951	1.34E+00	2.21E-01	
	PB-214	0.969	1.33E+00	2.09E-01	
	RA-226	0.992	5.38E+00	1.01E+01	

Analysis Report for 1606043-10

CP-5010 05-09

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	AC-228	0.934	1.87E+00	4.18E-01	
X	NP-239	0.587			
	AM-243	0.989	4.08E-01	1.11E-01	
	CM-243	0.346	5.39E-01	3.87E-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 1606043-10

CP-5010 05-09

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 2:05:20PM
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	77.63	1.79274E-01	7.24		
	5	106.64	1.83238E-02	51.82	Tol.	NP-239
	6	129.91	2.13173E-02	43.00		
m	10	242.35	4.78117E-02	21.58		
	11	270.85	1.82261E-02	40.44		
	15	327.69	1.45178E-02	45.54	Sum	
M	17	348.06	6.34419E-03	60.86	Sum	
	19	410.06	9.52031E-03	47.59	Tol.	HO-166M
	20	463.83	2.03723E-02	27.80	Sum	
	21	511.31	1.97677E-02	30.75	Sum	
	22	550.31	6.35965E-03	56.59		
M	24	606.25	6.00249E-03	30.17		
	26	705.11	2.83965E-02	40.70	Sum	
M	28	768.69	7.25771E-03	43.52		
m	29	773.57	5.24816E-03	49.44	Sum	
	30	794.92	9.85465E-03	42.14	Tol.	CS-134
M	31	830.86	4.40048E-03	42.35		
m	32	839.16	5.08867E-03	50.99		
	34	899.56	4.79365E-03	43.70		
M	38	1238.80	5.83524E-03	43.82		
m	39	1242.81	4.95186E-03	66.85		
M	40	1372.78	5.20318E-03	33.47		
m	41	1378.39	5.55062E-03	31.38		
M	42	1456.66	3.16428E-03	40.70		
	44	1496.96	2.36111E-03	44.22		
	45	1503.09	2.13675E-03	65.00		
	46	1510.09	2.14506E-03	43.43		
	47	1524.04	2.44444E-03	39.77		
M	48	1583.98	1.77685E-03	35.39		
m	49	1588.99	6.75758E-03	25.71		
	50	1629.70	4.50292E-03	31.00		
	51	1649.22	1.73611E-03	53.22		
	52	1747.77	2.22222E-03	35.36		
	54	2062.56	1.25000E-03	63.83		
	55	2103.74	2.50992E-03	53.29	S-Esc	

Analysis Report for 1606043-10

CP-5010 05-09

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
56	2188.16	2.22222E-03	35.36	Sum	
58	2358.03	2.48737E-03	43.25		

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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	7.18E-01	1.21E+00	1.21E+00
+	NA-22	1274.54		99.94	2.18E-02	1.72E-01	1.72E-01
+	NA-24	1368.53		99.99	1.09E+02	5.78E+02	3.68E+03
		2754.09		99.86	0.00E+00		5.78E+02
+	AL-26	1808.65		99.76	1.59E-02	1.20E-01	1.20E-01
+	K-40	1460.81	*	10.67	2.60E+01	1.36E+00	1.36E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-2.57E-02	1.01E-01	1.01E-01
		78.34		96.00	3.57E-01		1.33E-01
+	SC-46	889.25		99.98	5.21E-02	1.48E-01	1.48E-01
		1120.51		99.99	1.40E-01		2.17E-01
+	V-48	983.52		99.98	9.39E-02	2.05E-01	2.05E-01
		1312.10		97.50	-5.16E-02		2.24E-01
+	CR-51	320.08		9.83	-5.30E-01	1.15E+00	1.15E+00
+	MN-54	834.83		99.97	-5.03E-02	1.35E-01	1.35E-01
+	CO-56	846.75		99.96	-1.22E-02	1.26E-01	1.26E-01
		1037.75		14.03	-1.34E-01		1.02E+00
		1238.25		67.00	-5.44E-02		2.85E-01
		1771.40		15.51	1.24E-01		7.11E-01
		2598.48		16.90	-1.84E-01		5.93E-01
+	CO-57	122.06		85.51	-4.12E-02	8.00E-02	8.00E-02
		136.48		10.60	-2.00E-02		6.83E-01
+	CO-58	810.76		99.40	-5.42E-02	1.30E-01	1.30E-01
+	FE-59	1099.22		56.50	8.12E-02	2.98E-01	2.98E-01
		1291.56		43.20	1.81E-01		4.40E-01
+	CO-60	1173.22		100.00	7.82E-02	1.52E-01	1.62E-01
		1332.49		100.00	1.09E-02		1.52E-01

Analysis Report for 1606043-10

CP-5010 05-09

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZN-65	1115.52		50.75	4.24E-03	2.88E-01	2.88E-01
+	GA-67	93.31		35.70	3.63E+00	1.86E+00	1.86E+00
		208.95		2.24	1.53E+01		3.00E+01
		300.22		16.00	-7.03E+00		4.58E+00
+	SE-75	121.11		16.70	-2.43E-01	1.24E-01	4.23E-01
		136.00		59.20	-5.84E-02		1.24E-01
		264.65		59.80	3.82E-03		1.60E-01
		279.53		25.20	3.93E-02		4.13E-01
		400.65		11.40	-6.46E-01		8.84E-01
+	RB-82	776.52		13.00	2.09E-01	1.23E+00	1.23E+00
+	RB-83	520.41		46.00	-6.09E-02	2.34E-01	2.34E-01
		529.64		30.30	1.37E-01		3.94E-01
		552.65		16.40	-2.78E-01		7.00E-01
+	KR-85	513.99		0.43	2.90E+00	3.66E+01	3.66E+01
+	SR-85	513.99		99.27	1.40E-02	1.76E-01	1.76E-01
+	Y-88	898.02		93.40	1.60E-02	1.05E-01	1.56E-01
		1836.01		99.38	2.47E-03		1.05E-01
+	NB-93M	16.57		9.43	4.51E+01	1.24E+02	1.24E+02
+	NB-94	702.63		100.00	-6.18E-03	1.16E-01	1.24E-01
		871.10		100.00	5.91E-03		1.16E-01
+	NB-95	765.79		99.81	1.12E-01	1.72E-01	1.72E-01
+	NB-95M	235.69		25.00	7.01E+00	3.73E+00	3.73E+00
+	ZR-95	724.18		43.70	-1.35E-01	2.60E-01	3.80E-01
		756.72		55.30	1.14E-01		2.60E-01
+	MO-99	181.06		6.20	2.48E+00	1.00E+01	1.25E+01
		739.58		12.80	-1.95E+00		1.00E+01
		778.00		4.50	1.05E+01		2.57E+01
+	RU-103	497.08		89.00	-3.48E-02	1.34E-01	1.34E-01
+	RU-106	621.84		9.80	-1.53E-01	1.07E+00	1.07E+00
+	AG-108M	433.93		89.90	-8.29E-03	1.05E-01	1.05E-01
		614.37		90.40	0.00E+00		1.40E-01
		722.95		90.50	-2.42E-01		1.52E-01
+	CD-109	88.03	*	3.72	1.45E+00	2.66E+00	2.66E+00
+	AG-110M	657.75		93.14	-2.56E-02	1.36E-01	1.36E-01
		677.61		10.53	-4.12E-01		1.08E+00
		706.67		16.46	1.79E-01		8.01E-01
		763.93		21.98	-9.82E-02		5.79E-01
		884.67		71.63	8.67E-02		1.96E-01
		1384.27		23.94	3.01E-03		5.41E-01
+	CD-113M	263.70		0.02	-2.03E+00	3.94E+02	3.94E+02
+	SN-113	255.12		1.93	-1.19E+00	1.63E-01	4.80E+00
		391.69		64.90	-7.46E-02		1.63E-01
+	TE123M	159.00		84.10	-5.34E-02	8.47E-02	8.47E-02
+	SB-124	602.71		97.87	-1.56E-02	1.30E-01	1.30E-01
		645.85		7.26	4.51E-01		1.81E+00
		722.78		11.10	-2.19E+00		1.38E+00
		1691.02		49.00	8.04E-02		2.36E-01
+	I-125	35.49		6.49	4.38E-01	3.32E+00	3.32E+00

Analysis Report for 1606043-10

CP-5010 05-09

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-125	176.33		6.89	-2.63E-01	3.37E-01	1.05E+00
		427.89		29.33	7.37E-02		3.37E-01
		463.38		10.35	8.02E-01		1.21E+00
		600.56		17.80	9.10E-03		6.75E-01
		635.90		11.32	-2.33E-01		9.89E-01
+	SB-126	414.70		83.30	7.40E-02	2.03E-01	2.04E-01
		666.33		99.60	-3.24E-02		2.03E-01
		695.00		99.60	1.07E-01		2.26E-01
		720.50		53.80	6.02E-02		4.01E-01
+	SN-126	87.57	*	37.00	1.44E-01	2.64E-01	2.64E-01
+	SB-127	473.00		25.00	1.33E+00	1.80E+00	2.33E+00
		685.20		35.70	-1.36E-01		1.80E+00
		783.80		14.70	-2.32E-02		4.67E+00
+	I-129	29.78		57.00	-2.19E-02	6.06E-01	6.06E-01
		33.60		13.20	3.69E-01		1.72E+00
		39.58		7.52	-2.50E-01		1.96E+00
+	I-131	284.30		6.05	1.69E+00	2.60E-01	3.51E+00
		364.48		81.20	2.89E-02		2.60E-01
		636.97		7.26	9.99E-01		3.49E+00
		722.89		1.80	-2.66E+01		1.67E+01
+	TE-132	49.72		13.10	-1.25E+00	7.69E-01	5.85E+00
		228.16		88.00	1.36E-01		7.69E-01
+	BA-133	81.00		33.00	-1.31E+00	2.26E-01	2.63E-01
		302.84		17.80	5.76E-02		5.80E-01
		356.01		60.00	-1.99E-02		2.26E-01
+	I-133	529.87		86.30	6.48E+01	1.86E+02	1.86E+02
+	XE-133	81.00		38.00	-3.78E+00	7.59E-01	7.59E-01
+	CS-134	563.23		8.38	-3.50E-01	1.30E-01	1.43E+00
		569.32		15.43	-2.10E-02		7.21E-01
		604.70		97.60	2.49E-04		1.30E-01
		795.84		85.40	8.71E-02		1.62E-01
		801.93		8.73	-1.18E-01		1.35E+00
+	CS-135	268.24		16.00	7.70E-02	6.66E-01	6.66E-01
+	I-135	1131.51		22.50	-3.65E+09	4.47E+09	5.28E+09
		1260.41		28.60	1.29E+09		4.47E+09
		1678.03		9.54	7.90E+08		9.55E+09
+	CS-136	153.22		7.46	8.96E-01	2.11E-01	1.65E+00
		163.89		4.61	4.93E-01		2.43E+00
		176.55		13.56	-2.94E-01		8.61E-01
		273.65		12.66	2.08E-01		1.36E+00
		340.57		48.50	1.07E-02		4.42E-01
		818.50		99.70	1.08E-01		2.11E-01
		1048.07		79.60	-6.36E-02		2.56E-01
		1235.34		19.70	1.09E-01		1.40E+00
+	CS-137	661.65		85.12	3.72E-02	1.56E-01	1.56E-01
+	LA-138	788.74		34.00	2.36E-02	2.11E-01	4.16E-01
		1435.80		66.00	3.53E-02		2.11E-01
+	CE-139	165.85		80.35	1.28E-02	9.07E-02	9.07E-02
+	BA-140	162.64		6.70	-6.41E-01	6.63E-01	1.64E+00

Analysis Report for 1606043-10

CP-5010 05-09

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	304.84	4.50	-1.52E-01	6.63E-01	3.35E+00
		423.70	3.20	1.80E+00		5.26E+00
		437.55	2.00	3.63E+00		7.99E+00
		537.32	25.00	-2.86E-01		6.63E-01
+	LA-140	328.77	20.50	2.76E-01	2.17E-01	8.34E-01
		487.03	45.50	8.98E-02		3.75E-01
		815.85	23.50	-2.90E-01		8.64E-01
		1596.49	95.49	-8.88E-02		2.17E-01
+	CE-141	145.44	48.40	6.82E-02	1.90E-01	1.90E-01
+	CE-143	57.36	11.80	-3.78E+01	2.73E+01	7.99E+01
		293.26	42.00	2.80E+01		2.73E+01
		664.55	5.20	8.30E+01		2.43E+02
+	CE-144	133.54	10.80	6.33E-02	6.64E-01	6.64E-01
+	PM-144	476.78	42.00	-3.33E-02	1.17E-01	2.60E-01
		618.01	98.60	4.13E-02		1.17E-01
		696.49	99.49	7.87E-02		1.40E-01
+	PM-145	36.85	21.70	1.77E-01	4.15E-01	8.02E-01
		37.36	39.70	-3.47E-01		4.15E-01
		42.30	15.10	4.15E-01		8.88E-01
		72.40	2.31	-8.50E+00		4.80E+00
+	PM-146	453.90	39.94	1.31E-01	2.76E-01	2.76E-01
		735.90	14.01	2.49E-02		9.33E-01
		747.13	13.10	2.48E-01		9.80E-01
+	ND-147	91.11	28.90	1.93E-01	6.00E-01	6.00E-01
		531.02	13.10	2.79E-01		1.45E+00
+	PM-149	285.90	3.10	1.66E+01	5.36E+01	5.36E+01
+	EU-152	121.78	20.50	-1.68E-01	3.26E-01	3.26E-01
		244.69	5.40	-1.36E-01		2.09E+00
		344.27	19.13	-2.62E-02		4.93E-01
		778.89	9.20	4.81E-01		1.30E+00
		964.01	10.40	1.74E-01		1.60E+00
		1085.78	7.22	7.61E-01		2.17E+00
		1112.02	9.60	4.52E-01		1.54E+00
		1407.95	14.94	2.83E-01		1.03E+00
+	GD-153	97.43	31.30	-3.68E-01	2.31E-01	2.31E-01
		103.18	22.20	-7.57E-02		3.09E-01
+	EU-154	123.07	40.50	3.76E-02	1.70E-01	1.70E-01
		723.30	19.70	-1.11E+00		7.00E-01
		873.19	11.50	-2.36E-02		9.98E-01
		996.32	10.30	-6.64E-01		1.18E+00
		1004.76	17.90	-4.91E-02		7.41E-01
		1274.45	35.50	6.11E-02		4.83E-01
+	EU-155	86.50	30.90	4.09E-01	3.24E-01	3.24E-01
		105.30	20.70	8.79E-02		3.45E-01
+	EU-156	811.77	10.40	-3.59E-01	1.78E+00	1.78E+00
		1153.47	7.20	1.14E+00		3.50E+00
		1230.71	8.90	-3.05E-01		2.70E+00
+	HO-166M	184.41	72.60	2.13E-01	1.41E-01	1.41E-01
		280.45	29.60	7.26E-02		3.29E-01

Analysis Report for 1606043-10

CP-5010 05-09

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	HO-166M	410.94		11.10	9.02E-02	1.41E-01	9.61E-01
		711.69		54.10	7.55E-03		2.39E-01
+	TM-171	66.72		0.14	-1.24E+02	6.77E+01	6.77E+01
+	HF-172	81.75		4.52	-8.82E+00	6.09E-01	1.85E+00
		125.81		11.30	2.23E-01		6.09E-01
+	LU-172	181.53		20.60	3.43E-01	5.68E-01	1.00E+00
		810.06		16.63	-9.43E-02		1.88E+00
		912.12		15.25	7.32E+00		4.08E+00
		1093.66		62.50	-2.84E-01		5.68E-01
+	LU-173	100.72		5.24	5.37E-01	5.08E-01	1.36E+00
		272.11		21.20	1.25E-01		5.08E-01
+	HF-175	343.40		84.00	-6.51E-03	1.34E-01	1.34E-01
+	LU-176	88.34		13.30	2.74E-01	9.87E-02	7.61E-01
		201.83		86.00	5.06E-04		1.03E-01
		306.78		94.00	2.92E-02		9.87E-02
+	TA-182	67.75		41.20	-6.22E-02	2.44E-01	2.44E-01
		1121.30		34.90	5.28E-01		6.13E-01
		1189.05		16.23	8.10E-02		1.02E+00
		1221.41		26.98	1.41E-02		6.82E-01
		1231.02		11.44	5.20E-01		1.50E+00
+	IR-192	308.46		29.68	1.73E-02	2.44E-01	3.40E-01
		468.07		48.10	-7.11E-03		2.44E-01
+	HG-203	279.19		77.30	-1.02E-02	1.47E-01	1.47E-01
+	BI-207	569.67		97.72	-4.82E-03	1.14E-01	1.14E-01
		1063.62		74.90	2.12E-02		1.95E-01
+	TL-208	583.14	*	30.22	1.80E+00	2.03E-01	6.06E-01
		860.37	*	4.48	2.76E+00		3.33E+00
		2614.66	*	35.85	1.67E+00		2.03E-01
+	BI-210M	262.00		45.00	-9.60E-02	1.96E-01	1.96E-01
		300.00		23.00	-7.06E-01		4.60E-01
+	PB-210	46.50	*	4.25	2.28E+00	4.06E+00	4.06E+00
+	PB-211	404.84		2.90	9.12E-01	3.57E+00	3.57E+00
		831.96		2.90	-1.02E+00		4.44E+00
+	BI-212	727.17	*	11.80	1.63E+00	1.28E+00	1.28E+00
		1620.62		2.75	-8.08E-02		4.02E+00
+	PB-212	238.63	*	44.60	2.26E+00	3.49E-01	3.49E-01
		300.09	*	3.41	1.57E+00		2.74E+00
+	BI-214	609.31	*	46.30	1.32E+00	3.00E-01	3.00E-01
		1120.29	*	15.10	1.42E+00		1.45E+00
		1764.49	*	15.80	1.33E+00		4.90E-01
		2204.22	*	4.98	1.99E+00		1.83E+00
+	PB-214	295.21	*	19.19	7.34E-01	3.95E-01	7.21E-01
		351.92	*	37.19	1.49E+00		3.95E-01
+	RN-219	401.80		6.50	-3.41E-01	1.52E+00	1.52E+00
+	RA-223	323.87		3.88	-2.34E-01	2.33E+00	2.33E+00
+	RA-224	240.98		3.95	2.83E+01	5.07E+00	5.07E+00
+	RA-225	40.00		31.00	-9.06E-02	7.13E-01	7.13E-01
+	RA-226	186.21	*	3.28	5.38E+00	3.65E+00	3.65E+00

Analysis Report for 1606043-10

CP-5010 05-09

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-227	50.10		8.40	-2.79E-01	1.30E+00	1.30E+00
		236.00		11.50	2.66E+00		1.41E+00
		256.20		6.30	1.99E-02		1.40E+00
+	AC-228	338.32	*	11.40	2.23E+00	8.08E-01	1.20E+00
		911.07	*	27.70	1.67E+00		8.08E-01
		969.11	*	16.60	1.95E+00		1.36E+00
+	TH-230	48.44		16.90	6.76E-01	7.23E-01	7.23E-01
		62.85		4.60	2.21E+00		2.25E+00
		67.67		0.37	-6.55E+00		2.57E+01
+	PA-231	283.67		1.60	2.91E+00	4.48E+00	6.04E+00
		302.67		2.30	4.45E-01		4.48E+00
+	TH-231	25.64		14.70	-8.77E-01	1.32E+00	4.46E+00
		84.21		6.40	4.62E-01		1.32E+00
+	PA-233	311.98		38.60	2.53E-02	3.09E-01	3.09E-01
+	PA-234	131.20		20.40	3.34E-01	3.79E-01	3.79E-01
		733.99		8.80	6.35E-01		1.50E+00
		946.00		12.00	-2.65E-01		1.07E+00
+	PA-234M	1001.03		0.92	1.89E+00	1.52E+01	1.52E+01
+	TH-234	63.29		3.80	7.23E-01	2.70E+00	2.70E+00
+	U-235	143.76		10.50	3.14E-01	7.33E-01	7.33E-01
		163.35		4.70	2.99E-01		1.47E+00
		205.31		4.70	5.76E-01		1.87E+00
+	NP-237	86.50		12.60	1.00E+00	7.92E-01	7.92E-01
+	NP-239	106.10	*	22.70	3.40E+00	5.78E+00	5.78E+00
		228.18		10.70	2.35E+00		1.33E+01
		277.60	*	14.10	6.41E+00		9.26E+00
+	AM-241	59.54		35.90	-3.85E-02	2.70E-01	2.70E-01
+	AM-243	74.67	*	66.00	4.08E-01	2.93E-01	2.93E-01
+	CM-243	209.75	*	3.29	2.26E+00	6.41E-01	2.70E+00
		228.14		10.60	1.63E-01		9.22E-01
		277.60	*	14.00	4.44E-01		6.41E-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 1606043-10

CP-5010 05-09

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	7.18E-01	5.74E-01
	NA-22	1274.54		99.94	1.72E-01	1.72E-01	2.18E-02	7.90E-02
	NA-24	1368.53		99.99	3.68E+03	5.78E+02	1.09E+02	1.66E+03
		2754.09		99.86	5.78E+02		0.00E+00	0.00E+00
	AL-26	1808.65		99.76	1.20E-01	1.20E-01	1.59E-02	5.07E-02
+	K-40	1460.81	*	10.67	1.36E+00	1.36E+00	2.60E+01	6.07E-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	1.01E-01	1.01E-01	-2.57E-02	4.91E-02
		78.34		96.00	1.33E-01		3.57E-01	6.55E-02
	SC-46	889.25		99.98	1.48E-01	1.48E-01	5.21E-02	6.84E-02
		1120.51		99.99	2.17E-01		1.40E-01	1.02E-01
	V-48	983.52		99.98	2.05E-01	2.05E-01	9.39E-02	9.39E-02
		1312.10		97.50	2.24E-01		-5.16E-02	1.01E-01
	CR-51	320.08		9.83	1.15E+00	1.15E+00	-5.30E-01	5.46E-01
	MN-54	834.83		99.97	1.35E-01	1.35E-01	-5.03E-02	6.26E-02
	CO-56	846.75		99.96	1.26E-01	1.26E-01	-1.22E-02	5.73E-02
		1037.75		14.03	1.02E+00		-1.34E-01	4.65E-01
		1238.25		67.00	2.85E-01		-5.44E-02	1.31E-01
		1771.40		15.51	7.11E-01		1.24E-01	2.91E-01
		2598.48		16.90	5.93E-01		-1.84E-01	2.22E-01
	CO-57	122.06		85.51	8.00E-02	8.00E-02	-4.12E-02	3.86E-02
		136.48		10.60	6.83E-01		-2.00E-02	3.30E-01
	CO-58	810.76		99.40	1.30E-01	1.30E-01	-5.42E-02	5.97E-02
	FE-59	1099.22		56.50	2.98E-01	2.98E-01	8.12E-02	1.36E-01
		1291.56		43.20	4.40E-01		1.81E-01	2.01E-01
	CO-60	1173.22		100.00	1.62E-01	1.52E-01	7.82E-02	7.44E-02
		1332.49		100.00	1.52E-01		1.09E-02	6.86E-02
	ZN-65	1115.52		50.75	2.88E-01	2.88E-01	4.24E-03	1.31E-01
	GA-67	93.31		35.70	1.86E+00	1.86E+00	3.63E+00	9.09E-01
		208.95		2.24	3.00E+01		1.53E+01	1.45E+01
		300.22		16.00	4.58E+00		-7.03E+00	2.20E+00
	SE-75	121.11		16.70	4.23E-01	1.24E-01	-2.43E-01	2.04E-01
		136.00		59.20	1.24E-01		-5.84E-02	5.97E-02
		264.65		59.80	1.60E-01		3.82E-03	7.68E-02
		279.53		25.20	4.13E-01		3.93E-02	1.98E-01
		400.65		11.40	8.84E-01		-6.46E-01	4.18E-01
	RB-82	776.52		13.00	1.23E+00	1.23E+00	2.09E-01	5.67E-01
	RB-83	520.41		46.00	2.34E-01	2.34E-01	-6.09E-02	1.09E-01
		529.64		30.30	3.94E-01		1.37E-01	1.85E-01
		552.65		16.40	7.00E-01		-2.78E-01	3.27E-01
	KR-85	513.99		0.43	3.66E+01	3.66E+01	2.90E+00	1.75E+01
	SR-85	513.99		99.27	1.76E-01	1.76E-01	1.40E-02	8.44E-02
	Y-88	898.02		93.40	1.56E-01	1.05E-01	1.60E-02	7.20E-02
		1836.01		99.38	1.05E-01		2.47E-03	4.23E-02
	NB-93M	16.57		9.43	1.24E+02	1.24E+02	4.51E+01	6.04E+01

Analysis Report for 1606043-10

CP-5010 05-09

	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	1.24E-01	1.16E-01	-6.18E-03	5.78E-02
		871.10		100.00	1.16E-01		5.91E-03	5.27E-02
	NB-95	765.79		99.81	1.72E-01	1.72E-01	1.12E-01	8.06E-02
	NB-95M	235.69		25.00	3.73E+00	3.73E+00	7.01E+00	1.82E+00
	ZR-95	724.18		43.70	3.80E-01	2.60E-01	-1.35E-01	1.79E-01
		756.72		55.30	2.60E-01		1.14E-01	1.21E-01
	MO-99	181.06		6.20	1.25E+01	1.00E+01	2.48E+00	6.03E+00
		739.58		12.80	1.00E+01		-1.95E+00	4.68E+00
		778.00		4.50	2.57E+01		1.05E+01	1.18E+01
	RU-103	497.08		89.00	1.34E-01	1.34E-01	-3.48E-02	6.29E-02
	RU-106	621.84		9.80	1.07E+00	1.07E+00	-1.53E-01	4.93E-01
	AG-108M	433.93		89.90	1.05E-01	1.05E-01	-8.29E-03	4.96E-02
		614.37		90.40	1.40E-01		0.00E+00	6.60E-02
		722.95		90.50	1.52E-01		-2.42E-01	7.11E-02
+	CD-109	88.03	*	3.72	2.66E+00	2.66E+00	1.45E+00	1.30E+00
	AG-110M	657.75		93.14	1.36E-01	1.36E-01	-2.56E-02	6.35E-02
		677.61		10.53	1.08E+00		-4.12E-01	4.99E-01
		706.67		16.46	8.01E-01		1.79E-01	3.74E-01
		763.93		21.98	5.79E-01		-9.82E-02	2.68E-01
		884.67		71.63	1.96E-01		8.67E-02	9.05E-02
		1384.27		23.94	5.41E-01		3.01E-03	2.38E-01
	CD-113M	263.70		0.02	3.94E+02	3.94E+02	-2.03E+00	1.89E+02
	SN-113	255.12		1.93	4.80E+00	1.63E-01	-1.19E+00	2.30E+00
		391.69		64.90	1.63E-01		-7.46E-02	7.74E-02
	TE123M	159.00		84.10	8.47E-02	8.47E-02	-5.34E-02	4.07E-02
	SB-124	602.71		97.87	1.30E-01	1.30E-01	-1.56E-02	6.06E-02
		645.85		7.26	1.81E+00		4.51E-01	8.42E-01
		722.78		11.10	1.38E+00		-2.19E+00	6.44E-01
		1691.02		49.00	2.36E-01		8.04E-02	9.77E-02
	I-125	35.49		6.49	3.32E+00	3.32E+00	4.38E-01	1.61E+00
	SB-125	176.33		6.89	1.05E+00	3.37E-01	-2.63E-01	5.04E-01
		427.89		29.33	3.37E-01		7.37E-02	1.59E-01
		463.38		10.35	1.21E+00		8.02E-01	5.77E-01
		600.56		17.80	6.75E-01		9.10E-03	3.16E-01
		635.90		11.32	9.89E-01		-2.33E-01	4.59E-01
	SB-126	414.70		83.30	2.04E-01	2.03E-01	7.40E-02	9.66E-02
		666.33		99.60	2.03E-01		-3.24E-02	9.44E-02
		695.00		99.60	2.26E-01		1.07E-01	1.06E-01
		720.50		53.80	4.01E-01		6.02E-02	1.87E-01
+	SN-126	87.57	*	37.00	2.64E-01	2.64E-01	1.44E-01	1.29E-01
	SB-127	473.00		25.00	2.33E+00	1.80E+00	1.33E+00	1.10E+00
		685.20		35.70	1.80E+00		-1.36E-01	8.42E-01
		783.80		14.70	4.67E+00		-2.32E-02	2.17E+00
	I-129	29.78		57.00	6.06E-01	6.06E-01	-2.19E-02	2.93E-01
		33.60		13.20	1.72E+00		3.69E-01	8.34E-01
		39.58		7.52	1.96E+00		-2.50E-01	9.51E-01
	I-131	284.30		6.05	3.51E+00	2.60E-01	1.69E+00	1.68E+00
		364.48		81.20	2.60E-01		2.89E-02	1.23E-01
		636.97		7.26	3.49E+00		9.99E-01	1.63E+00
		722.89		1.80	1.67E+01		-2.66E+01	7.84E+00
	TE-132	49.72		13.10	5.85E+00	7.69E-01	-1.25E+00	2.84E+00
		228.16		88.00	7.69E-01		1.36E-01	3.72E-01
	BA-133	81.00		33.00	2.63E-01	2.26E-01	-1.31E+00	1.28E-01

Analysis Report for 1606043-10

CP-5010 05-09

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	5.80E-01	2.26E-01	5.76E-02	2.78E-01
	356.01	60.00	2.26E-01		-1.99E-02	1.09E-01
I-133	529.87	86.30	1.86E+02	1.86E+02	6.48E+01	8.74E+01
XE-133	81.00	38.00	7.59E-01	7.59E-01	-3.78E+00	3.70E-01
CS-134	563.23	8.38	1.43E+00	1.30E-01	-3.50E-01	6.73E-01
	569.32	15.43	7.21E-01		-2.10E-02	3.37E-01
	604.70	97.60	1.30E-01		2.49E-04	6.11E-02
	795.84	85.40	1.62E-01		8.71E-02	7.54E-02
	801.93	8.73	1.35E+00		-1.18E-01	6.21E-01
CS-135	268.24	16.00	6.66E-01	6.66E-01	7.70E-02	3.21E-01
I-135	1131.51	22.50	5.28E+09	4.47E+09	-3.65E+09	2.38E+09
	1260.41	28.60	4.47E+09		1.29E+09	2.02E+09
	1678.03	9.54	9.55E+09		7.90E+08	3.96E+09
CS-136	153.22	7.46	1.65E+00	2.11E-01	8.96E-01	7.96E-01
	163.89	4.61	2.43E+00		4.93E-01	1.17E+00
	176.55	13.56	8.61E-01		-2.94E-01	4.14E-01
	273.65	12.66	1.36E+00		2.08E-01	6.55E-01
	340.57	48.50	4.42E-01		1.07E-02	2.13E-01
	818.50	99.70	2.11E-01		1.08E-01	9.77E-02
	1048.07	79.60	2.56E-01		-6.36E-02	1.16E-01
	1235.34	19.70	1.40E+00		1.09E-01	6.42E-01
CS-137	661.65	85.12	1.56E-01	1.56E-01	3.72E-02	7.34E-02
LA-138	788.74	34.00	4.16E-01	2.11E-01	2.36E-02	1.94E-01
	1435.80	66.00	2.11E-01		3.53E-02	9.35E-02
CE-139	165.85	80.35	9.07E-02	9.07E-02	1.28E-02	4.36E-02
BA-140	162.64	6.70	1.64E+00	6.63E-01	-6.41E-01	7.88E-01
	304.84	4.50	3.35E+00		-1.52E-01	1.60E+00
	423.70	3.20	5.26E+00		1.80E+00	2.49E+00
	437.55	2.00	7.99E+00		3.63E+00	3.76E+00
	537.32	25.00	6.63E-01		-2.86E-01	3.09E-01
LA-140	328.77	20.50	8.34E-01	2.17E-01	2.76E-01	3.99E-01
	487.03	45.50	3.75E-01		8.98E-02	1.76E-01
	815.85	23.50	8.64E-01		-2.90E-01	3.98E-01
	1596.49	95.49	2.17E-01		-8.88E-02	9.37E-02
CE-141	145.44	48.40	1.90E-01	1.90E-01	6.82E-02	9.19E-02
CE-143	57.36	11.80	7.99E+01	2.73E+01	-3.78E+01	3.88E+01
	293.26	42.00	2.73E+01		2.80E+01	1.32E+01
	664.55	5.20	2.43E+02		8.30E+01	1.14E+02
CE-144	133.54	10.80	6.64E-01	6.64E-01	6.33E-02	3.21E-01
PM-144	476.78	42.00	2.60E-01	1.17E-01	-3.33E-02	1.23E-01
	618.01	98.60	1.17E-01		4.13E-02	5.46E-02
	696.49	99.49	1.40E-01		7.87E-02	6.55E-02
PM-145	36.85	21.70	8.02E-01	4.15E-01	1.77E-01	3.88E-01
	37.36	39.70	4.15E-01		-3.47E-01	2.00E-01
	42.30	15.10	8.88E-01		4.15E-01	4.30E-01
	72.40	2.31	4.80E+00		-8.50E+00	2.35E+00
PM-146	453.90	39.94	2.76E-01	2.76E-01	1.31E-01	1.31E-01
	735.90	14.01	9.33E-01		2.49E-02	4.34E-01
	747.13	13.10	9.80E-01		2.48E-01	4.55E-01
ND-147	91.11	28.90	6.00E-01	6.00E-01	1.93E-01	2.94E-01
	531.02	13.10	1.45E+00		2.79E-01	6.81E-01
PM-149	285.90	3.10	5.36E+01	5.36E+01	1.66E+01	2.57E+01
EU-152	121.78	20.50	3.26E-01	3.26E-01	-1.68E-01	1.57E-01

Analysis Report for 1606043-10

CP-5010 05-09

	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	2.09E+00	3.26E-01	-1.36E-01	1.01E+00
		344.27		19.13	4.93E-01		-2.62E-02	2.34E-01
		778.89		9.20	1.30E+00		4.81E-01	5.97E-01
		964.01		10.40	1.60E+00		1.74E-01	7.48E-01
		1085.78		7.22	2.17E+00		7.61E-01	9.99E-01
		1112.02		9.60	1.54E+00		4.52E-01	7.04E-01
		1407.95		14.94	1.03E+00		2.83E-01	4.62E-01
	GD-153	97.43		31.30	2.31E-01	2.31E-01	-3.68E-01	1.12E-01
		103.18		22.20	3.09E-01		-7.57E-02	1.49E-01
	EU-154	123.07		40.50	1.70E-01	1.70E-01	3.76E-02	8.21E-02
		723.30		19.70	7.00E-01		-1.11E+00	3.28E-01
		873.19		11.50	9.98E-01		-2.36E-02	4.54E-01
		996.32		10.30	1.18E+00		-6.64E-01	5.32E-01
		1004.76		17.90	7.41E-01		-4.91E-02	3.38E-01
		1274.45		35.50	4.83E-01		6.11E-02	2.21E-01
	EU-155	86.50		30.90	3.24E-01	3.24E-01	4.09E-01	1.59E-01
		105.30		20.70	3.45E-01		8.79E-02	1.67E-01
	EU-156	811.77		10.40	1.78E+00	1.78E+00	-3.59E-01	8.19E-01
		1153.47		7.20	3.50E+00		1.14E+00	1.61E+00
		1230.71		8.90	2.70E+00		-3.05E-01	1.23E+00
	HO-166M	184.41		72.60	1.41E-01	1.41E-01	2.13E-01	6.84E-02
		280.45		29.60	3.29E-01		7.26E-02	1.58E-01
		410.94		11.10	9.61E-01		9.02E-02	4.56E-01
		711.69		54.10	2.39E-01		7.55E-03	1.12E-01
	TM-171	66.72		0.14	6.77E+01	6.77E+01	-1.24E+02	3.30E+01
	HF-172	81.75		4.52	1.85E+00	6.09E-01	-8.82E+00	9.03E-01
		125.81		11.30	6.09E-01		2.23E-01	2.94E-01
	LU-172	181.53		20.60	1.00E+00	5.68E-01	3.43E-01	4.83E-01
		810.06		16.63	1.88E+00		-9.43E-02	8.66E-01
		912.12		15.25	4.08E+00		7.32E+00	1.95E+00
		1093.66		62.50	5.68E-01		-2.84E-01	2.58E-01
	LU-173	100.72		5.24	1.36E+00	5.08E-01	5.37E-01	6.59E-01
		272.11		21.20	5.08E-01		1.25E-01	2.45E-01
	HF-175	343.40		84.00	1.34E-01	1.34E-01	-6.51E-03	6.41E-02
	LU-176	88.34		13.30	7.61E-01	9.87E-02	2.74E-01	3.73E-01
		201.83		86.00	1.03E-01		5.06E-04	4.98E-02
		306.78		94.00	9.87E-02		2.92E-02	4.71E-02
	TA-182	67.75		41.20	2.44E-01	2.44E-01	-6.22E-02	1.19E-01
		1121.30		34.90	6.13E-01		5.28E-01	2.87E-01
		1189.05		16.23	1.02E+00		8.10E-02	4.64E-01
		1221.41		26.98	6.82E-01		1.41E-02	3.14E-01
		1231.02		11.44	1.50E+00		5.20E-01	6.87E-01
	IR-192	308.46		29.68	3.40E-01	2.44E-01	1.73E-02	1.62E-01
		468.07		48.10	2.44E-01		-7.11E-03	1.15E-01
	HG-203	279.19		77.30	1.47E-01	1.47E-01	-1.02E-02	7.08E-02
	BI-207	569.67		97.72	1.14E-01	1.14E-01	-4.82E-03	5.32E-02
		1063.62		74.90	1.95E-01		2.12E-02	8.91E-02
+	TL-208	583.14	*	30.22	6.06E-01	2.03E-01	1.80E+00	2.91E-01
		860.37	*	4.48	3.33E+00		2.76E+00	1.55E+00
		2614.66	*	35.85	2.03E-01		1.67E+00	6.89E-02
	BI-210M	262.00		45.00	1.96E-01	1.96E-01	-9.60E-02	9.37E-02
		300.00		23.00	4.60E-01		-7.06E-01	2.21E-01
+	PB-210	46.50	*	4.25	4.06E+00	4.06E+00	2.28E+00	1.99E+00

Analysis Report for 1606043-10

CP-5010 05-09

	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	3.57E+00	3.57E+00	9.12E-01	1.69E+00
		831.96		2.90	4.44E+00		-1.02E+00	2.05E+00
+	BI-212	727.17	*	11.80	1.28E+00	1.28E+00	1.63E+00	6.03E-01
		1620.62		2.75	4.02E+00		-8.08E-02	1.70E+00
+	PB-212	238.63	*	44.60	3.49E-01	3.49E-01	2.26E+00	1.71E-01
		300.09	*	3.41	2.74E+00		1.57E+00	1.31E+00
+	BI-214	609.31	*	46.30	3.00E-01	3.00E-01	1.32E+00	1.42E-01
		1120.29	*	15.10	1.45E+00		1.42E+00	6.84E-01
		1764.49	*	15.80	4.90E-01		1.33E+00	1.87E-01
		2204.22	*	4.98	1.83E+00		1.99E+00	7.04E-01
+	PB-214	295.21	*	19.19	7.21E-01	3.95E-01	7.34E-01	3.50E-01
		351.92	*	37.19	3.95E-01		1.49E+00	1.91E-01
	RN-219	401.80		6.50	1.52E+00	1.52E+00	-3.41E-01	7.17E-01
	RA-223	323.87		3.88	2.33E+00	2.33E+00	-2.34E-01	1.11E+00
	RA-224	240.98		3.95	5.07E+00	5.07E+00	2.83E+01	2.49E+00
	RA-225	40.00		31.00	7.13E-01	7.13E-01	-9.06E-02	3.45E-01
+	RA-226	186.21	*	3.28	3.65E+00	3.65E+00	5.38E+00	1.78E+00
	TH-227	50.10		8.40	1.30E+00	1.30E+00	-2.79E-01	6.33E-01
		236.00		11.50	1.41E+00		2.66E+00	6.92E-01
		256.20		6.30	1.40E+00		1.99E-02	6.72E-01
+	AC-228	338.32	*	11.40	1.20E+00	8.08E-01	2.23E+00	5.82E-01
		911.07	*	27.70	8.08E-01		1.67E+00	3.85E-01
		969.11	*	16.60	1.36E+00		1.95E+00	6.47E-01
	TH-230	48.44		16.90	7.23E-01	7.23E-01	6.76E-01	3.52E-01
		62.85		4.60	2.25E+00		2.21E+00	1.10E+00
		67.67		0.37	2.57E+01		-6.55E+00	1.25E+01
	PA-231	283.67		1.60	6.04E+00	4.48E+00	2.91E+00	2.90E+00
		302.67		2.30	4.48E+00		4.45E-01	2.15E+00
	TH-231	25.64		14.70	4.46E+00	1.32E+00	-8.77E-01	2.16E+00
		84.21		6.40	1.32E+00		4.62E-01	6.43E-01
	PA-233	311.98		38.60	3.09E-01	3.09E-01	2.53E-02	1.48E-01
	PA-234	131.20		20.40	3.79E-01	3.79E-01	3.34E-01	1.84E-01
		733.99		8.80	1.50E+00		6.35E-01	6.99E-01
		946.00		12.00	1.07E+00		-2.65E-01	4.91E-01
	PA-234M	1001.03		0.92	1.52E+01	1.52E+01	1.89E+00	6.98E+00
	TH-234	63.29		3.80	2.70E+00	2.70E+00	7.23E-01	1.32E+00
	U-235	143.76		10.50	7.33E-01	7.33E-01	3.14E-01	3.55E-01
		163.35		4.70	1.47E+00		2.99E-01	7.09E-01
		205.31		4.70	1.87E+00		5.76E-01	9.02E-01
	NP-237	86.50		12.60	7.92E-01	7.92E-01	1.00E+00	3.87E-01
	NP-239	106.10	*	22.70	5.78E+00	5.78E+00	3.40E+00	2.82E+00
		228.18		10.70	1.33E+01		2.35E+00	6.42E+00
		277.60	*	14.10	9.26E+00		6.41E+00	4.43E+00
	AM-241	59.54		35.90	2.70E-01	2.70E-01	-3.85E-02	1.32E-01
+	AM-243	74.67	*	66.00	2.93E-01	2.93E-01	4.08E-01	1.45E-01
+	CM-243	209.75	*	3.29	2.70E+00	6.41E-01	2.26E+00	1.30E+00
		228.14		10.60	9.22E-01		1.63E-01	4.45E-01
		277.60	*	14.00	6.41E-01		4.44E-01	3.07E-01

Analysis Report for 1606043-10

CP-5010 05-09

+ = 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-5010 05-09

Elapsed Live time: 3600
Elapsed Real Time: 3615

Channel								
1:	0	0	0	0	0	0	0	0
9:	1	133	139	99	105	97	85	108
17:	96	85	91	78	72	77	78	49
25:	53	92	69	58	60	69	61	58
33:	57	63	62	59	53	62	58	50
41:	75	57	69	55	76	77	121	114
49:	73	70	72	68	63	83	83	86
57:	71	88	84	95	102	97	114	167
65:	105	94	114	104	103	128	121	117
73:	133	139	283	308	276	501	146	111
81:	91	94	74	104	137	87	131	219
89:	128	107	140	87	213	178	109	64
97:	68	53	75	84	65	60	55	59
105:	63	79	86	60	70	50	65	62
113:	67	76	75	65	65	66	57	60
121:	49	53	58	54	74	54	47	50
129:	71	102	63	63	50	59	55	53
137:	63	40	68	61	54	58	65	71
145:	64	57	63	46	48	52	53	43
153:	55	55	80	55	39	46	47	47
161:	35	39	44	47	40	48	44	37
169:	48	34	38	49	40	36	40	42
177:	46	48	39	55	54	55	42	52
185:	64	109	146	56	47	44	40	48
193:	55	47	38	42	43	32	44	29
201:	46	42	40	29	41	43	36	28
209:	57	71	54	21	38	43	37	44
217:	52	36	33	43	37	35	40	36
225:	43	39	43	32	32	50	35	31
233:	42	24	37	33	47	90	466	257
241:	63	96	87	37	37	19	25	29
249:	24	37	26	30	18	22	24	32
257:	29	28	31	21	28	18	31	20
265:	27	35	26	28	28	45	63	39
273:	24	23	23	34	37	40	22	20
281:	23	28	30	31	23	30	22	22
289:	24	17	26	23	23	18	57	97
297:	34	26	16	40	42	26	21	16
305:	26	20	26	14	25	23	21	19
313:	16	25	22	26	17	19	18	20
321:	26	20	10	19	23	17	14	40
329:	37	22	21	19	22	21	26	22
337:	29	48	95	46	23	15	20	16
345:	16	17	19	23	32	10	24	158
353:	150	29	15	19	12	14	14	19
361:	17	14	27	21	17	12	17	11

369:	19	11	16	19	16	18	15	17

Sample Title: CP-5010 05-09

Channel								
377:	22	16	11	20	29	17	17	13
385:	23	13	20	20	15	18	18	21
393:	14	10	18	19	20	8	9	17
401:	11	12	19	23	14	24	14	9
409:	24	26	21	16	11	12	13	16
417:	23	16	8	18	16	21	12	11
425:	20	11	13	12	12	10	15	16
433:	8	10	15	9	11	12	15	14
441:	12	9	11	14	20	15	13	12
449:	12	12	12	11	19	19	10	19
457:	16	17	6	12	12	19	29	31
465:	16	14	18	13	8	13	14	14
473:	17	11	21	14	9	13	12	12
481:	20	6	9	10	9	14	15	14
489:	10	11	11	14	9	16	11	13
497:	11	8	12	5	10	16	11	13
505:	12	9	15	10	16	21	63	54
513:	20	14	7	11	13	11	7	9
521:	9	7	11	12	13	8	15	12
529:	10	5	11	17	11	9	8	8
537:	11	11	8	10	13	7	7	11
545:	11	11	11	3	14	22	12	9
553:	6	10	6	4	12	17	9	14
561:	10	9	18	11	14	8	12	16
569:	6	6	13	9	9	8	12	14
577:	7	11	9	9	11	14	85	107
585:	31	7	14	13	7	10	9	11
593:	9	12	10	10	15	16	10	12
601:	8	11	12	6	5	14	10	25
609:	73	112	27	8	15	5	8	11
617:	8	11	6	13	7	7	3	4
625:	11	6	8	10	12	6	10	8
633:	5	8	10	14	6	9	6	10
641:	10	6	8	7	12	7	14	9
649:	7	9	6	8	9	10	4	9
657:	9	15	11	11	9	13	11	9
665:	15	7	9	8	5	12	7	4
673:	8	9	4	4	5	10	14	5
681:	9	9	11	8	14	9	9	5
689:	13	10	4	6	9	11	8	24
697:	10	7	7	10	8	10	6	8
705:	8	11	10	11	8	9	9	7
713:	15	9	8	8	8	9	9	13
721:	11	3	11	7	10	17	28	30
729:	9	5	10	5	11	9	7	10
737:	12	7	6	10	9	7	11	11
745:	10	8	7	5	6	11	5	6
753:	5	9	8	3	8	7	13	11
761:	8	5	8	10	4	8	9	15
769:	17	6	6	6	13	8	5	2
777:	6	7	10	5	9	7	4	9
785:	8	14	7	11	7	9	10	7
793:	8	9	18	10	5	6	4	2

801:	6	9	4	11	6	9	8	4

Sample Title: CP-5010 05-09

Channel								
809:	5	5	9	8	6	5	7	8
817:	9	6	5	5	11	5	3	2
825:	12	3	6	4	4	12	8	7
833:	6	5	6	11	9	7	12	5
841:	5	6	5	8	3	4	5	8
849:	6	3	7	5	9	8	5	3
857:	7	3	11	13	18	9	3	4
865:	5	4	5	3	8	5	1	9
873:	3	6	3	7	5	4	8	1
881:	6	7	5	5	12	7	7	6
889:	4	8	9	8	3	2	10	3
897:	3	7	7	14	4	4	6	6
905:	7	9	8	5	8	19	54	55
913:	9	5	7	7	7	2	2	3
921:	4	1	6	5	9	7	5	3
929:	3	7	3	3	6	5	4	3
937:	3	4	6	6	1	11	7	2
945:	7	2	8	2	10	6	8	5
953:	2	2	4	7	8	2	4	10
961:	4	4	7	15	15	8	11	24
969:	43	33	5	11	6	6	5	10
977:	4	4	4	4	2	9	7	7
985:	9	3	3	4	6	4	6	6
993:	2	4	5	8	2	7	2	7
1001:	7	5	10	3	4	7	4	3
1009:	4	5	5	9	5	4	4	2
1017:	9	6	0	5	3	4	3	2
1025:	10	4	6	4	7	3	3	7
1033:	6	3	9	3	5	3	4	5
1041:	5	7	5	5	5	4	4	3
1049:	4	7	3	8	3	3	1	5
1057:	5	3	8	6	3	7	5	10
1065:	6	3	4	6	6	4	5	3
1073:	2	5	4	5	3	2	6	7
1081:	8	2	5	8	4	6	4	13
1089:	5	3	6	9	2	4	5	5
1097:	7	4	6	6	6	4	5	3
1105:	7	6	4	2	3	8	6	3
1113:	8	3	7	6	4	4	12	23
1121:	19	8	3	5	8	3	2	5
1129:	4	5	6	3	4	3	12	8
1137:	6	10	4	7	6	5	1	6
1145:	8	6	7	3	3	7	6	6
1153:	6	7	8	6	5	8	3	5
1161:	7	7	5	2	8	5	7	3
1169:	5	6	4	4	5	10	5	8
1177:	3	4	3	11	5	5	8	5
1185:	4	8	4	4	4	5	8	5
1193:	8	3	10	3	8	5	11	12
1201:	2	7	3	5	7	7	10	6
1209:	5	10	8	7	4	5	11	6
1217:	10	10	5	7	8	6	2	8
1225:	7	4	4	7	5	3	8	7

1233:	3	6	6	2	5	14	7	8

Sample Title: CP-5010 05-09

Channel								
1241:	4	11	9	9	4	4	9	3
1249:	4	4	4	5	3	5	5	1
1257:	2	3	9	7	1	6	1	4
1265:	2	4	3	2	5	8	4	7
1273:	4	1	4	4	2	7	5	4
1281:	8	1	3	3	2	1	3	2
1289:	2	4	5	4	6	8	3	1
1297:	7	2	6	2	3	2	5	2
1305:	5	3	3	5	2	3	2	2
1313:	2	3	6	3	2	7	5	0
1321:	1	4	4	4	5	2	4	1
1329:	3	3	3	1	4	6	3	5
1337:	3	3	3	3	2	4	2	2
1345:	3	3	2	3	3	7	3	3
1353:	4	2	4	2	2	8	5	3
1361:	1	4	3	3	4	4	1	1
1369:	2	2	2	9	4	2	3	5
1377:	2	9	2	1	3	2	0	2
1385:	2	2	3	3	3	4	1	2
1393:	4	2	1	3	2	2	3	1
1401:	3	3	2	3	4	5	4	2
1409:	5	2	1	1	1	3	1	1
1417:	1	2	4	3	2	3	1	4
1425:	2	3	2	2	3	2	1	6
1433:	1	2	6	0	1	3	1	2
1441:	1	2	0	3	0	1	3	2
1449:	2	3	1	0	1	2	1	5
1457:	3	5	30	147	196	77	14	2
1465:	1	2	1	1	0	1	1	1
1473:	1	2	1	0	2	1	1	1
1481:	2	0	2	0	1	1	2	2
1489:	3	3	0	2	1	0	1	4
1497:	6	0	1	1	3	2	4	1
1505:	1	1	0	1	3	4	1	0
1513:	0	1	0	0	2	3	1	0
1521:	1	1	3	3	2	0	0	2
1529:	0	0	0	0	3	0	0	2
1537:	2	0	2	0	2	2	2	2
1545:	1	1	0	0	0	0	1	1
1553:	2	0	1	0	1	0	0	1
1561:	1	1	1	0	1	0	1	2
1569:	0	2	1	1	1	0	0	0
1577:	0	1	0	5	0	1	3	0
1585:	0	2	1	10	5	2	4	5
1593:	5	0	1	0	0	0	2	1
1601:	1	2	1	3	0	0	1	2
1609:	2	1	1	1	1	2	2	0
1617:	1	1	2	3	1	1	1	0
1625:	0	1	1	4	4	4	3	1
1633:	1	0	1	2	3	2	3	1
1641:	1	2	0	0	1	0	0	2
1649:	3	2	0	0	1	1	2	1
1657:	1	0	0	0	0	0	1	1

1665:	1	0	0	1	1	1	2	1

Sample Title: CP-5010 05-09

Channel								
1673:	1	2	0	1	0	0	0	3
1681:	1	1	1	0	1	1	0	1
1689:	2	1	1	0	2	1	0	0
1697:	0	0	0	0	1	2	0	1
1705:	2	1	1	2	1	0	4	1
1713:	0	0	1	1	0	0	1	2
1721:	2	0	0	2	1	0	2	2
1729:	3	3	0	3	1	1	0	3
1737:	0	1	2	0	0	0	0	0
1745:	0	1	4	3	0	0	1	0
1753:	2	0	1	1	0	0	1	0
1761:	1	1	7	14	8	1	1	0
1769:	0	2	1	0	1	1	1	1
1777:	0	0	1	0	0	2	0	0
1785:	0	0	1	0	1	2	1	0
1793:	0	2	1	1	1	0	0	0
1801:	0	2	0	1	1	1	1	1
1809:	3	1	0	1	1	1	1	1
1817:	2	2	0	2	1	2	0	3
1825:	0	3	1	0	0	0	1	1
1833:	1	1	0	0	1	0	1	2
1841:	0	1	0	2	0	1	1	2
1849:	2	0	0	0	1	0	0	0
1857:	3	1	1	0	1	0	1	0
1865:	0	1	1	1	1	0	1	1
1873:	0	1	2	0	1	0	0	0
1881:	0	0	0	1	1	3	1	2
1889:	3	0	3	2	0	3	0	1
1897:	0	1	1	0	1	1	0	1
1905:	0	1	0	1	0	0	1	0
1913:	2	1	2	2	1	0	0	1
1921:	1	0	2	2	1	2	1	0
1929:	1	0	0	0	0	1	0	3
1937:	0	0	1	2	0	4	2	0
1945:	1	1	0	1	0	0	0	1
1953:	3	2	0	3	1	1	3	1
1961:	2	0	3	2	1	0	0	0
1969:	4	0	0	0	0	1	0	1
1977:	0	0	1	0	0	0	0	0
1985:	0	0	1	0	1	3	1	1
1993:	0	1	1	0	0	0	0	0
2001:	1	1	1	1	0	0	0	1
2009:	0	0	1	1	1	1	3	0
2017:	0	0	0	0	0	0	0	1
2025:	2	0	1	3	2	1	1	0
2033:	0	1	0	1	0	0	0	0
2041:	3	0	1	0	0	1	0	0
2049:	1	0	1	1	2	1	0	0
2057:	0	0	0	0	2	2	2	0
2065:	1	1	1	2	1	2	3	1
2073:	0	1	2	0	1	1	0	1
2081:	0	3	1	0	0	0	1	0
2089:	1	1	0	1	1	0	0	1

2097:	3	0	0	2	0	2	5	3

Sample Title: CP-5010 05-09

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

2529:	1	0	0	0	0	0	1	0

Sample Title: CP-5010 05-09

Channel								
2537:	0	0	0	0	1	0	0	1
2545:	1	0	0	1	0	0	1	0
2553:	0	0	0	1	0	0	0	0
2561:	0	0	0	1	0	0	0	0
2569:	0	1	0	0	1	0	0	0
2577:	0	0	0	0	0	1	1	0
2585:	0	0	0	1	0	0	2	0
2593:	1	0	0	0	0	1	1	1
2601:	0	0	1	0	0	0	0	0
2609:	0	1	0	7	17	26	14	6
2617:	1	0	0	0	1	1	0	0
2625:	0	1	0	0	1	0	1	0
2633:	1	0	1	0	0	0	0	1
2641:	0	0	0	0	0	0	0	0
2649:	1	0	0	0	0	1	2	0
2657:	0	0	0	0	1	0	0	0
2665:	0	0	0	0	0	0	0	1
2673:	0	2	0	0	0	0	1	0
2681:	0	0	0	2	0	1	0	1
2689:	1	0	0	0	0	0	0	0
2697:	2	0	0	0	0	0	0	0
2705:	0	1	0	0	1	0	1	0
2713:	0	0	0	0	0	0	0	0
2721:	0	1	0	2	0	0	1	0
2729:	0	0	0	0	0	0	0	0
2737:	0	0	1	0	0	0	0	0
2745:	0	1	0	0	0	0	0	0
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	0	0	0	0	1
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:	0	0	1	0	0	1	1	1
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	0	0	0	0	1
2817:	0	1	0	0	0	0	0	0
2825:	0	0	0	0	0	0	0	0
2833:	0	0	0	0	0	0	1	2
2841:	0	0	0	0	0	0	0	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	0	1	0	0	0
2873:	0	0	0	1	0	1	0	1
2881:	0	0	0	1	1	0	1	0
2889:	0	1	1	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	0	1	0	1
2913:	0	0	0	0	2	0	0	0
2921:	1	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	1	0	0	0	1	2	0
2945:	0	0	0	0	1	0	0	0
2953:	0	0	0	0	0	0	0	1

2961:	0	0	0	0	0	0	0	0

Sample Title: CP-5010 05-09

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

3393:	1	0	0	0	0	0	0	0

Sample Title: CP-5010 05-09

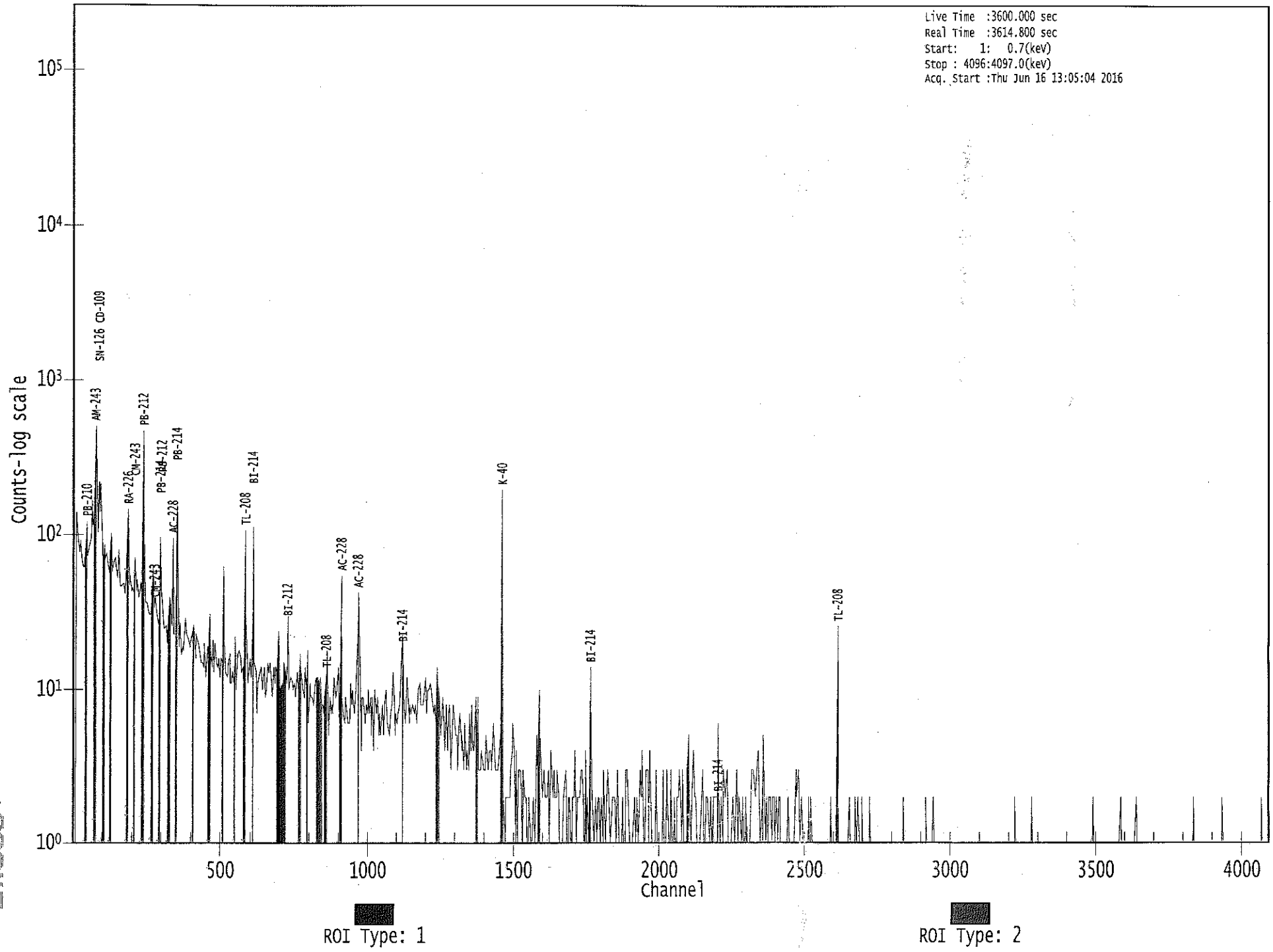
Channel								
3401:	0	0	0	1	0	1	0	0
3409:	0	0	0	0	0	0	1	0
3417:	0	0	0	0	0	0	0	0
3425:	1	0	0	0	0	0	0	0
3433:	0	0	0	1	0	0	0	0
3441:	0	0	0	0	0	0	0	1
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	1	0	0	0	0	0	0	0
3473:	1	0	1	1	0	0	0	0
3481:	0	0	0	0	1	0	0	1
3489:	0	0	2	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	1	0
3529:	0	0	0	0	1	0	0	0
3537:	0	1	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	0	0	0	0	1	0
3569:	0	0	0	0	0	0	0	0
3577:	0	1	1	1	1	0	0	0
3585:	0	2	0	1	0	0	0	0
3593:	0	0	0	0	0	1	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	1	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	1	0	0	0	0	0	1	2
3641:	0	0	0	0	1	1	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	1	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:	0	0	0	0	0	0	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	1	0	0	0	0	0
3745:	0	0	0	0	0	0	1	0
3753:	0	0	0	0	1	0	0	0
3761:	0	0	0	0	0	0	0	1
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	1	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	1	0	0
3809:	0	1	0	0	0	0	0	0
3817:	0	1	0	0	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: CP-5010 05-09

Channel								
3833:	0	0	0	2	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	1	0	0	0
3857:	1	0	0	0	0	0	0	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	1	0	0	0	0
3897:	1	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	1	0
3913:	0	0	0	0	0	0	1	0
3921:	0	0	0	1	0	0	0	0
3929:	0	0	0	1	0	2	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	1
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	1	0	0	0	1	1
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	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	1	0	0	0	0	0	0
4025:	0	0	1	0	0	0	0	0
4033:	1	0	0	1	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	1	0	0	0	0	1	0	0
4057:	0	0	0	1	0	0	0	0
4065:	1	0	0	2	0	0	0	0
4073:	0	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

0000039014.CNF



Apex-Gamma

Analysis Report for 1606043-11
CP-5010 09-15

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-11
Sample Description	: CP-5010 09-15
Sample Type	: SOIL
Sample Size	: 3.137E+02 grams
Facility	: Countroom
Sample Taken On	: 6/7/2016 11:59:38AM
Acquisition Started	: 6/16/2016 1:53:14PM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3601.1 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	: 39015

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/17/16

Analysis Report for 1606043-11

CP-5010 09-15

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 2:53:18PM
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	47.22	47.57	0.0000	0.00
2	64.00	64.34	0.0000	0.00
3	76.88	77.22	0.0000	0.00
4	90.80	91.14	0.0000	0.00
5	93.76	94.09	0.0000	0.00
6	129.29	129.62	0.0000	0.00
7	144.05	144.37	0.0000	0.00
8	186.68	186.98	0.0000	0.00
9	239.72	240.00	0.0000	0.00
10	271.08	271.35	0.0000	0.00
11	295.67	295.94	0.0000	0.00
12	300.79	301.05	0.0000	0.00
13	328.10	328.36	0.0000	0.00
14	338.95	339.20	0.0000	0.00
15	352.56	352.81	0.0000	0.00
16	363.83	364.08	0.0000	0.00
17	463.35	463.56	0.0000	0.00
18	511.49	511.68	0.0000	0.00
19	583.85	584.02	0.0000	0.00
20	610.07	610.23	0.0000	0.00
21	667.04	667.18	0.0000	0.00
22	703.60	703.73	0.0000	0.00
23	727.85	727.97	0.0000	0.00
24	768.77	768.88	0.0000	0.00
25	819.88	819.96	0.0000	0.00
26	860.72	860.79	0.0000	0.00
27	907.75	907.80	0.0000	0.00
28	911.93	911.99	0.0000	0.00
29	934.33	934.38	0.0000	0.00
30	949.61	949.65	0.0000	0.00
31	965.94	965.98	0.0000	0.00
32	969.78	969.81	0.0000	0.00
33	1078.74	1078.73	0.0000	0.00
34	1089.36	1089.35	0.0000	0.00
35	1121.63	1121.61	0.0000	0.00
36	1313.67	1313.58	0.0000	0.00
37	1407.94	1407.81	0.0000	0.00
38	1457.14	1457.00	0.0000	0.00
39	1461.58	1461.43	0.0000	0.00
40	1566.18	1566.00	0.0000	0.00
41	1630.89	1630.69	0.0000	0.00
42	1661.51	1661.30	0.0000	0.00

Analysis Report for 1606043-11

CP-5010 09-15

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1666.79	1666.57	0.0000	0.00
44	1729.91	1729.67	0.0000	0.00
45	1757.14	1756.89	0.0000	0.00
46	1765.64	1765.38	0.0000	0.00
47	1805.39	1805.12	0.0000	0.00
48	1844.64	1844.35	0.0000	0.00
49	1847.80	1847.51	0.0000	0.00
50	2015.17	2014.82	0.0000	0.00
51	2066.65	2066.28	0.0000	0.00
52	2103.31	2102.93	0.0000	0.00
53	2128.14	2127.75	0.0000	0.00
54	2203.82	2203.40	0.0000	0.00
55	2463.52	2463.00	0.0000	0.00
56	2615.32	2614.74	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606043-11

CP-5010 09-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 2:53:18PM

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	47.22	45 -	50	47.57	1.48E+02	66.35	7.63E+02	2.10
	2	64.00	61 -	66	64.34	2.00E+02	83.83	1.25E+03	1.72
	3	76.88	72 -	82	77.22	9.83E+02	143.93	2.24E+03	2.89
M	4	90.80	90 -	97	91.14	1.06E+02	39.97	4.92E+02	1.49
m	5	93.76	90 -	97	94.09	3.13E+02	67.88	7.82E+02	1.49
	6	129.29	126 -	134	129.62	7.60E+01	85.58	1.08E+03	1.44
	7	144.05	140 -	148	144.37	1.21E+02	79.49	8.92E+02	4.85
	8	186.68	183 -	191	186.98	2.97E+02	82.85	8.74E+02	1.42
	9	239.72	234 -	245	240.00	1.05E+03	105.11	8.57E+02	1.83
	10	271.08	268 -	274	271.35	8.44E+01	47.12	3.41E+02	1.29
	11	295.67	292 -	299	295.94	1.92E+02	58.92	4.48E+02	1.35
	12	300.79	300 -	304	301.05	4.32E+01	35.56	2.40E+02	1.18
	13	328.10	324 -	331	328.36	5.98E+01	47.50	3.36E+02	1.17
	14	338.95	335 -	343	339.20	1.79E+02	57.92	4.07E+02	1.44
	15	352.56	348 -	357	352.81	3.72E+02	67.89	4.48E+02	1.58
	16	363.83	361 -	368	364.08	3.16E+01	37.04	2.07E+02	4.29
	17	463.35	459 -	468	463.56	5.95E+01	44.56	2.49E+02	1.44
	18	511.49	507 -	516	511.68	1.46E+02	47.62	2.42E+02	2.25
	19	583.85	581 -	587	584.02	2.32E+02	40.86	1.38E+02	1.63
	20	610.07	605 -	614	610.23	2.90E+02	49.57	1.85E+02	1.79
	21	667.04	665 -	670	667.18	2.29E+01	20.86	6.82E+01	3.50
	22	703.60	700 -	707	703.73	2.64E+01	30.00	1.33E+02	3.65
	23	727.85	724 -	730	727.97	7.11E+01	32.40	1.38E+02	1.32
	24	768.77	763 -	774	768.88	5.58E+01	36.44	1.38E+02	1.83
	25	819.88	815 -	826	819.96	2.78E+01	32.06	1.16E+02	6.38
	26	860.72	857 -	865	860.79	3.86E+01	32.18	1.37E+02	2.04
M	27	907.75	907 -	917	907.80	1.94E+01	10.58	2.62E+01	2.15
m	28	911.93	907 -	917	911.99	1.94E+02	32.42	6.94E+01	1.76
M	29	934.33	931 -	953	934.38	2.25E+01	17.97	4.70E+01	2.62
m	30	949.61	931 -	953	949.65	1.51E+01	20.59	5.71E+01	2.63
M	31	965.94	963 -	974	965.98	4.21E+01	20.57	5.76E+01	2.40
m	32	969.78	963 -	974	969.81	1.16E+02	31.83	7.15E+01	2.41
	33	1078.74	1074 -	1086	1078.73	3.60E+01	34.33	1.16E+02	3.86
	34	1089.36	1086 -	1093	1089.35	1.72E+01	22.45	7.36E+01	4.97
	35	1121.63	1117 -	1125	1121.61	5.57E+01	30.83	1.11E+02	1.96
	36	1313.67	1311 -	1316	1313.58	1.10E+01	11.58	1.80E+01	2.10
	37	1407.94	1404 -	1414	1407.81	1.58E+01	14.87	1.84E+01	7.38
M	38	1457.14	1456 -	1467	1457.00	1.15E+01	7.04	6.05E+00	2.19
m	39	1461.58	1456 -	1467	1461.43	6.90E+02	53.98	2.12E+01	2.23
	40	1566.18	1562 -	1569	1566.00	1.80E+01	9.80	3.95E+00	4.11

Analysis Report for 1606043-11

CP-5010 09-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1630.89	1627 -	1634	1630.69	1.12E+01	8.25	3.54E+00	1.60
	42	1661.51	1657 -	1664	1661.30	1.10E+01	8.25	4.08E+00	2.97
	43	1666.79	1665 -	1669	1666.57	7.00E+00	5.29	0.00E+00	1.47
	44	1729.91	1726 -	1732	1729.67	1.40E+01	11.53	1.40E+01	2.37
	45	1757.14	1754 -	1760	1756.89	8.60E+00	7.23	2.80E+00	3.82
	46	1765.64	1762 -	1769	1765.38	5.00E+01	14.14	0.00E+00	2.30
	47	1805.39	1802 -	1808	1805.12	7.50E+00	8.28	7.00E+00	1.45
M	48	1844.64	1842 -	1852	1844.35	8.30E+00	6.36	5.00E+00	3.81
m	49	1847.80	1842 -	1852	1847.51	1.57E+01	10.39	8.00E+00	2.83
	50	2015.17	2013 -	2017	2014.82	4.50E+00	6.36	5.00E+00	2.49
	51	2066.65	2062 -	2069	2066.28	5.94E+00	6.93	4.13E+00	5.34
	52	2103.31	2100 -	2106	2102.93	5.22E+00	7.78	7.56E+00	1.88
	53	2128.14	2125 -	2130	2127.75	8.00E+00	5.66	0.00E+00	1.47
	54	2203.82	2198 -	2208	2203.40	1.93E+01	10.87	5.45E+00	2.27
	55	2463.52	2460 -	2465	2463.00	5.00E+00	4.47	0.00E+00	2.98
	56	2615.32	2609 -	2619	2614.74	9.20E+01	19.18	0.00E+00	3.13

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 2:53:18PM

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	47.22	45 -	50	1.48E+02	66.35	7.63E+02	5.08E+01
	2	64.00	61 -	66	2.00E+02	83.83	1.25E+03	6.49E+01
	3	76.88	72 -	82	9.83E+02	143.93	2.24E+03	1.06E+02
M	4	90.80	90 -	97	1.06E+02	39.97	4.92E+02	3.65E+01
m	5	93.76	90 -	97	3.13E+02	67.88	7.82E+02	4.60E+01
	6	129.29	126 -	134	7.60E+01	85.58	1.08E+03	6.89E+01
	7	144.05	140 -	148	1.21E+02	79.49	8.92E+02	6.28E+01
	8	186.68	183 -	191	2.97E+02	82.85	8.74E+02	6.19E+01
	9	239.72	234 -	245	1.05E+03	105.11	8.57E+02	6.81E+01
	10	271.08	268 -	274	8.44E+01	47.12	3.41E+02	3.57E+01
	11	295.67	292 -	299	1.92E+02	58.92	4.48E+02	4.27E+01
	12	300.79	300 -	304	4.32E+01	35.56	2.40E+02	2.72E+01

Analysis Report for 1606043-11

CP-5010 09-15

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	13	328.10	324 -	331	5.98E+01	47.50	3.36E+02	3.69E+01
	14	338.95	335 -	343	1.79E+02	57.92	4.07E+02	4.22E+01
	15	352.56	348 -	357	3.72E+02	67.89	4.48E+02	4.59E+01
	16	363.83	361 -	368	3.16E+01	37.04	2.07E+02	2.90E+01
	17	463.35	459 -	468	5.95E+01	44.56	2.49E+02	3.44E+01
	18	511.49	507 -	516	1.46E+02	47.62	2.42E+02	3.37E+01
	19	583.85	581 -	587	2.32E+02	40.86	1.38E+02	2.24E+01
	20	610.07	605 -	614	2.90E+02	49.57	1.85E+02	2.96E+01
	21	667.04	665 -	670	2.29E+01	20.86	6.82E+01	1.52E+01
	22	703.60	700 -	707	2.64E+01	30.00	1.33E+02	2.32E+01
	23	727.85	724 -	730	7.11E+01	32.40	1.38E+02	2.27E+01
	24	768.77	763 -	774	5.58E+01	36.44	1.38E+02	2.73E+01
	25	819.88	815 -	826	2.78E+01	32.06	1.16E+02	2.49E+01
	26	860.72	857 -	865	3.86E+01	32.18	1.37E+02	2.44E+01
M	27	907.75	907 -	917	1.94E+01	10.58	2.62E+01	8.41E+00
m	28	911.93	907 -	917	1.94E+02	32.42	6.94E+01	1.37E+01
M	29	934.33	931 -	953	2.25E+01	17.97	4.70E+01	1.13E+01
m	30	949.61	931 -	953	1.51E+01	20.59	5.71E+01	1.24E+01
M	31	965.94	963 -	974	4.21E+01	20.57	5.76E+01	1.25E+01
m	32	969.78	963 -	974	1.16E+02	31.83	7.15E+01	1.39E+01
	33	1078.74	1074 -	1086	3.60E+01	34.33	1.16E+02	2.64E+01
	34	1089.36	1086 -	1093	1.72E+01	22.45	7.36E+01	1.71E+01
	35	1121.63	1117 -	1125	5.57E+01	30.83	1.11E+02	2.22E+01
	36	1313.67	1311 -	1316	1.10E+01	11.58	1.80E+01	7.80E+00
	37	1407.94	1404 -	1414	1.58E+01	14.87	1.84E+01	1.03E+01
M	38	1457.14	1456 -	1467	1.15E+01	7.04	6.05E+00	4.04E+00
m	39	1461.58	1456 -	1467	6.90E+02	53.98	2.12E+01	7.57E+00
	40	1566.18	1562 -	1569	1.80E+01	9.80	3.95E+00	4.02E+00
	41	1630.89	1627 -	1634	1.12E+01	8.25	3.54E+00	3.95E+00
	42	1661.51	1657 -	1664	1.10E+01	8.25	4.08E+00	4.04E+00
	43	1666.79	1665 -	1669	7.00E+00	5.29	0.00E+00	0.00E+00
	44	1729.91	1726 -	1732	1.40E+01	11.53	1.40E+01	7.21E+00
	45	1757.14	1754 -	1760	8.60E+00	7.23	2.80E+00	3.47E+00
	46	1765.64	1762 -	1769	5.00E+01	14.14	0.00E+00	0.00E+00
	47	1805.39	1802 -	1808	7.50E+00	8.28	7.00E+00	5.10E+00
M	48	1844.64	1842 -	1852	8.30E+00	6.36	5.00E+00	3.68E+00
m	49	1847.80	1842 -	1852	1.57E+01	10.39	8.00E+00	4.65E+00
	50	2015.17	2013 -	2017	4.50E+00	6.36	5.00E+00	3.90E+00
	51	2066.65	2062 -	2069	5.94E+00	6.93	4.13E+00	4.05E+00
	52	2103.31	2100 -	2106	5.22E+00	7.78	7.56E+00	5.17E+00
	53	2128.14	2125 -	2130	8.00E+00	5.66	0.00E+00	0.00E+00
	54	2203.82	2198 -	2208	1.93E+01	10.87	5.45E+00	5.27E+00
	55	2463.52	2460 -	2465	5.00E+00	4.47	0.00E+00	0.00E+00
	56	2615.32	2609 -	2619	9.20E+01	19.18	0.00E+00	0.00E+00

Analysis Report for 1606043-11

CP-5010 09-15

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 2:53:18PM

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	47.22	45 -	50	47.57	1.48E+02	66.35	7.63E+02	PB-210
	2	64.00	61 -	66	64.34	2.00E+02	83.83	1.25E+03	TH-234
	3	76.88	72 -	82	77.22	9.83E+02	143.93	2.24E+03	.....
M	4	90.80	90 -	97	91.14	1.06E+02	39.97	4.92E+02	ND-147
m	5	93.76	90 -	97	94.09	3.13E+02	67.88	7.82E+02	GA-67
	6	129.29	126 -	134	129.62	7.60E+01	85.58	1.08E+03	.....
	7	144.05	140 -	148	144.37	1.21E+02	79.49	8.92E+02	U-235
	8	186.68	183 -	191	186.98	2.97E+02	82.85	8.74E+02	RA-226
	9	239.72	234 -	245	240.00	1.05E+03	105.11	8.57E+02	.....
	10	271.08	268 -	274	271.35	8.44E+01	47.12	3.41E+02	.....
	11	295.67	292 -	299	295.94	1.92E+02	58.92	4.48E+02	PB-214
	12	300.79	300 -	304	301.05	4.32E+01	35.56	2.40E+02	GA-67 PB-212 BI-210M
	13	328.10	324 -	331	328.36	5.98E+01	47.50	3.36E+02	LA-140
	14	338.95	335 -	343	339.20	1.79E+02	57.92	4.07E+02	AC-228
	15	352.56	348 -	357	352.81	3.72E+02	67.89	4.48E+02	PB-214
	16	363.83	361 -	368	364.08	3.16E+01	37.04	2.07E+02	I-131
	17	463.35	459 -	468	463.56	5.95E+01	44.56	2.49E+02	SB-125
	18	511.49	507 -	516	511.68	1.46E+02	47.62	2.42E+02	.....
	19	583.85	581 -	587	584.02	2.32E+02	40.86	1.38E+02	TL-208
	20	610.07	605 -	614	610.23	2.90E+02	49.57	1.85E+02	BI-214
	21	667.04	665 -	670	667.18	2.29E+01	20.86	6.82E+01	SB-126
	22	703.60	700 -	707	703.73	2.64E+01	30.00	1.33E+02	NB-94
	23	727.85	724 -	730	727.97	7.11E+01	32.40	1.38E+02	BI-212
	24	768.77	763 -	774	768.88	5.58E+01	36.44	1.38E+02	.....
	25	819.88	815 -	826	819.96	2.78E+01	32.06	1.16E+02	.....
	26	860.72	857 -	865	860.79	3.86E+01	32.18	1.37E+02	TL-208
M	27	907.75	907 -	917	907.80	1.94E+01	10.58	2.62E+01	.....
m	28	911.93	907 -	917	911.99	1.94E+02	32.42	6.94E+01	LU-172

Analysis Report for 1606043-11

CP-5010 09-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									AC-228
M	29	934.33	931 -	953	934.38	2.25E+01	17.97	4.70E+01	.....
m	30	949.61	931 -	953	949.65	1.51E+01	20.59	5.71E+01	.....
M	31	965.94	963 -	974	965.98	4.21E+01	20.57	5.76E+01	.....
m	32	969.78	963 -	974	969.81	1.16E+02	31.83	7.15E+01	AC-228
	33	1078.74	1074 -	1086	1078.73	3.60E+01	34.33	1.16E+02	.....
	34	1089.36	1086 -	1093	1089.35	1.72E+01	22.45	7.36E+01	.....
	35	1121.63	1117 -	1125	1121.61	5.57E+01	30.83	1.11E+02	TA-182
	36	1313.67	1311 -	1316	1313.58	1.10E+01	11.58	1.80E+01	.....
	37	1407.94	1404 -	1414	1407.81	1.58E+01	14.87	1.84E+01	EU-152
M	38	1457.14	1456 -	1467	1457.00	1.15E+01	7.04	6.05E+00	.....
m	39	1461.58	1456 -	1467	1461.43	6.90E+02	53.98	2.12E+01	K-40
	40	1566.18	1562 -	1569	1566.00	1.80E+01	9.80	3.95E+00	.....
	41	1630.89	1627 -	1634	1630.69	1.12E+01	8.25	3.54E+00	.....
	42	1661.51	1657 -	1664	1661.30	1.10E+01	8.25	4.08E+00	.....
	43	1666.79	1665 -	1669	1666.57	7.00E+00	5.29	0.00E+00	.....
	44	1729.91	1726 -	1732	1729.67	1.40E+01	11.53	1.40E+01	.....
	45	1757.14	1754 -	1760	1756.89	8.60E+00	7.23	2.80E+00	.....
	46	1765.64	1762 -	1769	1765.38	5.00E+01	14.14	0.00E+00	.....
	47	1805.39	1802 -	1808	1805.12	7.50E+00	8.28	7.00E+00	.....
M	48	1844.64	1842 -	1852	1844.35	8.30E+00	6.36	5.00E+00	.....
m	49	1847.80	1842 -	1852	1847.51	1.57E+01	10.39	8.00E+00	.....
	50	2015.17	2013 -	2017	2014.82	4.50E+00	6.36	5.00E+00	.....
	51	2066.65	2062 -	2069	2066.28	5.94E+00	6.93	4.13E+00	.....
	52	2103.31	2100 -	2106	2102.93	5.22E+00	7.78	7.56E+00	.....
	53	2128.14	2125 -	2130	2127.75	8.00E+00	5.66	0.00E+00	.....
	54	2203.82	2198 -	2208	2203.40	1.93E+01	10.87	5.45E+00	BI-214
	55	2463.52	2460 -	2465	2463.00	5.00E+00	4.47	0.00E+00	.....
	56	2615.32	2609 -	2619	2614.74	9.20E+01	19.18	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 2:53:18PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	47.22	1.48E+02	66.35	1.73E-02	1.78E-03

Analysis Report for 1606043-11

CP-5010 09-15

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	2	64.00	2.00E+02	83.83	2.51E-02	1.93E-03
	3	76.88	9.83E+02	143.93	2.77E-02	2.37E-03
M	4	90.80	1.06E+02	39.97	2.86E-02	2.69E-03
m	5	93.76	3.13E+02	67.88	2.86E-02	2.63E-03
	6	129.29	7.60E+01	85.58	2.67E-02	2.09E-03
	7	144.05	1.21E+02	79.49	2.55E-02	2.12E-03
	8	186.68	2.97E+02	82.85	2.23E-02	2.02E-03
	9	239.72	1.05E+03	105.11	1.92E-02	1.63E-03
	10	271.08	8.44E+01	47.12	1.77E-02	1.40E-03
	11	295.67	1.92E+02	58.92	1.67E-02	1.31E-03
	12	300.79	4.32E+01	35.56	1.65E-02	1.30E-03
	13	328.10	5.98E+01	47.50	1.55E-02	1.24E-03
	14	338.95	1.79E+02	57.92	1.52E-02	1.22E-03
	15	352.56	3.72E+02	67.89	1.47E-02	1.19E-03
	16	363.83	3.16E+01	37.04	1.44E-02	1.17E-03
	17	463.35	5.95E+01	44.56	1.21E-02	1.04E-03
	18	511.49	1.46E+02	47.62	1.12E-02	9.90E-04
	19	583.85	2.32E+02	40.86	1.02E-02	9.15E-04
	20	610.07	2.90E+02	49.57	9.82E-03	8.88E-04
	21	667.04	2.29E+01	20.86	9.16E-03	8.29E-04
	22	703.60	2.64E+01	30.00	8.78E-03	7.97E-04
	23	727.85	7.11E+01	32.40	8.55E-03	7.75E-04
	24	768.77	5.58E+01	36.44	8.19E-03	7.38E-04
	25	819.88	2.78E+01	32.06	7.78E-03	6.92E-04
	26	860.72	3.86E+01	32.18	7.48E-03	6.56E-04
M	27	907.75	1.94E+01	10.58	7.17E-03	6.17E-04
m	28	911.93	1.94E+02	32.42	7.14E-03	6.15E-04
M	29	934.33	2.25E+01	17.97	7.01E-03	6.03E-04
m	30	949.61	1.51E+01	20.59	6.92E-03	5.95E-04
M	31	965.94	4.21E+01	20.57	6.82E-03	5.87E-04
m	32	969.78	1.16E+02	31.83	6.80E-03	5.85E-04
	33	1078.74	3.60E+01	34.33	6.25E-03	5.28E-04
	34	1089.36	1.72E+01	22.45	6.20E-03	5.23E-04
	35	1121.63	5.57E+01	30.83	6.06E-03	5.06E-04
	36	1313.67	1.10E+01	11.58	5.37E-03	4.54E-04
	37	1407.94	1.58E+01	14.87	5.10E-03	4.32E-04
M	38	1457.14	1.15E+01	7.04	4.98E-03	4.20E-04
m	39	1461.58	6.90E+02	53.98	4.97E-03	4.19E-04
	40	1566.18	1.80E+01	9.80	4.74E-03	3.93E-04
	41	1630.89	1.12E+01	8.25	4.61E-03	3.77E-04
	42	1661.51	1.10E+01	8.25	4.56E-03	3.69E-04
	43	1666.79	7.00E+00	5.29	4.55E-03	3.68E-04
	44	1729.91	1.40E+01	11.53	4.45E-03	3.52E-04
	45	1757.14	8.60E+00	7.23	4.41E-03	3.45E-04
	46	1765.64	5.00E+01	14.14	4.39E-03	3.43E-04
	47	1805.39	7.50E+00	8.28	4.34E-03	3.33E-04
M	48	1844.64	8.30E+00	6.36	4.29E-03	3.26E-04
m	49	1847.80	1.57E+01	10.39	4.28E-03	3.26E-04
	50	2015.17	4.50E+00	6.36	4.10E-03	3.26E-04
	51	2066.65	5.94E+00	6.93	4.05E-03	3.26E-04
	52	2103.31	5.22E+00	7.78	4.02E-03	3.26E-04
	53	2128.14	8.00E+00	5.66	4.00E-03	3.26E-04
	54	2203.82	1.93E+01	10.87	3.95E-03	3.26E-04

Analysis Report for 1606043-11

CP-5010 09-15

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
55	2463.52	5.00E+00	4.47	3.83E-03	3.26E-04
56	2615.32	9.20E+01	19.18	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 2:53:18PM

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	47.22	1.48E+02	66.35	4.33E+01	8.35E+00	1.04E+02	6.69E+01
	2	64.00	2.00E+02	83.83	1.14E+02	2.81E+01	8.66E+01	8.84E+01
	3	76.88	9.83E+02	143.93			9.83E+02	1.44E+02
M	4	90.80	1.06E+02	39.97			1.06E+02	4.00E+01
m	5	93.76	3.13E+02	67.88	1.29E+02	7.14E+00	1.83E+02	6.83E+01
	6	129.29	7.60E+01	85.58			7.60E+01	8.56E+01
	7	144.05	1.21E+02	79.49	1.24E+01	6.72E+00	1.09E+02	7.98E+01
	8	186.68	2.97E+02	82.85	5.81E+01	8.50E+00	2.39E+02	8.33E+01
	9	239.72	1.05E+03	105.11	1.81E+01	5.76E+00	1.03E+03	1.05E+02
	10	271.08	8.44E+01	47.12			8.44E+01	4.71E+01
	11	295.67	1.92E+02	58.92	1.02E+00	5.38E+00	1.91E+02	5.92E+01
	12	300.79	4.32E+01	35.56			4.32E+01	3.56E+01
	13	328.10	5.98E+01	47.50			5.98E+01	4.75E+01
	14	338.95	1.79E+02	57.92	3.86E+00	4.98E+00	1.75E+02	5.81E+01
	15	352.56	3.72E+02	67.89	7.25E+00	4.86E+00	3.65E+02	6.81E+01
	16	363.83	3.16E+01	37.04			3.16E+01	3.70E+01
	17	463.35	5.95E+01	44.56			5.95E+01	4.46E+01
	18	511.49	1.46E+02	47.62	7.58E+01	5.38E+00	7.03E+01	4.79E+01
	19	583.85	2.32E+02	40.86	6.11E+00	3.78E+00	2.26E+02	4.10E+01
	20	610.07	2.90E+02	49.57	6.74E+00	3.64E+00	2.84E+02	4.97E+01
	21	667.04	2.29E+01	20.86			2.29E+01	2.09E+01
	22	703.60	2.64E+01	30.00			2.64E+01	3.00E+01
	23	727.85	7.11E+01	32.40			7.11E+01	3.24E+01
	24	768.77	5.58E+01	36.44			5.58E+01	3.64E+01
	25	819.88	2.78E+01	32.06			2.78E+01	3.21E+01
	26	860.72	3.86E+01	32.18			3.86E+01	3.22E+01
M	27	907.75	1.94E+01	10.58			1.94E+01	1.06E+01
m	28	911.93	1.94E+02	32.42	4.21E+00	2.98E+00	1.89E+02	3.26E+01

Analysis Report for 1606043-11

CP-5010 09-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	29	934.33	2.25E+01	17.97			2.25E+01	1.80E+01
m	30	949.61	1.51E+01	20.59			1.51E+01	2.06E+01
M	31	965.94	4.21E+01	20.57			4.21E+01	2.06E+01
m	32	969.78	1.16E+02	31.83			1.16E+02	3.18E+01
	33	1078.74	3.60E+01	34.33			3.60E+01	3.43E+01
	34	1089.36	1.72E+01	22.45			1.72E+01	2.24E+01
	35	1121.63	5.57E+01	30.83			5.57E+01	3.08E+01
	36	1313.67	1.10E+01	11.58			1.10E+01	1.16E+01
	37	1407.94	1.58E+01	14.87			1.58E+01	1.49E+01
M	38	1457.14	1.15E+01	7.04			1.15E+01	7.04E+00
m	39	1461.58	6.90E+02	53.98	6.83E+00	2.10E+00	6.83E+02	5.40E+01
	40	1566.18	1.80E+01	9.80			1.80E+01	9.80E+00
	41	1630.89	1.12E+01	8.25			1.12E+01	8.25E+00
	42	1661.51	1.10E+01	8.25			1.10E+01	8.25E+00
	43	1666.79	7.00E+00	5.29			7.00E+00	5.29E+00
	44	1729.91	1.40E+01	11.53			1.40E+01	1.15E+01
	45	1757.14	8.60E+00	7.23			8.60E+00	7.23E+00
	46	1765.64	5.00E+01	14.14	1.66E+00	1.65E+00	4.83E+01	1.42E+01
	47	1805.39	7.50E+00	8.28			7.50E+00	8.28E+00
M	48	1844.64	8.30E+00	6.36			8.30E+00	6.36E+00
m	49	1847.80	1.57E+01	10.39			1.57E+01	1.04E+01
	50	2015.17	4.50E+00	6.36			4.50E+00	6.36E+00
	51	2066.65	5.94E+00	6.93			5.94E+00	6.93E+00
	52	2103.31	5.22E+00	7.78			5.22E+00	7.78E+00
	53	2128.14	8.00E+00	5.66			8.00E+00	5.66E+00
	54	2203.82	1.93E+01	10.87			1.93E+01	1.09E+01
	55	2463.52	5.00E+00	4.47			5.00E+00	4.47E+00
	56	2615.32	9.20E+01	19.18	4.95E+00	1.35E+00	8.70E+01	1.92E+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 2:53:18PM

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.

Analysis Report for 1606043-11

CP-5010 09-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	47.22	1.48E+02	66.35	4.33E+01	8.35E+00	1.04E+02	6.69E+01
	2	64.00	2.00E+02	83.83	1.14E+02	2.81E+01	8.66E+01	8.84E+01
	3	76.88	9.83E+02	143.93			9.83E+02	1.44E+02
M	4	90.80	1.06E+02	39.97			1.06E+02	4.00E+01
m	5	93.76	3.13E+02	67.88	1.29E+02	7.14E+00	1.83E+02	6.83E+01
	6	129.29	7.60E+01	85.58			7.60E+01	8.56E+01
	7	144.05	1.21E+02	79.49	1.24E+01	6.72E+00	1.09E+02	7.98E+01
	8	186.68	2.97E+02	82.85	5.81E+01	8.50E+00	2.39E+02	8.33E+01
	9	239.72	1.05E+03	105.11	1.81E+01	5.76E+00	1.03E+03	1.05E+02
	10	271.08	8.44E+01	47.12			8.44E+01	4.71E+01
	11	295.67	1.92E+02	58.92	1.02E+00	5.38E+00	1.91E+02	5.92E+01
	12	300.79	4.32E+01	35.56			4.32E+01	3.56E+01
	13	328.10	5.98E+01	47.50			5.98E+01	4.75E+01
	14	338.95	1.79E+02	57.92	3.86E+00	4.98E+00	1.75E+02	5.81E+01
	15	352.56	3.72E+02	67.89	7.25E+00	4.86E+00	3.65E+02	6.81E+01
	16	363.83	3.16E+01	37.04			3.16E+01	3.70E+01
	17	463.35	5.95E+01	44.56			5.95E+01	4.46E+01
	18	511.49	1.46E+02	47.62	7.58E+01	5.38E+00	7.03E+01	4.79E+01
	19	583.85	2.32E+02	40.86	6.11E+00	3.78E+00	2.26E+02	4.10E+01
	20	610.07	2.90E+02	49.57	6.74E+00	3.64E+00	2.84E+02	4.97E+01
	21	667.04	2.29E+01	20.86			2.29E+01	2.09E+01
	22	703.60	2.64E+01	30.00			2.64E+01	3.00E+01
	23	727.85	7.11E+01	32.40			7.11E+01	3.24E+01
	24	768.77	5.58E+01	36.44			5.58E+01	3.64E+01
	25	819.88	2.78E+01	32.06			2.78E+01	3.21E+01
	26	860.72	3.86E+01	32.18			3.86E+01	3.22E+01
M	27	907.75	1.94E+01	10.58			1.94E+01	1.06E+01
m	28	911.93	1.94E+02	32.42	4.21E+00	2.98E+00	1.89E+02	3.26E+01
M	29	934.33	2.25E+01	17.97			2.25E+01	1.80E+01
m	30	949.61	1.51E+01	20.59			1.51E+01	2.06E+01
M	31	965.94	4.21E+01	20.57			4.21E+01	2.06E+01
m	32	969.78	1.16E+02	31.83			1.16E+02	3.18E+01
	33	1078.74	3.60E+01	34.33			3.60E+01	3.43E+01
	34	1089.36	1.72E+01	22.45			1.72E+01	2.24E+01
	35	1121.63	5.57E+01	30.83			5.57E+01	3.08E+01
	36	1313.67	1.10E+01	11.58			1.10E+01	1.16E+01
	37	1407.94	1.58E+01	14.87			1.58E+01	1.49E+01
M	38	1457.14	1.15E+01	7.04			1.15E+01	7.04E+00
m	39	1461.58	6.90E+02	53.98	6.83E+00	2.10E+00	6.83E+02	5.40E+01
	40	1566.18	1.80E+01	9.80			1.80E+01	9.80E+00
	41	1630.89	1.12E+01	8.25			1.12E+01	8.25E+00
	42	1661.51	1.10E+01	8.25			1.10E+01	8.25E+00
	43	1666.79	7.00E+00	5.29			7.00E+00	5.29E+00
	44	1729.91	1.40E+01	11.53			1.40E+01	1.15E+01
	45	1757.14	8.60E+00	7.23			8.60E+00	7.23E+00
	46	1765.64	5.00E+01	14.14	1.66E+00	1.65E+00	4.83E+01	1.42E+01
	47	1805.39	7.50E+00	8.28			7.50E+00	8.28E+00
M	48	1844.64	8.30E+00	6.36			8.30E+00	6.36E+00
m	49	1847.80	1.57E+01	10.39			1.57E+01	1.04E+01
	50	2015.17	4.50E+00	6.36			4.50E+00	6.36E+00
	51	2066.65	5.94E+00	6.93			5.94E+00	6.93E+00
	52	2103.31	5.22E+00	7.78			5.22E+00	7.78E+00
	53	2128.14	8.00E+00	5.66			8.00E+00	5.66E+00
	54	2203.82	1.93E+01	10.87			1.93E+01	1.09E+01

Analysis Report for 1606043-11

CP-5010 09-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
55	2463.52	5.00E+00	4.47			5.00E+00	4.47E+00
56	2615.32	9.20E+01	19.18	4.95E+00	1.35E+00	8.70E+01	1.92E+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	0.910	1460.81	*	10.67	3.08E+01	3.62E+00
GA-67	0.868	93.31	*	35.70	2.98E+00	4.99E+00
		208.95		2.24		
		300.22	*	16.00	2.71E+00	4.96E+00
I-131	0.707	284.30		6.05		
		364.48	*	81.20	1.42E-01	1.66E-01
		636.97		7.26		
		722.89		1.80		
ND-147	0.637	91.11	*	28.90	5.47E-01	2.12E-01
		531.02		13.10		
TL-208	0.931	583.14	*	30.22	1.76E+00	3.57E-01
		860.37	*	4.48	2.76E+00	2.31E+00
		2614.66	*	35.85	1.53E+00	3.63E-01
PB-210	0.921	46.50	*	4.25	3.40E+00	2.21E+00
BI-212	0.707	727.17	*	11.80	1.69E+00	7.84E-01
		1620.62		2.75		
BI-214	0.449	609.31	*	46.30	1.49E+00	2.94E-01
		1120.29		15.10		
		1764.49		15.80		
		2204.22	*	4.98	2.35E+00	1.34E+00
PB-214	0.947	295.21	*	19.19	1.43E+00	4.57E-01
		351.92	*	37.19	1.59E+00	3.24E-01
RA-226	0.966	186.21	*	3.28	7.80E+00	1.46E+01
AC-228	0.911	338.32	*	11.40	2.43E+00	8.28E-01
		911.07	*	27.70	2.29E+00	4.40E-01
		969.11	*	16.60	2.47E+00	7.07E-01
TH-234	0.923	63.29	*	3.80	2.17E+00	2.22E+00

Analysis Report for 1606043-11

CP-5010 09-15

* = 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 2:53:18PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	76.88	2.73102E-01	7.32		
	6	129.29	2.11111E-02	56.30		
	7	144.05	3.02053E-02	36.68	Tol.	U-235
	9	239.72	2.85677E-01	5.12		
	10	271.08	2.34483E-02	27.91		
	13	328.10	1.66082E-02	39.72	Tol.	LA-140
	17	463.35	1.65263E-02	37.45	Tol.	SB-125
	18	511.49	1.95372E-02	34.07		
	21	667.04	6.36696E-03	45.50	Tol.	SB-126
	22	703.60	7.32975E-03	56.85	Sum	
	24	768.77	1.55044E-02	32.64		
	25	819.88	7.72448E-03	57.65		
M	27	907.75	5.37538E-03	27.34	Sum	
M	29	934.33	6.24772E-03	39.95		
m	30	949.61	4.19043E-03	68.25	S-Esc	
M	31	965.94	1.16817E-02	24.46		
	33	1078.74	1.00000E-02	47.68		
	34	1089.36	4.77366E-03	65.32		
	35	1121.63	1.54617E-02	27.69	Tol.	TA-182
	36	1313.67	3.05556E-03	52.62		
	37	1407.94	4.38333E-03	47.10	Tol.	EU-152
M	38	1457.14	3.20654E-03	30.47		
	40	1566.18	5.00694E-03	27.18		
	41	1630.89	3.11966E-03	36.71		
	42	1661.51	3.04487E-03	37.61		
	43	1666.79	1.94444E-03	37.80		
	44	1729.91	3.88889E-03	41.19		
	45	1757.14	2.38889E-03	42.03	Sum	
	46	1765.64	1.34266E-02	14.73		
	47	1805.39	2.08333E-03	55.18		
M	48	1844.64	2.30639E-03	38.32		
m	49	1847.80	4.35710E-03	33.13		
	50	2015.17	1.25000E-03	70.71		
	51	2066.65	1.64931E-03	58.34		

Analysis Report for 1606043-11

CP-5010 09-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
52	2103.31	1.45062E-03	74.47		
53	2128.14	2.22222E-03	35.36		
55	2463.52	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	0.91	1460.81	*	10.67	3.08E+01	3.62E+00
GA-67	0.86	93.31	*	35.70	2.98E+00	4.99E+00
		208.95		2.24		
		300.22	*	16.00	2.71E+00	4.96E+00
I-131	0.70	284.30		6.05		
		364.48	*	81.20	1.42E-01	1.66E-01
		636.97		7.26		
		722.89		1.80		
ND-147	0.63	91.11	*	28.90	5.47E-01	2.12E-01
		531.02		13.10		
TL-208	0.93	583.14	*	30.22	1.76E+00	3.57E-01
		860.37	*	4.48	2.76E+00	2.31E+00
		2614.66	*	35.85	1.53E+00	3.63E-01
PB-210	0.92	46.50	*	4.25	3.40E+00	2.21E+00
BI-212	0.70	727.17	*	11.80	1.69E+00	7.84E-01
		1620.62		2.75		
BI-214	0.44	609.31	*	46.30	1.49E+00	2.94E-01
		1120.29		15.10		
		1764.49		15.80		
		2204.22	*	4.98	2.35E+00	1.34E+00
PB-214	0.94	295.21	*	19.19	1.43E+00	4.57E-01
		351.92	*	37.19	1.59E+00	3.24E-01
RA-226	0.96	186.21	*	3.28	7.80E+00	1.46E+01
AC-228	0.91	338.32	*	11.40	2.43E+00	8.28E-01
		911.07	*	27.70	2.29E+00	4.40E-01

Analysis Report for 1606043-11

CP-5010 09-15

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AC-228	0.91	969.11	*	16.60	2.47E+00	7.07E-01
TH-234	0.92	63.29	*	3.80	2.17E+00	2.22E+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	0.910	3.08E+01	3.62E+00	
GA-67	0.868	2.85E+00	4.25E+00	
I-131	0.707	1.42E-01	1.66E-01	
ND-147	0.637	5.47E-01	2.12E-01	
TL-208	0.931	1.66E+00	2.53E-01	
PB-210	0.921	3.40E+00	2.21E+00	
BI-212	0.707	1.69E+00	7.84E-01	
BI-214	0.449	1.53E+00	2.88E-01	
PB-214	0.947	1.54E+00	2.64E-01	
RA-226	0.966	7.80E+00	1.46E+01	
AC-228	0.911	2.35E+00	3.41E-01	
TH-234	0.923	2.17E+00	2.22E+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 1606043-11
CP-5010 09-15

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 2:53:18PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	76.88	2.73102E-01	7.32		
	6	129.29	2.11111E-02	56.30		
	7	144.05	3.02053E-02	36.68	Tol.	U-235
	9	239.72	2.85677E-01	5.12		
	10	271.08	2.34483E-02	27.91		
	13	328.10	1.66082E-02	39.72	Tol.	LA-140
	17	463.35	1.65263E-02	37.45	Tol.	SB-125
	18	511.49	1.95372E-02	34.07		
	21	667.04	6.36696E-03	45.50	Tol.	SB-126
	22	703.60	7.32975E-03	56.85	Sum	
	24	768.77	1.55044E-02	32.64		
	25	819.88	7.72448E-03	57.65		
M	27	907.75	5.37538E-03	27.34	Sum	
M	29	934.33	6.24772E-03	39.95		
m	30	949.61	4.19043E-03	68.25	S-Esc	
M	31	965.94	1.16817E-02	24.46		
	33	1078.74	1.00000E-02	47.68		
	34	1089.36	4.77366E-03	65.32		
	35	1121.63	1.54617E-02	27.69	Tol.	TA-182
	36	1313.67	3.05556E-03	52.62		
	37	1407.94	4.38333E-03	47.10	Tol.	EU-152
M	38	1457.14	3.20654E-03	30.47		
	40	1566.18	5.00694E-03	27.18		
	41	1630.89	3.11966E-03	36.71		
	42	1661.51	3.04487E-03	37.61		
	43	1666.79	1.94444E-03	37.80		
	44	1729.91	3.88889E-03	41.19		
	45	1757.14	2.38889E-03	42.03	Sum	
	46	1765.64	1.34266E-02	14.73		
	47	1805.39	2.08333E-03	55.18		
M	48	1844.64	2.30639E-03	38.32		
m	49	1847.80	4.35710E-03	33.13		
	50	2015.17	1.25000E-03	70.71		
	51	2066.65	1.64931E-03	58.34		
	52	2103.31	1.45062E-03	74.47		

Analysis Report for 1606043-11

CP-5010 09-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
53	2128.14	2.22222E-03	35.36		
55	2463.52	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	-2.39E-01	1.02E+00	1.02E+00
+	NA-22	1274.54		99.94	-1.56E-02	1.16E-01	1.16E-01
+	NA-24	1368.53		99.99	-1.49E+03	1.12E+03	2.16E+03
		2754.09		99.86	-3.06E+02		1.12E+03
+	AL-26	1808.65		99.76	-1.11E-02	9.23E-02	9.23E-02
+	K-40	1460.81	*	10.67	3.08E+01	1.39E+00	1.39E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	2.41E-02	1.09E-01	1.09E-01
		78.34		96.00	2.17E-01		1.42E-01
+	SC-46	889.25		99.98	-6.73E-02	1.30E-01	1.30E-01
		1120.51		99.99	1.52E-01		2.07E-01
+	V-48	983.52		99.98	-3.97E-02	1.70E-01	1.75E-01
		1312.10		97.50	-6.78E-03		1.70E-01
+	CR-51	320.08		9.83	2.87E-01	1.05E+00	1.05E+00
+	MN-54	834.83		99.97	-1.26E-02	1.22E-01	1.22E-01
+	CO-56	846.75		99.96	-2.28E-02	1.11E-01	1.11E-01
		1037.75		14.03	2.43E-01		9.63E-01
		1238.25		67.00	1.43E-03		2.77E-01
		1771.40		15.51	5.72E-02		5.38E-01
		2598.48		16.90	4.04E-02		4.85E-01
+	CO-57	122.06		85.51	5.99E-02	8.84E-02	8.84E-02
		136.48		10.60	5.28E-01		7.53E-01
+	CO-58	810.76		99.40	1.83E-02	1.18E-01	1.18E-01
+	FE-59	1099.22		56.50	1.48E-02	2.66E-01	2.66E-01
		1291.56		43.20	-3.00E-02		3.15E-01
+	CO-60	1173.22		100.00	-2.95E-02	1.15E-01	1.27E-01
		1332.49		100.00	-8.29E-03		1.15E-01

Analysis Report for 1606043-11

CP-5010 09-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZN-65	1115.52		50.75	8.13E-02	2.93E-01	2.93E-01
+	GA-67	93.31	*	35.70	2.98E+00	2.55E+00	2.55E+00
		208.95		2.24	9.42E+00		2.81E+01
		300.22	*	16.00	2.71E+00		3.58E+00
+	SE-75	121.11		16.70	-7.79E-02	1.35E-01	4.56E-01
		136.00		59.20	7.19E-02		1.37E-01
		264.65		59.80	2.01E-02		1.35E-01
		279.53		25.20	1.05E-01		3.65E-01
		400.65		11.40	-4.28E-02		7.62E-01
+	RB-82	776.52		13.00	-6.63E-02	1.06E+00	1.06E+00
+	RB-83	520.41		46.00	-8.80E-02	2.17E-01	2.17E-01
		529.64		30.30	-9.74E-02		3.26E-01
		552.65		16.40	3.00E-02		6.98E-01
+	KR-85	513.99		0.43	6.37E+01	3.56E+01	3.56E+01
+	SR-85	513.99		99.27	3.06E-01	1.71E-01	1.71E-01
+	Y-88	898.02		93.40	1.77E-02	9.91E-02	1.45E-01
		1836.01		99.38	-1.06E-02		9.91E-02
+	NB-93M	16.57		9.43	-1.41E+02	1.04E+02	1.04E+02
+	NB-94	702.63		100.00	6.26E-02	1.03E-01	1.25E-01
		871.10		100.00	-6.44E-02		1.03E-01
+	NB-95	765.79		99.81	-1.75E-03	1.47E-01	1.47E-01
+	NB-95M	235.69		25.00	-2.90E+01	2.10E+00	2.10E+00
+	ZR-95	724.18		43.70	-7.53E-02	2.38E-01	3.19E-01
		756.72		55.30	8.50E-02		2.38E-01
+	MO-99	181.06		6.20	6.05E+00	7.44E+00	1.27E+01
		739.58		12.80	-3.58E+00		7.44E+00
		778.00		4.50	-5.03E+00		2.44E+01
+	RU-103	497.08		89.00	1.24E-02	1.22E-01	1.22E-01
+	RU-106	621.84		9.80	2.63E-01	1.23E+00	1.23E+00
+	AG-108M	433.93		89.90	-2.63E-02	1.08E-01	1.08E-01
		614.37		90.40	-6.13E-02		1.22E-01
		722.95		90.50	-8.21E-03		1.40E-01
+	CD-109	88.03		3.72	1.85E+00	2.88E+00	2.88E+00
+	AG-110M	657.75		93.14	-7.34E-02	1.10E-01	1.10E-01
		677.61		10.53	1.94E-01		1.01E+00
		706.67		16.46	-2.59E-02		7.33E-01
		763.93		21.98	-3.65E-02		5.05E-01
		884.67		71.63	8.26E-02		1.91E-01
		1384.27		23.94	2.43E-02		5.34E-01
+	CD-113M	263.70		0.02	-3.54E+01	3.33E+02	3.33E+02
+	SN-113	255.12		1.93	-6.11E-01	1.33E-01	4.17E+00
		391.69		64.90	1.14E-02		1.33E-01
+	TE123M	159.00		84.10	5.86E-03	9.80E-02	9.80E-02
+	SB-124	602.71		97.87	1.60E-02	1.18E-01	1.18E-01
		645.85		7.26	7.75E-01		1.84E+00
		722.78		11.10	-7.43E-02		1.26E+00
		1691.02		49.00	-3.21E-02		1.70E-01
+	I-125	35.49		6.49	-1.32E+00	3.68E+00	3.68E+00

Analysis Report for 1606043-11

CP-5010 09-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-125	176.33		6.89	2.66E-01	3.41E-01	1.11E+00
		427.89		29.33	-9.55E-03		3.41E-01
		463.38		10.35	9.76E-01		1.12E+00
		600.56		17.80	1.84E-01		6.07E-01
		635.90		11.32	-3.25E-01		9.25E-01
+	SB-126	414.70		83.30	-2.27E-01	1.76E-01	1.76E-01
		666.33		99.60	-1.31E-02		1.87E-01
		695.00		99.60	9.39E-02		1.97E-01
		720.50		53.80	-1.07E-02		3.96E-01
+	SN-126	87.57		37.00	1.84E-01	2.86E-01	2.86E-01
+	SB-127	473.00		25.00	-6.20E-03	1.42E+00	1.94E+00
		685.20		35.70	-3.52E-01		1.42E+00
		783.80		14.70	8.45E-01		4.30E+00
+	I-129	29.78		57.00	-1.88E-01	7.76E-01	7.76E-01
		33.60		13.20	3.46E-01		2.04E+00
		39.58		7.52	4.54E-01		2.22E+00
+	I-131	284.30		6.05	4.08E-01	2.72E-01	3.08E+00
		364.48	*	81.20	1.42E-01		2.72E-01
		636.97		7.26	6.08E-01		3.27E+00
		722.89		1.80	-9.04E-01		1.54E+01
+	TE-132	49.72		13.10	-6.07E-01	6.20E-01	6.52E+00
		228.16		88.00	-1.20E-02		6.20E-01
+	BA-133	81.00		33.00	-1.47E+00	1.70E-01	3.06E-01
		302.84		17.80	2.72E-01		5.00E-01
		356.01		60.00	-4.39E-01		1.70E-01
+	I-133	529.87		86.30	-4.60E+01	1.54E+02	1.54E+02
+	XE-133	81.00		38.00	-4.24E+00	8.83E-01	8.83E-01
+	CS-134	563.23		8.38	5.82E-01	1.10E-01	1.31E+00
		569.32		15.43	-1.55E-01		6.73E-01
		604.70		97.60	7.28E-03		1.10E-01
		795.84		85.40	7.12E-02		1.56E-01
		801.93		8.73	2.18E-01		1.41E+00
+	CS-135	268.24		16.00	1.04E-01	5.49E-01	5.49E-01
+	I-135	1131.51		22.50	-4.99E+08	4.33E+09	5.55E+09
		1260.41		28.60	-1.33E+08		4.33E+09
		1678.03		9.54	-3.18E+09		6.41E+09
+	CS-136	153.22		7.46	7.50E-01	1.85E-01	1.85E+00
		163.89		4.61	1.59E+00		2.80E+00
		176.55		13.56	2.17E-01		9.06E-01
		273.65		12.66	-1.66E-01		1.04E+00
		340.57		48.50	8.32E-01		4.23E-01
		818.50		99.70	4.23E-02		1.85E-01
		1048.07		79.60	-8.48E-02		2.33E-01
		1235.34		19.70	-7.30E-01		1.30E+00
+	CS-137	661.65		85.12	1.62E-02	1.26E-01	1.26E-01
+	LA-138	788.74		34.00	3.17E-01	1.54E-01	3.73E-01
		1435.80		66.00	3.72E-02		1.54E-01
+	CE-139	165.85		80.35	-1.93E-02	1.00E-01	1.00E-01
+	BA-140	162.64		6.70	-1.68E-01	6.89E-01	1.90E+00

Analysis Report for 1606043-11

CP-5010 09-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	304.84		4.50	4.82E-01	6.89E-01	2.74E+00
		423.70		3.20	9.48E-01		5.05E+00
		437.55		2.00	1.46E+00		8.20E+00
		537.32		25.00	-1.02E-01		6.89E-01
+	LA-140	328.77		20.50	5.76E-01	1.82E-01	7.69E-01
		487.03		45.50	-9.84E-02		3.50E-01
		815.85		23.50	6.76E-02		7.53E-01
		1596.49		95.49	3.95E-02		1.82E-01
+	CE-141	145.44		48.40	9.67E-02	2.03E-01	2.03E-01
+	CE-143	57.36		11.80	-1.27E+01	2.78E+01	8.75E+01
		293.26		42.00	4.09E+01		2.78E+01
		664.55		5.20	-1.09E+01		2.13E+02
+	CE-144	133.54		10.80	-6.66E-05	7.17E-01	7.17E-01
+	PM-144	476.78		42.00	-4.62E-02	1.09E-01	2.28E-01
		618.01		98.60	-6.53E-02		1.09E-01
		696.49		99.49	3.40E-02		1.17E-01
+	PM-145	36.85		21.70	-5.73E-01	4.83E-01	8.87E-01
		37.36		39.70	-9.32E-02		4.83E-01
		42.30		15.10	1.91E-02		9.63E-01
		72.40		2.31	-2.34E+01		4.56E+00
+	PM-146	453.90		39.94	2.50E-02	2.33E-01	2.33E-01
		735.90		14.01	-2.49E-01		6.93E-01
		747.13		13.10	4.54E-01		8.48E-01
+	ND-147	91.11	*	28.90	5.47E-01	7.56E-01	7.56E-01
		531.02		13.10	-4.12E-01		1.25E+00
+	PM-149	285.90		3.10	-1.21E+01	4.59E+01	4.59E+01
+	EU-152	121.78		20.50	2.44E-01	3.61E-01	3.61E-01
		244.69		5.40	1.10E-01		1.83E+00
		344.27		19.13	-5.16E-02		4.30E-01
		778.89		9.20	1.87E-01		1.24E+00
		964.01		10.40	-5.18E-02		1.55E+00
		1085.78		7.22	-4.41E-01		1.70E+00
		1112.02		9.60	1.54E-01		1.47E+00
		1407.95		14.94	1.91E-01		7.23E-01
+	GD-153	97.43		31.30	7.65E-02	2.69E-01	2.69E-01
		103.18		22.20	-1.17E-01		3.42E-01
+	EU-154	123.07		40.50	-7.33E-02	1.80E-01	1.80E-01
		723.30		19.70	-3.78E-02		6.42E-01
		873.19		11.50	3.53E-01		9.66E-01
		996.32		10.30	-2.36E-01		9.86E-01
		1004.76		17.90	2.03E-01		7.35E-01
		1274.45		35.50	-4.38E-02		3.25E-01
+	EU-155	86.50		30.90	5.13E-01	3.50E-01	3.50E-01
		105.30		20.70	-1.31E-01		3.57E-01
+	EU-156	811.77		10.40	-3.53E-02	1.46E+00	1.46E+00
		1153.47		7.20	-4.25E-02		2.97E+00
		1230.71		8.90	6.41E-01		2.78E+00
+	HO-166M	184.41		72.60	1.91E-01	1.53E-01	1.53E-01
		280.45		29.60	-1.41E-02		2.91E-01

Analysis Report for 1606043-11

CP-5010 09-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	HO-166M	410.94		11.10	4.20E-01	1.53E-01	9.03E-01
		711.69		54.10	-2.25E-02		2.06E-01
+	TM-171	66.72		0.14	-5.68E+00	7.92E+01	7.92E+01
+	HF-172	81.75		4.52	-1.37E+00	6.62E-01	2.01E+00
		125.81		11.30	-1.81E-01		6.62E-01
+	LU-172	181.53		20.60	2.04E-01	5.71E-01	1.01E+00
		810.06		16.63	9.78E-01		1.78E+00
		912.12		15.25	9.89E+00		4.15E+00
		1093.66		62.50	5.14E-02		5.71E-01
+	LU-173	100.72		5.24	1.12E+00	4.48E-01	1.51E+00
		272.11		21.20	4.64E-01		4.48E-01
+	HF-175	343.40		84.00	4.37E-03	1.10E-01	1.10E-01
+	LU-176	88.34		13.30	8.42E-01	8.21E-02	8.31E-01
		201.83		86.00	-1.26E-02		9.31E-02
		306.78		94.00	3.45E-02		8.21E-02
+	TA-182	67.75		41.20	5.84E-02	2.64E-01	2.64E-01
		1121.30		34.90	6.88E-01		5.91E-01
		1189.05		16.23	4.04E-01		9.93E-01
		1221.41		26.98	-9.34E-02		5.99E-01
		1231.02		11.44	3.48E-01		1.51E+00
+	IR-192	308.46		29.68	-1.86E-02	2.20E-01	2.71E-01
		468.07		48.10	-6.18E-03		2.20E-01
+	HG-203	279.19		77.30	1.76E-02	1.27E-01	1.27E-01
+	BI-207	569.67		97.72	-3.25E-02	1.04E-01	1.04E-01
		1063.62		74.90	-2.22E-02		1.72E-01
+	TL-208	583.14	*	30.22	1.76E+00	1.82E-01	3.80E-01
		860.37	*	4.48	2.76E+00		3.68E+00
		2614.66	*	35.85	1.53E+00		1.82E-01
+	BI-210M	262.00		45.00	2.49E-02	1.76E-01	1.76E-01
		300.00		23.00	-1.02E+00		3.94E-01
+	PB-210	46.50	*	4.25	3.40E+00	3.51E+00	3.51E+00
+	PB-211	404.84		2.90	8.28E-02	2.75E+00	2.75E+00
		831.96		2.90	-2.57E+00		3.64E+00
+	BI-212	727.17	*	11.80	1.69E+00	1.14E+00	1.14E+00
		1620.62		2.75	1.36E+00		3.54E+00
+	PB-212	238.63		44.60	1.75E+00	4.26E-01	4.26E-01
		300.09		3.41	-6.87E+00		2.66E+00
+	BI-214	609.31	*	46.30	1.49E+00	3.31E-01	3.31E-01
		1120.29		15.10	9.33E-01		1.27E+00
		1764.49		15.80	1.57E+00		1.22E+00
		2204.22	*	4.98	2.35E+00		1.61E+00
+	PB-214	295.21	*	19.19	1.43E+00	4.16E-01	6.64E-01
		351.92	*	37.19	1.59E+00		4.16E-01
+	RN-219	401.80		6.50	-2.75E-01	1.27E+00	1.27E+00
+	RA-223	323.87		3.88	8.62E-01	2.13E+00	2.13E+00
+	RA-224	240.98		3.95	3.01E+01	5.12E+00	5.12E+00
+	RA-225	40.00		31.00	1.64E-01	8.02E-01	8.02E-01
+	RA-226	186.21	*	3.28	7.80E+00	4.24E+00	4.24E+00

Analysis Report for 1606043-11

CP-5010 09-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-227	50.10		8.40	-1.35E-01	7.96E-01	1.45E+00
		236.00		11.50	-1.10E+01		7.96E-01
		256.20		6.30	-3.74E-01		1.21E+00
+	AC-228	338.32	*	11.40	2.43E+00	6.65E-01	1.22E+00
		911.07	*	27.70	2.29E+00		6.65E-01
		969.11	*	16.60	2.47E+00		1.10E+00
+	TH-230	48.44		16.90	7.86E-01	8.11E-01	8.11E-01
		62.85		4.60	4.48E+00		2.69E+00
		67.67		0.37	6.15E+00		2.79E+01
+	PA-231	283.67		1.60	2.63E+00	3.86E+00	5.45E+00
		302.67		2.30	2.10E+00		3.86E+00
+	TH-231	25.64		14.70	-3.78E+01	1.47E+00	8.33E+00
		84.21		6.40	-4.13E+00		1.47E+00
+	PA-233	311.98		38.60	-1.50E-01	2.32E-01	2.32E-01
+	PA-234	131.20		20.40	-1.16E-02	3.99E-01	3.99E-01
		733.99		8.80	-8.27E-02		1.18E+00
		946.00		12.00	-3.09E-01		8.91E-01
+	PA-234M	1001.03		0.92	1.09E+01	1.47E+01	1.47E+01
+	TH-234	63.29	*	3.80	2.17E+00	3.63E+00	3.63E+00
+	U-235	143.76		10.50	2.77E-01	7.96E-01	7.96E-01
		163.35		4.70	9.65E-01		1.70E+00
		205.31		4.70	-4.64E-02		1.69E+00
+	NP-237	86.50		12.60	1.25E+00	8.55E-01	8.55E-01
+	NP-239	106.10		22.70	-1.74E+00	4.72E+00	4.72E+00
		228.18		10.70	-2.07E-01		1.07E+01
		277.60		14.10	1.59E+00		8.64E+00
+	AM-241	59.54		35.90	2.51E-03	2.98E-01	2.98E-01
+	AM-243	74.67		66.00	-8.63E-01	1.93E-01	1.93E-01
+	CM-243	209.75		3.29	3.69E-01	5.98E-01	2.76E+00
		228.14		10.60	-1.43E-02		7.44E-01
		277.60		14.00	1.10E-01		5.98E-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

Analysis Report for 1606043-11

CP-5010 09-15

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	1.02E+00	1.02E+00	-2.39E-01	4.80E-01
	NA-22	1274.54		99.94	1.16E-01	1.16E-01	-1.56E-02	5.21E-02
	NA-24	1368.53		99.99	2.16E+03	1.12E+03	-1.49E+03	9.31E+02
		2754.09		99.86	1.12E+03		-3.06E+02	3.56E+02
	AL-26	1808.65		99.76	9.23E-02	9.23E-02	-1.11E-02	3.86E-02
+	K-40	1460.81	*	10.67	1.39E+00	1.39E+00	3.08E+01	6.32E-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	1.09E-01	1.09E-01	2.41E-02	5.32E-02
		78.34		96.00	1.42E-01		2.17E-01	7.00E-02
	SC-46	889.25		99.98	1.30E-01	1.30E-01	-6.73E-02	6.00E-02
		1120.51		99.99	2.07E-01		1.52E-01	9.80E-02
	V-48	983.52		99.98	1.75E-01	1.70E-01	-3.97E-02	8.06E-02
		1312.10		97.50	1.70E-01		-6.78E-03	7.56E-02
	CR-51	320.08		9.83	1.05E+00	1.05E+00	2.87E-01	4.98E-01
	MN-54	834.83		99.97	1.22E-01	1.22E-01	-1.26E-02	5.69E-02
	CO-56	846.75		99.96	1.11E-01	1.11E-01	-2.28E-02	5.10E-02
		1037.75		14.03	9.63E-01		2.43E-01	4.43E-01
		1238.25		67.00	2.77E-01		1.43E-03	1.29E-01
		1771.40		15.51	5.38E-01		5.72E-02	2.17E-01
		2598.48		16.90	4.85E-01		4.04E-02	1.88E-01
	CO-57	122.06		85.51	8.84E-02	8.84E-02	5.99E-02	4.28E-02
		136.48		10.60	7.53E-01		5.28E-01	3.64E-01
	CO-58	810.76		99.40	1.18E-01	1.18E-01	1.83E-02	5.46E-02
	FE-59	1099.22		56.50	2.66E-01	2.66E-01	1.48E-02	1.22E-01
		1291.56		43.20	3.15E-01		-3.00E-02	1.42E-01
	CO-60	1173.22		100.00	1.27E-01	1.15E-01	-2.95E-02	5.81E-02
		1332.49		100.00	1.15E-01		-8.29E-03	5.15E-02
	ZN-65	1115.52		50.75	2.93E-01	2.93E-01	8.13E-02	1.36E-01
+	GA-67	93.31	*	35.70	2.55E+00	2.55E+00	2.98E+00	1.25E+00
		208.95		2.24	2.81E+01		9.42E+00	1.35E+01
		300.22	*	16.00	3.58E+00		2.71E+00	1.71E+00
	SE-75	121.11		16.70	4.56E-01	1.35E-01	-7.79E-02	2.20E-01
		136.00		59.20	1.37E-01		7.19E-02	6.63E-02
		264.65		59.80	1.35E-01		2.01E-02	6.42E-02
		279.53		25.20	3.65E-01		1.05E-01	1.75E-01
		400.65		11.40	7.62E-01		-4.28E-02	3.59E-01
	RB-82	776.52		13.00	1.06E+00	1.06E+00	-6.63E-02	4.91E-01
	RB-83	520.41		46.00	2.17E-01	2.17E-01	-8.80E-02	1.02E-01
		529.64		30.30	3.26E-01		-9.74E-02	1.52E-01
		552.65		16.40	6.98E-01		3.00E-02	3.29E-01
	KR-85	513.99		0.43	3.56E+01	3.56E+01	6.37E+01	1.71E+01
	SR-85	513.99		99.27	1.71E-01	1.71E-01	3.06E-01	8.25E-02
	Y-88	898.02		93.40	1.45E-01	9.91E-02	1.77E-02	6.72E-02
		1836.01		99.38	9.91E-02		-1.06E-02	4.15E-02
	NB-93M	16.57		9.43	1.04E+02	1.04E+02	-1.41E+02	4.77E+01

Analysis Report for 1606043-11

CP-5010 09-15

	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	1.25E-01	1.03E-01	6.26E-02	5.87E-02
		871.10		100.00	1.03E-01		-6.44E-02	4.69E-02
	NB-95	765.79		99.81	1.47E-01	1.47E-01	-1.75E-03	6.90E-02
	NB-95M	235.69		25.00	2.10E+00	2.10E+00	-2.90E+01	1.01E+00
	ZR-95	724.18		43.70	3.19E-01	2.38E-01	-7.53E-02	1.50E-01
		756.72		55.30	2.38E-01		8.50E-02	1.11E-01
	MO-99	181.06		6.20	1.27E+01	7.44E+00	6.05E+00	6.14E+00
		739.58		12.80	7.44E+00		-3.58E+00	3.42E+00
		778.00		4.50	2.44E+01		-5.03E+00	1.13E+01
	RU-103	497.08		89.00	1.22E-01	1.22E-01	1.24E-02	5.72E-02
	RU-106	621.84		9.80	1.23E+00	1.23E+00	2.63E-01	5.79E-01
	AG-108M	433.93		89.90	1.08E-01	1.08E-01	-2.63E-02	5.09E-02
		614.37		90.40	1.22E-01		-6.13E-02	5.71E-02
		722.95		90.50	1.40E-01		-8.21E-03	6.56E-02
	CD-109	88.03		3.72	2.88E+00	2.88E+00	1.85E+00	1.41E+00
	AG-110M	657.75		93.14	1.10E-01	1.10E-01	-7.34E-02	5.13E-02
		677.61		10.53	1.01E+00		1.94E-01	4.72E-01
		706.67		16.46	7.33E-01		-2.59E-02	3.43E-01
		763.93		21.98	5.05E-01		-3.65E-02	2.34E-01
		884.67		71.63	1.91E-01		8.26E-02	8.92E-02
		1384.27		23.94	5.34E-01		2.43E-02	2.40E-01
	CD-113M	263.70		0.02	3.33E+02	3.33E+02	-3.54E+01	1.59E+02
	SN-113	255.12		1.93	4.17E+00	1.33E-01	-6.11E-01	1.99E+00
		391.69		64.90	1.33E-01		1.14E-02	6.25E-02
	TE123M	159.00		84.10	9.80E-02	9.80E-02	5.86E-03	4.73E-02
	SB-124	602.71		97.87	1.18E-01	1.18E-01	1.60E-02	5.52E-02
		645.85		7.26	1.84E+00		7.75E-01	8.70E-01
		722.78		11.10	1.26E+00		-7.43E-02	5.94E-01
		1691.02		49.00	1.70E-01		-3.21E-02	6.85E-02
	I-125	35.49		6.49	3.68E+00	3.68E+00	-1.32E+00	1.77E+00
	SB-125	176.33		6.89	1.11E+00	3.41E-01	2.66E-01	5.34E-01
		427.89		29.33	3.41E-01		-9.55E-03	1.62E-01
		463.38		10.35	1.12E+00		9.76E-01	5.33E-01
		600.56		17.80	6.07E-01		1.84E-01	2.85E-01
		635.90		11.32	9.25E-01		-3.25E-01	4.32E-01
	SB-126	414.70		83.30	1.76E-01	1.76E-01	-2.27E-01	8.30E-02
		666.33		99.60	1.87E-01		-1.31E-02	8.78E-02
		695.00		99.60	1.97E-01		9.39E-02	9.26E-02
		720.50		53.80	3.96E-01		-1.07E-02	1.86E-01
	SN-126	87.57		37.00	2.86E-01	2.86E-01	1.84E-01	1.40E-01
	SB-127	473.00		25.00	1.94E+00	1.42E+00	-6.20E-03	9.13E-01
		685.20		35.70	1.42E+00		-3.52E-01	6.58E-01
		783.80		14.70	4.30E+00		8.45E-01	2.01E+00
	I-129	29.78		57.00	7.76E-01	7.76E-01	-1.88E-01	3.76E-01
		33.60		13.20	2.04E+00		3.46E-01	9.88E-01
		39.58		7.52	2.22E+00		4.54E-01	1.07E+00
+	I-131	284.30		6.05	3.08E+00	2.72E-01	4.08E-01	1.47E+00
		364.48	*	81.20	2.72E-01		1.42E-01	1.30E-01
		636.97		7.26	3.27E+00		6.08E-01	1.53E+00
		722.89		1.80	1.54E+01		-9.04E-01	7.23E+00
	TE-132	49.72		13.10	6.52E+00	6.20E-01	-6.07E-01	3.17E+00
		228.16		88.00	6.20E-01		-1.20E-02	2.97E-01
	BA-133	81.00		33.00	3.06E-01	1.70E-01	-1.47E+00	1.49E-01

Analysis Report for 1606043-11

CP-5010 09-15

	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	5.00E-01	1.70E-01	2.72E-01	2.39E-01
		356.01		60.00	1.70E-01		-4.39E-01	8.13E-02
	I-133	529.87		86.30	1.54E+02	1.54E+02	-4.60E+01	7.20E+01
	XE-133	81.00		38.00	8.83E-01	8.83E-01	-4.24E+00	4.31E-01
	CS-134	563.23		8.38	1.31E+00	1.10E-01	5.82E-01	6.16E-01
		569.32		15.43	6.73E-01		-1.55E-01	3.16E-01
		604.70		97.60	1.10E-01		7.28E-03	5.17E-02
		795.84		85.40	1.56E-01		7.12E-02	7.34E-02
		801.93		8.73	1.41E+00		2.18E-01	6.60E-01
	CS-135	268.24		16.00	5.49E-01	5.49E-01	1.04E-01	2.63E-01
	I-135	1131.51		22.50	5.55E+09	4.33E+09	-4.99E+08	2.57E+09
		1260.41		28.60	4.33E+09		-1.33E+08	1.99E+09
		1678.03		9.54	6.41E+09		-3.18E+09	2.54E+09
	CS-136	153.22		7.46	1.85E+00	1.85E-01	7.50E-01	8.95E-01
		163.89		4.61	2.80E+00		1.59E+00	1.35E+00
		176.55		13.56	9.06E-01		2.17E-01	4.36E-01
		273.65		12.66	1.04E+00		-1.66E-01	4.97E-01
		340.57		48.50	4.23E-01		8.32E-01	2.05E-01
		818.50		99.70	1.85E-01		4.23E-02	8.59E-02
		1048.07		79.60	2.33E-01		-8.48E-02	1.06E-01
		1235.34		19.70	1.30E+00		-7.30E-01	6.02E-01
	CS-137	661.65		85.12	1.26E-01	1.26E-01	1.62E-02	5.90E-02
	LA-138	788.74		34.00	3.73E-01	1.54E-01	3.17E-01	1.74E-01
		1435.80		66.00	1.54E-01		3.72E-02	6.71E-02
	CE-139	165.85		80.35	1.00E-01	1.00E-01	-1.93E-02	4.83E-02
	BA-140	162.64		6.70	1.90E+00	6.89E-01	-1.68E-01	9.18E-01
		304.84		4.50	2.74E+00		4.82E-01	1.30E+00
		423.70		3.20	5.05E+00		9.48E-01	2.40E+00
		437.55		2.00	8.20E+00		1.46E+00	3.89E+00
		537.32		25.00	6.89E-01		-1.02E-01	3.25E-01
	LA-140	328.77		20.50	7.69E-01	1.82E-01	5.76E-01	3.68E-01
		487.03		45.50	3.50E-01		-9.84E-02	1.65E-01
		815.85		23.50	7.53E-01		6.76E-02	3.48E-01
		1596.49		95.49	1.82E-01		3.95E-02	7.90E-02
	CE-141	145.44		48.40	2.03E-01	2.03E-01	9.67E-02	9.81E-02
	CE-143	57.36		11.80	8.75E+01	2.78E+01	-1.27E+01	4.26E+01
		293.26		42.00	2.78E+01		4.09E+01	1.35E+01
		664.55		5.20	2.13E+02		-1.09E+01	9.98E+01
	CE-144	133.54		10.80	7.17E-01	7.17E-01	-6.66E-05	3.47E-01
	PM-144	476.78		42.00	2.28E-01	1.09E-01	-4.62E-02	1.07E-01
		618.01		98.60	1.09E-01		-6.53E-02	5.09E-02
		696.49		99.49	1.17E-01		3.40E-02	5.50E-02
	PM-145	36.85		21.70	8.87E-01	4.83E-01	-5.73E-01	4.28E-01
		37.36		39.70	4.83E-01		-9.32E-02	2.33E-01
		42.30		15.10	9.63E-01		1.91E-02	4.66E-01
		72.40		2.31	4.56E+00		-2.34E+01	2.23E+00
	PM-146	453.90		39.94	2.33E-01	2.33E-01	2.50E-02	1.10E-01
		735.90		14.01	6.93E-01		-2.49E-01	3.19E-01
		747.13		13.10	8.48E-01		4.54E-01	3.94E-01
+	ND-147	91.11	*	28.90	7.56E-01	7.56E-01	5.47E-01	3.71E-01
		531.02		13.10	1.25E+00		-4.12E-01	5.87E-01
	PM-149	285.90		3.10	4.59E+01	4.59E+01	-1.21E+01	2.19E+01
	EU-152	121.78		20.50	3.61E-01	3.61E-01	2.44E-01	1.74E-01

Analysis Report for 1606043-11

CP-5010 09-15

	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	1.83E+00	3.61E-01	1.10E-01	8.82E-01
		344.27		19.13	4.30E-01		-5.16E-02	2.04E-01
		778.89		9.20	1.24E+00		1.87E-01	5.75E-01
		964.01		10.40	1.55E+00		-5.18E-02	7.32E-01
		1085.78		7.22	1.70E+00		-4.41E-01	7.76E-01
		1112.02		9.60	1.47E+00		1.54E-01	6.80E-01
		1407.95		14.94	7.23E-01		1.91E-01	3.19E-01
	GD-153	97.43		31.30	2.69E-01	2.69E-01	7.65E-02	1.31E-01
		103.18		22.20	3.42E-01		-1.17E-01	1.66E-01
	EU-154	123.07		40.50	1.80E-01	1.80E-01	-7.33E-02	8.72E-02
		723.30		19.70	6.42E-01		-3.78E-02	3.02E-01
		873.19		11.50	9.66E-01		3.53E-01	4.45E-01
		996.32		10.30	9.86E-01		-2.36E-01	4.46E-01
		1004.76		17.90	7.35E-01		2.03E-01	3.40E-01
		1274.45		35.50	3.25E-01		-4.38E-02	1.46E-01
	EU-155	86.50		30.90	3.50E-01	3.50E-01	5.13E-01	1.71E-01
		105.30		20.70	3.57E-01		-1.31E-01	1.73E-01
	EU-156	811.77		10.40	1.46E+00	1.46E+00	-3.53E-02	6.70E-01
		1153.47		7.20	2.97E+00		-4.25E-02	1.37E+00
		1230.71		8.90	2.78E+00		6.41E-01	1.29E+00
	HO-166M	184.41		72.60	1.53E-01	1.53E-01	1.91E-01	7.48E-02
		280.45		29.60	2.91E-01		-1.41E-02	1.39E-01
		410.94		11.10	9.03E-01		4.20E-01	4.30E-01
		711.69		54.10	2.06E-01		-2.25E-02	9.61E-02
	TM-171	66.72		0.14	7.92E+01	7.92E+01	-5.68E+00	3.87E+01
	HF-172	81.75		4.52	2.01E+00	6.62E-01	-1.37E+00	9.81E-01
		125.81		11.30	6.62E-01		-1.81E-01	3.20E-01
	LU-172	181.53		20.60	1.01E+00	5.71E-01	2.04E-01	4.85E-01
		810.06		16.63	1.78E+00		9.78E-01	8.25E-01
		912.12		15.25	4.15E+00		9.89E+00	2.00E+00
		1093.66		62.50	5.71E-01		5.14E-02	2.64E-01
	LU-173	100.72		5.24	1.51E+00	4.48E-01	1.12E+00	7.34E-01
		272.11		21.20	4.48E-01		4.64E-01	2.15E-01
	HF-175	343.40		84.00	1.10E-01	1.10E-01	4.37E-03	5.24E-02
	LU-176	88.34		13.30	8.31E-01	8.21E-02	8.42E-01	4.07E-01
		201.83		86.00	9.31E-02		-1.26E-02	4.48E-02
		306.78		94.00	8.21E-02		3.45E-02	3.89E-02
	TA-182	67.75		41.20	2.64E-01	2.64E-01	5.84E-02	1.29E-01
		1121.30		34.90	5.91E-01		6.88E-01	2.79E-01
		1189.05		16.23	9.93E-01		4.04E-01	4.60E-01
		1221.41		26.98	5.99E-01		-9.34E-02	2.77E-01
		1231.02		11.44	1.51E+00		3.48E-01	7.00E-01
	IR-192	308.46		29.68	2.71E-01	2.20E-01	-1.86E-02	1.28E-01
		468.07		48.10	2.20E-01		-6.18E-03	1.04E-01
	HG-203	279.19		77.30	1.27E-01	1.27E-01	1.76E-02	6.08E-02
	BI-207	569.67		97.72	1.04E-01	1.04E-01	-3.25E-02	4.86E-02
		1063.62		74.90	1.72E-01		-2.22E-02	7.89E-02
+	TL-208	583.14	*	30.22	3.80E-01	1.82E-01	1.76E+00	1.79E-01
		860.37	*	4.48	3.68E+00		2.76E+00	1.74E+00
		2614.66	*	35.85	1.82E-01		1.53E+00	6.73E-02
	BI-210M	262.00		45.00	1.76E-01	1.76E-01	2.49E-02	8.38E-02
		300.00		23.00	3.94E-01		-1.02E+00	1.88E-01
+	PB-210	46.50	*	4.25	3.51E+00	3.51E+00	3.40E+00	1.71E+00

Analysis Report for 1606043-11

CP-5010 09-15

	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	2.75E+00	2.75E+00	8.28E-02	1.29E+00
		831.96		2.90	3.64E+00		-2.57E+00	1.68E+00
+	BI-212	727.17	*	11.80	1.14E+00	1.14E+00	1.69E+00	5.40E-01
		1620.62		2.75	3.54E+00		1.36E+00	1.51E+00
	PB-212	238.63		44.60	4.26E-01	4.26E-01	1.75E+00	2.09E-01
		300.09		3.41	2.66E+00		-6.87E+00	1.27E+00
+	BI-214	609.31	*	46.30	3.31E-01	3.31E-01	1.49E+00	1.58E-01
		1120.29		15.10	1.27E+00		9.33E-01	6.02E-01
		1764.49		15.80	1.22E+00		1.57E+00	5.61E-01
		2204.22	*	4.98	1.61E+00		2.35E+00	6.42E-01
+	PB-214	295.21	*	19.19	6.64E-01	4.16E-01	1.43E+00	3.22E-01
		351.92	*	37.19	4.16E-01		1.59E+00	2.02E-01
	RN-219	401.80		6.50	1.27E+00	1.27E+00	-2.75E-01	5.98E-01
	RA-223	323.87		3.88	2.13E+00	2.13E+00	8.62E-01	1.01E+00
	RA-224	240.98		3.95	5.12E+00	5.12E+00	3.01E+01	2.52E+00
	RA-225	40.00		31.00	8.02E-01	8.02E-01	1.64E-01	3.88E-01
+	RA-226	186.21	*	3.28	4.24E+00	4.24E+00	7.80E+00	2.08E+00
	TH-227	50.10		8.40	1.45E+00	7.96E-01	-1.35E-01	7.05E-01
		236.00		11.50	7.96E-01		-1.10E+01	3.83E-01
		256.20		6.30	1.21E+00		-3.74E-01	5.78E-01
+	AC-228	338.32	*	11.40	1.22E+00	6.65E-01	2.43E+00	5.89E-01
		911.07	*	27.70	6.65E-01		2.29E+00	3.16E-01
		969.11	*	16.60	1.10E+00		2.47E+00	5.23E-01
	TH-230	48.44		16.90	8.11E-01	8.11E-01	7.86E-01	3.95E-01
		62.85		4.60	2.69E+00		4.48E+00	1.32E+00
		67.67		0.37	2.79E+01		6.15E+00	1.36E+01
	PA-231	283.67		1.60	5.45E+00	3.86E+00	2.63E+00	2.61E+00
		302.67		2.30	3.86E+00		2.10E+00	1.84E+00
	TH-231	25.64		14.70	8.33E+00	1.47E+00	-3.78E+01	4.06E+00
		84.21		6.40	1.47E+00		-4.13E+00	7.19E-01
	PA-233	311.98		38.60	2.32E-01	2.32E-01	-1.50E-01	1.09E-01
	PA-234	131.20		20.40	3.99E-01	3.99E-01	-1.16E-02	1.93E-01
		733.99		8.80	1.18E+00		-8.27E-02	5.47E-01
		946.00		12.00	8.91E-01		-3.09E-01	4.07E-01
	PA-234M	1001.03		0.92	1.47E+01	1.47E+01	1.09E+01	6.83E+00
+	TH-234	63.29	*	3.80	3.63E+00	3.63E+00	2.17E+00	1.78E+00
	U-235	143.76		10.50	7.96E-01	7.96E-01	2.77E-01	3.86E-01
		163.35		4.70	1.70E+00		9.65E-01	8.20E-01
		205.31		4.70	1.69E+00		-4.64E-02	8.15E-01
	NP-237	86.50		12.60	8.55E-01	8.55E-01	1.25E+00	4.18E-01
	NP-239	106.10		22.70	4.72E+00	4.72E+00	-1.74E+00	2.29E+00
		228.18		10.70	1.07E+01		-2.07E-01	5.14E+00
		277.60		14.10	8.64E+00		1.59E+00	4.13E+00
	AM-241	59.54		35.90	2.98E-01	2.98E-01	2.51E-03	1.45E-01
	AM-243	74.67		66.00	1.93E-01	1.93E-01	-8.63E-01	9.50E-02
	CM-243	209.75		3.29	2.76E+00	5.98E-01	3.69E-01	1.33E+00
		228.14		10.60	7.44E-01		-1.43E-02	3.56E-01
		277.60		14.00	5.98E-01		1.10E-01	2.86E-01

Analysis Report for 1606043-11

CP-5010 09-15

+ = 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

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-5010 09-15

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	88	76	115	707	282
25:	66	76	64	53	60	63	61	60
33:	63	51	49	59	49	49	53	69
41:	66	54	59	69	57	72	131	127
49:	81	61	67	74	80	88	77	79
57:	79	82	89	107	100	110	103	223
65:	189	98	110	123	103	123	115	92
73:	113	129	178	350	184	530	222	88
81:	109	106	94	98	141	111	105	219
89:	150	115	180	129	184	298	123	91
97:	77	76	86	87	72	67	64	53
105:	71	78	73	52	77	66	78	63
113:	66	71	66	68	58	62	48	61
121:	65	57	62	61	51	69	56	65
129:	72	106	76	62	61	49	71	58
137:	69	60	56	52	60	67	69	66
145:	81	63	65	44	48	65	50	70
153:	60	71	79	60	68	49	61	53
161:	42	50	70	60	42	55	49	46
169:	43	46	62	52	48	36	44	47
177:	45	42	52	47	51	54	42	59
185:	57	105	218	91	49	50	63	35
193:	36	46	47	39	43	35	48	45
201:	46	46	45	36	44	51	48	32
209:	41	79	71	47	55	47	46	45
217:	36	39	50	38	31	40	39	40
225:	35	53	24	32	34	37	33	38
233:	45	30	45	52	59	49	354	484
241:	93	117	114	46	32	36	33	30
249:	30	31	37	31	24	28	32	30
257:	30	24	32	39	29	24	23	35
265:	33	24	23	28	23	26	81	45
273:	34	18	29	25	28	39	30	34
281:	32	34	33	32	34	32	25	21
289:	34	28	25	36	34	38	38	154
297:	76	18	22	30	64	31	15	23
305:	23	24	24	22	21	19	17	16
313:	24	17	28	26	21	25	25	22
321:	18	32	26	14	21	29	31	23
329:	58	30	22	22	23	19	22	17
337:	22	44	130	65	31	27	25	24
345:	19	23	19	19	23	14	20	130
353:	251	73	18	22	26	25	16	10
361:	17	18	12	22	22	19	13	12

369:	13	14	19	18	23	18	14	22

Sample Title: CP-5010 09-15

Channel								
377:	13	23	16	16	20	15	23	24
385:	21	14	17	17	17	22	20	15
393:	11	21	22	12	16	22	16	17
401:	18	19	18	16	19	21	7	17
409:	12	37	21	11	19	11	17	13
417:	12	13	17	19	21	9	27	13
425:	11	14	23	12	15	28	15	14
433:	15	16	14	16	19	15	13	20
441:	19	12	18	19	16	19	14	14
449:	10	14	17	8	10	16	13	12
457:	17	11	15	14	9	24	19	43
465:	24	11	12	13	11	11	16	12
473:	15	13	14	9	14	13	9	17
481:	13	16	13	11	13	11	15	12
489:	15	15	21	10	10	12	6	7
497:	14	11	18	12	8	15	13	14
505:	10	13	8	13	13	25	55	73
513:	37	20	11	12	15	14	9	14
521:	8	8	10	12	12	14	10	9
529:	7	12	9	7	17	11	11	14
537:	17	13	13	13	12	15	14	13
545:	12	8	11	9	9	19	12	14
553:	14	9	13	10	19	11	6	12
561:	9	13	15	14	16	13	8	15
569:	7	16	6	16	10	13	11	15
577:	5	15	12	7	5	10	52	142
585:	69	13	10	16	12	10	14	15
593:	7	6	9	15	6	13	11	7
601:	17	11	10	12	8	10	14	14
609:	56	151	83	16	18	13	4	11
617:	8	12	12	15	12	14	12	15
625:	14	15	12	15	12	12	14	11
633:	7	11	10	15	9	6	11	13
641:	10	10	16	13	18	11	10	11
649:	13	7	14	10	11	13	6	6
657:	10	6	7	16	9	13	12	7
665:	5	17	13	9	12	1	10	7
673:	7	8	7	9	11	9	10	6
681:	10	6	10	4	6	6	7	15
689:	14	6	12	11	9	12	10	11
697:	14	11	7	8	8	13	14	16
705:	17	10	7	11	4	10	13	5
713:	14	10	10	13	9	13	11	18
721:	7	12	11	15	11	10	18	57
729:	23	6	8	8	9	11	9	2
737:	7	3	5	9	8	6	7	11
745:	12	4	9	8	4	12	4	6
753:	13	10	10	12	12	7	5	13
761:	7	6	5	10	9	9	9	10
769:	20	25	4	8	12	4	8	7
777:	8	5	10	11	7	11	9	9
785:	4	12	17	6	8	11	13	6
793:	7	2	16	28	7	6	13	8

801:	7	6	15	9	8	8	12	10

Sample Title: CP-5010 09-15

Channel								
809:	9	5	8	5	8	4	3	5
817:	8	12	9	8	4	9	10	8
825:	7	3	9	7	3	8	8	5
833:	3	10	8	14	9	10	9	11
841:	9	4	3	7	10	8	4	3
849:	7	2	13	4	2	3	9	7
857:	6	11	9	13	24	20	7	9
865:	8	9	9	6	3	9	6	5
873:	4	6	8	8	6	4	4	7
881:	6	9	8	11	13	3	8	15
889:	8	7	3	9	6	12	8	10
897:	15	7	6	7	6	7	7	8
905:	10	8	5	16	6	10	46	111
913:	46	9	5	10	3	12	5	5
921:	6	6	7	6	8	7	12	5
929:	3	6	2	6	5	15	11	8
937:	4	7	6	5	6	5	6	2
945:	6	8	2	2	11	7	9	5
953:	2	5	7	5	7	6	9	9
961:	9	5	7	8	20	26	12	18
969:	39	57	28	9	9	2	7	4
977:	4	6	5	10	6	5	9	4
985:	6	6	7	6	8	7	7	2
993:	2	3	7	1	5	7	5	5
1001:	7	15	11	6	4	6	4	6
1009:	6	6	5	1	5	11	5	4
1017:	9	5	4	3	10	6	7	5
1025:	8	4	6	2	2	5	9	8
1033:	3	6	4	8	10	5	5	4
1041:	8	5	6	4	5	8	4	4
1049:	3	6	6	8	8	3	3	7
1057:	3	5	7	3	6	6	7	8
1065:	7	8	3	11	6	6	4	7
1073:	6	6	9	3	20	7	7	13
1081:	10	3	7	4	3	2	5	9
1089:	9	10	4	10	5	8	9	5
1097:	10	8	6	5	7	3	4	5
1105:	7	11	6	6	4	6	11	2
1113:	10	3	15	7	8	4	7	11
1121:	33	27	8	11	2	8	6	12
1129:	5	6	7	7	4	9	8	8
1137:	9	4	10	5	10	3	11	3
1145:	6	10	4	10	7	5	5	9
1153:	6	7	5	11	9	2	9	6
1161:	10	6	3	5	3	15	3	3
1169:	7	4	4	6	6	5	3	9
1177:	10	5	10	10	10	9	4	10
1185:	4	8	9	5	6	10	11	5
1193:	3	6	5	6	2	8	9	9
1201:	13	9	6	6	10	7	9	10
1209:	8	15	5	10	5	15	7	10
1217:	11	7	6	9	8	8	6	8
1225:	3	10	6	10	5	9	8	8

1233:	11	8	5	8	5	10	12	13

Sample Title: CP-5010 09-15

Channel								
1241:	12	8	10	8	6	3	10	7
1249:	6	6	5	6	7	3	10	2
1257:	5	4	7	5	8	6	6	8
1265:	4	3	5	5	6	3	2	6
1273:	2	3	6	4	3	3	5	1
1281:	2	3	3	4	4	3	6	4
1289:	5	3	2	2	7	4	4	4
1297:	2	5	3	2	6	8	4	4
1305:	3	5	3	5	3	0	3	1
1313:	5	7	4	0	3	2	2	3
1321:	1	2	6	2	6	3	3	5
1329:	4	3	6	2	4	3	2	2
1337:	5	5	2	1	2	1	5	3
1345:	5	5	3	1	2	5	7	3
1353:	0	6	4	6	3	3	1	3
1361:	1	2	1	6	1	3	2	1
1369:	2	2	2	3	5	4	3	3
1377:	4	6	8	1	5	3	2	4
1385:	2	7	4	3	3	3	2	0
1393:	1	1	3	1	5	2	1	2
1401:	2	6	1	2	4	3	4	5
1409:	1	1	1	3	1	0	1	0
1417:	2	0	2	2	1	2	2	3
1425:	3	2	4	3	3	2	4	2
1433:	3	0	6	1	2	0	4	1
1441:	0	2	0	4	2	2	2	1
1449:	3	1	3	0	3	2	1	1
1457:	6	2	19	93	264	253	66	13
1465:	3	4	1	3	3	4	1	0
1473:	1	3	2	5	0	3	0	0
1481:	2	1	1	3	0	4	4	0
1489:	1	2	1	4	1	2	4	4
1497:	2	1	3	0	3	3	1	2
1505:	3	2	3	1	6	3	2	1
1513:	4	3	1	2	0	2	0	2
1521:	1	2	4	2	0	1	3	3
1529:	1	1	0	1	0	3	1	0
1537:	3	1	1	2	2	2	3	0
1545:	3	0	0	1	5	3	0	0
1553:	0	0	1	2	2	0	3	1
1561:	0	0	1	2	5	3	5	4
1569:	0	1	1	0	0	0	1	2
1577:	0	2	1	1	1	2	2	2
1585:	1	0	7	9	10	5	1	2
1593:	6	3	2	2	1	0	1	1
1601:	2	1	0	1	2	2	1	1
1609:	2	2	0	2	1	1	2	0
1617:	0	4	3	2	1	2	0	1
1625:	0	1	0	2	1	2	5	2
1633:	1	0	0	3	0	2	1	1
1641:	0	0	1	1	5	0	3	1
1649:	1	3	3	1	1	0	2	1
1657:	0	1	2	1	3	3	3	0

1665:	0	4	2	1	0	0	0	0

Sample Title: CP-5010 09-15

Channel								
1673:	3	2	0	2	0	1	0	2
1681:	0	2	0	3	1	2	0	1
1689:	1	0	0	1	1	2	3	0
1697:	1	2	3	0	0	1	1	1
1705:	2	0	2	2	1	0	1	1
1713:	0	0	1	0	2	0	3	2
1721:	1	2	5	1	1	1	2	1
1729:	6	7	4	0	2	1	1	1
1737:	1	1	1	1	1	0	0	2
1745:	1	0	0	1	0	1	3	1
1753:	1	0	2	3	1	3	1	0
1761:	0	0	0	8	20	18	3	1
1769:	0	0	1	0	2	2	1	1
1777:	2	3	2	3	1	1	3	0
1785:	1	0	0	1	0	1	0	1
1793:	2	1	2	0	2	1	1	0
1801:	1	0	2	1	4	2	2	0
1809:	1	0	0	1	1	0	0	2
1817:	1	0	2	2	0	0	0	1
1825:	0	1	2	2	1	0	1	1
1833:	1	1	2	0	1	4	0	3
1841:	1	0	1	2	4	0	3	7
1849:	1	1	2	0	1	1	0	1
1857:	0	0	2	1	0	1	1	0
1865:	0	1	1	2	1	2	1	4
1873:	1	1	4	1	1	0	1	0
1881:	1	1	1	1	2	0	2	1
1889:	1	0	2	0	1	1	0	2
1897:	0	1	2	3	1	0	2	0
1905:	0	1	0	1	1	1	0	2
1913:	0	1	1	0	2	1	2	2
1921:	2	0	0	0	1	1	0	1
1929:	2	1	0	3	1	0	2	0
1937:	1	1	2	2	0	0	1	0
1945:	2	2	2	0	2	0	0	1
1953:	1	2	1	1	1	0	1	2
1961:	0	2	0	0	4	0	0	1
1969:	1	1	1	2	0	0	0	0
1977:	0	1	2	1	3	0	2	1
1985:	0	0	1	1	3	1	2	0
1993:	0	1	1	1	2	1	1	1
2001:	2	0	1	1	0	0	0	1
2009:	1	1	1	1	0	3	2	2
2017:	0	1	1	2	0	1	2	2
2025:	2	1	1	1	2	0	0	1
2033:	1	3	0	1	1	1	0	1
2041:	0	0	3	1	0	0	0	1
2049:	1	0	1	0	1	0	0	1
2057:	2	0	1	0	1	0	2	0
2065:	0	1	3	2	0	0	0	2
2073:	1	1	2	0	0	0	0	0
2081:	2	0	1	2	1	1	0	1
2089:	0	1	0	0	1	2	2	1

2097:	2	0	0	0	0	3	3	1

Sample Title: CP-5010 09-15

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

2529:	0	0	1	0	0	0	2	0

Sample Title: CP-5010 09-15

Channel								
2537:	0	2	0	0	1	1	0	1
2545:	1	0	0	0	3	0	0	0
2553:	0	0	0	0	0	2	0	0
2561:	0	0	2	0	1	0	1	0
2569:	0	0	0	0	0	1	0	0
2577:	0	0	0	0	1	0	1	1
2585:	1	0	1	1	0	0	0	0
2593:	1	0	1	0	1	0	1	1
2601:	0	0	0	0	1	0	0	0
2609:	0	1	1	2	11	24	27	18
2617:	5	3	0	0	0	0	0	1
2625:	0	0	1	0	1	0	0	1
2633:	0	1	1	0	0	1	0	1
2641:	1	0	0	1	0	0	0	2
2649:	0	0	0	0	0	0	0	0
2657:	0	0	1	0	1	0	0	1
2665:	1	0	0	0	0	0	0	2
2673:	0	0	0	0	0	0	0	0
2681:	0	1	1	0	1	1	0	2
2689:	2	0	0	1	1	1	1	1
2697:	0	0	0	0	0	0	0	0
2705:	1	1	0	0	0	0	1	0
2713:	0	0	0	1	0	1	0	0
2721:	0	0	0	0	0	0	1	0
2729:	0	0	0	0	0	0	0	1
2737:	0	0	0	0	0	0	0	0
2745:	0	0	0	1	1	0	0	0
2753:	0	0	0	0	0	1	0	0
2761:	1	0	0	3	0	0	0	0
2769:	0	0	0	0	0	0	0	0
2777:	1	0	2	0	1	0	0	0
2785:	0	1	0	1	1	0	0	0
2793:	0	0	2	0	0	0	0	1
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	1	0	0	0	1
2825:	0	0	0	0	0	0	0	0
2833:	0	1	0	0	0	0	0	0
2841:	0	1	1	0	0	0	0	0
2849:	0	0	0	0	0	0	1	0
2857:	1	1	1	0	0	1	0	0
2865:	0	0	1	1	0	0	0	0
2873:	0	0	0	0	0	0	0	1
2881:	0	0	0	0	0	0	2	1
2889:	0	0	1	0	2	0	0	0
2897:	0	0	0	0	0	0	0	1
2905:	0	0	1	0	1	0	0	0
2913:	2	0	0	1	0	0	0	0
2921:	0	0	0	1	0	0	0	0
2929:	0	0	0	1	0	0	0	0
2937:	0	2	0	0	0	0	0	1
2945:	1	1	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961:	0	0	0	0	0	1	0	0

Sample Title: CP-5010 09-15

Channel								
2969:	1	0	0	0	0	1	2	0
2977:	0	0	1	0	0	0	0	0
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	0	0	0	0	0	0	0
3009:	0	0	0	0	0	2	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	1
3033:	0	0	1	0	0	0	2	0
3041:	0	1	1	0	0	3	0	0
3049:	1	0	0	0	0	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	1	0	1	0	0	0	1	0
3073:	0	0	0	1	0	0	0	0
3081:	0	1	0	0	0	0	1	0
3089:	0	0	0	0	0	1	2	1
3097:	0	2	0	0	0	0	2	1
3105:	0	0	0	0	0	0	0	0
3113:	1	0	0	0	0	0	1	0
3121:	0	0	0	0	1	0	0	1
3129:	0	0	1	0	0	1	0	0
3137:	0	0	1	0	0	0	0	0
3145:	0	0	0	0	1	0	0	1
3153:	0	0	0	0	0	0	0	0
3161:	1	1	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:	1	1	0	0	0	0	0	0
3193:	0	0	0	2	0	0	1	0
3201:	0	0	0	0	0	1	0	0
3209:	1	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	1	0	0	0	2	1	0
3233:	0	0	0	0	0	1	0	0
3241:	1	0	1	0	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	1	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	1	0	0
3281:	0	1	0	0	0	0	0	1
3289:	1	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	1	0
3321:	1	0	1	0	0	1	1	0
3329:	0	1	0	0	0	1	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	1	0	0	0	1	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	1	0	0
3377:	0	0	0	0	0	0	1	0
3385:	0	1	0	0	0	1	0	0

3393:	0	0	0	0	0	0	0	0

Sample Title: CP-5010 09-15

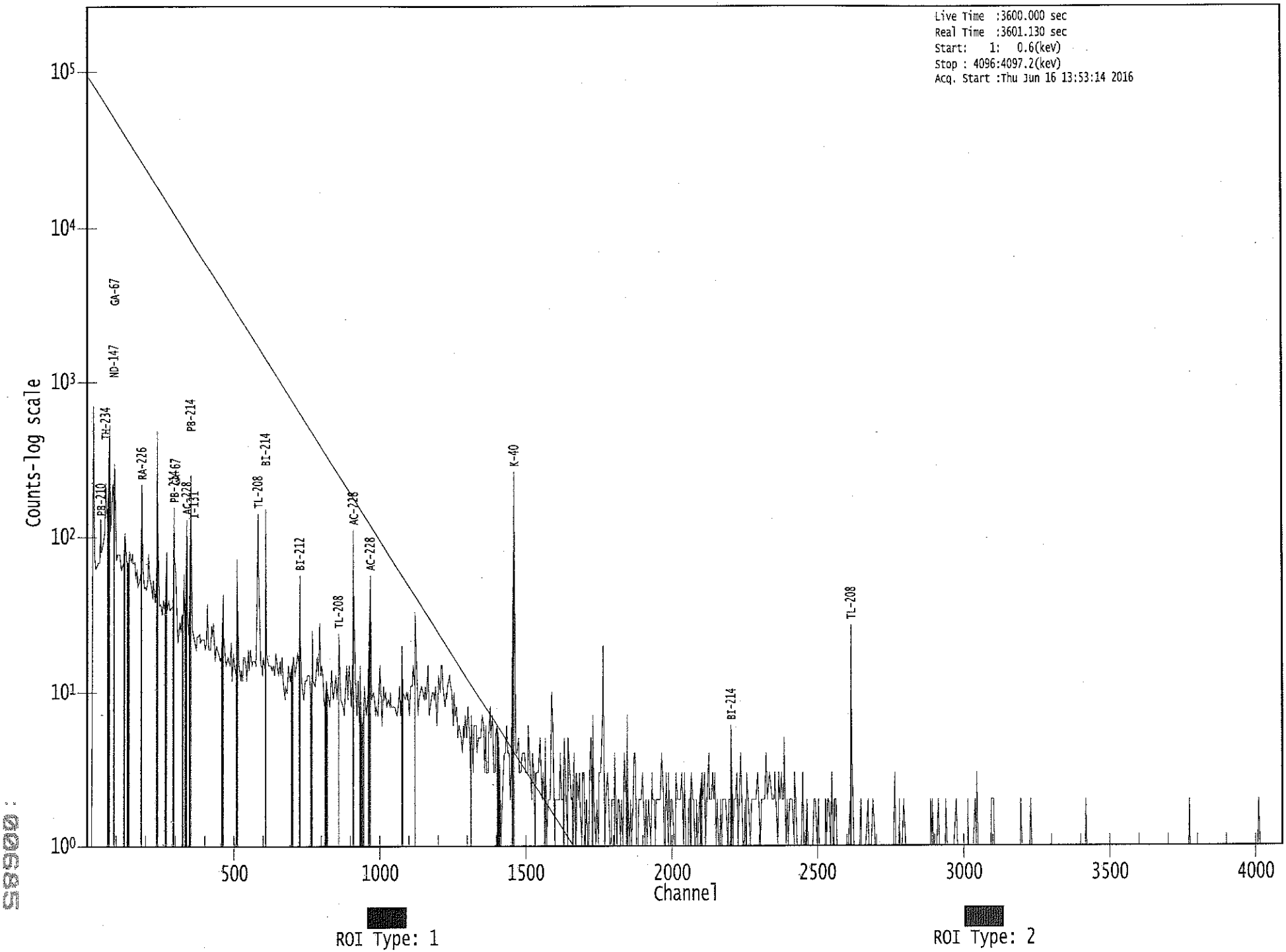
Channel								
3401:	0	0	0	1	0	0	1	0
3409:	0	0	1	0	0	0	0	0
3417:	1	2	0	0	1	0	0	0
3425:	0	0	0	1	0	0	0	0
3433:	0	0	0	0	1	1	1	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	1	0	0	0	0	0	0
3473:	1	0	0	0	0	0	0	1
3481:	0	1	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	1	0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

3825:	0	0	0	0	0	0	0	0

Sample Title: CP-5010 09-15

Channel								
3833:	1	0	0	0	1	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	1	0	0	0	0
3865:	0	0	0	0	0	0	1	0
3873:	0	0	0	0	0	0	0	0
3881:	0	1	0	0	0	0	0	0
3889:	1	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	1	1	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	1	0	0	0	0	0	0
3945:	0	0	1	0	0	0	0	1
3953:	0	0	0	0	0	0	0	0
3961:	0	1	0	0	0	1	1	1
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	1
3985:	0	1	0	0	0	0	0	0
3993:	0	0	0	0	0	0	1	0
4001:	0	0	0	0	0	0	0	1
4009:	0	0	1	2	0	0	0	1
4017:	0	0	1	0	0	0	0	0
4025:	0	1	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	1	0	0	0	0	0	0
4049:	0	0	0	1	0	0	0	0
4057:	0	0	0	0	1	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	1	0	0	0	0	0	0
4081:	0	0	1	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000039015.CNF



NCB 6/16/16

Apex-Gamma

Analysis Report for 1606043-12
CP-5012 00-02

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-12
Sample Description	: CP-5012 00-02
Sample Type	: SOIL
Sample Size	: 5.202E+02 grams
Facility	: Countroom
Sample Taken On	: 6/7/2016 12:00:09PM
Acquisition Started	: 6/16/2016 2:06:03PM
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	: 39017

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG 6/17/16

Analysis Report for 1606043-12

CP-5012 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 3:06:08PM
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	12.99	13.12	0.0000	0.00
2	46.89	47.00	0.0000	0.00
3	76.22	76.31	0.0000	0.00
4	87.48	87.56	0.0000	0.00
5	92.65	92.73	0.0000	0.00
6	128.52	128.58	0.0000	0.00
7	185.80	185.82	0.0000	0.00
8	210.27	210.28	0.0000	0.00
9	239.02	239.02	0.0000	0.00
10	242.03	242.02	0.0000	0.00
11	264.38	264.37	0.0000	0.00
12	270.14	270.11	0.0000	0.00
13	295.37	295.33	0.0000	0.00
14	300.12	300.08	0.0000	0.00
15	338.16	338.10	0.0000	0.00
16	340.92	340.86	0.0000	0.00
17	352.07	352.01	0.0000	0.00
18	463.04	462.92	0.0000	0.00
19	493.20	493.06	0.0000	0.00
20	511.01	510.86	0.0000	0.00
21	583.49	583.31	0.0000	0.00
22	609.72	609.53	0.0000	0.00
23	623.51	623.32	0.0000	0.00
24	717.77	717.53	0.0000	0.00
25	727.62	727.37	0.0000	0.00
26	768.33	768.07	0.0000	0.00
27	773.15	772.88	0.0000	0.00
28	785.40	785.13	0.0000	0.00
29	794.59	794.32	0.0000	0.00
30	806.01	805.73	0.0000	0.00
31	845.59	845.30	0.0000	0.00
32	859.39	859.09	0.0000	0.00
33	891.50	891.18	0.0000	0.00
34	901.65	901.33	0.0000	0.00
35	911.45	911.12	0.0000	0.00
36	934.12	933.78	0.0000	0.00
37	960.38	960.03	0.0000	0.00
38	965.15	964.80	0.0000	0.00
39	969.44	969.09	0.0000	0.00
40	975.15	974.80	0.0000	0.00
41	1121.05	1120.65	0.0000	0.00
42	1154.46	1154.04	0.0000	0.00

Analysis Report for 1606043-12

CP-5012 00-02

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1163.07	1162.64	0.0000	0.00
44	1238.56	1238.11	0.0000	0.00
45	1247.45	1247.00	0.0000	0.00
46	1252.00	1251.54	0.0000	0.00
47	1372.47	1371.97	0.0000	0.00
48	1378.12	1377.63	0.0000	0.00
49	1461.26	1460.74	0.0000	0.00
50	1486.47	1485.94	0.0000	0.00
51	1509.41	1508.87	0.0000	0.00
52	1537.70	1537.16	0.0000	0.00
53	1588.06	1587.50	0.0000	0.00
54	1593.06	1592.50	0.0000	0.00
55	1630.45	1629.88	0.0000	0.00
56	1718.54	1717.95	0.0000	0.00
57	1765.12	1764.51	0.0000	0.00
58	1796.35	1795.73	0.0000	0.00
59	1848.36	1847.73	0.0000	0.00
60	2089.67	2089.00	0.0000	0.00
61	2103.48	2102.81	0.0000	0.00
62	2118.50	2117.82	0.0000	0.00
63	2204.08	2203.39	0.0000	0.00
64	2215.55	2214.85	0.0000	0.00
65	2380.43	2379.71	0.0000	0.00
66	2405.92	2405.20	0.0000	0.00
67	2614.70	2613.96	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606043-12

CP-5012 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 3:06:08PM

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	12.99	12 -	15	13.12	2.04E+03	119.80	1.39E+03	1.05
	2	46.89	46 -	49	47.00	6.80E+01	48.74	5.34E+02	0.91
	3	76.22	71 -	81	76.31	9.44E+02	140.77	2.14E+03	3.50
	4	87.48	86 -	89	87.56	4.83E+01	60.17	8.71E+02	1.45
	5	92.65	90 -	96	92.73	2.81E+02	92.31	1.30E+03	1.31
	6	128.52	125 -	131	128.58	7.73E+01	66.74	7.49E+02	3.31
	7	185.80	181 -	190	185.82	1.99E+02	83.23	8.79E+02	1.45
	8	210.27	206 -	214	210.28	1.04E+02	71.53	6.99E+02	2.23
M	9	239.02	235 -	246	239.02	6.59E+02	60.17	2.46E+02	1.41
m	10	242.03	235 -	246	242.02	1.35E+02	42.33	2.14E+02	1.42
	11	264.38	262 -	267	264.37	4.47E+01	34.60	1.99E+02	3.59
	12	270.14	267 -	273	270.11	7.60E+01	45.64	3.26E+02	1.85
M	13	295.37	291 -	303	295.33	2.67E+02	45.07	2.30E+02	1.57
m	14	300.12	291 -	303	300.08	4.25E+01	34.63	2.30E+02	1.82
M	15	338.16	335 -	346	338.10	1.25E+02	36.41	1.55E+02	1.56
m	16	340.92	335 -	346	340.86	3.02E+01	32.34	1.64E+02	1.56
	17	352.07	348 -	355	352.01	4.54E+02	59.13	2.80E+02	1.20
	18	463.04	460 -	465	462.92	4.68E+01	30.00	1.40E+02	1.64
	19	493.20	489 -	496	493.06	3.93E+01	30.20	1.21E+02	5.07
	20	511.01	505 -	516	510.86	1.50E+02	52.99	2.75E+02	2.01
	21	583.49	579 -	587	583.31	1.70E+02	45.30	2.10E+02	1.56
	22	609.72	605 -	614	609.53	3.44E+02	52.11	1.82E+02	1.85
	23	623.51	621 -	625	623.32	1.69E+01	19.47	6.82E+01	1.85
	24	717.77	714 -	721	717.53	2.26E+01	24.41	8.48E+01	4.63
	25	727.62	722 -	734	727.37	6.53E+01	40.50	1.61E+02	2.33
M	26	768.33	765 -	776	768.07	3.54E+01	24.70	9.23E+01	2.02
m	27	773.15	765 -	776	772.88	2.48E+01	22.58	8.66E+01	2.03
	28	785.40	781 -	789	785.13	3.06E+01	28.03	9.89E+01	2.53
	29	794.59	790 -	798	794.32	4.36E+01	29.63	1.09E+02	1.50
	30	806.01	801 -	810	805.73	2.71E+01	30.05	1.10E+02	2.72
	31	845.59	835 -	854	845.30	4.96E+01	52.88	1.99E+02	12.59
	32	859.39	855 -	863	859.09	4.88E+01	25.21	6.84E+01	1.80
	33	891.50	887 -	895	891.18	2.06E+01	21.52	5.88E+01	6.22
	34	901.65	896 -	906	901.33	4.19E+01	23.97	5.21E+01	7.83
	35	911.45	907 -	915	911.12	1.61E+02	32.98	6.93E+01	1.77
	36	934.12	930 -	938	933.78	2.39E+01	24.99	8.22E+01	2.19
M	37	960.38	957 -	978	960.03	1.16E+01	17.41	4.84E+01	2.18
m	38	965.15	957 -	978	964.80	3.48E+01	21.43	4.69E+01	2.19
m	39	969.44	957 -	978	969.09	8.46E+01	22.12	3.23E+01	1.79
m	40	975.15	957 -	978	974.80	1.25E+01	17.18	4.25E+01	2.20

Analysis Report for 1606043-12

CP-5012 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1121.05	1117 -	1125	1120.65	8.38E+01	26.82	6.04E+01	2.29
	42	1154.46	1149 -	1159	1154.04	2.25E+01	25.84	7.70E+01	6.02
	43	1163.07	1159 -	1168	1162.64	1.77E+01	23.00	6.66E+01	2.68
M	44	1238.56	1233 -	1255	1238.11	3.74E+01	21.73	6.09E+01	2.63
m	45	1247.45	1233 -	1255	1247.00	1.39E+01	16.94	2.92E+01	2.18
m	46	1252.00	1233 -	1255	1251.54	1.53E+01	18.11	2.25E+01	2.64
M	47	1372.47	1371 -	1383	1371.97	7.96E+00	1.12	1.00E+00	2.49
m	48	1378.12	1371 -	1383	1377.63	2.42E+01	16.76	2.58E+01	3.31
	49	1461.26	1457 -	1466	1460.74	5.34E+02	49.94	5.49E+01	1.94
	50	1486.47	1482 -	1489	1485.94	8.07E+00	10.20	1.19E+01	1.36
	51	1509.41	1505 -	1512	1508.87	1.01E+01	12.65	1.97E+01	5.58
	52	1537.70	1533 -	1541	1537.16	8.50E+00	9.62	9.00E+00	4.28
M	53	1588.06	1584 -	1598	1587.50	1.43E+01	9.82	3.33E+00	2.89
m	54	1593.06	1584 -	1598	1592.50	8.19E+00	11.85	1.25E+01	2.89
	55	1630.45	1627 -	1632	1629.88	9.45E+00	7.28	3.09E+00	1.98
	56	1718.54	1714 -	1721	1717.95	1.01E+01	8.00	3.75E+00	3.35
	57	1765.12	1761 -	1767	1764.51	5.93E+01	16.01	3.48E+00	2.50
	58	1796.35	1792 -	1798	1795.73	6.50E+00	8.03	7.00E+00	2.42
	59	1848.36	1843 -	1851	1847.73	1.35E+01	10.61	9.00E+00	1.09
	60	2089.67	2085 -	2091	2089.00	7.00E+00	5.29	0.00E+00	1.92
	61	2103.48	2099 -	2107	2102.81	1.41E+01	10.79	9.79E+00	1.85
	62	2118.50	2114 -	2121	2117.82	1.10E+01	6.63	0.00E+00	4.72
	63	2204.08	2199 -	2206	2203.39	1.18E+01	10.77	1.04E+01	2.14
	64	2215.55	2211 -	2218	2214.85	7.00E+00	7.21	4.00E+00	2.88
	65	2380.43	2377 -	2382	2379.71	7.00E+00	5.29	0.00E+00	3.31
	66	2405.92	2400 -	2408	2405.20	5.56E+00	7.23	4.88E+00	2.72
	67	2614.70	2609 -	2619	2613.96	7.70E+01	17.55	0.00E+00	2.33

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 3:06:08PM

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	12.99	12 -	15	2.04E+03	119.80	1.39E+03	6.47E+01

Analysis Report for 1606043-12

CP-5012 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	2	46.89	46 -	49	6.80E+01	48.74	5.34E+02	3.77E+01
	3	76.22	71 -	81	9.44E+02	140.77	2.14E+03	1.04E+02
	4	87.48	86 -	89	4.83E+01	60.17	8.71E+02	4.81E+01
	5	92.65	90 -	96	2.81E+02	92.31	1.30E+03	7.07E+01
	6	128.52	125 -	131	7.73E+01	66.74	7.49E+02	5.29E+01
	7	185.80	181 -	190	1.99E+02	83.23	8.79E+02	6.44E+01
	8	210.27	206 -	214	1.04E+02	71.53	6.99E+02	5.63E+01
M	9	239.02	235 -	246	6.59E+02	60.17	2.46E+02	2.58E+01
m	10	242.03	235 -	246	1.35E+02	42.33	2.14E+02	2.40E+01
	11	264.38	262 -	267	4.47E+01	34.60	1.99E+02	2.62E+01
	12	270.14	267 -	273	7.60E+01	45.64	3.26E+02	3.47E+01
M	13	295.37	291 -	303	2.67E+02	45.07	2.30E+02	2.49E+01
m	14	300.12	291 -	303	4.25E+01	34.63	2.30E+02	2.49E+01
M	15	338.16	335 -	346	1.25E+02	36.41	1.55E+02	2.05E+01
m	16	340.92	335 -	346	3.02E+01	32.34	1.64E+02	2.10E+01
	17	352.07	348 -	355	4.54E+02	59.13	2.80E+02	3.37E+01
	18	463.04	460 -	465	4.68E+01	30.00	1.40E+02	2.19E+01
	19	493.20	489 -	496	3.93E+01	30.20	1.21E+02	1.03E+01
	20	511.01	505 -	516	1.50E+02	52.99	2.75E+02	3.86E+01
	21	583.49	579 -	587	1.70E+02	45.30	2.10E+02	3.04E+01
	22	609.72	605 -	614	3.44E+02	52.11	1.82E+02	3.01E+01
	23	623.51	621 -	625	1.69E+01	19.47	6.82E+01	1.45E+01
	24	717.77	714 -	721	2.26E+01	24.41	8.48E+01	1.85E+01
	25	727.62	722 -	734	6.53E+01	40.50	1.61E+02	1.54E+01
M	26	768.33	765 -	776	3.54E+01	24.70	9.23E+01	1.58E+01
m	27	773.15	765 -	776	2.48E+01	22.58	8.66E+01	1.53E+01
	28	785.40	781 -	789	3.06E+01	28.03	9.89E+01	1.05E+01
	29	794.59	790 -	798	4.36E+01	29.63	1.09E+02	2.18E+01
	30	806.01	801 -	810	2.71E+01	30.05	1.10E+02	2.32E+01
	31	845.59	835 -	854	4.96E+01	52.88	1.99E+02	1.66E+01
	32	859.39	855 -	863	4.88E+01	25.21	6.84E+01	1.73E+01
	33	891.50	887 -	895	2.06E+01	21.52	5.88E+01	1.60E+01
	34	901.65	896 -	906	4.19E+01	23.97	5.21E+01	1.66E+01
	35	911.45	907 -	915	1.61E+02	32.98	6.93E+01	1.73E+01
	36	934.12	930 -	938	2.39E+01	24.99	8.22E+01	1.89E+01
M	37	960.38	957 -	978	1.16E+01	17.41	4.84E+01	1.14E+01
m	38	965.15	957 -	978	3.48E+01	21.43	4.69E+01	1.13E+01
m	39	969.44	957 -	978	8.46E+01	22.12	3.23E+01	9.34E+00
m	40	975.15	957 -	978	1.25E+01	17.18	4.25E+01	1.07E+01
	41	1121.05	1117 -	1125	8.38E+01	26.82	6.04E+01	1.61E+01
	42	1154.46	1149 -	1159	2.25E+01	25.84	7.70E+01	1.98E+01
	43	1163.07	1159 -	1168	1.77E+01	23.00	6.66E+01	1.76E+01
M	44	1238.56	1233 -	1255	3.74E+01	21.73	6.09E+01	1.28E+01
m	45	1247.45	1233 -	1255	1.39E+01	16.94	2.92E+01	8.89E+00
m	46	1252.00	1233 -	1255	1.53E+01	18.11	2.25E+01	7.79E+00
M	47	1372.47	1371 -	1383	7.96E+00	1.12	1.00E+00	1.64E+00
m	48	1378.12	1371 -	1383	2.42E+01	16.76	2.58E+01	8.35E+00
	49	1461.26	1457 -	1466	5.34E+02	49.94	5.49E+01	1.56E+01
	50	1486.47	1482 -	1489	8.07E+00	10.20	1.19E+01	6.96E+00
	51	1509.41	1505 -	1512	1.01E+01	12.65	1.97E+01	8.98E+00
	52	1537.70	1533 -	1541	8.50E+00	9.62	9.00E+00	6.29E+00

Analysis Report for 1606043-12

CP-5012 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	53	1588.06	1584 -	1598	1.43E+01	9.82	3.33E+00	3.00E+00
m	54	1593.06	1584 -	1598	8.19E+00	11.85	1.25E+01	5.82E+00
	55	1630.45	1627 -	1632	9.45E+00	7.28	3.09E+00	3.20E+00
	56	1718.54	1714 -	1721	1.01E+01	8.00	3.75E+00	3.98E+00
	57	1765.12	1761 -	1767	5.93E+01	16.01	3.48E+00	3.60E+00
	58	1796.35	1792 -	1798	6.50E+00	8.03	7.00E+00	5.10E+00
	59	1848.36	1843 -	1851	1.35E+01	10.61	9.00E+00	6.29E+00
	60	2089.67	2085 -	2091	7.00E+00	5.29	0.00E+00	0.00E+00
	61	2103.48	2099 -	2107	1.41E+01	10.79	9.79E+00	6.37E+00
	62	2118.50	2114 -	2121	1.10E+01	6.63	0.00E+00	0.00E+00
	63	2204.08	2199 -	2206	1.18E+01	10.77	1.04E+01	6.82E+00
	64	2215.55	2211 -	2218	7.00E+00	7.21	4.00E+00	4.03E+00
	65	2380.43	2377 -	2382	7.00E+00	5.29	0.00E+00	0.00E+00
	66	2405.92	2400 -	2408	5.56E+00	7.23	4.88E+00	4.50E+00
	67	2614.70	2609 -	2619	7.70E+01	17.55	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 3:06:08PM

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	12.99	12 -	15	13.12	2.04E+03	119.80	1.39E+03	.....
2	46.89	46 -	49	47.00	6.80E+01	48.74	5.34E+02	PB-210
3	76.22	71 -	81	76.31	9.44E+02	140.77	2.14E+03	.....
4	87.48	86 -	89	87.56	4.83E+01	60.17	8.71E+02	SN-126 CD-109 LU-176 NP-237 EU-155
5	92.65	90 -	96	92.73	2.81E+02	92.31	1.30E+03	GA-67
6	128.52	125 -	131	128.58	7.73E+01	66.74	7.49E+02	.....

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Analysis Report for 1606043-12

CP-5012 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	7	185.80	181 -	190	185.82	1.99E+02	83.23	8.79E+02	RA-226
	8	210.27	206 -	214	210.28	1.04E+02	71.53	6.99E+02	CM-243
M	9	239.02	235 -	246	239.02	6.59E+02	60.17	2.46E+02	PB-212
m	10	242.03	235 -	246	242.02	1.35E+02	42.33	2.14E+02	.....
	11	264.38	262 -	267	264.37	4.47E+01	34.60	1.99E+02	SE-75 CD-113M
	12	270.14	267 -	273	270.11	7.60E+01	45.64	3.26E+02	.....
M	13	295.37	291 -	303	295.33	2.67E+02	45.07	2.30E+02	PB-214
m	14	300.12	291 -	303	300.08	4.25E+01	34.63	2.30E+02	PB-212 GA-67 BI-210M
M	15	338.16	335 -	346	338.10	1.25E+02	36.41	1.55E+02	AC-228
m	16	340.92	335 -	346	340.86	3.02E+01	32.34	1.64E+02	CS-136
	17	352.07	348 -	355	352.01	4.54E+02	59.13	2.80E+02	PB-214
	18	463.04	460 -	465	462.92	4.68E+01	30.00	1.40E+02	SB-125
	19	493.20	489 -	496	493.06	3.93E+01	30.20	1.21E+02	.....
	20	511.01	505 -	516	510.86	1.50E+02	52.99	2.75E+02	.....
	21	583.49	579 -	587	583.31	1.70E+02	45.30	2.10E+02	TL-208
	22	609.72	605 -	614	609.53	3.44E+02	52.11	1.82E+02	BI-214
	23	623.51	621 -	625	623.32	1.69E+01	19.47	6.82E+01	.....
	24	717.77	714 -	721	717.53	2.26E+01	24.41	8.48E+01	.....
	25	727.62	722 -	734	727.37	6.53E+01	40.50	1.61E+02	BI-212
M	26	768.33	765 -	776	768.07	3.54E+01	24.70	9.23E+01	.....
m	27	773.15	765 -	776	772.88	2.48E+01	22.58	8.66E+01	.....
	28	785.40	781 -	789	785.13	3.06E+01	28.03	9.89E+01	.....
	29	794.59	790 -	798	794.32	4.36E+01	29.63	1.09E+02	.....
	30	806.01	801 -	810	805.73	2.71E+01	30.05	1.10E+02	.....
	31	845.59	835 -	854	845.30	4.96E+01	52.88	1.99E+02	.....
	32	859.39	855 -	863	859.09	4.88E+01	25.21	6.84E+01	TL-208
	33	891.50	887 -	895	891.18	2.06E+01	21.52	5.88E+01	.....
	34	901.65	896 -	906	901.33	4.19E+01	23.97	5.21E+01	.....
	35	911.45	907 -	915	911.12	1.61E+02	32.98	6.93E+01	AC-228 LU-172
	36	934.12	930 -	938	933.78	2.39E+01	24.99	8.22E+01	.....
M	37	960.38	957 -	978	960.03	1.16E+01	17.41	4.84E+01	.....
m	38	965.15	957 -	978	964.80	3.48E+01	21.43	4.69E+01	.....
m	39	969.44	957 -	978	969.09	8.46E+01	22.12	3.23E+01	AC-228
m	40	975.15	957 -	978	974.80	1.25E+01	17.18	4.25E+01	.....
	41	1121.05	1117 -	1125	1120.65	8.38E+01	26.82	6.04E+01	TA-182 SC-46 BI-214
	42	1154.46	1149 -	1159	1154.04	2.25E+01	25.84	7.70E+01	EU-156
	43	1163.07	1159 -	1168	1162.64	1.77E+01	23.00	6.66E+01	.....
M	44	1238.56	1233 -	1255	1238.11	3.74E+01	21.73	6.09E+01	CO-56
m	45	1247.45	1233 -	1255	1247.00	1.39E+01	16.94	2.92E+01	.....
m	46	1252.00	1233 -	1255	1251.54	1.53E+01	18.11	2.25E+01	.....
M	47	1372.47	1371 -	1383	1371.97	7.96E+00	1.12	1.00E+00	.....
m	48	1378.12	1371 -	1383	1377.63	2.42E+01	16.76	2.58E+01	.....
	49	1461.26	1457 -	1466	1460.74	5.34E+02	49.94	5.49E+01	K-40
	50	1486.47	1482 -	1489	1485.94	8.07E+00	10.20	1.19E+01	.....
	51	1509.41	1505 -	1512	1508.87	1.01E+01	12.65	1.97E+01	.....
	52	1537.70	1533 -	1541	1537.16	8.50E+00	9.62	9.00E+00	.....
M	53	1588.06	1584 -	1598	1587.50	1.43E+01	9.82	3.33E+00	.....
m	54	1593.06	1584 -	1598	1592.50	8.19E+00	11.85	1.25E+01	.....

Analysis Report for 1606043-12

CP-5012 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
55	1630.45	1627 -	1632	1629.88	9.45E+00	7.28	3.09E+00	.....
56	1718.54	1714 -	1721	1717.95	1.01E+01	8.00	3.75E+00	.....
57	1765.12	1761 -	1767	1764.51	5.93E+01	16.01	3.48E+00	BI-214
58	1796.35	1792 -	1798	1795.73	6.50E+00	8.03	7.00E+00	.....
59	1848.36	1843 -	1851	1847.73	1.35E+01	10.61	9.00E+00	.....
60	2089.67	2085 -	2091	2089.00	7.00E+00	5.29	0.00E+00	.....
61	2103.48	2099 -	2107	2102.81	1.41E+01	10.79	9.79E+00	.....
62	2118.50	2114 -	2121	2117.82	1.10E+01	6.63	0.00E+00	.....
63	2204.08	2199 -	2206	2203.39	1.18E+01	10.77	1.04E+01	BI-214
64	2215.55	2211 -	2218	2214.85	7.00E+00	7.21	4.00E+00	.....
65	2380.43	2377 -	2382	2379.71	7.00E+00	5.29	0.00E+00	.....
66	2405.92	2400 -	2408	2405.20	5.56E+00	7.23	4.88E+00	.....
67	2614.70	2609 -	2619	2613.96	7.70E+01	17.55	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 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/16/2016 3:06:08PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	12.99	2.04E+03	119.80	1.24E-05	1.66E-03
	2	46.89	6.80E+01	48.74	1.73E-02	1.66E-03
	3	76.22	9.44E+02	140.77	2.56E-02	2.02E-03
	4	87.48	4.83E+01	60.17	2.60E-02	2.26E-03
	5	92.65	2.81E+02	92.31	2.60E-02	2.27E-03
	6	128.52	7.73E+01	66.74	2.40E-02	2.29E-03
	7	185.80	1.99E+02	83.23	1.99E-02	2.40E-03
	8	210.27	1.04E+02	71.53	1.85E-02	2.36E-03
M	9	239.02	6.59E+02	60.17	1.70E-02	2.31E-03
m	10	242.03	1.35E+02	42.33	1.69E-02	2.30E-03
	11	264.38	4.47E+01	34.60	1.59E-02	2.27E-03
	12	270.14	7.60E+01	45.64	1.57E-02	2.26E-03
M	13	295.37	2.67E+02	45.07	1.47E-02	2.21E-03
m	14	300.12	4.25E+01	34.63	1.45E-02	2.21E-03
M	15	338.16	1.25E+02	36.41	1.34E-02	2.14E-03
m	16	340.92	3.02E+01	32.34	1.33E-02	2.14E-03
	17	352.07	4.54E+02	59.13	1.30E-02	2.12E-03

Analysis Report for 1606043-12

CP-5012 00-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	18	463.04	4.68E+01	30.00	1.05E-02	1.68E-03
	19	493.20	3.93E+01	30.20	1.00E-02	1.52E-03
	20	511.01	1.50E+02	52.99	9.77E-03	1.43E-03
	21	583.49	1.70E+02	45.30	8.79E-03	1.06E-03
	22	609.72	3.44E+02	52.11	8.48E-03	9.21E-04
	23	623.51	1.69E+01	19.47	8.33E-03	8.49E-04
	24	717.77	2.26E+01	24.41	7.42E-03	7.24E-04
	25	727.62	6.53E+01	40.50	7.34E-03	7.36E-04
M	26	768.33	3.54E+01	24.70	7.02E-03	7.89E-04
m	27	773.15	2.48E+01	22.58	6.98E-03	7.95E-04
	28	785.40	3.06E+01	28.03	6.89E-03	8.11E-04
	29	794.59	4.36E+01	29.63	6.82E-03	8.23E-04
	30	806.01	2.71E+01	30.05	6.74E-03	8.37E-04
	31	845.59	4.96E+01	52.88	6.48E-03	8.88E-04
	32	859.39	4.88E+01	25.21	6.40E-03	9.06E-04
	33	891.50	2.06E+01	21.52	6.20E-03	9.47E-04
	34	901.65	4.19E+01	23.97	6.15E-03	9.48E-04
	35	911.45	1.61E+02	32.98	6.09E-03	9.28E-04
	36	934.12	2.39E+01	24.99	5.97E-03	8.82E-04
M	37	960.38	1.16E+01	17.41	5.84E-03	8.29E-04
m	38	965.15	3.48E+01	21.43	5.81E-03	8.20E-04
m	39	969.44	8.46E+01	22.12	5.79E-03	8.11E-04
m	40	975.15	1.25E+01	17.18	5.76E-03	7.99E-04
	41	1121.05	8.38E+01	26.82	5.15E-03	5.04E-04
	42	1154.46	2.25E+01	25.84	5.03E-03	4.37E-04
	43	1163.07	1.77E+01	23.00	5.00E-03	4.19E-04
M	44	1238.56	3.74E+01	21.73	4.77E-03	3.84E-04
m	45	1247.45	1.39E+01	16.94	4.74E-03	3.82E-04
m	46	1252.00	1.53E+01	18.11	4.73E-03	3.81E-04
M	47	1372.47	7.96E+00	1.12	4.42E-03	3.66E-04
m	48	1378.12	2.42E+01	16.76	4.41E-03	3.66E-04
	49	1461.26	5.34E+02	49.94	4.23E-03	3.72E-04
	50	1486.47	8.07E+00	10.20	4.18E-03	3.74E-04
	51	1509.41	1.01E+01	12.65	4.14E-03	3.76E-04
	52	1537.70	8.50E+00	9.62	4.09E-03	3.78E-04
M	53	1588.06	1.43E+01	9.82	4.01E-03	3.82E-04
m	54	1593.06	8.19E+00	11.85	4.00E-03	3.82E-04
	55	1630.45	9.45E+00	7.28	3.94E-03	3.85E-04
	56	1718.54	1.01E+01	8.00	3.83E-03	3.92E-04
	57	1765.12	5.93E+01	16.01	3.77E-03	3.96E-04
	58	1796.35	6.50E+00	8.03	3.74E-03	3.98E-04
	59	1848.36	1.35E+01	10.61	3.69E-03	4.01E-04
	60	2089.67	7.00E+00	5.29	3.51E-03	4.01E-04
	61	2103.48	1.41E+01	10.79	3.50E-03	4.01E-04
	62	2118.50	1.10E+01	6.63	3.49E-03	4.01E-04
	63	2204.08	1.18E+01	10.77	3.45E-03	4.01E-04
	64	2215.55	7.00E+00	7.21	3.45E-03	4.01E-04
	65	2380.43	7.00E+00	5.29	3.41E-03	4.01E-04
	66	2405.92	5.56E+00	7.23	3.40E-03	4.01E-04
	67	2614.70	7.70E+01	17.55	3.40E-03	4.01E-04

Analysis Report for 1606043-12

CP-5012 00-02

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 3:06:08PM

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	12.99	2.04E+03	119.80			2.04E+03	1.20E+02
	2	46.89	6.80E+01	48.74	2.17E+01	5.74E+00	4.63E+01	4.91E+01
	3	76.22	9.44E+02	140.77			9.44E+02	1.41E+02
	4	87.48	4.83E+01	60.17			4.83E+01	6.02E+01
	5	92.65	2.81E+02	92.31	4.47E+01	7.30E+00	2.36E+02	9.26E+01
	6	128.52	7.73E+01	66.74			7.73E+01	6.67E+01
	7	185.80	1.99E+02	83.23	3.13E+01	6.95E+00	1.67E+02	8.35E+01
	8	210.27	1.04E+02	71.53			1.04E+02	7.15E+01
M	9	239.02	6.59E+02	60.17	1.19E+01	7.10E+00	6.47E+02	6.06E+01
m	10	242.03	1.35E+02	42.33	2.33E+00	1.42E+00	1.33E+02	4.24E+01
	11	264.38	4.47E+01	34.60			4.47E+01	3.46E+01
	12	270.14	7.60E+01	45.64			7.60E+01	4.56E+01
M	13	295.37	2.67E+02	45.07			2.67E+02	4.51E+01
m	14	300.12	4.25E+01	34.63			4.25E+01	3.46E+01
M	15	338.16	1.25E+02	36.41			1.25E+02	3.64E+01
m	16	340.92	3.02E+01	32.34			3.02E+01	3.23E+01
	17	352.07	4.54E+02	59.13	9.12E+00	4.79E+00	4.45E+02	5.93E+01
	18	463.04	4.68E+01	30.00			4.68E+01	3.00E+01
	19	493.20	3.93E+01	30.20			3.93E+01	3.02E+01
	20	511.01	1.50E+02	52.99	6.97E+01	5.00E+00	8.07E+01	5.32E+01
	21	583.49	1.70E+02	45.30	3.98E+00	3.57E+00	1.66E+02	4.54E+01
	22	609.72	3.44E+02	52.11	8.66E+00	3.90E+00	3.35E+02	5.23E+01
	23	623.51	1.69E+01	19.47			1.69E+01	1.95E+01
	24	717.77	2.26E+01	24.41			2.26E+01	2.44E+01
	25	727.62	6.53E+01	40.50			6.53E+01	4.05E+01
M	26	768.33	3.54E+01	24.70			3.54E+01	2.47E+01
m	27	773.15	2.48E+01	22.58			2.48E+01	2.26E+01
	28	785.40	3.06E+01	28.03			3.06E+01	2.80E+01
	29	794.59	4.36E+01	29.63			4.36E+01	2.96E+01
	30	806.01	2.71E+01	30.05			2.71E+01	3.00E+01
	31	845.59	4.96E+01	52.88			4.96E+01	5.29E+01
	32	859.39	4.88E+01	25.21			4.88E+01	2.52E+01
	33	891.50	2.06E+01	21.52			2.06E+01	2.15E+01
	34	901.65	4.19E+01	23.97			4.19E+01	2.40E+01
	35	911.45	1.61E+02	32.98	2.01E+00	2.72E+00	1.59E+02	3.31E+01

Analysis Report for 1606043-12

CP-5012 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	36	934.12	2.39E+01	24.99			2.39E+01	2.50E+01
M	37	960.38	1.16E+01	17.41			1.16E+01	1.74E+01
m	38	965.15	3.48E+01	21.43			3.48E+01	2.14E+01
m	39	969.44	8.46E+01	22.12			8.46E+01	2.21E+01
m	40	975.15	1.25E+01	17.18			1.25E+01	1.72E+01
	41	1121.05	8.38E+01	26.82			8.38E+01	2.68E+01
	42	1154.46	2.25E+01	25.84			2.25E+01	2.58E+01
	43	1163.07	1.77E+01	23.00			1.77E+01	2.30E+01
M	44	1238.56	3.74E+01	21.73			3.74E+01	2.17E+01
m	45	1247.45	1.39E+01	16.94			1.39E+01	1.69E+01
m	46	1252.00	1.53E+01	18.11			1.53E+01	1.81E+01
M	47	1372.47	7.96E+00	1.12			7.96E+00	1.12E+00
m	48	1378.12	2.42E+01	16.76			2.42E+01	1.68E+01
	49	1461.26	5.34E+02	49.94	3.09E+00	1.97E+00	5.30E+02	5.00E+01
	50	1486.47	8.07E+00	10.20			8.07E+00	1.02E+01
	51	1509.41	1.01E+01	12.65			1.01E+01	1.26E+01
	52	1537.70	8.50E+00	9.62			8.50E+00	9.62E+00
M	53	1588.06	1.43E+01	9.82			1.43E+01	9.82E+00
m	54	1593.06	8.19E+00	11.85			8.19E+00	1.19E+01
	55	1630.45	9.45E+00	7.28			9.45E+00	7.28E+00
	56	1718.54	1.01E+01	8.00			1.01E+01	8.00E+00
	57	1765.12	5.93E+01	16.01	2.70E+00	1.86E+00	5.66E+01	1.61E+01
	58	1796.35	6.50E+00	8.03			6.50E+00	8.03E+00
	59	1848.36	1.35E+01	10.61			1.35E+01	1.06E+01
	60	2089.67	7.00E+00	5.29			7.00E+00	5.29E+00
	61	2103.48	1.41E+01	10.79			1.41E+01	1.08E+01
	62	2118.50	1.10E+01	6.63			1.10E+01	6.63E+00
	63	2204.08	1.18E+01	10.77			1.18E+01	1.08E+01
	64	2215.55	7.00E+00	7.21			7.00E+00	7.21E+00
	65	2380.43	7.00E+00	5.29			7.00E+00	5.29E+00
	66	2405.92	5.56E+00	7.23			5.56E+00	7.23E+00
	67	2614.70	7.70E+01	17.55	3.07E+00	1.34E+00	7.39E+01	1.76E+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 3:06:08PM

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

Analysis Report for 1606043-12

CP-5012 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	12.99	2.04E+03	119.80			2.04E+03	1.20E+02
	2	46.89	6.80E+01	48.74	2.17E+01	5.74E+00	4.63E+01	4.91E+01
	3	76.22	9.44E+02	140.77			9.44E+02	1.41E+02
	4	87.48	4.83E+01	60.17			4.83E+01	6.02E+01
	5	92.65	2.81E+02	92.31	4.47E+01	7.30E+00	2.36E+02	9.26E+01
	6	128.52	7.73E+01	66.74			7.73E+01	6.67E+01
	7	185.80	1.99E+02	83.23	3.13E+01	6.95E+00	1.67E+02	8.35E+01
	8	210.27	1.04E+02	71.53			1.04E+02	7.15E+01
M	9	239.02	6.59E+02	60.17	1.19E+01	7.10E+00	6.47E+02	6.06E+01
m	10	242.03	1.35E+02	42.33	2.33E+00	1.42E+00	1.33E+02	4.24E+01
	11	264.38	4.47E+01	34.60			4.47E+01	3.46E+01
	12	270.14	7.60E+01	45.64			7.60E+01	4.56E+01
M	13	295.37	2.67E+02	45.07			2.67E+02	4.51E+01
m	14	300.12	4.25E+01	34.63			4.25E+01	3.46E+01
M	15	338.16	1.25E+02	36.41			1.25E+02	3.64E+01
m	16	340.92	3.02E+01	32.34			3.02E+01	3.23E+01
	17	352.07	4.54E+02	59.13	9.12E+00	4.79E+00	4.45E+02	5.93E+01
	18	463.04	4.68E+01	30.00			4.68E+01	3.00E+01
	19	493.20	3.93E+01	30.20			3.93E+01	3.02E+01
	20	511.01	1.50E+02	52.99	6.97E+01	5.00E+00	8.07E+01	5.32E+01
	21	583.49	1.70E+02	45.30	3.98E+00	3.57E+00	1.66E+02	4.54E+01
	22	609.72	3.44E+02	52.11	8.66E+00	3.90E+00	3.35E+02	5.23E+01
	23	623.51	1.69E+01	19.47			1.69E+01	1.95E+01
	24	717.77	2.26E+01	24.41			2.26E+01	2.44E+01
	25	727.62	6.53E+01	40.50			6.53E+01	4.05E+01
M	26	768.33	3.54E+01	24.70			3.54E+01	2.47E+01
m	27	773.15	2.48E+01	22.58			2.48E+01	2.26E+01
	28	785.40	3.06E+01	28.03			3.06E+01	2.80E+01
	29	794.59	4.36E+01	29.63			4.36E+01	2.96E+01
	30	806.01	2.71E+01	30.05			2.71E+01	3.00E+01
	31	845.59	4.96E+01	52.88			4.96E+01	5.29E+01
	32	859.39	4.88E+01	25.21			4.88E+01	2.52E+01
	33	891.50	2.06E+01	21.52			2.06E+01	2.15E+01
	34	901.65	4.19E+01	23.97			4.19E+01	2.40E+01
	35	911.45	1.61E+02	32.98	2.01E+00	2.72E+00	1.59E+02	3.31E+01
	36	934.12	2.39E+01	24.99			2.39E+01	2.50E+01
M	37	960.38	1.16E+01	17.41			1.16E+01	1.74E+01
m	38	965.15	3.48E+01	21.43			3.48E+01	2.14E+01
m	39	969.44	8.46E+01	22.12			8.46E+01	2.21E+01
m	40	975.15	1.25E+01	17.18			1.25E+01	1.72E+01
	41	1121.05	8.38E+01	26.82			8.38E+01	2.68E+01
	42	1154.46	2.25E+01	25.84			2.25E+01	2.58E+01
	43	1163.07	1.77E+01	23.00			1.77E+01	2.30E+01
M	44	1238.56	3.74E+01	21.73			3.74E+01	2.17E+01
m	45	1247.45	1.39E+01	16.94			1.39E+01	1.69E+01
m	46	1252.00	1.53E+01	18.11			1.53E+01	1.81E+01
M	47	1372.47	7.96E+00	1.12			7.96E+00	1.12E+00
m	48	1378.12	2.42E+01	16.76			2.42E+01	1.68E+01
	49	1461.26	5.34E+02	49.94	3.09E+00	1.97E+00	5.30E+02	5.00E+01
	50	1486.47	8.07E+00	10.20			8.07E+00	1.02E+01
	51	1509.41	1.01E+01	12.65			1.01E+01	1.26E+01
	52	1537.70	8.50E+00	9.62			8.50E+00	9.62E+00
M	53	1588.06	1.43E+01	9.82			1.43E+01	9.82E+00
m	54	1593.06	8.19E+00	11.85			8.19E+00	1.19E+01

Analysis Report for 1606043-12

CP-5012 00-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
55	1630.45	9.45E+00	7.28			9.45E+00	7.28E+00
56	1718.54	1.01E+01	8.00			1.01E+01	8.00E+00
57	1765.12	5.93E+01	16.01	2.70E+00	1.86E+00	5.66E+01	1.61E+01
58	1796.35	6.50E+00	8.03			6.50E+00	8.03E+00
59	1848.36	1.35E+01	10.61			1.35E+01	1.06E+01
60	2089.67	7.00E+00	5.29			7.00E+00	5.29E+00
61	2103.48	1.41E+01	10.79			1.41E+01	1.08E+01
62	2118.50	1.10E+01	6.63			1.10E+01	6.63E+00
63	2204.08	1.18E+01	10.77			1.18E+01	1.08E+01
64	2215.55	7.00E+00	7.21			7.00E+00	7.21E+00
65	2380.43	7.00E+00	5.29			7.00E+00	5.29E+00
66	2405.92	5.56E+00	7.23			5.56E+00	7.23E+00
67	2614.70	7.70E+01	17.55	3.07E+00	1.34E+00	7.39E+01	1.76E+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	0.968	1460.81	*	10.67	1.70E+01	2.21E+00
GA-67	0.859	93.31	*	35.70	2.55E+00	4.28E+00
		208.95		2.24		
		300.22	*	16.00	1.83E+00	3.35E+00
CD-109	0.952	88.03	*	3.72	7.29E-01	9.12E-01
CD-113M	0.928	263.70	*	0.02	1.77E+02	1.39E+02
SN-126	0.999	87.57	*	37.00	7.24E-02	9.03E-02
TL-208	0.982	583.14	*	30.22	9.03E-01	2.70E-01
		860.37	*	4.48	2.46E+00	1.32E+00
		2614.66	*	35.85	8.76E-01	2.33E-01
PB-210	0.975	46.50	*	4.25	9.11E-01	9.70E-01
BI-212	0.740	727.17	*	11.80	1.09E+00	6.84E-01
		1620.62		2.75		
PB-212	0.977	238.63	*	44.60	1.23E+00	2.03E-01
		300.09	*	3.41	1.24E+00	1.02E+00
BI-214	0.956	609.31	*	46.30	1.23E+00	2.34E-01
		1120.29	*	15.10	1.55E+00	5.20E-01
		1764.49	*	15.80	1.37E+00	4.16E-01

Analysis Report for 1606043-12

CP-5012 00-02

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.956	2204.22	*	4.98	9.90E-01	9.11E-01
PB-214	0.996	295.21	*	19.19	1.36E+00	3.08E-01
		351.92	*	37.19	1.33E+00	2.81E-01
RA-226	0.973	186.21	*	3.28	3.70E+00	7.03E+00
AC-228	0.983	338.32	*	11.40	1.18E+00	3.94E-01
		911.07	*	27.70	1.36E+00	3.51E-01
		969.11	*	16.60	1.27E+00	3.77E-01
NP-237	0.859	86.50	*	12.60	2.12E-01	2.65E-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 3:06:08PM
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	12.99	5.66149E-01	2.94		
	3	76.22	2.62203E-01	7.46		
	6	128.52	2.14633E-02	43.19		
	8	210.27	2.90241E-02	34.23	Tol.	CM-243
m	10	242.03	3.68152E-02	15.98		
	12	270.14	2.11094E-02	30.03		
m	16	340.92	8.38930E-03	53.54	Tol.	CS-136
	18	463.04	1.30033E-02	32.04		
	19	493.20	1.09167E-02	38.42		
	20	511.01	2.24264E-02	32.96		
	23	623.51	4.68954E-03	57.66		
	24	717.77	6.27137E-03	54.07		
M	26	768.33	9.83684E-03	34.87	Sum	
m	27	773.15	6.90143E-03	45.45		
	28	785.40	8.49132E-03	45.85		
	29	794.59	1.20975E-02	34.02	Sum	
	30	806.01	7.51694E-03	55.52		
	31	845.59	1.37826E-02	53.28		
	33	891.50	5.72222E-03	52.24		
	34	901.65	1.16503E-02	28.57		
	36	934.12	6.64103E-03	52.26		

Analysis Report for 1606043-12

CP-5012 00-02

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	37	960.38	3.21122E-03	75.32		
m	38	965.15	9.65795E-03	30.82		
m	40	975.15	3.47242E-03	68.73		
	42	1154.46	6.25000E-03	57.41	Sum	
	43	1163.07	4.91830E-03	64.95		
M	44	1238.56	1.03810E-02	29.07	Tol.	CO-56
m	45	1247.45	3.84750E-03	61.15		
m	46	1252.00	4.26194E-03	59.02		
M	47	1372.47	2.21249E-03	7.02		
m	48	1378.12	6.71117E-03	34.69		
	50	1486.47	2.24206E-03	63.17		
	51	1509.41	2.81944E-03	62.31		
	52	1537.70	2.36111E-03	56.57		
M	53	1588.06	3.98371E-03	34.25		
m	54	1593.06	2.27611E-03	72.33	D-Esc	
	55	1630.45	2.62626E-03	38.50		
	56	1718.54	2.81250E-03	39.51	Sum	
	58	1796.35	1.80556E-03	61.78		
	59	1848.36	3.75000E-03	39.28	Sum	
	60	2089.67	1.94444E-03	37.80	Sum	
	61	2103.48	3.91813E-03	38.26	S-Esc	
	62	2118.50	3.05556E-03	30.15		
	64	2215.55	1.94444E-03	51.51		
	65	2380.43	1.94444E-03	37.80		
	66	2405.92	1.54514E-03	64.97		

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	0.96	1460.81	*	10.67	1.70E+01	2.21E+00
GA-67	0.85	93.31	*	35.70	2.55E+00	4.28E+00
		208.95		2.24		

Analysis Report for 1606043-12

CP-5012 00-02

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
GA-67	0.85	300.22	*	16.00	1.83E+00	3.35E+00
CD-109	0.95	88.03	*	3.72	7.29E-01	9.12E-01
CD-113M	0.92	263.70	*	0.02	1.77E+02	1.39E+02
SN-126	0.99	87.57	*	37.00	7.24E-02	9.03E-02
TL-208	0.98	583.14	*	30.22	9.03E-01	2.70E-01
		860.37	*	4.48	2.46E+00	1.32E+00
		2614.66	*	35.85	8.76E-01	2.33E-01
PB-210	0.97	46.50	*	4.25	9.11E-01	9.70E-01
BI-212	0.74	727.17	*	11.80	1.09E+00	6.84E-01
		1620.62		2.75		
PB-212	0.97	238.63	*	44.60	1.23E+00	2.03E-01
		300.09	*	3.41	1.24E+00	1.02E+00
BI-214	0.95	609.31	*	46.30	1.23E+00	2.34E-01
		1120.29	*	15.10	1.55E+00	5.20E-01
		1764.49	*	15.80	1.37E+00	4.16E-01
		2204.22	*	4.98	9.90E-01	9.11E-01
PB-214	0.99	295.21	*	19.19	1.36E+00	3.08E-01
		351.92	*	37.19	1.33E+00	2.81E-01
RA-226	0.97	186.21	*	3.28	3.70E+00	7.03E+00
AC-228	0.98	338.32	*	11.40	1.18E+00	3.94E-01
		911.07	*	27.70	1.36E+00	3.51E-01
		969.11	*	16.60	1.27E+00	3.77E-01
NP-237	0.85	86.50	*	12.60	2.12E-01	2.65E-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	0.968	1.70E+01	2.21E+00	
	GA-67	0.859	1.77E+00	2.26E+00	
?	CD-109	0.952	7.29E-01	9.12E-01	
	CD-113M	0.928	1.77E+02	1.39E+02	

Analysis Report for 1606043-12

CP-5012 00-02

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
?	SN-126	0.999	7.24E-02	9.03E-02	
	TL-208	0.982	9.15E-01	1.75E-01	
	PB-210	0.975	9.11E-01	9.70E-01	
	BI-212	0.740	1.09E+00	6.84E-01	
	PB-212	0.977	1.19E+00	2.01E-01	
	BI-214	0.956	1.29E+00	1.86E-01	
	PB-214	0.996	1.35E+00	2.08E-01	
	RA-226	0.973	3.70E+00	7.03E+00	
	AC-228	0.983	1.28E+00	2.15E-01	
?	NP-237	0.859	2.12E-01	2.65E-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 1606043-12

CP-5012 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 3:06:08PM
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	12.99	5.66149E-01	2.94		
	3	76.22	2.62203E-01	7.46		
	6	128.52	2.14633E-02	43.19		
	8	210.27	2.90241E-02	34.23	Tol.	CM-243
m	10	242.03	3.68152E-02	15.98		
	12	270.14	2.11094E-02	30.03		
m	16	340.92	8.38930E-03	53.54	Tol.	CS-136
	18	463.04	1.30033E-02	32.04		
	19	493.20	1.09167E-02	38.42		
	20	511.01	2.24264E-02	32.96		
	23	623.51	4.68954E-03	57.66		
	24	717.77	6.27137E-03	54.07		
M	26	768.33	9.83684E-03	34.87	Sum	
m	27	773.15	6.90143E-03	45.45		
	28	785.40	8.49132E-03	45.85		
	29	794.59	1.20975E-02	34.02	Sum	
	30	806.01	7.51694E-03	55.52		
	31	845.59	1.37826E-02	53.28		
	33	891.50	5.72222E-03	52.24		
	34	901.65	1.16503E-02	28.57		
	36	934.12	6.64103E-03	52.26		
M	37	960.38	3.21122E-03	75.32		
m	38	965.15	9.65795E-03	30.82		
m	40	975.15	3.47242E-03	68.73		
	42	1154.46	6.25000E-03	57.41	Sum	
	43	1163.07	4.91830E-03	64.95		
M	44	1238.56	1.03810E-02	29.07	Tol.	CO-56
m	45	1247.45	3.84750E-03	61.15		
m	46	1252.00	4.26194E-03	59.02		
M	47	1372.47	2.21249E-03	7.02		
m	48	1378.12	6.71117E-03	34.69		
	50	1486.47	2.24206E-03	63.17		
	51	1509.41	2.81944E-03	62.31		
	52	1537.70	2.36111E-03	56.57		
M	53	1588.06	3.98371E-03	34.25		

Analysis Report for 1606043-12

CP-5012 00-02

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	54	1593.06	2.27611E-03	72.33	D-Esc	
	55	1630.45	2.62626E-03	38.50		
	56	1718.54	2.81250E-03	39.51	Sum	
	58	1796.35	1.80556E-03	61.78		
	59	1848.36	3.75000E-03	39.28	Sum	
	60	2089.67	1.94444E-03	37.80	Sum	
	61	2103.48	3.91813E-03	38.26	S-Esc	
	62	2118.50	3.05556E-03	30.15		
	64	2215.55	1.94444E-03	51.51		
	65	2380.43	1.94444E-03	37.80		
	66	2405.92	1.54514E-03	64.97		

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	-5.22E-02	5.34E-01	5.34E-01
+	NA-22	1274.54		99.94	-9.88E-03	8.65E-02	8.65E-02
+	NA-24	1368.53		99.99	7.22E+01	9.56E+02	1.44E+03
		2754.09		99.86	-3.43E+02		9.56E+02
+	AL-26	1808.65		99.76	3.32E-02	7.57E-02	7.57E-02
+	K-40	1460.81	*	10.67	1.70E+01	1.11E+00	1.11E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	1.70E-02	5.43E-02	5.43E-02
		78.34		96.00	2.79E-01		7.86E-02
+	SC-46	889.25		99.98	-3.58E-02	7.37E-02	7.37E-02
		1120.51		99.99	1.95E-01		1.51E-01
+	V-48	983.52		99.98	-5.50E-03	1.09E-01	1.09E-01
		1312.10		97.50	8.02E-04		1.16E-01
+	CR-51	320.08		9.83	-4.12E-01	6.12E-01	6.12E-01
+	MN-54	834.83		99.97	-8.22E-03	8.71E-02	8.71E-02
+	CO-56	846.75		99.96	1.12E-03	8.76E-02	8.76E-02
		1037.75		14.03	-2.48E-02		5.90E-01

Analysis Report for 1606043-12

CP-5012 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CO-56	1238.25		67.00	2.03E-01	8.76E-02	1.98E-01
		1771.40		15.51	-4.08E-01		3.78E-01
		2598.48		16.90	-2.72E-02		2.53E-01
+	CO-57	122.06		85.51	7.85E-03	6.00E-02	6.00E-02
		136.48		10.60	-2.27E-01		4.77E-01
+	CO-58	810.76		99.40	4.73E-03	7.94E-02	7.94E-02
+	FE-59	1099.22		56.50	1.12E-02	1.89E-01	1.89E-01
		1291.56		43.20	-6.98E-02		2.20E-01
+	CO-60	1173.22		100.00	-3.53E-02	8.62E-02	8.69E-02
		1332.49		100.00	2.90E-02		8.62E-02
+	ZN-65	1115.52		50.75	6.19E-02	1.71E-01	1.71E-01
+	GA-67	93.31	*	35.70	2.55E+00	1.58E+00	1.58E+00
		208.95		2.24	2.14E+01		1.99E+01
		300.22	*	16.00	1.83E+00		4.78E+00
+	SE-75	121.11		16.70	2.20E-01	8.84E-02	3.19E-01
		136.00		59.20	3.73E-03		8.90E-02
		264.65		59.80	8.47E-02		8.84E-02
		279.53		25.20	-1.05E-03		2.25E-01
		400.65		11.40	-4.59E-03		5.14E-01
+	RB-82	776.52		13.00	4.09E-02	8.10E-01	8.10E-01
+	RB-83	520.41		46.00	1.49E-02	1.34E-01	1.34E-01
		529.64		30.30	8.88E-02		2.19E-01
		552.65		16.40	2.36E-01		4.44E-01
+	KR-85	513.99		0.43	-1.13E+01	1.55E+01	1.55E+01
+	SR-85	513.99		99.27	-5.46E-02	7.48E-02	7.48E-02
+	Y-88	898.02		93.40	-3.00E-02	8.38E-02	8.64E-02
		1836.01		99.38	2.14E-02		8.38E-02
+	NB-93M	16.57		9.43	4.20E+01	9.04E+01	9.04E+01
+	NB-94	702.63		100.00	3.72E-02	8.27E-02	8.27E-02
		871.10		100.00	1.67E-02		8.27E-02
+	NB-95	765.79		99.81	1.09E-02	1.18E-01	1.18E-01
+	NB-95M	235.69		25.00	-1.73E+01	1.69E+00	1.69E+00
+	ZR-95	724.18		43.70	-5.31E-02	1.63E-01	2.22E-01
		756.72		55.30	1.31E-01		1.63E-01
+	MO-99	181.06		6.20	6.13E-01	5.55E+00	8.37E+00
		739.58		12.80	1.39E+00		5.55E+00
		778.00		4.50	-2.44E-01		1.63E+01
+	RU-103	497.08		89.00	-1.37E-03	6.85E-02	6.85E-02
+	RU-106	621.84		9.80	5.76E-02	7.47E-01	7.47E-01
+	AG-108M	433.93		89.90	8.31E-03	6.19E-02	6.19E-02
		614.37		90.40	1.29E-02		8.10E-02
		722.95		90.50	-1.39E-01		8.63E-02
+	CD-109	88.03	*	3.72	7.29E-01	1.49E+00	1.49E+00
+	AG-110M	657.75		93.14	-6.77E-03	7.60E-02	7.60E-02
		677.61		10.53	-1.77E-01		6.89E-01
		706.67		16.46	1.06E-01		4.81E-01
		763.93		21.98	-6.72E-02		3.49E-01
		884.67		71.63	-2.18E-02		9.19E-02

Analysis Report for 1606043-12

CP-5012 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AG-110M	1384.27		23.94	1.31E-01	7.60E-02	3.66E-01
+	CD-113M	263.70	*	0.02	1.77E+02	2.18E+02	2.18E+02
+	SN-113	255.12		1.93	3.85E-01	9.70E-02	2.94E+00
		391.69		64.90	7.62E-02		9.70E-02
+	TE123M	159.00		84.10	-1.11E-02	6.39E-02	6.39E-02
+	SB-124	602.71		97.87	-2.62E-02	8.63E-02	8.63E-02
		645.85		7.26	-2.22E-01		1.07E+00
		722.78		11.10	-1.26E+00		7.81E-01
		1691.02		49.00	5.73E-02		1.76E-01
+	I-125	35.49		6.49	3.37E-01	1.58E+00	1.58E+00
+	SB-125	176.33		6.89	-3.08E-02	2.13E-01	7.63E-01
		427.89		29.33	6.94E-02		2.13E-01
		463.38		10.35	4.87E-01		6.61E-01
		600.56		17.80	-1.22E-01		4.26E-01
		635.90		11.32	-9.81E-02		6.16E-01
+	SB-126	414.70		83.30	-3.16E-02	1.07E-01	1.07E-01
		666.33		99.60	-5.08E-02		1.26E-01
		695.00		99.60	1.87E-02		1.28E-01
		720.50		53.80	4.33E-02		2.44E-01
+	SN-126	87.57	*	37.00	7.24E-02	1.48E-01	1.48E-01
+	SB-127	473.00		25.00	4.14E-01	1.07E+00	1.15E+00
		685.20		35.70	2.36E-01		1.07E+00
		783.80		14.70	2.03E+00		3.07E+00
+	I-129	29.78		57.00	-1.02E-01	2.81E-01	2.81E-01
		33.60		13.20	1.27E-01		8.57E-01
		39.58		7.52	3.16E-01		9.86E-01
+	I-131	284.30		6.05	-9.62E-02	1.42E-01	1.97E+00
		364.48		81.20	2.16E-02		1.42E-01
		636.97		7.26	-1.19E-01		2.16E+00
		722.89		1.80	-1.53E+01		9.52E+00
+	TE-132	49.72		13.10	7.69E-01	4.28E-01	2.98E+00
		228.16		88.00	-6.23E-02		4.28E-01
+	BA-133	81.00		33.00	7.61E-02	8.73E-02	1.39E-01
		302.84		17.80	-4.26E-02		3.06E-01
		356.01		60.00	3.37E-02		8.73E-02
+	I-133	529.87		86.30	2.04E+01	1.03E+02	1.03E+02
+	XE-133	81.00		38.00	2.20E-01	4.01E-01	4.01E-01
+	CS-134	563.23		8.38	-2.49E-03	8.44E-02	7.09E-01
		569.32		15.43	4.21E-02		3.53E-01
		604.70		97.60	-3.47E-03		8.44E-02
		795.84		85.40	5.46E-02		1.13E-01
		801.93		8.73	1.29E-01		9.54E-01
+	CS-135	268.24		16.00	-1.34E-01	3.60E-01	3.60E-01
+	I-135	1131.51		22.50	1.23E+08	2.85E+09	3.42E+09
		1260.41		28.60	1.46E+09		2.85E+09
		1678.03		9.54	2.54E+09		7.08E+09
+	CS-136	153.22		7.46	7.76E-01	1.23E-01	1.26E+00
		163.89		4.61	3.79E-01		1.84E+00
		176.55		13.56	1.79E-01		6.23E-01

Analysis Report for 1606043-12

CP-5012 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	273.65	12.66	-1.49E-01	1.23E-01	6.42E-01
		340.57	48.50	-1.06E-01		2.25E-01
		818.50	99.70	-1.39E-02		1.23E-01
		1048.07	79.60	-9.92E-02		1.56E-01
		1235.34	19.70	6.29E-01		9.53E-01
+	CS-137	661.65	85.12	2.36E-02	8.72E-02	8.72E-02
+	LA-138	788.74	34.00	1.19E-01	1.03E-01	2.50E-01
		1435.80	66.00	3.57E-02		1.03E-01
+	CE-139	165.85	80.35	2.02E-02	6.90E-02	6.90E-02
+	BA-140	162.64	6.70	3.47E-01	3.65E-01	1.28E+00
		304.84	4.50	7.61E-01		2.01E+00
		423.70	3.20	1.14E-01		2.80E+00
		437.55	2.00	1.42E+00		4.59E+00
		537.32	25.00	-1.65E-01		3.65E-01
+	LA-140	328.77	20.50	2.65E-01	1.32E-01	5.08E-01
		487.03	45.50	-5.69E-02		2.06E-01
		815.85	23.50	2.18E-01		5.42E-01
		1596.49	95.49	6.20E-03		1.32E-01
+	CE-141	145.44	48.40	-4.60E-04	1.31E-01	1.31E-01
+	CE-143	57.36	11.80	-1.01E+00	1.79E+01	4.08E+01
		293.26	42.00	-1.24E+01		1.79E+01
		664.55	5.20	6.51E+01		1.52E+02
+	CE-144	133.54	10.80	1.22E-01	4.70E-01	4.70E-01
+	PM-144	476.78	42.00	-1.17E-02	6.93E-02	1.20E-01
		618.01	98.60	2.23E-02		6.93E-02
		696.49	99.49	5.37E-02		8.24E-02
+	PM-145	36.85	21.70	-6.26E-02	1.98E-01	3.75E-01
		37.36	39.70	-3.30E-02		1.98E-01
		42.30	15.10	1.39E-01		4.35E-01
		72.40	2.31	-3.18E-01		2.17E+00
+	PM-146	453.90	39.94	-5.04E-02	1.34E-01	1.34E-01
		735.90	14.01	-5.71E-02		4.82E-01
		747.13	13.10	1.25E-01		5.53E-01
+	ND-147	91.11	28.90	-3.70E-01	4.32E-01	4.32E-01
		531.02	13.10	6.34E-02		8.01E-01
+	PM-149	285.90	3.10	1.57E+01	3.21E+01	3.21E+01
+	EU-152	121.78	20.50	3.20E-02	2.45E-01	2.45E-01
		244.69	5.40	-2.59E+00		1.01E+00
		344.27	19.13	-1.71E-01		2.66E-01
		778.89	9.20	-1.20E-02		8.64E-01
		964.01	10.40	-2.04E+00		9.11E-01
		1085.78	7.22	2.77E-01		1.22E+00
		1112.02	9.60	9.70E-01		1.01E+00
		1407.95	14.94	3.24E-02		5.35E-01
+	GD-153	97.43	31.30	1.73E-02	1.68E-01	1.68E-01
		103.18	22.20	-2.60E-01		2.22E-01
+	EU-154	123.07	40.50	2.14E-02	1.23E-01	1.23E-01
		723.30	19.70	-6.39E-01		3.97E-01
		873.19	11.50	-1.15E-01		7.09E-01

Analysis Report for 1606043-12

CP-5012 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	996.32		10.30	-3.13E-01	1.23E-01	7.09E-01
		1004.76		17.90	-1.79E-01		3.99E-01
		1274.45		35.50	-2.77E-02		2.42E-01
+	EU-155	86.50		30.90	-3.01E-01	2.09E-01	2.09E-01
		105.30		20.70	-6.27E-02		2.39E-01
+	EU-156	811.77		10.40	5.29E-02	1.03E+00	1.03E+00
		1153.47		7.20	1.20E+00		2.11E+00
		1230.71		8.90	2.27E-01		1.49E+00
+	HO-166M	184.41		72.60	3.76E-02	9.13E-02	9.13E-02
		280.45		29.60	-8.46E-04		1.82E-01
		410.94		11.10	2.84E-01		5.46E-01
		711.69		54.10	3.49E-02		1.19E-01
+	TM-171	66.72		0.14	-1.26E+01	3.61E+01	3.61E+01
+	HF-172	81.75		4.52	-1.22E+00	4.51E-01	9.78E-01
		125.81		11.30	-2.56E-01		4.51E-01
+	LU-172	181.53		20.60	-4.39E-01	3.58E-01	6.54E-01
		810.06		16.63	6.63E-02		1.11E+00
		912.12		15.25	6.29E+00		2.64E+00
		1093.66		62.50	-2.95E-02		3.58E-01
+	LU-173	100.72		5.24	3.13E-01	3.07E-01	9.68E-01
		272.11		21.20	3.29E-01		3.07E-01
+	HF-175	343.40		84.00	2.40E-02	7.17E-02	7.17E-02
+	LU-176	88.34		13.30	7.36E-01	5.84E-02	5.05E-01
		201.83		86.00	-7.74E-02		5.94E-02
		306.78		94.00	-3.18E-02		5.84E-02
+	TA-182	67.75		41.20	4.13E-02	1.32E-01	1.32E-01
		1121.30		34.90	7.05E-01		4.31E-01
		1189.05		16.23	-2.29E-01		5.92E-01
		1221.41		26.98	1.37E-01		4.10E-01
		1231.02		11.44	3.61E-02		7.73E-01
+	IR-192	308.46		29.68	8.89E-02	1.24E-01	2.11E-01
		468.07		48.10	-3.14E-02		1.24E-01
+	HG-203	279.19		77.30	3.53E-02	8.26E-02	8.26E-02
+	BI-207	569.67		97.72	6.60E-03	5.54E-02	5.54E-02
		1063.62		74.90	-4.83E-02		1.03E-01
+	TL-208	583.14	*	30.22	9.03E-01	1.05E-01	3.49E-01
		860.37	*	4.48	2.46E+00		1.88E+00
		2614.66	*	35.85	8.76E-01		1.05E-01
+	BI-210M	262.00		45.00	2.41E-02	1.13E-01	1.13E-01
		300.00		23.00	1.64E-01		2.59E-01
+	PB-210	46.50	*	4.25	9.11E-01	1.58E+00	1.58E+00
+	PB-211	404.84		2.90	3.83E-01	1.93E+00	1.93E+00
		831.96		2.90	-1.10E+00		2.82E+00
+	BI-212	727.17	*	11.80	1.09E+00	1.06E+00	1.06E+00
		1620.62		2.75	1.51E+00		2.98E+00
+	PB-212	238.63	*	44.60	1.23E+00	2.25E-01	2.25E-01
		300.09	*	3.41	1.24E+00		3.23E+00
+	BI-214	609.31	*	46.30	1.23E+00	2.35E-01	2.35E-01

Analysis Report for 1606043-12

CP-5012 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	1120.29	*	15.10	1.55E+00	2.35E-01	6.48E-01
		1764.49	*	15.80	1.37E+00		2.96E-01
		2204.22	*	4.98	9.90E-01		1.37E+00
+	PB-214	295.21	*	19.19	1.36E+00	2.13E-01	5.68E-01
		351.92	*	37.19	1.33E+00		2.13E-01
+	RN-219	401.80		6.50	1.29E-01	8.57E-01	8.57E-01
+	RA-223	323.87		3.88	2.09E-01	1.42E+00	1.42E+00
+	RA-224	240.98		3.95	1.25E+01	2.98E+00	2.98E+00
+	RA-225	40.00		31.00	1.15E-01	3.58E-01	3.58E-01
+	RA-226	186.21	*	3.28	3.70E+00	2.95E+00	2.95E+00
+	TH-227	50.10		8.40	1.71E-01	6.41E-01	6.64E-01
		236.00		11.50	-6.54E+00		6.41E-01
		256.20		6.30	-2.68E-01		8.37E-01
+	AC-228	338.32	*	11.40	1.18E+00	3.24E-01	8.17E-01
		911.07	*	27.70	1.36E+00		3.24E-01
		969.11	*	16.60	1.27E+00		1.04E+00
+	TH-230	48.44		16.90	-7.15E-01	3.18E-01	3.18E-01
		62.85		4.60	1.20E+00		1.25E+00
		67.67		0.37	4.35E+00		1.39E+01
+	PA-231	283.67		1.60	-1.66E-01	2.37E+00	3.38E+00
		302.67		2.30	-3.29E-01		2.37E+00
+	TH-231	25.64		14.70	-1.61E-01	7.48E-01	2.14E+00
		84.21		6.40	9.21E-01		7.48E-01
+	PA-233	311.98		38.60	4.34E-02	1.79E-01	1.79E-01
+	PA-234	131.20		20.40	-2.09E-02	2.52E-01	2.52E-01
		733.99		8.80	1.34E-01		8.09E-01
		946.00		12.00	-2.18E-01		5.99E-01
+	PA-234M	1001.03		0.92	-1.04E+00	8.30E+00	8.30E+00
+	TH-234	63.29		3.80	1.44E+00	1.51E+00	1.51E+00
+	U-235	143.76		10.50	-2.40E-02	4.87E-01	4.87E-01
		163.35		4.70	3.03E-01		1.11E+00
		205.31		4.70	6.35E-02		1.18E+00
+	NP-237	86.50	*	12.60	2.12E-01	4.35E-01	4.35E-01
+	NP-239	106.10		22.70	-1.29E+00	3.21E+00	3.21E+00
		228.18		10.70	-1.08E+00		7.39E+00
		277.60		14.10	4.08E+00		5.81E+00
+	AM-241	59.54		35.90	-1.74E-03	1.39E-01	1.39E-01
+	AM-243	74.67		66.00	-2.71E-01	1.05E-01	1.05E-01
+	CM-243	209.75		3.29	1.38E+00	4.01E-01	1.93E+00
		228.14		10.60	-7.45E-02		5.12E-01
		277.60		14.00	2.82E-01		4.01E-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 1606043-12

CP-5012 00-02

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	5.34E-01	5.34E-01	-5.22E-02	2.47E-01
	NA-22	1274.54		99.94	8.65E-02	8.65E-02	-9.88E-03	3.90E-02
	NA-24	1368.53		99.99	1.44E+03	9.56E+02	7.22E+01	6.13E+02
		2754.09		99.86	9.56E+02		-3.43E+02	3.39E+02
	AL-26	1808.65		99.76	7.57E-02	7.57E-02	3.32E-02	3.26E-02
+	K-40	1460.81	*	10.67	1.11E+00	1.11E+00	1.70E+01	5.10E-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	5.43E-02	5.43E-02	1.70E-02	2.63E-02
		78.34		96.00	7.86E-02		2.79E-01	3.85E-02
	SC-46	889.25		99.98	7.37E-02	7.37E-02	-3.58E-02	3.35E-02
		1120.51		99.99	1.51E-01		1.95E-01	7.13E-02
	V-48	983.52		99.98	1.09E-01	1.09E-01	-5.50E-03	4.93E-02
		1312.10		97.50	1.16E-01		8.02E-04	5.13E-02
	CR-51	320.08		9.83	6.12E-01	6.12E-01	-4.12E-01	2.88E-01
	MN-54	834.83		99.97	8.71E-02	8.71E-02	-8.22E-03	4.05E-02
	CO-56	846.75		99.96	8.76E-02	8.76E-02	1.12E-03	4.05E-02
		1037.75		14.03	5.90E-01		-2.48E-02	2.68E-01
		1238.25		67.00	1.98E-01		2.03E-01	9.25E-02
		1771.40		15.51	3.78E-01		-4.08E-01	1.53E-01
		2598.48		16.90	2.53E-01		-2.72E-02	8.96E-02
	CO-57	122.06		85.51	6.00E-02	6.00E-02	7.85E-03	2.90E-02
		136.48		10.60	4.77E-01		-2.27E-01	2.30E-01
	CO-58	810.76		99.40	7.94E-02	7.94E-02	4.73E-03	3.65E-02
	FE-59	1099.22		56.50	1.89E-01	1.89E-01	1.12E-02	8.68E-02
		1291.56		43.20	2.20E-01		-6.98E-02	9.88E-02
	CO-60	1173.22		100.00	8.69E-02	8.62E-02	-3.53E-02	3.95E-02
		1332.49		100.00	8.62E-02		2.90E-02	3.88E-02
	ZN-65	1115.52		50.75	1.71E-01	1.71E-01	6.19E-02	7.77E-02
+	GA-67	93.31	*	35.70	1.58E+00	1.58E+00	2.55E+00	7.74E-01
		208.95		2.24	1.99E+01		2.14E+01	9.64E+00
		300.22	*	16.00	4.78E+00		1.83E+00	2.33E+00
	SE-75	121.11		16.70	3.19E-01	8.84E-02	2.20E-01	1.54E-01
		136.00		59.20	8.90E-02		3.73E-03	4.30E-02
		264.65		59.80	8.84E-02		8.47E-02	4.20E-02
		279.53		25.20	2.25E-01		-1.05E-03	1.07E-01
		400.65		11.40	5.14E-01		-4.59E-03	2.42E-01

Analysis Report for 1606043-12

CP-5012 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	RB-82	776.52		13.00	8.10E-01	8.10E-01	4.09E-02	3.77E-01
	RB-83	520.41		46.00	1.34E-01	1.34E-01	1.49E-02	6.21E-02
		529.64		30.30	2.19E-01		8.88E-02	1.02E-01
		552.65		16.40	4.44E-01		2.36E-01	2.08E-01
	KR-85	513.99		0.43	1.55E+01	1.55E+01	-1.13E+01	7.31E+00
	SR-85	513.99		99.27	7.48E-02	7.48E-02	-5.46E-02	3.51E-02
	Y-88	898.02		93.40	8.64E-02	8.38E-02	-3.00E-02	3.96E-02
		1836.01		99.38	8.38E-02		2.14E-02	3.63E-02
	NB-93M	16.57		9.43	9.04E+01	9.04E+01	4.20E+01	4.39E+01
	NB-94	702.63		100.00	8.27E-02	8.27E-02	3.72E-02	3.88E-02
		871.10		100.00	8.27E-02		1.67E-02	3.83E-02
	NB-95	765.79		99.81	1.18E-01	1.18E-01	1.09E-02	5.55E-02
	NB-95M	235.69		25.00	1.69E+00	1.69E+00	-1.73E+01	8.21E-01
	ZR-95	724.18		43.70	2.22E-01	1.63E-01	-5.31E-02	1.04E-01
		756.72		55.30	1.63E-01		1.31E-01	7.60E-02
	MO-99	181.06		6.20	8.37E+00	5.55E+00	6.13E-01	4.03E+00
		739.58		12.80	5.55E+00		1.39E+00	2.57E+00
		778.00		4.50	1.63E+01		-2.44E-01	7.54E+00
	RU-103	497.08		89.00	6.85E-02	6.85E-02	-1.37E-03	3.17E-02
	RU-106	621.84		9.80	7.47E-01	7.47E-01	5.76E-02	3.49E-01
	AG-108M	433.93		89.90	6.19E-02	6.19E-02	8.31E-03	2.90E-02
		614.37		90.40	8.10E-02		1.29E-02	3.79E-02
		722.95		90.50	8.63E-02		-1.39E-01	4.02E-02
+	CD-109	88.03	*	3.72	1.49E+00	1.49E+00	7.29E-01	7.27E-01
	AG-110M	657.75		93.14	7.60E-02	7.60E-02	-6.77E-03	3.53E-02
		677.61		10.53	6.89E-01		-1.77E-01	3.20E-01
		706.67		16.46	4.81E-01		1.06E-01	2.24E-01
		763.93		21.98	3.49E-01		-6.72E-02	1.62E-01
		884.67		71.63	9.19E-02		-2.18E-02	4.15E-02
		1384.27		23.94	3.66E-01		1.31E-01	1.64E-01
+	CD-113M	263.70	*	0.02	2.18E+02	2.18E+02	1.77E+02	1.04E+02
	SN-113	255.12		1.93	2.94E+00	9.70E-02	3.85E-01	1.41E+00
		391.69		64.90	9.70E-02		7.62E-02	4.58E-02
	TE123M	159.00		84.10	6.39E-02	6.39E-02	-1.11E-02	3.08E-02
	SB-124	602.71		97.87	8.63E-02	8.63E-02	-2.62E-02	4.06E-02
		645.85		7.26	1.07E+00		-2.22E-01	5.00E-01
		722.78		11.10	7.81E-01		-1.26E+00	3.64E-01
		1691.02		49.00	1.76E-01		5.73E-02	7.63E-02
	I-125	35.49		6.49	1.58E+00	1.58E+00	3.37E-01	7.56E-01
	SB-125	176.33		6.89	7.63E-01	2.13E-01	-3.08E-02	3.68E-01
		427.89		29.33	2.13E-01		6.94E-02	1.01E-01
		463.38		10.35	6.61E-01		4.87E-01	3.13E-01
		600.56		17.80	4.26E-01		-1.22E-01	2.00E-01
		635.90		11.32	6.16E-01		-9.81E-02	2.87E-01
	SB-126	414.70		83.30	1.07E-01	1.07E-01	-3.16E-02	4.99E-02
		666.33		99.60	1.26E-01		-5.08E-02	5.86E-02
		695.00		99.60	1.28E-01		1.87E-02	5.98E-02
		720.50		53.80	2.44E-01		4.33E-02	1.14E-01
+	SN-126	87.57	*	37.00	1.48E-01	1.48E-01	7.24E-02	7.21E-02
	SB-127	473.00		25.00	1.15E+00	1.07E+00	4.14E-01	5.34E-01
		685.20		35.70	1.07E+00		2.36E-01	4.99E-01
		783.80		14.70	3.07E+00		2.03E+00	1.44E+00
	I-129	29.78		57.00	2.81E-01	2.81E-01	-1.02E-01	1.34E-01

Analysis Report for 1606043-12

CP-5012 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-129	33.60	13.20	8.57E-01	2.81E-01	1.27E-01	4.11E-01
	39.58	7.52	9.86E-01		3.16E-01	4.72E-01
I-131	284.30	6.05	1.97E+00	1.42E-01	-9.62E-02	9.36E-01
	364.48	81.20	1.42E-01		2.16E-02	6.69E-02
	636.97	7.26	2.16E+00		-1.19E-01	1.01E+00
	722.89	1.80	9.52E+00		-1.53E+01	4.44E+00
TE-132	49.72	13.10	2.98E+00	4.28E-01	7.69E-01	1.44E+00
	228.16	88.00	4.28E-01		-6.23E-02	2.05E-01
BA-133	81.00	33.00	1.39E-01	8.73E-02	7.61E-02	6.71E-02
	302.84	17.80	3.06E-01		-4.26E-02	1.46E-01
	356.01	60.00	8.73E-02		3.37E-02	4.11E-02
I-133	529.87	86.30	1.03E+02	1.03E+02	2.04E+01	4.78E+01
XE-133	81.00	38.00	4.01E-01	4.01E-01	2.20E-01	1.94E-01
CS-134	563.23	8.38	7.09E-01	8.44E-02	-2.49E-03	3.28E-01
	569.32	15.43	3.53E-01		4.21E-02	1.62E-01
	604.70	97.60	8.44E-02		-3.47E-03	3.98E-02
	795.84	85.40	1.13E-01		5.46E-02	5.30E-02
	801.93	8.73	9.54E-01		1.29E-01	4.44E-01
CS-135	268.24	16.00	3.60E-01	3.60E-01	-1.34E-01	1.72E-01
I-135	1131.51	22.50	3.42E+09	2.85E+09	1.23E+08	1.56E+09
	1260.41	28.60	2.85E+09		1.46E+09	1.29E+09
	1678.03	9.54	7.08E+09		2.54E+09	3.06E+09
CS-136	153.22	7.46	1.26E+00	1.23E-01	7.76E-01	6.10E-01
	163.89	4.61	1.84E+00		3.79E-01	8.88E-01
	176.55	13.56	6.23E-01		1.79E-01	3.00E-01
	273.65	12.66	6.42E-01		-1.49E-01	3.05E-01
	340.57	48.50	2.25E-01		-1.06E-01	1.07E-01
	818.50	99.70	1.23E-01		-1.39E-02	5.66E-02
	1048.07	79.60	1.56E-01		-9.92E-02	7.09E-02
	1235.34	19.70	9.53E-01		6.29E-01	4.43E-01
CS-137	661.65	85.12	8.72E-02	8.72E-02	2.36E-02	4.07E-02
LA-138	788.74	34.00	2.50E-01	1.03E-01	1.19E-01	1.17E-01
	1435.80	66.00	1.03E-01		3.57E-02	4.45E-02
CE-139	165.85	80.35	6.90E-02	6.90E-02	2.02E-02	3.33E-02
BA-140	162.64	6.70	1.28E+00	3.65E-01	3.47E-01	6.16E-01
	304.84	4.50	2.01E+00		7.61E-01	9.54E-01
	423.70	3.20	2.80E+00		1.14E-01	1.31E+00
	437.55	2.00	4.59E+00		1.42E+00	2.15E+00
	537.32	25.00	3.65E-01		-1.65E-01	1.69E-01
LA-140	328.77	20.50	5.08E-01	1.32E-01	2.65E-01	2.43E-01
	487.03	45.50	2.06E-01		-5.69E-02	9.61E-02
	815.85	23.50	5.42E-01		2.18E-01	2.50E-01
	1596.49	95.49	1.32E-01		6.20E-03	5.77E-02
CE-141	145.44	48.40	1.31E-01	1.31E-01	-4.60E-04	6.33E-02
CE-143	57.36	11.80	4.08E+01	1.79E+01	-1.01E+00	1.97E+01
	293.26	42.00	1.79E+01		-1.24E+01	8.63E+00
	664.55	5.20	1.52E+02		6.51E+01	7.12E+01
CE-144	133.54	10.80	4.70E-01	4.70E-01	1.22E-01	2.27E-01
PM-144	476.78	42.00	1.20E-01	6.93E-02	-1.17E-02	5.52E-02
	618.01	98.60	6.93E-02		2.23E-02	3.23E-02
	696.49	99.49	8.24E-02		5.37E-02	3.86E-02
PM-145	36.85	21.70	3.75E-01	1.98E-01	-6.26E-02	1.79E-01
	37.36	39.70	1.98E-01		-3.30E-02	9.45E-02

Analysis Report for 1606043-12

CP-5012 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-145	42.30	15.10	4.35E-01	1.98E-01	1.39E-01	2.09E-01
	72.40	2.31	2.17E+00		-3.18E-01	1.05E+00
PM-146	453.90	39.94	1.34E-01	1.34E-01	-5.04E-02	6.25E-02
	735.90	14.01	4.82E-01		-5.71E-02	2.22E-01
	747.13	13.10	5.53E-01		1.25E-01	2.56E-01
ND-147	91.11	28.90	4.32E-01	4.32E-01	-3.70E-01	2.11E-01
	531.02	13.10	8.01E-01		6.34E-02	3.72E-01
PM-149	285.90	3.10	3.21E+01	3.21E+01	1.57E+01	1.53E+01
EU-152	121.78	20.50	2.45E-01	2.45E-01	3.20E-02	1.18E-01
	244.69	5.40	1.01E+00		-2.59E+00	4.84E-01
	344.27	19.13	2.66E-01		-1.71E-01	1.25E-01
	778.89	9.20	8.64E-01		-1.20E-02	4.01E-01
	964.01	10.40	9.11E-01		-2.04E+00	4.23E-01
	1085.78	7.22	1.22E+00		2.77E-01	5.57E-01
	1112.02	9.60	1.01E+00		9.70E-01	4.68E-01
	1407.95	14.94	5.35E-01		3.24E-02	2.38E-01
GD-153	97.43	31.30	1.68E-01	1.68E-01	1.73E-02	8.14E-02
	103.18	22.20	2.22E-01		-2.60E-01	1.08E-01
EU-154	123.07	40.50	1.23E-01	1.23E-01	2.14E-02	5.97E-02
	723.30	19.70	3.97E-01		-6.39E-01	1.85E-01
	873.19	11.50	7.09E-01		-1.15E-01	3.28E-01
	996.32	10.30	7.09E-01		-3.13E-01	3.21E-01
	1004.76	17.90	3.99E-01		-1.79E-01	1.80E-01
	1274.45	35.50	2.42E-01		-2.77E-02	1.09E-01
EU-155	86.50	30.90	2.09E-01	2.09E-01	-3.01E-01	1.02E-01
	105.30	20.70	2.39E-01		-6.27E-02	1.16E-01
EU-156	811.77	10.40	1.03E+00	1.03E+00	5.29E-02	4.73E-01
	1153.47	7.20	2.11E+00		1.20E+00	9.72E-01
	1230.71	8.90	1.49E+00		2.27E-01	6.75E-01
HO-166M	184.41	72.60	9.13E-02	9.13E-02	3.76E-02	4.43E-02
	280.45	29.60	1.82E-01		-8.46E-04	8.67E-02
	410.94	11.10	5.46E-01		2.84E-01	2.58E-01
	711.69	54.10	1.19E-01		3.49E-02	5.45E-02
TM-171	66.72	0.14	3.61E+01	3.61E+01	-1.26E+01	1.75E+01
HF-172	81.75	4.52	9.78E-01	4.51E-01	-1.22E+00	4.72E-01
	125.81	11.30	4.51E-01		-2.56E-01	2.18E-01
LU-172	181.53	20.60	6.54E-01	3.58E-01	-4.39E-01	3.15E-01
	810.06	16.63	1.11E+00		6.63E-02	5.12E-01
	912.12	15.25	2.64E+00		6.29E+00	1.27E+00
	1093.66	62.50	3.58E-01		-2.95E-02	1.64E-01
LU-173	100.72	5.24	9.68E-01	3.07E-01	3.13E-01	4.69E-01
	272.11	21.20	3.07E-01		3.29E-01	1.47E-01
HF-175	343.40	84.00	7.17E-02	7.17E-02	2.40E-02	3.39E-02
LU-176	88.34	13.30	5.05E-01	5.84E-02	7.36E-01	2.47E-01
	201.83	86.00	5.94E-02		-7.74E-02	2.85E-02
	306.78	94.00	5.84E-02		-3.18E-02	2.78E-02
TA-182	67.75	41.20	1.32E-01	1.32E-01	4.13E-02	6.37E-02
	1121.30	34.90	4.31E-01		7.05E-01	2.04E-01
	1189.05	16.23	5.92E-01		-2.29E-01	2.70E-01
	1221.41	26.98	4.10E-01		1.37E-01	1.89E-01
	1231.02	11.44	7.73E-01		3.61E-02	3.49E-01
IR-192	308.46	29.68	2.11E-01	1.24E-01	8.89E-02	1.01E-01
	468.07	48.10	1.24E-01		-3.14E-02	5.77E-02

Analysis Report for 1606043-12

CP-5012 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	HG-203	279.19		77.30	8.26E-02	8.26E-02	3.53E-02	3.94E-02
	BI-207	569.67		97.72	5.54E-02	5.54E-02	6.60E-03	2.55E-02
		1063.62		74.90	1.03E-01		-4.83E-02	4.65E-02
+	TL-208	583.14	*	30.22	3.49E-01	1.05E-01	9.03E-01	1.67E-01
		860.37	*	4.48	1.88E+00		2.46E+00	8.70E-01
		2614.66	*	35.85	1.05E-01		8.76E-01	3.66E-02
	BI-210M	262.00		45.00	1.13E-01	1.13E-01	2.41E-02	5.36E-02
		300.00		23.00	2.59E-01		1.64E-01	1.24E-01
+	PB-210	46.50	*	4.25	1.58E+00	1.58E+00	9.11E-01	7.63E-01
	PB-211	404.84		2.90	1.93E+00	1.93E+00	3.83E-01	9.08E-01
		831.96		2.90	2.82E+00		-1.10E+00	1.31E+00
+	BI-212	727.17	*	11.80	1.06E+00	1.06E+00	1.09E+00	5.09E-01
		1620.62		2.75	2.98E+00		1.51E+00	1.31E+00
+	PB-212	238.63	*	44.60	2.25E-01	2.25E-01	1.23E+00	1.10E-01
		300.09	*	3.41	3.23E+00		1.24E+00	1.58E+00
+	BI-214	609.31	*	46.30	2.35E-01	2.35E-01	1.23E+00	1.13E-01
		1120.29	*	15.10	6.48E-01		1.55E+00	2.99E-01
		1764.49	*	15.80	2.96E-01		1.37E+00	1.15E-01
		2204.22	*	4.98	1.37E+00		9.90E-01	5.73E-01
+	PB-214	295.21	*	19.19	5.68E-01	2.13E-01	1.36E+00	2.77E-01
		351.92	*	37.19	2.13E-01		1.33E+00	1.03E-01
	RN-219	401.80		6.50	8.57E-01	8.57E-01	1.29E-01	4.03E-01
	RA-223	323.87		3.88	1.42E+00	1.42E+00	2.09E-01	6.73E-01
	RA-224	240.98		3.95	2.98E+00	2.98E+00	1.25E+01	1.46E+00
	RA-225	40.00		31.00	3.58E-01	3.58E-01	1.15E-01	1.72E-01
+	RA-226	186.21	*	3.28	2.95E+00	2.95E+00	3.70E+00	1.44E+00
	TH-227	50.10		8.40	6.64E-01	6.41E-01	1.71E-01	3.20E-01
		236.00		11.50	6.41E-01		-6.54E+00	3.11E-01
		256.20		6.30	8.37E-01		-2.68E-01	3.99E-01
+	AC-228	338.32	*	11.40	8.17E-01	3.24E-01	1.18E+00	3.96E-01
		911.07	*	27.70	3.24E-01		1.36E+00	1.51E-01
		969.11	*	16.60	1.04E+00		1.27E+00	5.00E-01
	TH-230	48.44		16.90	3.18E-01	3.18E-01	-7.15E-01	1.52E-01
		62.85		4.60	1.25E+00		1.20E+00	6.08E-01
		67.67		0.37	1.39E+01		4.35E+00	6.72E+00
	PA-231	283.67		1.60	3.38E+00	2.37E+00	-1.66E-01	1.61E+00
		302.67		2.30	2.37E+00		-3.29E-01	1.12E+00
	TH-231	25.64		14.70	2.14E+00	7.48E-01	-1.61E-01	1.02E+00
		84.21		6.40	7.48E-01		9.21E-01	3.63E-01
	PA-233	311.98		38.60	1.79E-01	1.79E-01	4.34E-02	8.51E-02
	PA-234	131.20		20.40	2.52E-01	2.52E-01	-2.09E-02	1.22E-01
		733.99		8.80	8.09E-01		1.34E-01	3.74E-01
		946.00		12.00	5.99E-01		-2.18E-01	2.72E-01
	PA-234M	1001.03		0.92	8.30E+00	8.30E+00	-1.04E+00	3.77E+00
	TH-234	63.29		3.80	1.51E+00	1.51E+00	1.44E+00	7.33E-01
	U-235	143.76		10.50	4.87E-01	4.87E-01	-2.40E-02	2.36E-01
		163.35		4.70	1.11E+00		3.03E-01	5.37E-01
		205.31		4.70	1.18E+00		6.35E-02	5.68E-01
+	NP-237	86.50	*	12.60	4.35E-01	4.35E-01	2.12E-01	2.12E-01
	NP-239	106.10		22.70	3.21E+00	3.21E+00	-1.29E+00	1.56E+00
		228.18		10.70	7.39E+00		-1.08E+00	3.55E+00
		277.60		14.10	5.81E+00		4.08E+00	2.77E+00
	AM-241	59.54		35.90	1.39E-01	1.39E-01	-1.74E-03	6.70E-02

Analysis Report for 1606043-12

CP-5012 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AM-243	74.67	66.00	1.05E-01	1.05E-01	-2.71E-01	5.16E-02
CM-243	209.75	3.29	1.93E+00	4.01E-01	1.38E+00	9.35E-01
	228.14	10.60	5.12E-01		-7.45E-02	2.45E-01
	277.60	14.00	4.01E-01		2.82E-01	1.91E-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

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-5012 00-02

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	0	25	449
9:	1070	746	398	214	2028	373	119	123
17:	145	94	101	79	82	55	50	63
25:	53	63	48	53	53	45	55	61
33:	64	56	54	52	53	45	53	60
41:	64	56	63	51	57	60	159	51
49:	65	77	88	76	80	88	66	76
57:	72	89	87	95	82	88	153	145
65:	109	96	99	116	116	104	95	119
73:	118	121	402	144	438	274	93	101
81:	107	83	77	136	110	66	155	182
89:	81	164	82	115	268	146	77	78
97:	69	63	67	89	64	57	70	64
105:	60	79	56	79	78	65	66	62
113:	56	60	61	59	58	43	65	62
121:	56	76	60	58	57	58	70	67
129:	80	68	52	49	61	61	59	54
137:	53	57	53	64	58	49	56	75
145:	55	48	57	64	65	55	78	61
153:	68	62	76	60	51	54	54	47
161:	47	49	47	65	51	48	50	47
169:	48	42	42	37	48	48	46	55
177:	49	39	48	40	42	48	52	49
185:	62	156	92	46	43	48	45	51
193:	34	51	45	44	57	47	50	45
201:	41	35	37	33	59	46	47	40
209:	80	77	52	38	45	29	29	47
217:	35	38	48	41	40	39	42	43
225:	44	39	34	34	30	47	35	29
233:	29	41	29	54	44	165	518	58
241:	85	126	59	26	34	23	27	38
249:	30	25	29	27	38	25	29	28
257:	35	31	30	28	24	17	31	32
265:	25	25	14	14	39	75	54	23
273:	20	33	21	25	35	36	29	25
281:	22	24	23	19	37	32	32	30
289:	25	23	23	26	23	29	161	127
297:	24	25	23	49	35	20	22	24
305:	23	29	28	20	24	35	22	19
313:	26	18	20	18	23	13	22	23
321:	13	16	24	24	25	26	28	41
329:	29	27	27	23	19	14	15	20
337:	29	94	69	21	33	20	20	17
345:	15	16	18	17	26	22	55	353
353:	89	19	13	22	17	18	13	16
361:	16	17	16	22	13	19	16	18

369:	15	11	13	24	17	21	17	21

Sample Title: CP-5012 00-02

Channel								
377:	17	19	17	16	22	15	20	17
385:	10	8	23	21	13	19	17	21
393:	21	23	12	18	16	18	16	8
401:	24	15	21	16	15	19	13	15
409:	28	27	16	16	10	17	12	15
417:	19	15	21	8	15	8	7	18
425:	19	22	20	15	19	20	17	12
433:	15	14	16	17	8	12	21	13
441:	8	14	9	11	10	9	7	13
449:	14	12	12	10	16	12	13	12
457:	19	17	13	15	9	24	41	22
465:	6	14	11	15	11	12	14	16
473:	11	13	10	12	6	11	10	9
481:	10	13	19	21	11	15	17	11
489:	11	17	6	13	13	21	13	6
497:	4	14	14	10	14	13	5	12
505:	12	11	12	14	24	54	77	31
513:	19	12	8	14	8	4	8	14
521:	20	12	11	10	11	11	12	12
529:	9	12	21	10	8	14	8	9
537:	9	10	16	21	11	12	13	11
545:	15	11	15	9	7	15	17	12
553:	17	14	15	9	15	13	8	13
561:	11	17	9	9	8	8	14	4
569:	10	11	5	8	8	11	11	7
577:	11	15	11	10	11	21	121	68
585:	10	13	10	11	11	8	12	10
593:	4	12	13	11	13	18	11	10
601:	11	10	9	16	13	14	9	25
609:	187	142	18	14	8	5	5	13
617:	11	7	9	10	6	9	17	14
625:	5	7	12	14	7	7	11	8
633:	5	8	7	10	9	11	12	9
641:	11	14	10	6	10	8	6	11
649:	11	9	7	12	6	6	9	9
657:	8	5	7	7	13	16	6	13
665:	4	11	15	7	12	8	12	4
673:	10	4	13	10	9	10	8	4
681:	15	8	8	9	14	10	8	6
689:	7	6	5	9	9	10	12	4
697:	10	12	16	6	6	6	13	13
705:	16	6	5	6	6	9	9	5
713:	6	2	8	7	11	12	10	9
721:	6	7	11	7	11	13	27	23
729:	13	6	13	5	7	3	9	6
737:	8	4	8	8	11	6	8	4
745:	8	13	6	10	4	6	3	8
753:	7	13	6	10	8	11	10	7
761:	1	7	7	11	5	11	11	26
769:	23	9	8	10	20	8	5	7
777:	7	9	7	9	6	13	7	3
785:	18	12	12	5	4	4	11	10
793:	5	13	24	11	14	6	10	10

801:	5	8	11	9	7	16	8	11

Sample Title: CP-5012 00-02

Channel								
809:	3	4	4	7	7	6	7	7
817:	11	9	4	3	7	7	9	8
825:	4	4	7	6	8	5	4	10
833:	10	6	12	12	3	7	9	9
841:	14	3	4	8	10	9	11	2
849:	8	5	8	8	6	1	3	9
857:	10	9	5	14	20	7	6	5
865:	7	4	6	6	11	5	6	6
873:	8	10	9	6	9	6	3	5
881:	7	3	2	6	5	2	4	8
889:	1	4	8	6	10	6	3	4
897:	4	10	9	9	2	8	6	6
905:	10	0	3	7	4	18	88	56
913:	7	5	8	4	3	5	5	5
921:	5	5	5	6	6	11	4	6
929:	3	5	6	5	11	13	8	9
937:	5	3	7	2	7	6	3	2
945:	4	10	2	7	5	8	4	6
953:	4	8	1	4	3	5	4	9
961:	3	5	7	12	20	9	2	20
969:	46	25	5	4	5	3	9	6
977:	4	3	3	3	5	3	7	1
985:	4	9	7	6	5	8	5	9
993:	3	3	3	6	6	5	5	8
1001:	3	6	3	4	6	4	3	6
1009:	5	6	5	6	4	8	8	4
1017:	3	4	5	9	8	5	6	6
1025:	12	3	2	6	4	5	4	3
1033:	7	2	3	7	5	4	4	7
1041:	6	3	7	4	5	4	3	4
1049:	6	9	1	10	7	5	0	5
1057:	6	7	7	9	2	4	6	3
1065:	6	1	8	4	7	6	5	5
1073:	8	4	9	11	3	4	8	3
1081:	7	7	6	9	7	7	1	3
1089:	3	6	2	1	5	11	8	6
1097:	9	9	8	4	3	5	4	4
1105:	4	1	0	3	8	5	8	10
1113:	5	4	8	3	2	3	16	30
1121:	35	8	9	6	5	3	5	7
1129:	5	2	4	6	4	7	4	7
1137:	7	5	6	8	7	4	7	4
1145:	7	7	5	4	3	6	9	1
1153:	5	5	11	11	5	4	1	6
1161:	8	8	4	5	4	6	6	3
1169:	5	3	5	4	10	6	2	4
1177:	8	9	6	11	3	11	4	7
1185:	7	4	5	4	6	5	8	5
1193:	7	7	6	7	12	3	4	3
1201:	8	4	4	6	7	9	14	3
1209:	4	8	5	3	2	8	3	6
1217:	5	7	10	8	8	5	6	4
1225:	7	3	7	3	7	3	2	7

1233:	3	4	4	8	13	20	9	7

Sample Title: CP-5012 00-02

Channel								
1241:	5	3	4	2	5	6	8	1
1249:	6	7	4	8	3	5	0	2
1257:	4	3	5	2	7	8	4	5
1265:	3	2	2	5	6	6	4	6
1273:	2	3	4	6	4	5	2	6
1281:	5	6	4	2	0	6	6	4
1289:	3	4	2	3	6	4	5	3
1297:	4	5	5	5	5	3	5	5
1305:	5	7	4	1	2	0	3	3
1313:	6	4	3	5	2	3	3	2
1321:	4	2	3	2	1	5	6	4
1329:	4	5	5	3	3	4	3	1
1337:	1	4	3	5	5	3	3	1
1345:	4	1	5	5	4	3	6	4
1353:	3	1	4	1	4	1	1	4
1361:	1	7	0	2	4	2	1	0
1369:	3	1	0	4	1	1	3	3
1377:	5	12	2	5	2	5	0	4
1385:	7	3	4	3	1	1	1	2
1393:	0	3	1	4	5	3	0	3
1401:	6	5	0	3	1	5	3	4
1409:	5	0	2	4	4	0	2	1
1417:	1	1	2	6	3	2	3	5
1425:	1	2	2	0	5	0	2	0
1433:	4	3	3	0	2	2	0	2
1441:	4	1	1	0	0	3	3	2
1449:	2	0	2	4	3	3	5	2
1457:	1	4	32	166	262	79	11	2
1465:	2	2	5	4	0	1	2	4
1473:	1	1	4	2	2	1	0	0
1481:	1	0	1	1	1	6	3	1
1489:	1	1	2	3	0	2	2	3
1497:	4	4	4	4	1	1	2	3
1505:	0	5	1	2	3	5	4	0
1513:	2	0	1	2	1	2	2	3
1521:	1	1	3	1	1	7	0	2
1529:	3	1	2	0	1	0	2	1
1537:	3	3	2	1	0	1	6	3
1545:	3	1	1	5	1	1	2	0
1553:	1	1	4	2	1	1	3	0
1561:	0	1	1	2	0	1	1	1
1569:	1	2	2	0	1	1	1	1
1577:	1	0	0	0	0	1	0	0
1585:	0	1	6	6	3	2	1	4
1593:	3	3	2	1	1	0	2	0
1601:	1	0	2	0	2	1	0	1
1609:	2	1	1	1	0	1	0	1
1617:	0	2	2	2	6	1	0	4
1625:	2	0	0	2	1	4	4	0
1633:	1	0	0	0	1	1	1	0
1641:	1	0	1	0	0	0	0	2
1649:	1	2	1	0	5	3	1	0
1657:	1	1	2	0	2	2	0	0

1665:	1	0	1	0	1	0	2	0

Sample Title: CP-5012 00-02

Channel								
1673:	0	1	1	3	2	2	3	0
1681:	2	0	1	2	1	3	1	3
1689:	0	2	2	0	1	3	1	0
1697:	1	0	1	0	0	1	0	0
1705:	0	1	2	0	1	1	0	1
1713:	1	0	1	1	3	4	1	2
1721:	0	0	2	2	2	1	0	0
1729:	2	3	1	0	1	2	0	1
1737:	1	1	0	0	1	0	1	1
1745:	0	0	1	1	3	1	3	1
1753:	1	1	1	2	0	0	2	0
1761:	0	1	7	22	21	10	0	1
1769:	0	0	2	0	2	0	1	1
1777:	0	2	0	3	0	0	3	1
1785:	1	1	1	1	1	0	0	1
1793:	0	1	2	3	3	0	1	1
1801:	0	0	2	0	1	2	3	1
1809:	3	0	0	3	1	0	0	1
1817:	0	1	0	2	0	1	0	1
1825:	0	1	0	0	1	1	1	0
1833:	2	2	1	2	3	0	3	1
1841:	3	0	1	0	1	0	8	2
1849:	3	3	0	1	2	1	0	0
1857:	0	0	2	2	0	0	1	2
1865:	0	1	0	1	1	0	1	1
1873:	0	2	0	0	1	1	1	0
1881:	2	0	0	1	0	0	0	2
1889:	2	0	2	1	0	1	1	0
1897:	0	0	0	2	1	2	1	2
1905:	1	1	1	0	1	4	0	1
1913:	0	1	0	0	1	2	1	0
1921:	1	1	1	1	0	3	1	2
1929:	3	1	3	2	1	0	1	2
1937:	1	1	1	1	0	1	2	0
1945:	2	0	3	0	0	1	0	2
1953:	1	2	3	1	0	2	0	1
1961:	0	0	0	0	0	0	0	1
1969:	1	1	0	0	1	0	2	0
1977:	1	1	1	2	2	0	0	1
1985:	3	0	1	0	0	3	0	0
1993:	3	0	1	0	0	0	2	1
2001:	0	3	0	0	1	2	0	0
2009:	1	0	0	1	1	3	0	0
2017:	1	1	1	3	0	0	2	0
2025:	1	0	0	1	0	0	1	0
2033:	2	0	1	2	0	0	0	1
2041:	1	1	1	2	2	0	1	2
2049:	0	0	0	0	0	0	0	1
2057:	1	0	1	0	0	0	1	0
2065:	0	2	0	0	0	0	1	3
2073:	1	0	1	3	0	0	0	0
2081:	2	0	0	0	0	0	1	1
2089:	2	3	0	0	1	1	0	1

2097:	0	0	0	1	2	3	6	3

Sample Title: CP-5012 00-02

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

2529:	1	0	0	0	0	1	1	0

Sample Title: CP-5012 00-02

Channel							
2537:	0	1	1	0	0	0	0	1
2545:	0	0	2	0	1	1	0	0
2553:	0	0	0	1	1	0	0	0
2561:	1	1	0	0	0	0	0	0
2569:	0	0	0	0	1	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	1	0	0	0	0	0	0	0
2593:	1	0	0	0	0	0	2	0
2601:	0	0	1	0	0	0	0	0
2609:	0	2	2	3	20	27	13	7
2617:	2	1	0	0	0	0	1	0
2625:	0	0	0	0	0	1	0	0
2633:	1	0	0	0	2	0	0	1
2641:	0	1	0	0	0	0	0	1
2649:	0	1	0	0	0	0	0	1
2657:	0	0	1	1	1	1	0	0
2665:	0	1	0	0	0	0	0	0
2673:	0	0	0	0	0	0	0	1
2681:	1	3	1	0	0	0	1	1
2689:	0	0	0	1	0	1	0	0
2697:	0	0	0	1	0	0	1	0
2705:	0	0	2	1	0	0	1	0
2713:	0	0	0	0	0	0	0	0
2721:	1	0	0	0	0	0	0	0
2729:	0	0	0	0	1	0	1	0
2737:	0	0	1	0	0	1	0	0
2745:	0	0	1	0	1	0	0	0
2753:	1	0	0	0	0	0	0	2
2761:	0	2	0	0	0	0	0	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	0	0	0	1	0	0
2785:	0	1	1	0	0	0	0	1
2793:	0	0	0	0	1	0	0	0
2801:	0	1	1	0	1	0	0	1
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	0	0	0	0	0
2825:	0	0	0	0	0	0	1	0
2833:	0	1	0	0	0	2	1	0
2841:	2	1	0	1	0	0	0	0
2849:	0	0	0	0	1	0	0	0
2857:	0	0	1	0	0	0	0	0
2865:	0	1	0	0	1	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	1	0	1	0	1	0	0
2889:	0	0	0	0	1	0	1	0
2897:	1	0	2	0	0	0	0	1
2905:	1	1	1	0	0	0	0	0
2913:	0	0	1	1	1	1	0	0
2921:	0	0	0	1	0	0	0	0
2929:	0	0	1	0	1	0	0	3
2937:	0	1	0	0	0	0	0	0
2945:	1	0	0	0	0	0	0	0
2953:	0	0	0	0	0	1	1	0

2961:	0	0	0	0	1	1	0	1

Sample Title: CP-5012 00-02

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

3393:	0	0	1	0	0	1	0	1

Sample Title: CP-5012 00-02

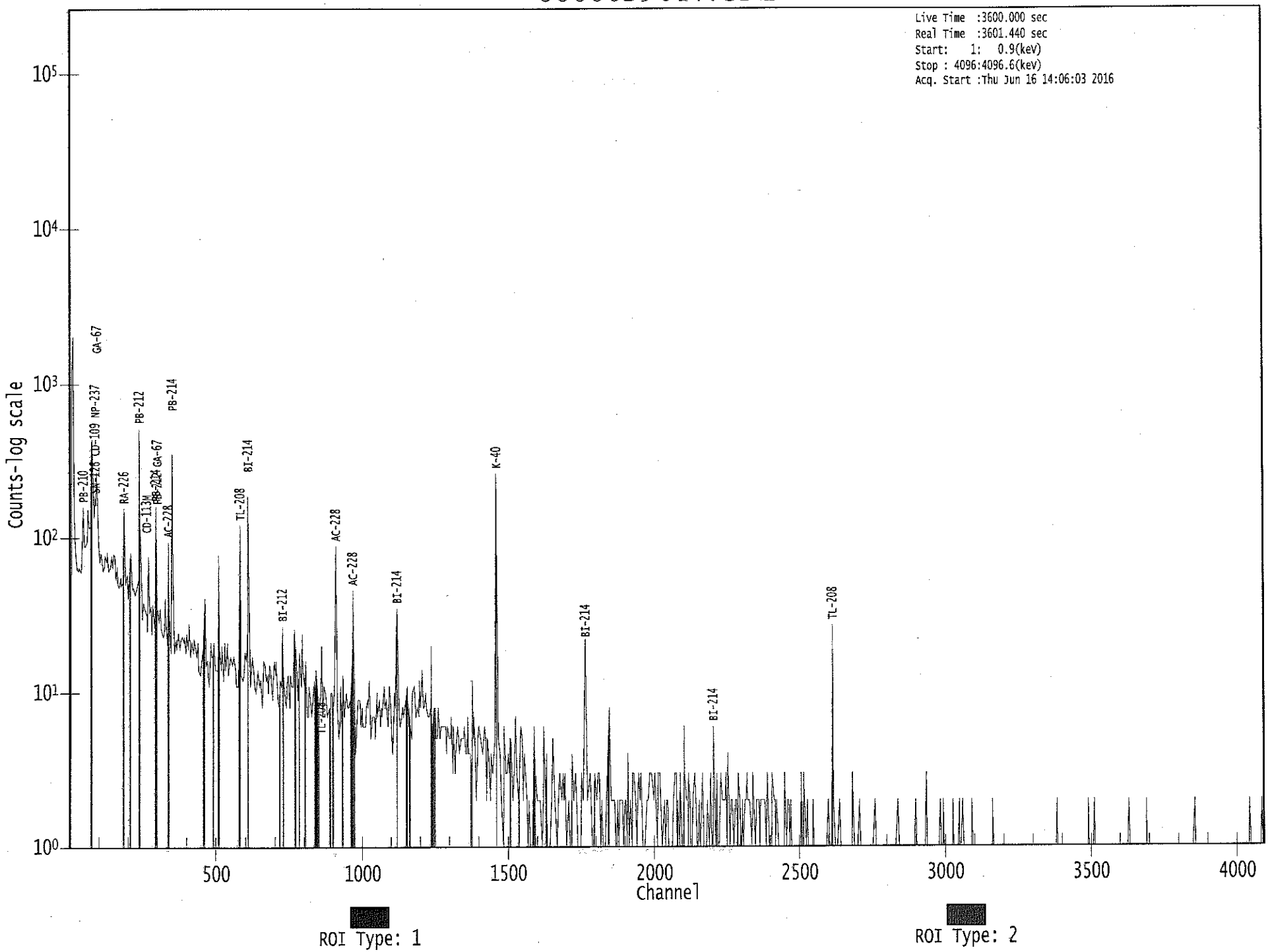
Channel								
3401:	0	0	0	1	1	1	0	0
3409:	0	0	0	0	1	1	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	1	0	0	0	1	1	1
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	1	0	0	0
3449:	1	0	1	0	0	0	0	0
3457:	0	0	1	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	2	0	0	0	0	0
3497:	0	0	0	0	0	0	1	0
3505:	0	0	0	1	0	1	2	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	0	0	0
3545:	0	0	0	0	0	0	0	1
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	1	0	0	0	0
3569:	0	0	0	0	1	0	0	0
3577:	0	0	0	0	0	1	0	1
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	1	0	0	0	0
3609:	0	1	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	1	0	0	0	2	0	0
3633:	0	1	0	0	0	0	0	0
3641:	0	0	0	0	1	0	1	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	0
3673:	0	0	1	0	0	0	0	0
3681:	0	0	1	0	0	0	0	0
3689:	0	2	0	0	1	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	1	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	1	0	1
3737:	0	1	0	0	0	0	0	0
3745:	0	0	0	1	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	1
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	1	1	1	0	0	0	0	0
3809:	0	1	0	0	0	0	0	0
3817:	0	1	0	0	0	0	0	0

3825:	0	0	1	0	0	0	0	0

Sample Title: CP-5012 00-02

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	1	0	0	0	0	0	0	2
3857:	0	0	0	0	0	1	0	0
3865:	0	0	1	0	0	0	0	0
3873:	0	0	0	0	0	0	1	0
3881:	1	0	0	0	0	0	0	1
3889:	0	1	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	1	0	1	1
3913:	1	0	0	0	0	1	0	0
3921:	0	0	0	0	0	0	1	1
3929:	0	0	0	1	0	1	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	1	1	0	0	0	1	1
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	1
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	1	0	0	0	0
3993:	1	0	0	0	0	0	0	0
4001:	1	0	0	0	0	0	0	0
4009:	0	0	0	0	0	1	0	0
4017:	0	0	0	0	0	1	0	0
4025:	0	0	0	1	0	0	1	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	2	2	0	0	0	1
4049:	0	0	0	0	0	1	0	0
4057:	0	0	1	0	0	0	0	0
4065:	0	0	0	0	0	1	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	1	0	0	2	1	0	0
4089:	0	0	0	0	1	2	0	0

0000039017.CNF



Apex-Gamma

Analysis Report for 1606043-13
CP-5012 02-05

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-13
Sample Description	: CP-5012 02-05
Sample Type	: SOIL
Sample Size	: 5.702E+02 grams
Facility	: Countroom
Sample Taken On	: 6/7/2016 12:00:36PM
Acquisition Started	: 6/16/2016 2:06:13PM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3617.6 seconds
Dead Time	: 0.49 %
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	: 39018

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1606043-13

CP-5012 02-05

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 3:06:33PM
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	57.92	58.15	0.0000	0.00
2	63.63	63.85	0.0000	0.00
3	74.94	75.15	0.0000	0.00
4	77.63	77.85	0.0000	0.00
5	87.50	87.71	0.0000	0.00
6	92.89	93.09	0.0000	0.00
7	105.31	105.51	0.0000	0.00
8	154.33	154.50	0.0000	0.00
9	186.45	186.60	0.0000	0.00
10	209.30	209.45	0.0000	0.00
11	239.14	239.27	0.0000	0.00
12	242.51	242.64	0.0000	0.00
13	270.87	270.98	0.0000	0.00
14	295.85	295.95	0.0000	0.00
15	301.04	301.14	0.0000	0.00
16	339.45	339.53	0.0000	0.00
17	352.47	352.54	0.0000	0.00
18	374.69	374.74	0.0000	0.00
19	409.48	409.53	0.0000	0.00
20	463.36	463.38	0.0000	0.00
21	511.37	511.36	0.0000	0.00
22	583.47	583.42	0.0000	0.00
23	609.89	609.83	0.0000	0.00
24	650.79	650.71	0.0000	0.00
25	727.85	727.74	0.0000	0.00
26	768.51	768.38	0.0000	0.00
27	794.57	794.42	0.0000	0.00
28	846.73	846.56	0.0000	0.00
29	860.53	860.36	0.0000	0.00
30	911.62	911.42	0.0000	0.00
31	934.28	934.07	0.0000	0.00
32	965.00	964.78	0.0000	0.00
33	969.44	969.22	0.0000	0.00
34	999.34	999.11	0.0000	0.00
35	1008.24	1008.00	0.0000	0.00
36	1010.77	1010.53	0.0000	0.00
37	1033.05	1032.80	0.0000	0.00
38	1066.02	1065.76	0.0000	0.00
39	1093.11	1092.84	0.0000	0.00
40	1120.77	1120.49	0.0000	0.00
41	1208.89	1208.57	0.0000	0.00
42	1376.83	1376.44	0.0000	0.00

Analysis Report for 1606043-13

CP-5012 02-05

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1445.22	1444.81	0.0000	0.00
44	1461.06	1460.64	0.0000	0.00
45	1517.49	1517.04	0.0000	0.00
46	1591.01	1590.54	0.0000	0.00
47	1630.52	1630.04	0.0000	0.00
48	1673.50	1673.00	0.0000	0.00
49	1730.60	1730.08	0.0000	0.00
50	1764.50	1763.97	0.0000	0.00
51	1874.03	1873.46	0.0000	0.00
52	2040.23	2039.61	0.0000	0.00
53	2117.99	2117.35	0.0000	0.00
54	2203.74	2203.07	0.0000	0.00
55	2345.41	2344.70	0.0000	0.00
56	2359.82	2359.10	0.0000	0.00
57	2614.65	2613.87	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

6/10/16

00728A 0078

Analysis Report for 1606043-13

CP-5012 02-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 3:06:33PM

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	57.92	57 -	66	58.15	7.61E+01	43.61	4.59E+02	1.62
m	2	63.63	57 -	66	63.85	1.52E+02	70.38	9.56E+02	1.64
M	3	74.94	71 -	81	75.15	3.47E+02	87.39	1.23E+03	1.66
m	4	77.63	71 -	81	77.85	5.89E+02	94.85	1.19E+03	1.67
	5	87.50	86 -	89	87.71	9.56E+01	67.85	1.06E+03	1.30
	6	92.89	90 -	96	93.09	2.65E+02	96.21	1.45E+03	1.98
	7	105.31	103 -	108	105.51	9.07E+01	62.81	7.07E+02	1.71
	8	154.33	150 -	158	154.50	6.95E+01	82.46	1.00E+03	5.04
	9	186.45	183 -	191	186.60	2.54E+02	78.36	7.91E+02	2.08
	10	209.30	206 -	212	209.45	9.58E+01	60.12	5.86E+02	1.24
M	11	239.14	234 -	246	239.27	7.98E+02	72.05	4.36E+02	1.98
m	12	242.51	234 -	246	242.64	1.50E+02	62.06	4.05E+02	2.08
	13	270.87	267 -	275	270.98	8.50E+01	60.87	5.18E+02	2.60
	14	295.85	292 -	299	295.95	1.49E+02	57.34	4.51E+02	1.27
	15	301.04	299 -	305	301.14	6.01E+01	44.49	3.06E+02	1.49
	16	339.45	336 -	344	339.53	1.80E+02	49.22	2.53E+02	1.50
	17	352.47	349 -	355	352.54	2.72E+02	49.17	2.41E+02	1.96
	18	374.69	370 -	379	374.74	4.35E+01	45.86	2.77E+02	1.54
	19	409.48	406 -	414	409.53	4.18E+01	42.64	2.48E+02	6.22
	20	463.36	459 -	466	463.38	5.30E+01	37.58	2.00E+02	1.33
	21	511.37	506 -	517	511.36	1.19E+02	52.19	2.79E+02	2.39
	22	583.47	579 -	589	583.42	1.74E+02	51.10	2.63E+02	1.82
	23	609.89	607 -	614	609.83	2.05E+02	43.41	1.80E+02	1.98
	24	650.79	648 -	654	650.71	2.38E+01	26.84	1.10E+02	3.53
	25	727.85	723 -	733	727.74	3.19E+01	38.60	1.82E+02	2.66
	26	768.51	766 -	771	768.38	2.51E+01	22.34	7.78E+01	2.07
	27	794.57	789 -	799	794.42	6.01E+01	33.28	1.16E+02	2.27
	28	846.73	843 -	850	846.56	3.20E+01	20.88	5.01E+01	3.80
	29	860.53	856 -	865	860.36	3.25E+01	26.85	8.31E+01	3.92
	30	911.62	908 -	916	911.42	1.40E+02	36.03	1.15E+02	2.02
	31	934.28	931 -	938	934.07	2.98E+01	23.07	7.04E+01	2.04
M	32	965.00	959 -	973	964.78	3.84E+01	20.37	4.93E+01	2.42
m	33	969.44	959 -	973	969.22	1.03E+02	24.47	3.62E+01	2.42
M	34	999.34	995 -	1021	999.11	1.59E+01	20.10	6.65E+01	2.68
m	35	1008.24	995 -	1021	1008.00	1.28E+01	18.64	4.87E+01	2.22
m	36	1010.77	995 -	1021	1010.53	2.27E+01	20.69	5.21E+01	2.69
	37	1033.05	1028 -	1037	1032.80	2.45E+01	21.89	5.30E+01	1.52
	38	1066.02	1063 -	1069	1065.76	1.28E+01	16.82	4.24E+01	1.43
	39	1093.11	1089 -	1098	1092.84	2.41E+01	23.35	6.18E+01	2.01
	40	1120.77	1117 -	1124	1120.49	3.43E+01	26.83	9.94E+01	1.68

Analysis Report for 1606043-13

CP-5012 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1208.89	1204 -	1212	1208.57	2.41E+01	24.25	7.38E+01	5.28
42	1376.83	1371 -	1380	1376.44	1.76E+01	17.75	3.48E+01	1.60
43	1445.22	1440 -	1448	1444.81	1.15E+01	10.22	9.00E+00	3.06
44	1461.06	1455 -	1465	1460.64	4.88E+02	46.01	2.22E+01	2.32
45	1517.49	1516 -	1519	1517.04	6.33E+00	7.75	5.33E+00	3.50
46	1591.01	1583 -	1595	1590.54	1.43E+01	16.64	2.53E+01	7.03
47	1630.52	1625 -	1635	1630.04	2.70E+01	10.39	0.00E+00	8.30
48	1673.50	1669 -	1676	1673.00	9.00E+00	6.00	0.00E+00	2.98
49	1730.60	1728 -	1732	1730.08	8.00E+00	7.25	4.00E+00	2.51
50	1764.50	1759 -	1767	1763.97	3.65E+01	14.30	9.00E+00	1.98
51	1874.03	1870 -	1876	1873.46	5.29E+00	6.34	3.43E+00	1.24
52	2040.23	2035 -	2042	2039.61	7.33E+00	7.21	3.33E+00	2.63
53	2117.99	2112 -	2120	2117.35	1.15E+01	8.73	5.07E+00	3.66
54	2203.74	2200 -	2207	2203.07	1.15E+01	12.00	1.70E+01	1.84
55	2345.41	2341 -	2348	2344.70	1.19E+01	8.49	4.21E+00	5.23
56	2359.82	2355 -	2361	2359.10	5.56E+00	7.78	6.89E+00	2.06
57	2614.65	2609 -	2617	2613.87	5.66E+01	16.01	4.83E+00	3.16

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 3:06:33PM

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
M	1	57.92	57 -	66	7.61E+01	43.61	4.59E+02	3.52E+01
m	2	63.63	57 -	66	1.52E+02	70.38	9.56E+02	5.08E+01
M	3	74.94	71 -	81	3.47E+02	87.39	1.23E+03	5.76E+01
m	4	77.63	71 -	81	5.89E+02	94.85	1.19E+03	5.67E+01
	5	87.50	86 -	89	9.56E+01	67.85	1.06E+03	5.34E+01
	6	92.89	90 -	96	2.65E+02	96.21	1.45E+03	7.44E+01
	7	105.31	103 -	108	9.07E+01	62.81	7.07E+02	4.92E+01
	8	154.33	150 -	158	6.95E+01	82.46	1.00E+03	6.64E+01
	9	186.45	183 -	191	2.54E+02	78.36	7.91E+02	5.88E+01
	10	209.30	206 -	212	9.58E+01	60.12	5.86E+02	4.67E+01
M	11	239.14	234 -	246	7.98E+02	72.05	4.36E+02	3.43E+01

Analysis Report for 1606043-13

CP-5012 02-05

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	12	242.51	234 -	246	1.50E+02	62.06	4.05E+02	3.31E+01
	13	270.87	267 -	275	8.50E+01	60.87	5.18E+02	4.77E+01
	14	295.85	292 -	299	1.49E+02	57.34	4.51E+02	4.27E+01
	15	301.04	299 -	305	6.01E+01	44.49	3.06E+02	3.43E+01
	16	339.45	336 -	344	1.80E+02	49.22	2.53E+02	3.39E+01
	17	352.47	349 -	355	2.72E+02	49.17	2.41E+02	3.00E+01
	18	374.69	370 -	379	4.35E+01	45.86	2.77E+02	3.61E+01
	19	409.48	406 -	414	4.18E+01	42.64	2.48E+02	3.34E+01
	20	463.36	459 -	466	5.30E+01	37.58	2.00E+02	2.85E+01
	21	511.37	506 -	517	1.19E+02	52.19	2.79E+02	3.90E+01
	22	583.47	579 -	589	1.74E+02	51.10	2.63E+02	3.60E+01
	23	609.89	607 -	614	2.05E+02	43.41	1.80E+02	2.68E+01
	24	650.79	648 -	654	2.38E+01	26.84	1.10E+02	2.05E+01
	25	727.85	723 -	733	3.19E+01	38.60	1.82E+02	3.03E+01
	26	768.51	766 -	771	2.51E+01	22.34	7.78E+01	1.64E+01
	27	794.57	789 -	799	6.01E+01	33.28	1.16E+02	2.42E+01
	28	846.73	843 -	850	3.20E+01	20.88	5.01E+01	1.44E+01
	29	860.53	856 -	865	3.25E+01	26.85	8.31E+01	2.00E+01
	30	911.62	908 -	916	1.40E+02	36.03	1.15E+02	2.23E+01
	31	934.28	931 -	938	2.98E+01	23.07	7.04E+01	1.67E+01
M	32	965.00	959 -	973	3.84E+01	20.37	4.93E+01	1.15E+01
m	33	969.44	959 -	973	1.03E+02	24.47	3.62E+01	9.89E+00
M	34	999.34	995 -	1021	1.59E+01	20.10	6.65E+01	1.34E+01
m	35	1008.24	995 -	1021	1.28E+01	18.64	4.87E+01	1.15E+01
m	36	1010.77	995 -	1021	2.27E+01	20.69	5.21E+01	1.19E+01
	37	1033.05	1028 -	1037	2.45E+01	21.89	5.30E+01	1.60E+01
	38	1066.02	1063 -	1069	1.28E+01	16.82	4.24E+01	1.25E+01
	39	1093.11	1089 -	1098	2.41E+01	23.35	6.18E+01	1.74E+01
	40	1120.77	1117 -	1124	3.43E+01	26.83	9.94E+01	2.57E+01
	41	1208.89	1204 -	1212	2.41E+01	24.25	7.38E+01	1.82E+01
	42	1376.83	1371 -	1380	1.76E+01	17.75	3.48E+01	1.29E+01
	43	1445.22	1440 -	1448	1.15E+01	10.22	9.00E+00	6.29E+00
	44	1461.06	1455 -	1465	4.88E+02	46.01	2.22E+01	1.06E+01
	45	1517.49	1516 -	1519	6.33E+00	7.75	5.33E+00	4.84E+00
	46	1591.01	1583 -	1595	1.43E+01	16.64	2.53E+01	1.22E+01
	47	1630.52	1625 -	1635	2.70E+01	10.39	0.00E+00	0.00E+00
	48	1673.50	1669 -	1676	9.00E+00	6.00	0.00E+00	0.00E+00
	49	1730.60	1728 -	1732	8.00E+00	7.25	4.00E+00	3.72E+00
	50	1764.50	1759 -	1767	3.65E+01	14.30	9.00E+00	6.29E+00
	51	1874.03	1870 -	1876	5.29E+00	6.34	3.43E+00	3.59E+00
	52	2040.23	2035 -	2042	7.33E+00	7.21	3.33E+00	3.91E+00
	53	2117.99	2112 -	2120	1.15E+01	8.73	5.07E+00	4.53E+00
	54	2203.74	2200 -	2207	1.15E+01	12.00	1.70E+01	8.14E+00
	55	2345.41	2341 -	2348	1.19E+01	8.49	4.21E+00	4.06E+00
	56	2359.82	2355 -	2361	5.56E+00	7.78	6.89E+00	5.09E+00
	57	2614.65	2609 -	2617	5.66E+01	16.01	4.83E+00	4.50E+00

Analysis Report for 1606043-13

CP-5012 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 WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 3:06:33PM

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
M	1	57.92	57 -	66	58.15	7.61E+01	43.61	4.59E+02	CE-143
m	2	63.63	57 -	66	63.85	1.52E+02	70.38	9.56E+02	TH-234
									TH-230
M	3	74.94	71 -	81	75.15	3.47E+02	87.39	1.23E+03	AM-243
m	4	77.63	71 -	81	77.85	5.89E+02	94.85	1.19E+03	TI-44
	5	87.50	86 -	89	87.71	9.56E+01	67.85	1.06E+03	SN-126
									CD-109
									LU-176
									NP-237
	6	92.89	90 -	96	93.09	2.65E+02	96.21	1.45E+03	GA-67
	7	105.31	103 -	108	105.51	9.07E+01	62.81	7.07E+02	EU-155
									NP-239
	8	154.33	150 -	158	154.50	6.95E+01	82.46	1.00E+03	.....
	9	186.45	183 -	191	186.60	2.54E+02	78.36	7.91E+02	RA-226
	10	209.30	206 -	212	209.45	9.58E+01	60.12	5.86E+02	GA-67
									CM-243
M	11	239.14	234 -	246	239.27	7.98E+02	72.05	4.36E+02	PB-212
m	12	242.51	234 -	246	242.64	1.50E+02	62.06	4.05E+02	.....
	13	270.87	267 -	275	270.98	8.50E+01	60.87	5.18E+02	.....
	14	295.85	292 -	299	295.95	1.49E+02	57.34	4.51E+02	PB-214
	15	301.04	299 -	305	301.14	6.01E+01	44.49	3.06E+02	GA-67
									PB-212
	16	339.45	336 -	344	339.53	1.80E+02	49.22	2.53E+02	.....
	17	352.47	349 -	355	352.54	2.72E+02	49.17	2.41E+02	PB-214
	18	374.69	370 -	379	374.74	4.35E+01	45.86	2.77E+02	.....
	19	409.48	406 -	414	409.53	4.18E+01	42.64	2.48E+02	.....
	20	463.36	459 -	466	463.38	5.30E+01	37.58	2.00E+02	SB-125
	21	511.37	506 -	517	511.36	1.19E+02	52.19	2.79E+02	.....
	22	583.47	579 -	589	583.42	1.74E+02	51.10	2.63E+02	TL-208
	23	609.89	607 -	614	609.83	2.05E+02	43.41	1.80E+02	BI-214

Analysis Report for 1606043-13

CP-5012 02-05

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	24	650.79	648 -	654	650.71	2.38E+01	26.84	1.10E+02	.....
	25	727.85	723 -	733	727.74	3.19E+01	38.60	1.82E+02	BI-212
	26	768.51	766 -	771	768.38	2.51E+01	22.34	7.78E+01	.....
	27	794.57	789 -	799	794.42	6.01E+01	33.28	1.16E+02	.....
	28	846.73	843 -	850	846.56	3.20E+01	20.88	5.01E+01	CO-56
	29	860.53	856 -	865	860.36	3.25E+01	26.85	8.31E+01	TL-208
	30	911.62	908 -	916	911.42	1.40E+02	36.03	1.15E+02	LU-172 AC-228
	31	934.28	931 -	938	934.07	2.98E+01	23.07	7.04E+01	.....
M	32	965.00	959 -	973	964.78	3.84E+01	20.37	4.93E+01	EU-152
m	33	969.44	959 -	973	969.22	1.03E+02	24.47	3.62E+01	AC-228
M	34	999.34	995 -	1021	999.11	1.59E+01	20.10	6.65E+01	.....
m	35	1008.24	995 -	1021	1008.00	1.28E+01	18.64	4.87E+01	.....
m	36	1010.77	995 -	1021	1010.53	2.27E+01	20.69	5.21E+01	.....
	37	1033.05	1028 -	1037	1032.80	2.45E+01	21.89	5.30E+01	.....
	38	1066.02	1063 -	1069	1065.76	1.28E+01	16.82	4.24E+01	.....
	39	1093.11	1089 -	1098	1092.84	2.41E+01	23.35	6.18E+01	LU-172
	40	1120.77	1117 -	1124	1120.49	3.43E+01	26.83	9.94E+01	SC-46 BI-214 TA-182
	41	1208.89	1204 -	1212	1208.57	2.41E+01	24.25	7.38E+01	.....
	42	1376.83	1371 -	1380	1376.44	1.76E+01	17.75	3.48E+01	.....
	43	1445.22	1440 -	1448	1444.81	1.15E+01	10.22	9.00E+00	.....
	44	1461.06	1455 -	1465	1460.64	4.88E+02	46.01	2.22E+01	K-40
	45	1517.49	1516 -	1519	1517.04	6.33E+00	7.75	5.33E+00	.....
	46	1591.01	1583 -	1595	1590.54	1.43E+01	16.64	2.53E+01	.....
	47	1630.52	1625 -	1635	1630.04	2.70E+01	10.39	0.00E+00	.....
	48	1673.50	1669 -	1676	1673.00	9.00E+00	6.00	0.00E+00	.....
	49	1730.60	1728 -	1732	1730.08	8.00E+00	7.25	4.00E+00	.....
	50	1764.50	1759 -	1767	1763.97	3.65E+01	14.30	9.00E+00	BI-214
	51	1874.03	1870 -	1876	1873.46	5.29E+00	6.34	3.43E+00	.....
	52	2040.23	2035 -	2042	2039.61	7.33E+00	7.21	3.33E+00	.....
	53	2117.99	2112 -	2120	2117.35	1.15E+01	8.73	5.07E+00	.....
	54	2203.74	2200 -	2207	2203.07	1.15E+01	12.00	1.70E+01	BI-214
	55	2345.41	2341 -	2348	2344.70	1.19E+01	8.49	4.21E+00	.....
	56	2359.82	2355 -	2361	2359.10	5.56E+00	7.78	6.89E+00	.....
	57	2614.65	2609 -	2617	2613.87	5.66E+01	16.01	4.83E+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 3:06:33PM

Analysis Report for 1606043-13

CP-5012 02-05

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	57.92	7.61E+01	43.61	2.00E-02	1.58E-03
m	2	63.63	1.52E+02	70.38	2.17E-02	1.72E-03
M	3	74.94	3.47E+02	87.39	2.36E-02	2.09E-03
m	4	77.63	5.89E+02	94.85	2.39E-02	2.18E-03
	5	87.50	9.56E+01	67.85	2.44E-02	2.51E-03
	6	92.89	2.65E+02	96.21	2.44E-02	2.41E-03
	7	105.31	9.07E+01	62.81	2.41E-02	2.12E-03
	8	154.33	6.95E+01	82.46	2.06E-02	1.57E-03
	9	186.45	2.54E+02	78.36	1.83E-02	1.42E-03
	10	209.30	9.58E+01	60.12	1.68E-02	1.31E-03
M	11	239.14	7.98E+02	72.05	1.52E-02	1.18E-03
m	12	242.51	1.50E+02	62.06	1.50E-02	1.16E-03
	13	270.87	8.50E+01	60.87	1.38E-02	1.03E-03
	14	295.85	1.49E+02	57.34	1.28E-02	9.73E-04
	15	301.04	6.01E+01	44.49	1.26E-02	9.66E-04
	16	339.45	1.80E+02	49.22	1.14E-02	9.11E-04
	17	352.47	2.72E+02	49.17	1.10E-02	8.93E-04
	18	374.69	4.35E+01	45.86	1.05E-02	8.61E-04
	19	409.48	4.18E+01	42.64	9.71E-03	8.19E-04
	20	463.36	5.30E+01	37.58	8.72E-03	7.66E-04
	21	511.37	1.19E+02	52.19	8.01E-03	7.18E-04
	22	583.47	1.74E+02	51.10	7.14E-03	6.46E-04
	23	609.89	2.05E+02	43.41	6.87E-03	6.19E-04
	24	650.79	2.38E+01	26.84	6.49E-03	5.79E-04
	25	727.85	3.19E+01	38.60	5.89E-03	5.14E-04
	26	768.51	2.51E+01	22.34	5.62E-03	4.81E-04
	27	794.57	6.01E+01	33.28	5.46E-03	4.59E-04
	28	846.73	3.20E+01	20.88	5.17E-03	4.17E-04
	29	860.53	3.25E+01	26.85	5.10E-03	4.05E-04
	30	911.62	1.40E+02	36.03	4.85E-03	3.72E-04
	31	934.28	2.98E+01	23.07	4.75E-03	3.68E-04
M	32	965.00	3.84E+01	20.37	4.62E-03	3.62E-04
m	33	969.44	1.03E+02	24.47	4.60E-03	3.61E-04
M	34	999.34	1.59E+01	20.10	4.49E-03	3.56E-04
m	35	1008.24	1.28E+01	18.64	4.45E-03	3.54E-04
m	36	1010.77	2.27E+01	20.69	4.44E-03	3.54E-04
	37	1033.05	2.45E+01	21.89	4.36E-03	3.50E-04
	38	1066.02	1.28E+01	16.82	4.25E-03	3.43E-04
	39	1093.11	2.41E+01	23.35	4.16E-03	3.38E-04
	40	1120.77	3.43E+01	26.83	4.08E-03	3.33E-04
	41	1208.89	2.41E+01	24.25	3.83E-03	3.16E-04
	42	1376.83	1.76E+01	17.75	3.45E-03	2.82E-04
	43	1445.22	1.15E+01	10.22	3.32E-03	2.72E-04
	44	1461.06	4.88E+02	46.01	3.29E-03	2.69E-04
	45	1517.49	6.33E+00	7.75	3.20E-03	2.61E-04
	46	1591.01	1.43E+01	16.64	3.08E-03	2.50E-04
	47	1630.52	2.70E+01	10.39	3.03E-03	2.44E-04
	48	1673.50	9.00E+00	6.00	2.97E-03	2.37E-04
	49	1730.60	8.00E+00	7.25	2.90E-03	2.29E-04
	50	1764.50	3.65E+01	14.30	2.86E-03	2.24E-04

Analysis Report for 1606043-13

CP-5012 02-05

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
51	1874.03	5.29E+00	6.34	2.74E-03	2.13E-04
52	2040.23	7.33E+00	7.21	2.59E-03	2.13E-04
53	2117.99	1.15E+01	8.73	2.52E-03	2.13E-04
54	2203.74	1.15E+01	12.00	2.46E-03	2.13E-04
55	2345.41	1.19E+01	8.49	2.37E-03	2.13E-04
56	2359.82	5.56E+00	7.78	2.37E-03	2.13E-04
57	2614.65	5.66E+01	16.01	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 3:06:33PM

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.
M	1	57.92	7.61E+01	43.61			7.61E+01	4.36E+01
m	2	63.63	1.52E+02	70.38	4.47E+01	1.66E+01	1.07E+02	7.23E+01
M	3	74.94	3.47E+02	87.39			3.47E+02	8.74E+01
m	4	77.63	5.89E+02	94.85	6.70E+00	3.28E+00	5.82E+02	9.49E+01
	5	87.50	9.56E+01	67.85	1.07E+01	3.99E+00	8.49E+01	6.80E+01
	6	92.89	2.65E+02	96.21	8.20E+01	2.30E+01	1.83E+02	9.89E+01
	7	105.31	9.07E+01	62.81			9.07E+01	6.28E+01
	8	154.33	6.95E+01	82.46			6.95E+01	8.25E+01
	9	186.45	2.54E+02	78.36	3.45E+01	5.92E+00	2.19E+02	7.86E+01
	10	209.30	9.58E+01	60.12			9.58E+01	6.01E+01
M	11	239.14	7.98E+02	72.05	1.33E+01	5.09E+00	7.85E+02	7.22E+01
m	12	242.51	1.50E+02	62.06			1.50E+02	6.21E+01
	13	270.87	8.50E+01	60.87			8.50E+01	6.09E+01
	14	295.85	1.49E+02	57.34	1.94E+00	4.39E+00	1.47E+02	5.75E+01
	15	301.04	6.01E+01	44.49			6.01E+01	4.45E+01
	16	339.45	1.80E+02	49.22			1.80E+02	4.92E+01
	17	352.47	2.72E+02	49.17	4.00E+00	3.58E+00	2.68E+02	4.93E+01
	18	374.69	4.35E+01	45.86			4.35E+01	4.59E+01
	19	409.48	4.18E+01	42.64			4.18E+01	4.26E+01
	20	463.36	5.30E+01	37.58			5.30E+01	3.76E+01
	21	511.37	1.19E+02	52.19	6.05E+01	4.93E+00	5.80E+01	5.24E+01
	22	583.47	1.74E+02	51.10	5.50E+00	3.61E+00	1.68E+02	5.12E+01
	23	609.89	2.05E+02	43.41	5.07E+00	3.83E+00	2.00E+02	4.36E+01

Analysis Report for 1606043-13

CP-5012 02-05

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	24	650.79	2.38E+01	26.84			2.38E+01	2.68E+01
	25	727.85	3.19E+01	38.60			3.19E+01	3.86E+01
	26	768.51	2.51E+01	22.34			2.51E+01	2.23E+01
	27	794.57	6.01E+01	33.28			6.01E+01	3.33E+01
	28	846.73	3.20E+01	20.88			3.20E+01	2.09E+01
	29	860.53	3.25E+01	26.85			3.25E+01	2.69E+01
	30	911.62	1.40E+02	36.03			1.40E+02	3.60E+01
	31	934.28	2.98E+01	23.07			2.98E+01	2.31E+01
M	32	965.00	3.84E+01	20.37			3.84E+01	2.04E+01
m	33	969.44	1.03E+02	24.47			1.03E+02	2.45E+01
M	34	999.34	1.59E+01	20.10			1.59E+01	2.01E+01
m	35	1008.24	1.28E+01	18.64			1.28E+01	1.86E+01
m	36	1010.77	2.27E+01	20.69			2.27E+01	2.07E+01
	37	1033.05	2.45E+01	21.89			2.45E+01	2.19E+01
	38	1066.02	1.28E+01	16.82			1.28E+01	1.68E+01
	39	1093.11	2.41E+01	23.35			2.41E+01	2.33E+01
	40	1120.77	3.43E+01	26.83	1.09E+00	2.08E+00	3.32E+01	2.69E+01
	41	1208.89	2.41E+01	24.25			2.41E+01	2.43E+01
	42	1376.83	1.76E+01	17.75			1.76E+01	1.77E+01
	43	1445.22	1.15E+01	10.22			1.15E+01	1.02E+01
	44	1461.06	4.88E+02	46.01	4.33E+00	2.02E+00	4.84E+02	4.61E+01
	45	1517.49	6.33E+00	7.75			6.33E+00	7.75E+00
	46	1591.01	1.43E+01	16.64			1.43E+01	1.66E+01
	47	1630.52	2.70E+01	10.39			2.70E+01	1.04E+01
	48	1673.50	9.00E+00	6.00			9.00E+00	6.00E+00
	49	1730.60	8.00E+00	7.25			8.00E+00	7.25E+00
	50	1764.50	3.65E+01	14.30			3.65E+01	1.43E+01
	51	1874.03	5.29E+00	6.34			5.29E+00	6.34E+00
	52	2040.23	7.33E+00	7.21			7.33E+00	7.21E+00
	53	2117.99	1.15E+01	8.73			1.15E+01	8.73E+00
	54	2203.74	1.15E+01	12.00			1.15E+01	1.20E+01
	55	2345.41	1.19E+01	8.49			1.19E+01	8.49E+00
	56	2359.82	5.56E+00	7.78			5.56E+00	7.78E+00
	57	2614.65	5.66E+01	16.01	2.52E+00	1.44E+00	5.41E+01	1.61E+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 1606043-13

CP-5012 02-05

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/16/2016 3:06:33PM

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.
M	1	57.92	7.61E+01	43.61			7.61E+01	4.36E+01
m	2	63.63	1.52E+02	70.38	4.47E+01	1.66E+01	1.07E+02	7.23E+01
M	3	74.94	3.47E+02	87.39			3.47E+02	8.74E+01
m	4	77.63	5.89E+02	94.85	6.70E+00	3.28E+00	5.82E+02	9.49E+01
	5	87.50	9.56E+01	67.85	1.07E+01	3.99E+00	8.49E+01	6.80E+01
	6	92.89	2.65E+02	96.21	8.20E+01	2.30E+01	1.83E+02	9.89E+01
	7	105.31	9.07E+01	62.81			9.07E+01	6.28E+01
	8	154.33	6.95E+01	82.46			6.95E+01	8.25E+01
	9	186.45	2.54E+02	78.36	3.45E+01	5.92E+00	2.19E+02	7.86E+01
	10	209.30	9.58E+01	60.12			9.58E+01	6.01E+01
M	11	239.14	7.98E+02	72.05	1.33E+01	5.09E+00	7.85E+02	7.22E+01
m	12	242.51	1.50E+02	62.06			1.50E+02	6.21E+01
	13	270.87	8.50E+01	60.87			8.50E+01	6.09E+01
	14	295.85	1.49E+02	57.34	1.94E+00	4.39E+00	1.47E+02	5.75E+01
	15	301.04	6.01E+01	44.49			6.01E+01	4.45E+01
	16	339.45	1.80E+02	49.22			1.80E+02	4.92E+01
	17	352.47	2.72E+02	49.17	4.00E+00	3.58E+00	2.68E+02	4.93E+01
	18	374.69	4.35E+01	45.86			4.35E+01	4.59E+01
	19	409.48	4.18E+01	42.64			4.18E+01	4.26E+01
	20	463.36	5.30E+01	37.58			5.30E+01	3.76E+01
	21	511.37	1.19E+02	52.19	6.05E+01	4.93E+00	5.80E+01	5.24E+01
	22	583.47	1.74E+02	51.10	5.50E+00	3.61E+00	1.68E+02	5.12E+01
	23	609.89	2.05E+02	43.41	5.07E+00	3.83E+00	2.00E+02	4.36E+01
	24	650.79	2.38E+01	26.84			2.38E+01	2.68E+01
	25	727.85	3.19E+01	38.60			3.19E+01	3.86E+01
	26	768.51	2.51E+01	22.34			2.51E+01	2.23E+01
	27	794.57	6.01E+01	33.28			6.01E+01	3.33E+01
	28	846.73	3.20E+01	20.88			3.20E+01	2.09E+01
	29	860.53	3.25E+01	26.85			3.25E+01	2.69E+01
	30	911.62	1.40E+02	36.03			1.40E+02	3.60E+01
	31	934.28	2.98E+01	23.07			2.98E+01	2.31E+01
M	32	965.00	3.84E+01	20.37			3.84E+01	2.04E+01
m	33	969.44	1.03E+02	24.47			1.03E+02	2.45E+01
M	34	999.34	1.59E+01	20.10			1.59E+01	2.01E+01
m	35	1008.24	1.28E+01	18.64			1.28E+01	1.86E+01
m	36	1010.77	2.27E+01	20.69			2.27E+01	2.07E+01
	37	1033.05	2.45E+01	21.89			2.45E+01	2.19E+01
	38	1066.02	1.28E+01	16.82			1.28E+01	1.68E+01
	39	1093.11	2.41E+01	23.35			2.41E+01	2.33E+01
	40	1120.77	3.43E+01	26.83	1.09E+00	2.08E+00	3.32E+01	2.69E+01
	41	1208.89	2.41E+01	24.25			2.41E+01	2.43E+01

Analysis Report for 1606043-13

CP-5012 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1376.83	1.76E+01	17.75			1.76E+01	1.77E+01
43	1445.22	1.15E+01	10.22			1.15E+01	1.02E+01
44	1461.06	4.88E+02	46.01	4.33E+00	2.02E+00	4.84E+02	4.61E+01
45	1517.49	6.33E+00	7.75			6.33E+00	7.75E+00
46	1591.01	1.43E+01	16.64			1.43E+01	1.66E+01
47	1630.52	2.70E+01	10.39			2.70E+01	1.04E+01
48	1673.50	9.00E+00	6.00			9.00E+00	6.00E+00
49	1730.60	8.00E+00	7.25			8.00E+00	7.25E+00
50	1764.50	3.65E+01	14.30			3.65E+01	1.43E+01
51	1874.03	5.29E+00	6.34			5.29E+00	6.34E+00
52	2040.23	7.33E+00	7.21			7.33E+00	7.21E+00
53	2117.99	1.15E+01	8.73			1.15E+01	8.73E+00
54	2203.74	1.15E+01	12.00			1.15E+01	1.20E+01
55	2345.41	1.19E+01	8.49			1.19E+01	8.49E+00
56	2359.82	5.56E+00	7.78			5.56E+00	7.78E+00
57	2614.65	5.66E+01	16.01	2.52E+00	1.44E+00	5.41E+01	1.61E+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	0.990	1460.81	*	10.67	1.81E+01	2.31E+00
GA-67	0.913	93.31	*	35.70	1.91E+00	3.29E+00
		208.95	*	2.24	2.32E+01	3.12E+01
		300.22	*	16.00	2.72E+00	4.88E+00
CD-109	0.956	88.03	*	3.72	1.25E+00	1.01E+00
SN-126	0.999	87.57	*	37.00	1.24E-01	1.00E-01
TL-208	0.992	583.14	*	30.22	1.03E+00	3.26E-01
		860.37	*	4.48	1.87E+00	1.56E+00
		2614.66	*	35.85	8.87E-01	2.77E-01
BI-212	0.711	727.17	*	11.80	6.04E-01	7.34E-01
		1620.62		2.75		
PB-212	0.952	238.63	*	44.60	1.53E+00	1.84E-01
		300.09	*	3.41	1.84E+00	1.37E+00
BI-214	0.962	609.31	*	46.30	8.29E-01	1.95E-01
		1120.29	*	15.10	7.10E-01	5.79E-01

Analysis Report for 1606043-13

CP-5012 02-05

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.962	1764.49	*	15.80	1.06E+00	4.25E-01
		2204.22	*	4.98	1.23E+00	1.29E+00
PB-214	0.948	295.21	*	19.19	7.87E-01	3.14E-01
		351.92	*	37.19	8.60E-01	1.73E-01
RA-226	0.991	186.21	*	3.28	4.82E+00	8.99E+00
AC-228	0.515	338.32		11.40		
		911.07	*	27.70	1.38E+00	3.69E-01
		969.11	*	16.60	1.77E+00	4.44E-01
TH-234	0.982	63.29	*	3.80	1.71E+00	1.16E+00
NP-237	0.853	86.50	*	12.60	3.64E-01	2.94E-01
AM-243	0.989	74.67	*	66.00	2.93E-01	7.82E-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 3:06:33PM
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	1	57.92	2.11427E-02	28.65	Tol.	CE-143
m	4	77.63	1.61781E-01	8.15	Tol.	TI-44
	7	105.31	2.52055E-02	34.61	Tol.	EU-155 NP-239
	8	154.33	1.92924E-02	59.36		
m	12	242.51	4.17430E-02	20.65		
	13	270.87	2.36095E-02	35.81		
	16	339.45	5.00819E-02	13.65		
	18	374.69	1.20795E-02	52.73		
	19	409.48	1.16081E-02	51.02		
	20	463.36	1.47222E-02	35.45	Tol.	SB-125
	21	511.37	1.61188E-02	45.17		
	24	650.79	6.62271E-03	56.28		
	26	768.51	6.97266E-03	44.50		
	27	794.57	1.67055E-02	27.66		
	28	846.73	8.88158E-03	32.65	Tol.	CO-56
	31	934.28	8.28205E-03	38.68		
M	32	965.00	1.06729E-02	26.51	Tol.	EU-152

Analysis Report for 1606043-13

CP-5012 02-05

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	34	999.34	4.40475E-03	63.38	Sum	
m	35	1008.24	3.54942E-03	72.94		
m	36	1010.77	6.29649E-03	45.63		
	37	1033.05	6.80556E-03	44.67	Sum	
	38	1066.02	3.56209E-03	65.59		
	39	1093.11	6.68939E-03	48.47	Tol.	LU-172
	41	1208.89	6.70082E-03	50.27	Sum	
	42	1376.83	4.89286E-03	50.38		
	43	1445.22	3.19444E-03	44.45		
	45	1517.49	1.75926E-03	61.15		
	46	1591.01	3.98148E-03	58.06		
	47	1630.52	7.50000E-03	19.25		
	48	1673.50	2.50000E-03	33.33		
	49	1730.60	2.22222E-03	45.29	Sum	
	51	1874.03	1.46825E-03	60.01		
	52	2040.23	2.03704E-03	49.17		
	53	2117.99	3.18452E-03	38.08		
	55	2345.41	3.30357E-03	35.67		
	56	2359.82	1.54321E-03	70.00		

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

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	1.81E+01	2.31E+00
GA-67	0.91	93.31	*	35.70	1.91E+00	3.29E+00
		208.95	*	2.24	2.32E+01	3.12E+01
		300.22	*	16.00	2.72E+00	4.88E+00
CD-109	0.95	88.03	*	3.72	1.25E+00	1.01E+00
SN-126	0.99	87.57	*	37.00	1.24E-01	1.00E-01
TL-208	0.99	583.14	*	30.22	1.03E+00	3.26E-01
		860.37	*	4.48	1.87E+00	1.56E+00
		2614.66	*	35.85	8.87E-01	2.77E-01

Analysis Report for 1606043-13

CP-5012 02-05

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-212	0.71	727.17	*	11.80	6.04E-01	7.34E-01
		1620.62		2.75		
PB-212	0.95	238.63	*	44.60	1.53E+00	1.84E-01
		300.09	*	3.41	1.84E+00	1.37E+00
BI-214	0.96	609.31	*	46.30	8.29E-01	1.95E-01
		1120.29	*	15.10	7.10E-01	5.79E-01
		1764.49	*	15.80	1.06E+00	4.25E-01
		2204.22	*	4.98	1.23E+00	1.29E+00
PB-214	0.94	295.21	*	19.19	7.87E-01	3.14E-01
		351.92	*	37.19	8.60E-01	1.73E-01
RA-226	0.99	186.21	*	3.28	4.82E+00	8.99E+00
AC-228	0.51	338.32		11.40		
		911.07	*	27.70	1.38E+00	3.69E-01
		969.11	*	16.60	1.77E+00	4.44E-01
TH-234	0.98	63.29	*	3.80	1.71E+00	1.16E+00
NP-237	0.85	86.50	*	12.60	3.64E-01	2.94E-01
AM-243	0.98	74.67	*	66.00	2.93E-01	7.82E-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	0.990	1.81E+01	2.31E+00	
	GA-67	0.913	1.70E+00	2.21E+00	
?	CD-109	0.956	1.25E+00	1.01E+00	
?	SN-126	0.999	1.24E-01	1.00E-01	
	TL-208	0.992	9.62E-01	2.09E-01	
	BI-212	0.711	6.04E-01	7.34E-01	
	PB-212	0.952	1.51E+00	1.82E-01	
	BI-214	0.962	8.62E-01	1.68E-01	
	PB-214	0.948	8.43E-01	1.51E-01	
	RA-226	0.991	4.82E+00	8.99E+00	

Analysis Report for 1606043-13

CP-5012 02-05

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	AC-228	0.515	1.54E+00	2.84E-01	
	TH-234	0.982	1.71E+00	1.16E+00	
?	NP-237	0.853	3.64E-01	2.94E-01	
	AM-243	0.989	2.93E-01	7.82E-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 1606043-13

CP-5012 02-05

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 3:06:33PM
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	1	57.92	2.11427E-02	28.65	Tol.	CE-143
m	4	77.63	1.61781E-01	8.15	Tol.	TI-44
	7	105.31	2.52055E-02	34.61	Tol.	EU-155 NP-239
	8	154.33	1.92924E-02	59.36		
m	12	242.51	4.17430E-02	20.65		
	13	270.87	2.36095E-02	35.81		
	16	339.45	5.00819E-02	13.65		
	18	374.69	1.20795E-02	52.73		
	19	409.48	1.16081E-02	51.02		
	20	463.36	1.47222E-02	35.45	Tol.	SB-125
	21	511.37	1.61188E-02	45.17		
	24	650.79	6.62271E-03	56.28		
	26	768.51	6.97266E-03	44.50		
	27	794.57	1.67055E-02	27.66		
	28	846.73	8.88158E-03	32.65	Tol.	CO-56
	31	934.28	8.28205E-03	38.68		
M	32	965.00	1.06729E-02	26.51	Tol.	EU-152
M	34	999.34	4.40475E-03	63.38	Sum	
m	35	1008.24	3.54942E-03	72.94		
m	36	1010.77	6.29649E-03	45.63		
	37	1033.05	6.80556E-03	44.67	Sum	
	38	1066.02	3.56209E-03	65.59		
	39	1093.11	6.68939E-03	48.47	Tol.	LU-172
	41	1208.89	6.70082E-03	50.27	Sum	
	42	1376.83	4.89286E-03	50.38		
	43	1445.22	3.19444E-03	44.45		
	45	1517.49	1.75926E-03	61.15		
	46	1591.01	3.98148E-03	58.06		
	47	1630.52	7.50000E-03	19.25		
	48	1673.50	2.50000E-03	33.33		
	49	1730.60	2.22222E-03	45.29	Sum	
	51	1874.03	1.46825E-03	60.01		
	52	2040.23	2.03704E-03	49.17		
	53	2117.99	3.18452E-03	38.08		

Analysis Report for 1606043-13
CP-5012 02-05

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
55	2345.41	3.30357E-03	35.67		
56	2359.82	1.54321E-03	70.00		

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	1.60E-01	7.92E-01	7.92E-01
+	NA-22	1274.54		99.94	3.44E-02	1.20E-01	1.20E-01
+	NA-24	1368.53		99.99	-2.32E+02	1.77E+03	2.18E+03
		2754.09		99.86	5.88E+02		1.77E+03
+	AL-26	1808.65		99.76	-6.27E-03	5.65E-02	5.65E-02
+	K-40	1460.81	*	10.67	1.81E+01	9.44E-01	9.44E-01
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	3.52E-02	7.28E-02	7.28E-02
		78.34		96.00	1.60E-01		8.98E-02
+	SC-46	889.25		99.98	-1.08E-02	8.78E-02	8.78E-02
		1120.51		99.99	1.55E-01		1.55E-01
+	V-48	983.52		99.98	-2.59E-02	1.27E-01	1.27E-01
		1312.10		97.50	4.84E-02		1.60E-01
+	CR-51	320.08		9.83	-2.86E-01	8.79E-01	8.79E-01
+	MN-54	834.83		99.97	1.99E-02	9.80E-02	9.80E-02
+	CO-56	846.75		99.96	4.59E-02	9.93E-02	9.93E-02
		1037.75		14.03	2.18E-02		6.18E-01
		1238.25		67.00	4.58E-02		1.98E-01
		1771.40		15.51	-2.02E-01		5.62E-01
		2598.48		16.90	-5.01E-02		3.49E-01
+	CO-57	122.06		85.51	-3.79E-02	5.63E-02	5.63E-02
		136.48		10.60	1.50E-01		5.11E-01
+	CO-58	810.76		99.40	-3.58E-02	8.37E-02	8.37E-02
+	FE-59	1099.22		56.50	-5.44E-02	1.42E-01	1.42E-01
		1291.56		43.20	-1.72E-01		3.07E-01
+	CO-60	1173.22		100.00	3.35E-02	9.69E-02	1.27E-01
		1332.49		100.00	-1.28E-02		9.69E-02

Analysis Report for 1606043-13

CP-5012 02-05

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZN-65	1115.52		50.75	-5.16E-02	2.30E-01	2.30E-01
+	GA-67	93.31	*	35.70	1.91E+00	1.67E+00	1.67E+00
		208.95	*	2.24	2.32E+01		2.33E+01
		300.22	*	16.00	2.72E+00		3.22E+00
+	SE-75	121.11		16.70	-1.41E-01	9.20E-02	2.98E-01
		136.00		59.20	-1.75E-02		9.20E-02
		264.65		59.80	-3.33E-02		1.13E-01
		279.53		25.20	-3.19E-03		2.74E-01
		400.65		11.40	1.31E-01		7.03E-01
+	RB-82	776.52		13.00	4.04E-01	9.03E-01	9.03E-01
+	RB-83	520.41		46.00	-5.96E-02	1.69E-01	1.69E-01
		529.64		30.30	-1.10E-02		2.59E-01
		552.65		16.40	-4.27E-02		4.81E-01
+	KR-85	513.99		0.43	3.05E+01	2.42E+01	2.42E+01
+	SR-85	513.99		99.27	1.47E-01	1.17E-01	1.17E-01
+	Y-88	898.02		93.40	-2.98E-02	8.96E-02	8.96E-02
		1836.01		99.38	1.35E-02		9.52E-02
+	NB-93M	16.57		9.43	5.38E+01	9.12E+01	9.12E+01
+	NB-94	702.63		100.00	2.50E-02	8.49E-02	8.91E-02
		871.10		100.00	3.69E-03		8.49E-02
+	NB-95	765.79		99.81	2.42E-02	1.25E-01	1.25E-01
+	NB-95M	235.69		25.00	2.27E+00	2.51E+00	2.51E+00
+	ZR-95	724.18		43.70	0.00E+00	1.73E-01	2.43E-01
		756.72		55.30	1.13E-01		1.73E-01
+	MO-99	181.06		6.20	1.89E+00	5.84E+00	8.24E+00
		739.58		12.80	-4.48E+00		5.84E+00
		778.00		4.50	-9.14E+00		1.89E+01
+	RU-103	497.08		89.00	-1.44E-02	9.65E-02	9.65E-02
+	RU-106	621.84		9.80	-3.95E-01	8.49E-01	8.49E-01
+	AG-108M	433.93		89.90	7.88E-03	7.88E-02	7.88E-02
		614.37		90.40	7.47E-03		1.13E-01
		722.95		90.50	-1.16E-02		9.74E-02
+	CD-109	88.03	*	3.72	1.25E+00	1.62E+00	1.62E+00
+	AG-110M	657.75		93.14	-2.05E-03	9.07E-02	9.07E-02
		677.61		10.53	2.53E-01		8.17E-01
		706.67		16.46	-3.11E-01		5.22E-01
		763.93		21.98	5.90E-02		4.02E-01
		884.67		71.63	-4.74E-02		1.31E-01
		1384.27		23.94	5.60E-03		4.27E-01
+	CD-113M	263.70		0.02	-6.07E+01	2.80E+02	2.80E+02
+	SN-113	255.12		1.93	-1.54E+00	1.17E-01	3.46E+00
		391.69		64.90	-4.22E-02		1.17E-01
+	TE123M	159.00		84.10	1.04E-02	6.68E-02	6.68E-02
+	SB-124	602.71		97.87	4.59E-02	9.82E-02	9.82E-02
		645.85		7.26	3.19E-01		1.33E+00
		722.78		11.10	-1.05E-01		8.82E-01
		1691.02		49.00	2.55E-02		1.84E-01
+	I-125	35.49		6.49	2.69E-01	2.32E+00	2.32E+00

Analysis Report for 1606043-13

CP-5012 02-05

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-125	176.33		6.89	1.04E-01	2.42E-01	7.63E-01
		427.89		29.33	-1.42E-02		2.42E-01
		463.38		10.35	6.29E-01		8.48E-01
		600.56		17.80	1.27E-02		4.54E-01
		635.90		11.32	3.96E-02		6.74E-01
+	SB-126	414.70		83.30	6.35E-02	1.39E-01	1.39E-01
		666.33		99.60	1.56E-02		1.52E-01
		695.00		99.60	9.46E-03		1.45E-01
		720.50		53.80	5.01E-02		2.78E-01
+	SN-126	87.57	*	37.00	1.24E-01	1.61E-01	1.61E-01
+	SB-127	473.00		25.00	-4.98E-01	1.17E+00	1.43E+00
		685.20		35.70	5.41E-01		1.17E+00
		783.80		14.70	1.05E+00		3.11E+00
+	I-129	29.78		57.00	-3.75E-01	3.80E-01	3.80E-01
		33.60		13.20	-4.08E-01		1.18E+00
		39.58		7.52	-5.26E-01		1.37E+00
+	I-131	284.30		6.05	-1.56E+00	1.80E-01	2.23E+00
		364.48		81.20	1.17E-01		1.80E-01
		636.97		7.26	1.19E-01		2.26E+00
		722.89		1.80	-1.27E+00		1.07E+01
+	TE-132	49.72		13.10	-4.50E+00	5.32E-01	3.98E+00
		228.16		88.00	-1.30E-01		5.32E-01
+	BA-133	81.00		33.00	-6.55E-02	1.54E-01	1.91E-01
		302.84		17.80	2.70E-01		4.21E-01
		356.01		60.00	1.80E-04		1.54E-01
+	I-133	529.87		86.30	-5.25E+00	1.23E+02	1.23E+02
+	XE-133	81.00		38.00	-1.89E-01	5.53E-01	5.53E-01
+	CS-134	563.23		8.38	1.36E-03	8.97E-02	9.49E-01
		569.32		15.43	3.03E-04		5.17E-01
		604.70		97.60	2.95E-02		8.97E-02
		795.84		85.40	1.17E-01		1.33E-01
		801.93		8.73	-4.44E-02		9.23E-01
+	CS-135	268.24		16.00	-9.68E-03	4.62E-01	4.62E-01
+	I-135	1131.51		22.50	2.45E+08	3.30E+09	4.05E+09
		1260.41		28.60	7.92E+08		3.30E+09
		1678.03		9.54	1.26E+08		7.00E+09
+	CS-136	153.22		7.46	3.37E-01	1.30E-01	1.21E+00
		163.89		4.61	-7.24E-02		1.81E+00
		176.55		13.56	-1.27E-01		6.04E-01
		273.65		12.66	-2.00E-02		9.61E-01
		340.57		48.50	6.53E-01		3.04E-01
		818.50		99.70	5.58E-03		1.30E-01
		1048.07		79.60	-4.19E-02		1.90E-01
		1235.34		19.70	1.15E-01		1.01E+00
+	CS-137	661.65		85.12	-5.28E-02	1.01E-01	1.01E-01
+	LA-138	788.74		34.00	4.82E-02	1.24E-01	2.58E-01
		1435.80		66.00	3.57E-02		1.24E-01
+	CE-139	165.85		80.35	2.13E-02	6.92E-02	6.92E-02
+	BA-140	162.64		6.70	-2.25E-01	4.96E-01	1.26E+00

Analysis Report for 1606043-13

CP-5012 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	304.84	4.50	2.07E-01	4.96E-01	2.35E+00
		423.70	3.20	2.09E+00		3.90E+00
		437.55	2.00	1.52E+00		6.11E+00
		537.32	25.00	4.41E-02		4.96E-01
+	LA-140	328.77	20.50	3.61E-01	1.43E-01	6.38E-01
		487.03	45.50	2.40E-02		2.69E-01
		815.85	23.50	1.01E-01		5.47E-01
		1596.49	95.49	0.00E+00		1.43E-01
+	CE-141	145.44	48.40	3.44E-02	1.32E-01	1.32E-01
+	CE-143	57.36	11.80	-2.89E+01	2.10E+01	5.78E+01
		293.26	42.00	1.39E+00		2.10E+01
		664.55	5.20	2.88E+01		1.73E+02
+	CE-144	133.54	10.80	2.13E-01	5.06E-01	5.06E-01
+	PM-144	476.78	42.00	-2.73E-02	8.98E-02	1.72E-01
		618.01	98.60	2.12E-02		8.98E-02
		696.49	99.49	3.59E-03		9.17E-02
+	PM-145	36.85	21.70	-1.02E-01	2.97E-01	5.54E-01
		37.36	39.70	4.94E-02		2.97E-01
		42.30	15.10	-2.97E-01		6.13E-01
		72.40	2.31	-4.35E+00		3.40E+00
+	PM-146	453.90	39.94	1.58E-02	1.80E-01	1.80E-01
		735.90	14.01	2.59E-01		6.02E-01
		747.13	13.10	1.97E-01		6.41E-01
+	ND-147	91.11	28.90	-4.09E-01	4.26E-01	4.26E-01
		531.02	13.10	3.11E-01		1.02E+00
+	PM-149	285.90	3.10	3.43E+00	3.61E+01	3.61E+01
+	EU-152	121.78	20.50	-1.55E-01	2.30E-01	2.30E-01
		244.69	5.40	0.00E+00		1.50E+00
		344.27	19.13	-8.65E-02		3.32E-01
		778.89	9.20	-1.82E-01		9.36E-01
		964.01	10.40	-1.68E+00		1.12E+00
		1085.78	7.22	6.19E-01		1.43E+00
		1112.02	9.60	4.85E-02		1.18E+00
		1407.95	14.94	3.13E-01		6.26E-01
+	GD-153	97.43	31.30	2.13E-03	1.69E-01	1.69E-01
		103.18	22.20	-4.81E-02		2.28E-01
+	EU-154	123.07	40.50	-8.13E-02	1.18E-01	1.18E-01
		723.30	19.70	-5.32E-02		4.48E-01
		873.19	11.50	-1.56E-01		7.07E-01
		996.32	10.30	-2.14E-02		8.72E-01
		1004.76	17.90	-2.29E-01		4.65E-01
		1274.45	35.50	9.65E-02		3.37E-01
+	EU-155	86.50	30.90	2.29E-01	2.33E-01	2.33E-01
		105.30	20.70	2.65E-01		2.52E-01
+	EU-156	811.77	10.40	-2.01E-01	1.14E+00	1.14E+00
		1153.47	7.20	3.65E-01		2.50E+00
		1230.71	8.90	-6.67E-01		2.10E+00
+	HO-166M	184.41	72.60	1.80E-01	9.88E-02	9.88E-02
		280.45	29.60	6.94E-02		2.22E-01

Analysis Report for 1606043-13

CP-5012 02-05

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	HO-166M	410.94		11.10	-6.13E-03	9.88E-02	6.81E-01
		711.69		54.10	2.81E-02		1.69E-01
+	TM-171	66.72		0.14	2.70E+00	5.01E+01	5.01E+01
+	HF-172	81.75		4.52	-5.41E-01	4.61E-01	1.35E+00
		125.81		11.30	9.81E-02		4.61E-01
+	LU-172	181.53		20.60	1.02E-01	4.58E-01	6.42E-01
		810.06		16.63	-8.29E-02		1.24E+00
		912.12		15.25	6.44E+00		3.02E+00
		1093.66		62.50	3.83E-01		4.58E-01
+	LU-173	100.72		5.24	-3.90E-02	3.72E-01	9.63E-01
		272.11		21.20	3.40E-01		3.72E-01
+	HF-175	343.40		84.00	-1.79E-02	8.95E-02	8.95E-02
+	LU-176	88.34		13.30	4.00E-01	6.73E-02	5.51E-01
		201.83		86.00	-8.87E-03		7.69E-02
		306.78		94.00	1.52E-02		6.73E-02
+	TA-182	67.75		41.20	8.54E-02	1.76E-01	1.76E-01
		1121.30		34.90	2.43E-01		4.23E-01
		1189.05		16.23	1.41E-01		7.18E-01
		1221.41		26.98	-3.20E-01		4.11E-01
		1231.02		11.44	1.50E-01		1.15E+00
+	IR-192	308.46		29.68	4.47E-02	1.71E-01	2.33E-01
		468.07		48.10	6.06E-03		1.71E-01
+	HG-203	279.19		77.30	9.71E-03	9.88E-02	9.88E-02
+	BI-207	569.67		97.72	-2.31E-02	7.96E-02	7.96E-02
		1063.62		74.90	3.31E-03		1.18E-01
+	TL-208	583.14	*	30.22	1.03E+00	2.19E-01	4.60E-01
		860.37	*	4.48	1.87E+00		2.46E+00
		2614.66	*	35.85	8.87E-01		2.19E-01
+	BI-210M	262.00		45.00	1.76E-02	1.45E-01	1.45E-01
		300.00		23.00	-5.75E-01		3.47E-01
+	PB-210	46.50		4.25	1.84E+00	2.10E+00	2.10E+00
+	PB-211	404.84		2.90	1.57E-01	2.54E+00	2.54E+00
		831.96		2.90	-6.06E-02		3.22E+00
+	BI-212	727.17	*	11.80	6.04E-01	1.20E+00	1.20E+00
		1620.62		2.75	7.87E-01		3.17E+00
+	PB-212	238.63	*	44.60	1.53E+00	2.73E-01	2.73E-01
		300.09	*	3.41	1.84E+00		2.18E+00
+	BI-214	609.31	*	46.30	8.29E-01	2.37E-01	2.37E-01
		1120.29	*	15.10	7.10E-01		1.16E+00
		1764.49	*	15.80	1.06E+00		4.46E-01
		2204.22	*	4.98	1.23E+00		2.04E+00
+	PB-214	295.21	*	19.19	7.87E-01	2.03E-01	4.74E-01
		351.92	*	37.19	8.60E-01		2.03E-01
+	RN-219	401.80		6.50	3.60E-02	1.13E+00	1.13E+00
+	RA-223	323.87		3.88	-9.94E-01	1.85E+00	1.85E+00
+	RA-224	240.98		3.95	1.91E+01	3.50E+00	3.50E+00
+	RA-225	40.00		31.00	-1.91E-01	4.96E-01	4.96E-01
+	RA-226	186.21	*	3.28	4.82E+00	2.69E+00	2.69E+00

Analysis Report for 1606043-13

CP-5012 02-05

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-227	50.10		8.40	-1.00E+00	8.85E-01	8.85E-01
		236.00		11.50	8.58E-01		9.51E-01
		256.20		6.30	-4.79E-01		1.01E+00
+	AC-228	338.32		11.40	1.16E+00	4.64E-01	7.98E-01
		911.07	*	27.70	1.38E+00		4.64E-01
		969.11	*	16.60	1.77E+00		8.22E-01
+	TH-230	48.44		16.90	2.86E-01	4.95E-01	4.95E-01
		62.85		4.60	1.53E+00		1.65E+00
		67.67		0.37	9.00E+00		1.86E+01
+	PA-231	283.67		1.60	-2.68E+00	3.25E+00	3.83E+00
		302.67		2.30	2.09E+00		3.25E+00
+	TH-231	25.64		14.70	-7.40E-01	9.75E-01	3.05E+00
		84.21		6.40	-1.45E-01		9.75E-01
+	PA-233	311.98		38.60	-4.89E-02	2.11E-01	2.11E-01
+	PA-234	131.20		20.40	5.82E-02	2.60E-01	2.60E-01
		733.99		8.80	3.04E-02		9.61E-01
		946.00		12.00	-3.17E-01		7.67E-01
+	PA-234M	1001.03		0.92	3.51E+00	1.00E+01	1.00E+01
+	TH-234	63.29	*	3.80	1.71E+00	2.84E+00	2.84E+00
+	U-235	143.76		10.50	-1.50E-01	4.89E-01	4.89E-01
		163.35		4.70	-4.39E-02		1.10E+00
		205.31		4.70	3.23E-02		1.44E+00
+	NP-237	86.50	*	12.60	3.64E-01	4.73E-01	4.73E-01
+	NP-239	106.10		22.70	1.56E+00	3.26E+00	3.26E+00
		228.18		10.70	-2.25E+00		9.20E+00
		277.60		14.10	3.49E+00		7.04E+00
+	AM-241	59.54		35.90	1.15E-01	2.02E-01	2.02E-01
+	AM-243	74.67	*	66.00	2.93E-01	1.84E-01	1.84E-01
+	CM-243	209.75		3.29	1.08E+00	4.86E-01	2.24E+00
		228.14		10.60	-1.56E-01		6.36E-01
		277.60		14.00	2.41E-01		4.86E-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 1606043-13

CP-5012 02-05

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	7.92E-01	7.92E-01	1.60E-01	3.73E-01
	NA-22	1274.54		99.94	1.20E-01	1.20E-01	3.44E-02	5.52E-02
	NA-24	1368.53		99.99	2.18E+03	1.77E+03	-2.32E+02	9.64E+02
		2754.09		99.86	1.77E+03		5.88E+02	6.84E+02
	AL-26	1808.65		99.76	5.65E-02	5.65E-02	-6.27E-03	2.19E-02
+	K-40	1460.81	*	10.67	9.44E-01	9.44E-01	1.81E+01	4.21E-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	7.28E-02	7.28E-02	3.52E-02	3.56E-02
		78.34		96.00	8.98E-02		1.60E-01	4.41E-02
	SC-46	889.25		99.98	8.78E-02	8.78E-02	-1.08E-02	4.00E-02
		1120.51		99.99	1.55E-01		1.55E-01	7.29E-02
	V-48	983.52		99.98	1.27E-01	1.27E-01	-2.59E-02	5.75E-02
		1312.10		97.50	1.60E-01		4.84E-02	7.25E-02
	CR-51	320.08		9.83	8.79E-01	8.79E-01	-2.86E-01	4.21E-01
	MN-54	834.83		99.97	9.80E-02	9.80E-02	1.99E-02	4.55E-02
	CO-56	846.75		99.96	9.93E-02	9.93E-02	4.59E-02	4.59E-02
		1037.75		14.03	6.18E-01		2.18E-02	2.78E-01
		1238.25		67.00	1.98E-01		4.58E-02	9.14E-02
		1771.40		15.51	5.62E-01		-2.02E-01	2.37E-01
		2598.48		16.90	3.49E-01		-5.01E-02	1.24E-01
	CO-57	122.06		85.51	5.63E-02	5.63E-02	-3.79E-02	2.72E-02
		136.48		10.60	5.11E-01		1.50E-01	2.48E-01
	CO-58	810.76		99.40	8.37E-02	8.37E-02	-3.58E-02	3.82E-02
	FE-59	1099.22		56.50	1.42E-01	1.42E-01	-5.44E-02	6.22E-02
		1291.56		43.20	3.07E-01		-1.72E-01	1.41E-01
	CO-60	1173.22		100.00	1.27E-01	9.69E-02	3.35E-02	5.91E-02
		1332.49		100.00	9.69E-02		-1.28E-02	4.34E-02
	ZN-65	1115.52		50.75	2.30E-01	2.30E-01	-5.16E-02	1.06E-01
+	GA-67	93.31	*	35.70	1.67E+00	1.67E+00	1.91E+00	8.19E-01
		208.95	*	2.24	2.33E+01		2.32E+01	1.13E+01
		300.22	*	16.00	3.22E+00		2.72E+00	1.55E+00
	SE-75	121.11		16.70	2.98E-01	9.20E-02	-1.41E-01	1.44E-01
		136.00		59.20	9.20E-02		-1.75E-02	4.46E-02
		264.65		59.80	1.13E-01		-3.33E-02	5.41E-02
		279.53		25.20	2.74E-01		-3.19E-03	1.31E-01
		400.65		11.40	7.03E-01		1.31E-01	3.35E-01
	RB-82	776.52		13.00	9.03E-01	9.03E-01	4.04E-01	4.20E-01
	RB-83	520.41		46.00	1.69E-01	1.69E-01	-5.96E-02	7.92E-02
		529.64		30.30	2.59E-01		-1.10E-02	1.21E-01
		552.65		16.40	4.81E-01		-4.27E-02	2.25E-01
	KR-85	513.99		0.43	2.42E+01	2.42E+01	3.05E+01	1.16E+01
	SR-85	513.99		99.27	1.17E-01	1.17E-01	1.47E-01	5.58E-02
	Y-88	898.02		93.40	8.96E-02	8.96E-02	-2.98E-02	4.07E-02
		1836.01		99.38	9.52E-02		1.35E-02	4.08E-02
	NB-93M	16.57		9.43	9.12E+01	9.12E+01	5.38E+01	4.45E+01

Analysis Report for 1606043-13

CP-5012 02-05

	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	8.91E-02	8.49E-02	2.50E-02	4.16E-02
		871.10		100.00	8.49E-02		3.69E-03	3.89E-02
	NB-95	765.79		99.81	1.25E-01	1.25E-01	2.42E-02	5.87E-02
	NB-95M	235.69		25.00	2.51E+00	2.51E+00	2.27E+00	1.23E+00
	ZR-95	724.18		43.70	2.43E-01	1.73E-01	0.00E+00	1.14E-01
		756.72		55.30	1.73E-01		1.13E-01	8.04E-02
	MO-99	181.06		6.20	8.24E+00	5.84E+00	1.89E+00	3.97E+00
		739.58		12.80	5.84E+00		-4.48E+00	2.68E+00
		778.00		4.50	1.89E+01		-9.14E+00	8.77E+00
	RU-103	497.08		89.00	9.65E-02	9.65E-02	-1.44E-02	4.54E-02
	RU-106	621.84		9.80	8.49E-01	8.49E-01	-3.95E-01	3.97E-01
	AG-108M	433.93		89.90	7.88E-02	7.88E-02	7.88E-03	3.73E-02
		614.37		90.40	1.13E-01		7.47E-03	5.37E-02
		722.95		90.50	9.74E-02		-1.16E-02	4.54E-02
+	CD-109	88.03	*	3.72	1.62E+00	1.62E+00	1.25E+00	7.91E-01
	AG-110M	657.75		93.14	9.07E-02	9.07E-02	-2.05E-03	4.23E-02
		677.61		10.53	8.17E-01		2.53E-01	3.81E-01
		706.67		16.46	5.22E-01		-3.11E-01	2.43E-01
		763.93		21.98	4.02E-01		5.90E-02	1.86E-01
		884.67		71.63	1.31E-01		-4.74E-02	6.04E-02
		1384.27		23.94	4.27E-01		5.60E-03	1.91E-01
	CD-113M	263.70		0.02	2.80E+02	2.80E+02	-6.07E+01	1.34E+02
	SN-113	255.12		1.93	3.46E+00	1.17E-01	-1.54E+00	1.66E+00
		391.69		64.90	1.17E-01		-4.22E-02	5.57E-02
	TE123M	159.00		84.10	6.68E-02	6.68E-02	1.04E-02	3.23E-02
	SB-124	602.71		97.87	9.82E-02	9.82E-02	4.59E-02	4.62E-02
		645.85		7.26	1.33E+00		3.19E-01	6.21E-01
		722.78		11.10	8.82E-01		-1.05E-01	4.11E-01
		1691.02		49.00	1.84E-01		2.55E-02	7.81E-02
	I-125	35.49		6.49	2.32E+00	2.32E+00	2.69E-01	1.13E+00
	SB-125	176.33		6.89	7.63E-01	2.42E-01	1.04E-01	3.68E-01
		427.89		29.33	2.42E-01		-1.42E-02	1.15E-01
		463.38		10.35	8.48E-01		6.29E-01	4.04E-01
		600.56		17.80	4.54E-01		1.27E-02	2.13E-01
		635.90		11.32	6.74E-01		3.96E-02	3.13E-01
	SB-126	414.70		83.30	1.39E-01	1.39E-01	6.35E-02	6.56E-02
		666.33		99.60	1.52E-01		1.56E-02	7.11E-02
		695.00		99.60	1.45E-01		9.46E-03	6.78E-02
		720.50		53.80	2.78E-01		5.01E-02	1.30E-01
+	SN-126	87.57	*	37.00	1.61E-01	1.61E-01	1.24E-01	7.85E-02
	SB-127	473.00		25.00	1.43E+00	1.17E+00	-4.98E-01	6.71E-01
		685.20		35.70	1.17E+00		5.41E-01	5.43E-01
		783.80		14.70	3.11E+00		1.05E+00	1.44E+00
	I-129	29.78		57.00	3.80E-01	3.80E-01	-3.75E-01	1.83E-01
		33.60		13.20	1.18E+00		-4.08E-01	5.69E-01
		39.58		7.52	1.37E+00		-5.26E-01	6.62E-01
	I-131	284.30		6.05	2.23E+00	1.80E-01	-1.56E+00	1.07E+00
		364.48		81.20	1.80E-01		1.17E-01	8.55E-02
		636.97		7.26	2.26E+00		1.19E-01	1.05E+00
		722.89		1.80	1.07E+01		-1.27E+00	5.00E+00
	TE-132	49.72		13.10	3.98E+00	5.32E-01	-4.50E+00	1.93E+00
		228.16		88.00	5.32E-01		-1.30E-01	2.57E-01
	BA-133	81.00		33.00	1.91E-01	1.54E-01	-6.55E-02	9.34E-02

Analysis Report for 1606043-13

CP-5012 02-05

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	4.21E-01	1.54E-01	2.70E-01	2.02E-01
	356.01	60.00	1.54E-01		1.80E-04	7.44E-02
I-133	529.87	86.30	1.23E+02	1.23E+02	-5.25E+00	5.77E+01
XE-133	81.00	38.00	5.53E-01	5.53E-01	-1.89E-01	2.70E-01
CS-134	563.23	8.38	9.49E-01	8.97E-02	1.36E-03	4.45E-01
	569.32	15.43	5.17E-01		3.03E-04	2.43E-01
	604.70	97.60	8.97E-02		2.95E-02	4.22E-02
	795.84	85.40	1.33E-01		1.17E-01	6.26E-02
	801.93	8.73	9.23E-01		-4.44E-02	4.24E-01
CS-135	268.24	16.00	4.62E-01	4.62E-01	-9.68E-03	2.23E-01
I-135	1131.51	22.50	4.05E+09	3.30E+09	2.45E+08	1.85E+09
	1260.41	28.60	3.30E+09		7.92E+08	1.50E+09
	1678.03	9.54	7.00E+09		1.26E+08	2.93E+09
CS-136	153.22	7.46	1.21E+00	1.30E-01	3.37E-01	5.86E-01
	163.89	4.61	1.81E+00		-7.24E-02	8.75E-01
	176.55	13.56	6.04E-01		-1.27E-01	2.91E-01
	273.65	12.66	9.61E-01		-2.00E-02	4.64E-01
	340.57	48.50	3.04E-01		6.53E-01	1.47E-01
	818.50	99.70	1.30E-01		5.58E-03	5.98E-02
	1048.07	79.60	1.90E-01		-4.19E-02	8.66E-02
	1235.34	19.70	1.01E+00		1.15E-01	4.67E-01
CS-137	661.65	85.12	1.01E-01	1.01E-01	-5.28E-02	4.71E-02
LA-138	788.74	34.00	2.58E-01	1.24E-01	4.82E-02	1.19E-01
	1435.80	66.00	1.24E-01		3.57E-02	5.39E-02
CE-139	165.85	80.35	6.92E-02	6.92E-02	2.13E-02	3.34E-02
BA-140	162.64	6.70	1.26E+00	4.96E-01	-2.25E-01	6.07E-01
	304.84	4.50	2.35E+00		2.07E-01	1.12E+00
	423.70	3.20	3.90E+00		2.09E+00	1.85E+00
	437.55	2.00	6.11E+00		1.52E+00	2.90E+00
	537.32	25.00	4.96E-01		4.41E-02	2.33E-01
LA-140	328.77	20.50	6.38E-01	1.43E-01	3.61E-01	3.07E-01
	487.03	45.50	2.69E-01		2.40E-02	1.27E-01
	815.85	23.50	5.47E-01		1.01E-01	2.50E-01
	1596.49	95.49	1.43E-01		0.00E+00	6.16E-02
CE-141	145.44	48.40	1.32E-01	1.32E-01	3.44E-02	6.37E-02
CE-143	57.36	11.80	5.78E+01	2.10E+01	-2.89E+01	2.82E+01
	293.26	42.00	2.10E+01		1.39E+00	1.02E+01
	664.55	5.20	1.73E+02		2.88E+01	8.11E+01
CE-144	133.54	10.80	5.06E-01	5.06E-01	2.13E-01	2.45E-01
PM-144	476.78	42.00	1.72E-01	8.98E-02	-2.73E-02	8.09E-02
	618.01	98.60	8.98E-02		2.12E-02	4.22E-02
	696.49	99.49	9.17E-02		3.59E-03	4.29E-02
PM-145	36.85	21.70	5.54E-01	2.97E-01	-1.02E-01	2.68E-01
	37.36	39.70	2.97E-01		4.94E-02	1.44E-01
	42.30	15.10	6.13E-01		-2.97E-01	2.97E-01
	72.40	2.31	3.40E+00		-4.35E+00	1.67E+00
PM-146	453.90	39.94	1.80E-01	1.80E-01	1.58E-02	8.49E-02
	735.90	14.01	6.02E-01		2.59E-01	2.79E-01
	747.13	13.10	6.41E-01		1.97E-01	2.97E-01
ND-147	91.11	28.90	4.26E-01	4.26E-01	-4.09E-01	2.08E-01
	531.02	13.10	1.02E+00		3.11E-01	4.77E-01
PM-149	285.90	3.10	3.61E+01	3.61E+01	3.43E+00	1.73E+01
EU-152	121.78	20.50	2.30E-01	2.30E-01	-1.55E-01	1.11E-01

Analysis Report for 1606043-13

CP-5012 02-05

	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	1.50E+00	2.30E-01	0.00E+00	7.29E-01
		344.27		19.13	3.32E-01		-8.65E-02	1.58E-01
		778.89		9.20	9.36E-01		-1.82E-01	4.33E-01
		964.01		10.40	1.12E+00		-1.68E+00	5.22E-01
		1085.78		7.22	1.43E+00		6.19E-01	6.58E-01
		1112.02		9.60	1.18E+00		4.85E-02	5.45E-01
		1407.95		14.94	6.26E-01		3.13E-01	2.78E-01
	GD-153	97.43		31.30	1.69E-01	1.69E-01	2.13E-03	8.19E-02
		103.18		22.20	2.28E-01		-4.81E-02	1.11E-01
	EU-154	123.07		40.50	1.18E-01	1.18E-01	-8.13E-02	5.69E-02
		723.30		19.70	4.48E-01		-5.32E-02	2.09E-01
		873.19		11.50	7.07E-01		-1.56E-01	3.23E-01
		996.32		10.30	8.72E-01		-2.14E-02	3.98E-01
		1004.76		17.90	4.65E-01		-2.29E-01	2.10E-01
		1274.45		35.50	3.37E-01		9.65E-02	1.55E-01
	EU-155	86.50		30.90	2.33E-01	2.33E-01	2.29E-01	1.14E-01
		105.30		20.70	2.52E-01		2.65E-01	1.23E-01
	EU-156	811.77		10.40	1.14E+00	1.14E+00	-2.01E-01	5.20E-01
		1153.47		7.20	2.50E+00		3.65E-01	1.16E+00
		1230.71		8.90	2.10E+00		-6.67E-01	9.67E-01
	HO-166M	184.41		72.60	9.88E-02	9.88E-02	1.80E-01	4.81E-02
		280.45		29.60	2.22E-01		6.94E-02	1.06E-01
		410.94		11.10	6.81E-01		-6.13E-03	3.24E-01
		711.69		54.10	1.69E-01		2.81E-02	7.89E-02
	TM-171	66.72		0.14	5.01E+01	5.01E+01	2.70E+00	2.45E+01
	HF-172	81.75		4.52	1.35E+00	4.61E-01	-5.41E-01	6.57E-01
		125.81		11.30	4.61E-01		9.81E-02	2.24E-01
	LU-172	181.53		20.60	6.42E-01	4.58E-01	1.02E-01	3.09E-01
		810.06		16.63	1.24E+00		-8.29E-02	5.71E-01
		912.12		15.25	3.02E+00		6.44E+00	1.45E+00
		1093.66		62.50	4.58E-01		3.83E-01	2.12E-01
	LU-173	100.72		5.24	9.63E-01	3.72E-01	-3.90E-02	4.67E-01
		272.11		21.20	3.72E-01		3.40E-01	1.80E-01
	HF-175	343.40		84.00	8.95E-02	8.95E-02	-1.79E-02	4.27E-02
	LU-176	88.34		13.30	5.51E-01	6.73E-02	4.00E-01	2.70E-01
		201.83		86.00	7.69E-02		-8.87E-03	3.73E-02
		306.78		94.00	6.73E-02		1.52E-02	3.21E-02
	TA-182	67.75		41.20	1.76E-01	1.76E-01	8.54E-02	8.62E-02
		1121.30		34.90	4.23E-01		2.43E-01	1.98E-01
		1189.05		16.23	7.18E-01		1.41E-01	3.29E-01
		1221.41		26.98	4.11E-01		-3.20E-01	1.87E-01
		1231.02		11.44	1.15E+00		1.50E-01	5.30E-01
	IR-192	308.46		29.68	2.33E-01	1.71E-01	4.47E-02	1.11E-01
		468.07		48.10	1.71E-01		6.06E-03	8.06E-02
	HG-203	279.19		77.30	9.88E-02	9.88E-02	9.71E-03	4.74E-02
	BI-207	569.67		97.72	7.96E-02	7.96E-02	-2.31E-02	3.73E-02
		1063.62		74.90	1.18E-01		3.31E-03	5.35E-02
+	TL-208	583.14	*	30.22	4.60E-01	2.19E-01	1.03E+00	2.22E-01
		860.37	*	4.48	2.46E+00		1.87E+00	1.15E+00
		2614.66	*	35.85	2.19E-01		8.87E-01	8.75E-02
	BI-210M	262.00		45.00	1.45E-01	1.45E-01	1.76E-02	6.95E-02
		300.00		23.00	3.47E-01		-5.75E-01	1.67E-01
	PB-210	46.50		4.25	2.10E+00	2.10E+00	1.84E+00	1.02E+00

Analysis Report for 1606043-13

CP-5012 02-05

	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	2.54E+00	2.54E+00	1.57E-01	1.21E+00
		831.96		2.90	3.22E+00		-6.06E-02	1.49E+00
+	BI-212	727.17	*	11.80	1.20E+00	1.20E+00	6.04E-01	5.76E-01
		1620.62		2.75	3.17E+00		7.87E-01	1.37E+00
+	PB-212	238.63	*	44.60	2.73E-01	2.73E-01	1.53E+00	1.34E-01
		300.09	*	3.41	2.18E+00		1.84E+00	1.05E+00
+	BI-214	609.31	*	46.30	2.37E-01	2.37E-01	8.29E-01	1.13E-01
		1120.29	*	15.10	1.16E+00		7.10E-01	5.52E-01
		1764.49	*	15.80	4.46E-01		1.06E+00	1.83E-01
		2204.22	*	4.98	2.04E+00		1.23E+00	8.74E-01
+	PB-214	295.21	*	19.19	4.74E-01	2.03E-01	7.87E-01	2.30E-01
		351.92	*	37.19	2.03E-01		8.60E-01	9.71E-02
	RN-219	401.80		6.50	1.13E+00	1.13E+00	3.60E-02	5.38E-01
	RA-223	323.87		3.88	1.85E+00	1.85E+00	-9.94E-01	8.85E-01
	RA-224	240.98		3.95	3.50E+00	3.50E+00	1.91E+01	1.72E+00
	RA-225	40.00		31.00	4.96E-01	4.96E-01	-1.91E-01	2.40E-01
+	RA-226	186.21	*	3.28	2.69E+00	2.69E+00	4.82E+00	1.32E+00
	TH-227	50.10		8.40	8.85E-01	8.85E-01	-1.00E+00	4.30E-01
		236.00		11.50	9.51E-01		8.58E-01	4.65E-01
		256.20		6.30	1.01E+00		-4.79E-01	4.85E-01
+	AC-228	338.32		11.40	7.98E-01	4.64E-01	1.16E+00	3.85E-01
		911.07	*	27.70	4.64E-01		1.38E+00	2.19E-01
		969.11	*	16.60	8.22E-01		1.77E+00	3.87E-01
	TH-230	48.44		16.90	4.95E-01	4.95E-01	2.86E-01	2.41E-01
		62.85		4.60	1.65E+00		1.53E+00	8.08E-01
		67.67		0.37	1.86E+01		9.00E+00	9.09E+00
	PA-231	283.67		1.60	3.83E+00	3.25E+00	-2.68E+00	1.83E+00
		302.67		2.30	3.25E+00		2.09E+00	1.56E+00
	TH-231	25.64		14.70	3.05E+00	9.75E-01	-7.40E-01	1.48E+00
		84.21		6.40	9.75E-01		-1.45E-01	4.76E-01
	PA-233	311.98		38.60	2.11E-01	2.11E-01	-4.89E-02	1.01E-01
	PA-234	131.20		20.40	2.60E-01	2.60E-01	5.82E-02	1.26E-01
		733.99		8.80	9.61E-01		3.04E-02	4.46E-01
		946.00		12.00	7.67E-01		-3.17E-01	3.52E-01
	PA-234M	1001.03		0.92	1.00E+01	1.00E+01	3.51E+00	4.58E+00
+	TH-234	63.29	*	3.80	2.84E+00	2.84E+00	1.71E+00	1.40E+00
	U-235	143.76		10.50	4.89E-01	4.89E-01	-1.50E-01	2.37E-01
		163.35		4.70	1.10E+00		-4.39E-02	5.30E-01
		205.31		4.70	1.44E+00		3.23E-02	6.97E-01
+	NP-237	86.50	*	12.60	4.73E-01	4.73E-01	3.64E-01	2.30E-01
	NP-239	106.10		22.70	3.26E+00	3.26E+00	1.56E+00	1.58E+00
		228.18		10.70	9.20E+00		-2.25E+00	4.45E+00
		277.60		14.10	7.04E+00		3.49E+00	3.38E+00
	AM-241	59.54		35.90	2.02E-01	2.02E-01	1.15E-01	9.88E-02
+	AM-243	74.67	*	66.00	1.84E-01	1.84E-01	2.93E-01	9.08E-02
	CM-243	209.75		3.29	2.24E+00	4.86E-01	1.08E+00	1.09E+00
		228.14		10.60	6.36E-01		-1.56E-01	3.08E-01
		277.60		14.00	4.86E-01		2.41E-01	2.34E-01

Analysis Report for 1606043-13

CP-5012 02-05

+ = 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-5012 02-05

Elapsed Live time: 3600
Elapsed Real Time: 3618

Channel								
1:	0	0	0	0	0	0	0	0
9:	2	163	177	101	119	93	122	106
17:	125	98	92	97	77	71	90	74
25:	63	72	63	50	56	50	55	46
33:	69	70	48	66	73	59	56	59
41:	67	74	67	67	65	88	133	95
49:	70	76	79	74	80	97	83	74
57:	68	117	89	127	124	108	122	188
65:	137	102	114	121	141	135	121	131
73:	146	148	311	301	247	476	158	105
81:	111	117	98	109	157	103	169	224
89:	128	139	159	102	203	194	109	82
97:	84	66	70	92	70	63	71	78
105:	75	97	73	50	57	73	71	69
113:	65	78	82	89	64	65	67	69
121:	55	61	44	64	73	71	75	63
129:	66	82	68	75	62	54	76	85
137:	60	48	69	66	64	57	64	64
145:	71	45	73	58	60	52	53	65
153:	73	66	76	64	68	54	57	50
161:	60	43	50	48	60	61	51	52
169:	41	62	48	42	39	62	47	49
177:	45	40	47	53	42	46	39	47
185:	64	145	144	57	63	46	44	46
193:	56	54	46	41	51	45	43	45
201:	47	51	41	55	44	42	54	46
209:	62	100	40	45	37	52	52	47
217:	51	33	42	55	46	47	53	43
225:	39	32	42	45	39	44	40	39
233:	39	38	38	42	49	88	425	286
241:	86	95	100	42	32	33	33	32
249:	34	31	41	29	29	35	28	27
257:	24	33	30	34	33	26	27	27
265:	31	26	31	29	29	53	62	51
273:	31	27	31	27	33	35	28	32
281:	21	21	19	33	19	21	27	23
289:	34	25	29	22	23	24	62	146
297:	42	37	18	43	62	27	24	24
305:	15	22	28	18	24	19	18	21
313:	24	16	29	26	22	32	20	29
321:	17	21	25	27	25	33	29	30
329:	41	30	29	24	21	28	19	17
337:	23	46	98	39	27	21	18	18
345:	5	18	16	18	17	15	25	149
353:	142	34	11	23	17	12	15	11
361:	17	16	20	13	24	21	16	13

369:	10	13	17	14	19	15	27	21

Sample Title: CP-5012 02-05

Channel								
377:	21	16	19	13	15	18	16	15
385:	10	27	22	22	12	17	13	19
393:	18	25	23	25	15	19	19	21
401:	12	23	23	20	9	24	13	14
409:	27	29	22	16	14	7	17	20
417:	15	17	15	9	24	18	23	10
425:	19	15	15	19	10	15	11	16
433:	13	18	10	15	19	18	12	20
441:	18	14	12	11	16	14	14	13
449:	14	14	17	11	13	20	9	17
457:	9	12	13	14	19	14	21	41
465:	18	13	12	18	17	10	13	12
473:	13	10	14	11	10	13	16	12
481:	16	12	12	16	7	11	9	19
489:	15	15	13	13	17	10	13	10
497:	9	14	16	13	11	12	11	9
505:	18	8	11	19	17	32	56	44
513:	23	13	8	15	12	9	9	14
521:	13	10	9	13	13	10	4	13
529:	10	9	17	10	12	8	13	9
537:	13	12	12	12	14	7	7	11
545:	15	12	12	4	13	9	10	13
553:	10	9	10	9	13	11	11	10
561:	10	13	12	9	11	14	8	15
569:	5	11	12	13	11	13	12	11
577:	9	8	9	13	21	19	71	105
585:	27	8	9	7	16	13	9	6
593:	9	9	14	5	7	9	7	11
601:	9	13	13	11	17	11	9	11
609:	83	113	42	16	11	10	14	10
617:	14	10	14	10	10	13	7	10
625:	7	13	14	10	9	10	10	14
633:	8	11	4	11	8	8	8	6
641:	4	7	8	8	13	11	13	7
649:	15	15	14	16	5	7	6	10
657:	12	9	12	9	7	14	10	8
665:	10	18	12	10	10	9	12	11
673:	9	4	6	12	13	10	6	9
681:	8	9	7	4	10	7	15	6
689:	4	3	4	8	11	11	8	11
697:	11	6	12	14	11	6	13	7
705:	11	6	7	8	10	10	13	14
713:	6	10	7	9	11	12	11	7
721:	9	9	7	11	8	12	20	21
729:	15	5	13	5	6	11	12	5
737:	4	8	9	9	2	6	10	7
745:	8	10	7	5	10	6	6	3
753:	6	9	13	12	4	8	4	6
761:	3	6	10	8	11	5	11	20
769:	16	8	4	7	11	10	8	8
777:	5	8	10	5	8	8	11	5
785:	5	10	8	6	4	8	9	8
793:	12	12	24	22	9	5	5	6

801:	6	6	4	10	5	7	8	8

Sample Title: CP-5012 02-05

Channel								
809:	5	7	3	7	4	3	10	4
817:	6	6	6	2	7	7	7	8
825:	4	3	5	5	3	9	9	8
833:	13	3	10	12	9	3	3	9
841:	7	2	6	7	5	13	8	7
849:	9	2	3	8	7	3	7	3
857:	6	11	8	13	10	7	6	5
865:	5	2	6	12	5	5	6	5
873:	4	4	8	5	4	5	7	10
881:	10	8	7	7	5	6	4	9
889:	8	4	0	5	3	8	8	5
897:	3	2	6	5	4	8	5	6
905:	10	5	6	5	6	18	72	61
913:	16	6	7	7	7	8	7	4
921:	7	7	9	5	7	5	5	4
929:	5	3	2	8	8	15	11	7
937:	8	6	6	7	12	8	5	6
945:	7	6	9	7	2	7	6	4
953:	8	10	3	3	6	6	2	5
961:	8	1	8	16	20	8	6	16
969:	47	24	8	4	3	1	5	6
977:	3	3	4	4	3	8	7	6
985:	0	5	5	9	7	6	6	5
993:	4	4	5	3	6	3	11	8
1001:	4	5	5	2	4	3	2	9
1009:	6	7	13	2	5	7	6	5
1017:	6	4	4	4	1	4	8	3
1025:	3	8	4	3	6	3	5	11
1033:	6	6	5	5	1	3	2	3
1041:	7	3	5	6	3	10	3	5
1049:	8	6	1	11	2	4	4	4
1057:	4	6	9	2	5	3	0	1
1065:	12	8	2	6	5	4	8	8
1073:	2	8	4	1	5	5	8	7
1081:	3	5	7	10	3	8	6	6
1089:	2	7	8	4	12	10	5	3
1097:	3	1	4	0	4	2	5	7
1105:	3	4	8	5	5	10	7	6
1113:	10	6	5	6	8	8	7	24
1121:	16	11	7	3	7	8	9	7
1129:	7	7	4	3	4	5	6	0
1137:	5	8	8	3	8	5	14	1
1145:	8	9	5	6	5	4	10	2
1153:	6	12	10	7	9	6	4	3
1161:	9	3	7	5	8	7	4	5
1169:	6	7	11	12	6	9	6	6
1177:	5	10	6	5	5	8	6	6
1185:	6	4	6	8	4	3	6	10
1193:	5	3	2	3	3	2	9	8
1201:	6	3	6	5	5	7	10	9
1209:	9	4	9	3	3	7	7	7
1217:	7	5	3	6	4	7	4	6
1225:	9	10	6	11	5	7	9	6

1233:	5	7	9	2	11	9	7	3

Sample Title: CP-5012 02-05

Channel								
1241:	7	7	4	7	2	6	4	7
1249:	8	2	5	5	4	8	5	3
1257:	4	5	7	4	6	2	5	4
1265:	3	4	5	0	8	5	8	4
1273:	2	4	4	6	4	6	4	3
1281:	4	4	3	5	6	4	1	5
1289:	3	7	6	5	3	4	5	8
1297:	7	5	3	3	3	3	3	2
1305:	7	3	3	2	2	3	7	3
1313:	4	3	0	7	1	3	6	2
1321:	2	3	2	6	7	2	5	4
1329:	6	5	2	1	3	1	0	3
1337:	2	4	3	5	0	6	4	1
1345:	0	3	2	4	2	4	2	1
1353:	2	6	3	4	5	3	4	2
1361:	1	2	3	5	2	0	2	4
1369:	2	0	3	2	1	3	0	6
1377:	10	3	4	3	1	5	1	3
1385:	1	5	4	2	1	3	1	0
1393:	2	1	2	2	2	4	3	2
1401:	1	2	0	0	4	2	3	5
1409:	0	3	3	1	1	1	1	3
1417:	2	1	1	1	2	0	2	4
1425:	0	5	0	2	1	2	2	0
1433:	1	3	1	1	2	4	1	0
1441:	1	2	0	4	2	5	2	0
1449:	1	4	3	2	1	2	1	1
1457:	3	8	46	163	190	72	14	1
1465:	0	1	0	3	0	3	0	0
1473:	1	1	3	3	1	3	2	5
1481:	2	3	4	1	0	1	0	1
1489:	1	3	0	4	0	1	5	2
1497:	3	3	2	2	1	0	1	0
1505:	0	1	4	0	8	4	2	3
1513:	3	2	1	5	0	4	0	0
1521:	2	2	1	0	2	1	4	1
1529:	2	1	1	1	4	2	1	1
1537:	0	1	2	1	1	0	1	0
1545:	0	1	2	1	4	2	1	1
1553:	2	0	1	0	2	0	2	0
1561:	1	1	2	1	2	2	2	1
1569:	3	0	1	0	0	0	2	0
1577:	1	1	1	0	2	3	1	2
1585:	0	1	3	4	4	1	3	3
1593:	3	2	0	0	2	1	2	0
1601:	1	1	3	2	0	0	0	1
1609:	0	1	1	0	2	0	1	0
1617:	0	1	4	3	1	3	2	0
1625:	0	3	3	0	5	4	5	2
1633:	2	3	0	0	0	3	0	1
1641:	1	1	1	0	1	2	1	1
1649:	2	0	0	0	1	0	0	1
1657:	0	0	1	0	2	0	1	1

1665:	2	1	2	0	0	1	0	2

Sample Title: CP-5012 02-05

Channel								
1673:	2	3	1	0	0	1	1	2
1681:	1	0	1	1	1	2	3	0
1689:	2	1	0	0	2	2	1	0
1697:	1	1	0	0	0	0	1	1
1705:	0	0	1	1	2	1	3	1
1713:	0	1	0	1	3	1	2	2
1721:	1	0	0	0	0	2	2	0
1729:	3	4	3	0	0	2	3	1
1737:	1	1	1	1	3	0	0	2
1745:	1	1	1	1	1	0	1	2
1753:	3	1	1	1	0	0	1	0
1761:	1	3	6	17	11	2	0	1
1769:	2	1	2	0	2	0	2	0
1777:	1	0	1	3	1	1	0	2
1785:	2	1	1	1	0	0	0	0
1793:	0	0	1	1	1	1	3	0
1801:	0	0	1	0	2	1	0	1
1809:	0	0	0	0	0	1	1	2
1817:	1	1	2	1	0	0	1	0
1825:	0	0	0	1	0	1	2	2
1833:	0	1	2	1	1	0	3	1
1841:	0	3	1	0	0	1	2	2
1849:	0	0	0	1	0	1	2	0
1857:	0	0	2	2	1	0	2	1
1865:	0	0	0	3	0	0	1	0
1873:	1	4	1	0	1	0	0	3
1881:	2	1	1	1	1	1	1	0
1889:	2	0	1	1	0	1	1	0
1897:	0	2	0	2	2	1	1	0
1905:	2	3	0	0	3	1	0	2
1913:	3	2	0	2	0	0	3	0
1921:	0	2	1	0	1	3	0	1
1929:	1	1	0	0	3	0	0	1
1937:	0	1	1	2	0	2	0	1
1945:	0	0	1	1	0	0	2	2
1953:	3	1	0	1	0	1	1	0
1961:	1	1	0	0	0	0	0	1
1969:	0	1	1	2	1	2	2	1
1977:	0	0	1	1	1	0	3	0
1985:	1	0	2	0	1	2	1	0
1993:	0	0	0	2	0	3	1	3
2001:	1	1	1	1	0	0	2	0
2009:	0	0	1	1	0	1	0	0
2017:	0	0	1	0	3	0	1	1
2025:	1	1	0	1	0	0	1	0
2033:	0	0	0	1	0	0	2	3
2041:	3	0	1	0	1	3	1	1
2049:	0	0	0	0	0	0	0	0
2057:	1	2	0	1	1	0	0	1
2065:	3	1	0	1	1	1	0	0
2073:	0	1	1	1	1	2	2	2
2081:	0	0	0	0	0	1	0	2
2089:	2	1	0	1	0	1	0	1

2097:	1	2	0	2	3	3	4	2

Sample Title: CP-5012 02-05

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

2529:	1	0	0	0	0	0	1	0

Sample Title: CP-5012 02-05

Channel								
2537:	0	2	1	0	0	1	1	0
2545:	0	0	0	0	0	0	2	0
2553:	0	1	0	1	1	0	0	0
2561:	0	0	0	0	0	1	0	0
2569:	0	0	0	0	0	0	0	1
2577:	0	1	0	0	0	1	0	0
2585:	1	0	2	0	0	0	0	0
2593:	0	0	0	0	0	0	0	1
2601:	1	0	1	1	2	1	1	1
2609:	0	0	3	3	17	17	16	3
2617:	0	0	0	1	0	1	1	1
2625:	1	0	0	0	1	0	0	0
2633:	0	0	0	0	0	0	1	0
2641:	0	0	0	0	0	0	0	0
2649:	1	0	0	0	0	0	0	0
2657:	0	0	0	1	0	1	1	0
2665:	0	0	0	0	0	0	0	0
2673:	0	0	0	0	0	0	0	0
2681:	0	0	1	0	0	1	2	0
2689:	0	0	0	0	0	0	0	1
2697:	0	1	0	0	0	0	0	0
2705:	0	0	0	0	0	0	0	0
2713:	0	1	0	0	0	2	0	1
2721:	0	0	0	0	0	0	0	0
2729:	0	0	2	0	0	0	0	0
2737:	0	0	0	0	2	0	0	0
2745:	0	0	0	0	0	0	2	1
2753:	0	0	1	0	0	0	0	0
2761:	0	0	0	0	0	0	1	0
2769:	0	0	0	0	0	1	0	0
2777:	0	1	0	0	0	1	1	0
2785:	0	0	0	0	0	0	0	1
2793:	0	0	1	1	1	1	0	0
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	0	0	0	1	0
2825:	0	1	0	1	0	0	1	0
2833:	0	1	0	0	0	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:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	1	0	0	0
2881:	0	0	0	0	1	0	0	1
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	1	0	0	0	0	0
2921:	0	0	0	0	1	0	0	0
2929:	0	0	0	0	0	1	0	1
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	1	0	0	0
2953:	0	0	0	0	1	0	0	0

2961:	0	1	0	1	1	0	0	1

Sample Title: CP-5012 02-05

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

3393:	0	0	2	0	0	1	0	0

Sample Title: CP-5012 02-05

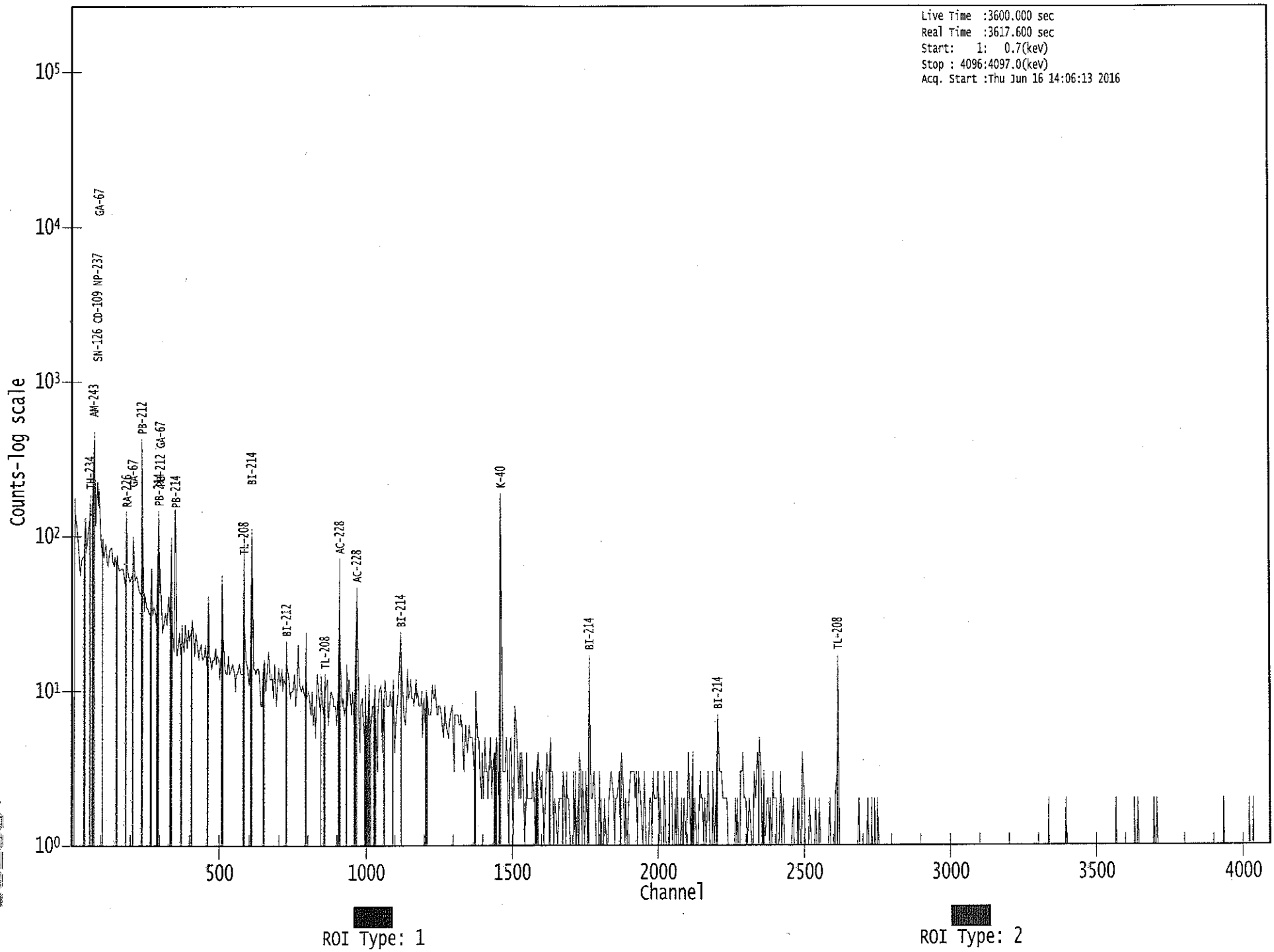
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	1	1	0	0	0
3417:	0	1	0	0	0	0	0	1
3425:	0	0	0	1	0	1	0	0
3433:	0	1	0	1	0	0	0	0
3441:	0	0	0	0	1	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	1	0	1
3465:	0	0	0	0	0	0	0	0
3473:	0	0	1	0	0	0	0	0
3481:	0	0	0	0	0	0	0	1
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	1	0	0	0	0	0
3513:	0	0	1	0	0	0	0	0
3521:	0	0	0	0	0	1	1	0
3529:	0	1	0	1	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	1	0	1	0	0	0
3553:	0	0	0	0	0	1	0	0
3561:	0	0	0	0	0	0	2	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	0	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	1	1
3625:	0	0	0	0	2	0	0	0
3633:	0	0	0	0	0	1	1	0
3641:	0	2	0	1	1	0	0	0
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	0	0
3673:	1	0	0	0	0	0	0	0
3681:	0	0	1	0	0	0	0	0
3689:	0	0	0	0	0	0	0	2
3697:	0	0	1	0	0	0	1	0
3705:	0	2	0	0	0	0	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	1	0	0	0	1
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	1	0	0	0	0
3761:	0	0	0	0	0	1	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	1	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	1
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

3825:	0	0	0	0	0	1	1	1

Sample Title: CP-5012 02-05

Channel								
3833:	0	0	0	0	0	0	1	0
3841:	0	1	0	0	0	0	0	0
3849:	0	0	0	0	0	1	0	0
3857:	0	1	0	1	0	0	0	0
3865:	0	0	0	0	1	0	0	0
3873:	0	0	0	1	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	1	0	0	0
3897:	0	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	0	0	0	0	0
3929:	0	1	0	1	0	2	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	0	0	1	0	0
3969:	0	0	0	1	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	1	1
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	1
4017:	0	0	0	0	2	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	2	0	0	0	0
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	0	0	0	0	1	0	0
4073:	0	0	1	0	0	0	0	0
4081:	0	1	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000039018.CNF



Apex-Gamma

Analysis Report for 1606043-14
CP-5012 05-09

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-14
Sample Description	: CP-5012 05-09
Sample Type	: SOIL
Sample Size	: 2.836E+02 grams
Facility	: Countroom
Sample Taken On	: 6/7/2016 12:01:02PM
Acquisition Started	: 6/16/2016 2:53:57PM
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	: 39020

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1606043-14

CP-5012 05-09

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 3:54:01PM
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	33.12	33.48	0.0000	0.00
2	46.95	47.30	0.0000	0.00
3	63.49	63.83	0.0000	0.00
4	76.82	77.16	0.0000	0.00
5	93.74	94.07	0.0000	0.00
6	143.03	143.35	0.0000	0.00
7	155.60	155.92	0.0000	0.00
8	177.55	177.85	0.0000	0.00
9	183.55	183.85	0.0000	0.00
10	186.67	186.97	0.0000	0.00
11	226.09	226.38	0.0000	0.00
12	239.70	239.98	0.0000	0.00
13	271.24	271.51	0.0000	0.00
14	278.34	278.61	0.0000	0.00
15	295.71	295.98	0.0000	0.00
16	300.97	301.24	0.0000	0.00
17	338.83	339.08	0.0000	0.00
18	352.60	352.85	0.0000	0.00
19	409.85	410.08	0.0000	0.00
20	441.09	441.31	0.0000	0.00
21	463.57	463.78	0.0000	0.00
22	511.76	511.95	0.0000	0.00
23	563.26	563.44	0.0000	0.00
24	583.71	583.88	0.0000	0.00
25	609.85	610.01	0.0000	0.00
26	728.28	728.40	0.0000	0.00
27	768.45	768.55	0.0000	0.00
28	800.46	800.55	0.0000	0.00
29	896.79	896.85	0.0000	0.00
30	911.87	911.92	0.0000	0.00
31	969.74	969.77	0.0000	0.00
32	1050.73	1050.74	0.0000	0.00
33	1120.67	1120.65	0.0000	0.00
34	1218.65	1218.59	0.0000	0.00
35	1239.19	1239.13	0.0000	0.00
36	1309.64	1309.56	0.0000	0.00
37	1409.36	1409.24	0.0000	0.00
38	1461.58	1461.44	0.0000	0.00
39	1527.23	1527.06	0.0000	0.00
40	1764.47	1764.22	0.0000	0.00
41	2105.16	2104.77	0.0000	0.00
42	2205.09	2204.67	0.0000	0.00

Analysis Report for 1606043-14

CP-5012 05-09

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2217.46	2217.04	0.0000	0.00
44	2336.31	2335.83	0.0000	0.00
45	2615.00	2614.42	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606043-14

CP-5012 05-09

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 3:54:01PM

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	33.12	32 -	36	33.48	3.99E+01	49.28	5.06E+02	1.31
	2	46.95	44 -	49	47.30	1.11E+02	63.45	7.19E+02	1.82
	3	63.49	59 -	68	63.83	2.70E+02	116.75	1.80E+03	1.43
	4	76.82	72 -	81	77.16	9.21E+02	130.87	1.92E+03	3.11
	5	93.74	92 -	97	94.07	2.58E+02	79.66	1.01E+03	1.39
	6	143.03	140 -	147	143.35	6.11E+01	69.20	7.60E+02	4.05
	7	155.60	153 -	160	155.92	7.30E+01	62.99	6.14E+02	4.66
M	8	177.55	174 -	192	177.85	3.95E+01	43.11	3.52E+02	1.61
m	9	183.55	174 -	192	183.85	3.29E+01	42.83	3.64E+02	1.62
m	10	186.67	174 -	192	186.97	2.10E+02	50.31	3.77E+02	1.62
	11	226.09	223 -	229	226.38	4.24E+01	50.51	4.31E+02	3.38
	12	239.70	234 -	245	239.98	9.86E+02	97.24	6.86E+02	1.90
	13	271.24	268 -	275	271.51	5.02E+01	51.30	4.08E+02	3.55
	14	278.34	275 -	281	278.61	4.69E+01	45.57	3.38E+02	1.99
M	15	295.71	291 -	306	295.98	1.93E+02	40.68	1.93E+02	1.66
m	16	300.97	291 -	306	301.24	5.94E+01	37.52	2.22E+02	2.11
M	17	338.83	335 -	359	339.08	1.79E+02	38.74	1.94E+02	1.66
m	18	352.60	335 -	359	352.85	3.40E+02	45.53	1.57E+02	1.79
	19	409.85	405 -	413	410.08	3.45E+01	40.61	2.29E+02	1.47
	20	441.09	439 -	444	441.31	2.46E+01	27.11	1.25E+02	3.02
	21	463.57	458 -	470	463.78	7.90E+01	49.72	2.54E+02	3.12
	22	511.76	506 -	518	511.95	1.92E+02	53.53	2.46E+02	2.30
	23	563.26	562 -	566	563.44	1.80E+01	21.42	8.39E+01	1.06
	24	583.71	579 -	588	583.88	1.95E+02	48.89	2.31E+02	1.44
	25	609.85	607 -	614	610.01	2.22E+02	44.05	1.74E+02	1.66
	26	728.28	723 -	732	728.40	5.50E+01	34.64	1.40E+02	1.93
	27	768.45	766 -	771	768.55	2.33E+01	20.95	6.94E+01	3.00
	28	800.46	791 -	813	800.55	5.77E+01	59.04	2.39E+02	1.73
	29	896.79	894 -	899	896.85	1.76E+01	17.55	4.69E+01	2.62
	30	911.87	909 -	916	911.92	1.58E+02	32.31	7.09E+01	2.37
	31	969.74	966 -	974	969.77	1.08E+02	39.98	1.68E+02	1.95
	32	1050.73	1047 -	1055	1050.74	1.80E+01	23.24	7.20E+01	2.35
	33	1120.67	1117 -	1125	1120.65	5.91E+01	27.06	7.58E+01	1.90
	34	1218.65	1215 -	1221	1218.59	1.85E+01	22.21	7.51E+01	1.52
	35	1239.19	1235 -	1243	1239.13	3.73E+01	27.66	9.54E+01	4.64
	36	1309.64	1307 -	1312	1309.56	1.84E+01	13.71	2.12E+01	1.46
	37	1409.36	1405 -	1415	1409.24	2.50E+01	16.28	2.20E+01	2.63
	38	1461.58	1456 -	1467	1461.44	6.45E+02	53.59	3.71E+01	2.29
	39	1527.23	1525 -	1529	1527.06	7.00E+00	6.18	2.00E+00	1.15
	40	1764.47	1756 -	1769	1764.22	3.47E+01	25.30	5.46E+01	2.66

Analysis Report for 1606043-14

CP-5012 05-09

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2105.16	2100 -	2108	2104.77	8.21E+00	10.81	1.16E+01	4.66
42	2205.09	2201 -	2208	2204.67	1.80E+01	8.49	0.00E+00	3.25
43	2217.46	2215 -	2219	2217.04	8.20E+00	7.25	3.60E+00	2.94
44	2336.31	2333 -	2338	2335.83	5.00E+00	7.07	6.00E+00	2.38
45	2615.00	2610 -	2619	2614.42	9.20E+01	20.93	1.00E+01	2.50

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 3:54:01PM

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	33.12	32 -	36	3.99E+01	49.28	5.06E+02	3.92E+01
	2	46.95	44 -	49	1.11E+02	63.45	7.19E+02	4.92E+01
	3	63.49	59 -	68	2.70E+02	116.75	1.80E+03	9.21E+01
	4	76.82	72 -	81	9.21E+02	130.87	1.92E+03	1.49E+02
	5	93.74	92 -	97	2.58E+02	79.66	1.01E+03	5.99E+01
	6	143.03	140 -	147	6.11E+01	69.20	7.60E+02	5.54E+01
	7	155.60	153 -	160	7.30E+01	62.99	6.14E+02	4.98E+01
M	8	177.55	174 -	192	3.95E+01	43.11	3.52E+02	3.09E+01
m	9	183.55	174 -	192	3.29E+01	42.83	3.64E+02	3.14E+01
m	10	186.67	174 -	192	2.10E+02	50.31	3.77E+02	3.19E+01
	11	226.09	223 -	229	4.24E+01	50.51	4.31E+02	4.01E+01
	12	239.70	234 -	245	9.86E+02	97.24	6.86E+02	6.10E+01
	13	271.24	268 -	275	5.02E+01	51.30	4.08E+02	4.05E+01
	14	278.34	275 -	281	4.69E+01	45.57	3.38E+02	3.57E+01
M	15	295.71	291 -	306	1.93E+02	40.68	1.93E+02	2.29E+01
m	16	300.97	291 -	306	5.94E+01	37.52	2.22E+02	2.45E+01
M	17	338.83	335 -	359	1.79E+02	38.74	1.94E+02	2.29E+01
m	18	352.60	335 -	359	3.40E+02	45.53	1.57E+02	2.06E+01
	19	409.85	405 -	413	3.45E+01	40.61	2.29E+02	3.20E+01
	20	441.09	439 -	444	2.46E+01	27.11	1.25E+02	2.07E+01
	21	463.57	458 -	470	7.90E+01	49.72	2.54E+02	3.82E+01
	22	511.76	506 -	518	1.92E+02	53.53	2.46E+02	3.76E+01

Analysis Report for 1606043-14

CP-5012 05-09

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
23	563.26	562 -	566	1.80E+01	21.42	8.39E+01	1.62E+01
24	583.71	579 -	588	1.95E+02	48.89	2.31E+02	3.30E+01
25	609.85	607 -	614	2.22E+02	44.05	1.74E+02	2.67E+01
26	728.28	723 -	732	5.50E+01	34.64	1.40E+02	2.57E+01
27	768.45	766 -	771	2.33E+01	20.95	6.94E+01	1.53E+01
28	800.46	791 -	813	5.77E+01	59.04	2.39E+02	1.48E+01
29	896.79	894 -	899	1.76E+01	17.55	4.69E+01	1.27E+01
30	911.87	909 -	916	1.58E+02	32.31	7.09E+01	1.67E+01
31	969.74	966 -	974	1.08E+02	39.98	1.68E+02	2.81E+01
32	1050.73	1047 -	1055	1.80E+01	23.24	7.20E+01	1.78E+01
33	1120.67	1117 -	1125	5.91E+01	27.06	7.58E+01	1.83E+01
34	1218.65	1215 -	1221	1.85E+01	22.21	7.51E+01	1.68E+01
35	1239.19	1235 -	1243	3.73E+01	27.66	9.54E+01	2.04E+01
36	1309.64	1307 -	1312	1.84E+01	13.71	2.12E+01	8.80E+00
37	1409.36	1405 -	1415	2.50E+01	16.28	2.20E+01	1.06E+01
38	1461.58	1456 -	1467	6.45E+02	53.59	3.71E+01	1.40E+01
39	1527.23	1525 -	1529	7.00E+00	6.18	2.00E+00	2.63E+00
40	1764.47	1756 -	1769	3.47E+01	25.30	5.46E+01	1.84E+01
41	2105.16	2100 -	2108	8.21E+00	10.81	1.16E+01	7.53E+00
42	2205.09	2201 -	2208	1.80E+01	8.49	0.00E+00	0.00E+00
43	2217.46	2215 -	2219	8.20E+00	7.25	3.60E+00	3.65E+00
44	2336.31	2333 -	2338	5.00E+00	7.07	6.00E+00	4.50E+00
45	2615.00	2610 -	2619	9.20E+01	20.93	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 3:54:01PM

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	33.12	32 -	36	33.48	3.99E+01	49.28	5.06E+02	I-129
2	46.95	44 -	49	47.30	1.11E+02	63.45	7.19E+02	PB-210

Analysis Report for 1606043-14

CP-5012 05-09

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	3	63.49	59 -	68	63.83	2.70E+02	116.75	1.80E+03	TH-234
									TH-230
	4	76.82	72 -	81	77.16	9.21E+02	130.87	1.92E+03	.....
	5	93.74	92 -	97	94.07	2.58E+02	79.66	1.01E+03	GA-67
	6	143.03	140 -	147	143.35	6.11E+01	69.20	7.60E+02	U-235
	7	155.60	153 -	160	155.92	7.30E+01	62.99	6.14E+02	.....
M	8	177.55	174 -	192	177.85	3.95E+01	43.11	3.52E+02	CS-136
m	9	183.55	174 -	192	183.85	3.29E+01	42.83	3.64E+02	HO-166M
m	10	186.67	174 -	192	186.97	2.10E+02	50.31	3.77E+02	RA-226
	11	226.09	223 -	229	226.38	4.24E+01	50.51	4.31E+02	.....
	12	239.70	234 -	245	239.98	9.86E+02	97.24	6.86E+02	.....
	13	271.24	268 -	275	271.51	5.02E+01	51.30	4.08E+02	LU-173
	14	278.34	275 -	281	278.61	4.69E+01	45.57	3.38E+02	CM-243
									NP-239
									HG-203
M	15	295.71	291 -	306	295.98	1.93E+02	40.68	1.93E+02	PB-214
m	16	300.97	291 -	306	301.24	5.94E+01	37.52	2.22E+02	GA-67
									PB-212
									BI-210M
M	17	338.83	335 -	359	339.08	1.79E+02	38.74	1.94E+02	AC-228
m	18	352.60	335 -	359	352.85	3.40E+02	45.53	1.57E+02	PB-214
	19	409.85	405 -	413	410.08	3.45E+01	40.61	2.29E+02	.....
	20	441.09	439 -	444	441.31	2.46E+01	27.11	1.25E+02	.....
	21	463.57	458 -	470	463.78	7.90E+01	49.72	2.54E+02	SB-125
	22	511.76	506 -	518	511.95	1.92E+02	53.53	2.46E+02	.....
	23	563.26	562 -	566	563.44	1.80E+01	21.42	8.39E+01	CS-134
	24	583.71	579 -	588	583.88	1.95E+02	48.89	2.31E+02	TL-208
	25	609.85	607 -	614	610.01	2.22E+02	44.05	1.74E+02	BI-214
	26	728.28	723 -	732	728.40	5.50E+01	34.64	1.40E+02	.....
	27	768.45	766 -	771	768.55	2.33E+01	20.95	6.94E+01	.....
	28	800.46	791 -	813	800.55	5.77E+01	59.04	2.39E+02	.....
	29	896.79	894 -	899	896.85	1.76E+01	17.55	4.69E+01	.....
	30	911.87	909 -	916	911.92	1.58E+02	32.31	7.09E+01	LU-172
									AC-228
	31	969.74	966 -	974	969.77	1.08E+02	39.98	1.68E+02	AC-228
	32	1050.73	1047 -	1055	1050.74	1.80E+01	23.24	7.20E+01	.....
	33	1120.67	1117 -	1125	1120.65	5.91E+01	27.06	7.58E+01	SC-46
									BI-214
									TA-182
	34	1218.65	1215 -	1221	1218.59	1.85E+01	22.21	7.51E+01	.....
	35	1239.19	1235 -	1243	1239.13	3.73E+01	27.66	9.54E+01	CO-56
	36	1309.64	1307 -	1312	1309.56	1.84E+01	13.71	2.12E+01	.....
	37	1409.36	1405 -	1415	1409.24	2.50E+01	16.28	2.20E+01	.....
	38	1461.58	1456 -	1467	1461.44	6.45E+02	53.59	3.71E+01	K-40
	39	1527.23	1525 -	1529	1527.06	7.00E+00	6.18	2.00E+00	.....
	40	1764.47	1756 -	1769	1764.22	3.47E+01	25.30	5.46E+01	BI-214
	41	2105.16	2100 -	2108	2104.77	8.21E+00	10.81	1.16E+01	.....
	42	2205.09	2201 -	2208	2204.67	1.80E+01	8.49	0.00E+00	BI-214
	43	2217.46	2215 -	2219	2217.04	8.20E+00	7.25	3.60E+00	.....
	44	2336.31	2333 -	2338	2335.83	5.00E+00	7.07	6.00E+00	.....
	45	2615.00	2610 -	2619	2614.42	9.20E+01	20.93	1.00E+01	TL-208

Analysis Report for 1606043-14

CP-5012 05-09

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 3:54:01PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	33.12	3.99E+01	49.28	6.81E-03	1.78E-03
	2	46.95	1.11E+02	63.45	1.71E-02	1.78E-03
	3	63.49	2.70E+02	116.75	2.50E-02	1.92E-03
	4	76.82	9.21E+02	130.87	2.77E-02	2.36E-03
	5	93.74	2.58E+02	79.66	2.86E-02	2.63E-03
	6	143.03	6.11E+01	69.20	2.56E-02	2.12E-03
	7	155.60	7.30E+01	62.99	2.46E-02	2.15E-03
M	8	177.55	3.95E+01	43.11	2.30E-02	2.09E-03
m	9	183.55	3.29E+01	42.83	2.26E-02	2.05E-03
m	10	186.67	2.10E+02	50.31	2.23E-02	2.02E-03
	11	226.09	4.24E+01	50.51	1.99E-02	1.73E-03
	12	239.70	9.86E+02	97.24	1.92E-02	1.63E-03
	13	271.24	5.02E+01	51.30	1.77E-02	1.40E-03
	14	278.34	4.69E+01	45.57	1.74E-02	1.35E-03
M	15	295.71	1.93E+02	40.68	1.67E-02	1.31E-03
m	16	300.97	5.94E+01	37.52	1.65E-02	1.30E-03
M	17	338.83	1.79E+02	38.74	1.52E-02	1.22E-03
m	18	352.60	3.40E+02	45.53	1.47E-02	1.19E-03
	19	409.85	3.45E+01	40.61	1.32E-02	1.10E-03
	20	441.09	2.46E+01	27.11	1.25E-02	1.06E-03
	21	463.57	7.90E+01	49.72	1.21E-02	1.04E-03
	22	511.76	1.92E+02	53.53	1.12E-02	9.90E-04
	23	563.26	1.80E+01	21.42	1.04E-02	9.36E-04
	24	583.71	1.95E+02	48.89	1.02E-02	9.15E-04
	25	609.85	2.22E+02	44.05	9.82E-03	8.88E-04
	26	728.28	5.50E+01	34.64	8.55E-03	7.74E-04
	27	768.45	2.33E+01	20.95	8.19E-03	7.38E-04
	28	800.46	5.77E+01	59.04	7.93E-03	7.10E-04
	29	896.79	1.76E+01	17.55	7.24E-03	6.23E-04
	30	911.87	1.58E+02	32.31	7.14E-03	6.15E-04
	31	969.74	1.08E+02	39.98	6.80E-03	5.85E-04
	32	1050.73	1.80E+01	23.24	6.38E-03	5.43E-04
	33	1120.67	5.91E+01	27.06	6.06E-03	5.06E-04
	34	1218.65	1.85E+01	22.21	5.68E-03	4.71E-04

Analysis Report for 1606043-14

CP-5012 05-09

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1239.19	3.73E+01	27.66	5.61E-03	4.68E-04
36	1309.64	1.84E+01	13.71	5.38E-03	4.55E-04
37	1409.36	2.50E+01	16.28	5.10E-03	4.32E-04
38	1461.58	6.45E+02	53.59	4.97E-03	4.19E-04
39	1527.23	7.00E+00	6.18	4.82E-03	4.03E-04
40	1764.47	3.47E+01	25.30	4.40E-03	3.44E-04
41	2105.16	8.21E+00	10.81	4.02E-03	3.26E-04
42	2205.09	1.80E+01	8.49	3.95E-03	3.26E-04
43	2217.46	8.20E+00	7.25	3.94E-03	3.26E-04
44	2336.31	5.00E+00	7.07	3.88E-03	3.26E-04
45	2615.00	9.20E+01	20.93	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 3:54:01PM

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	33.12	3.99E+01	49.28			3.99E+01	4.93E+01
	2	46.95	1.11E+02	63.45	4.33E+01	8.35E+00	6.80E+01	6.40E+01
	3	63.49	2.70E+02	116.75	1.14E+02	2.81E+01	1.56E+02	1.20E+02
	4	76.82	9.21E+02	130.87			9.21E+02	1.31E+02
	5	93.74	2.58E+02	79.66	1.29E+02	7.14E+00	1.29E+02	8.00E+01
	6	143.03	6.11E+01	69.20			6.11E+01	6.92E+01
	7	155.60	7.30E+01	62.99			7.30E+01	6.30E+01
M	8	177.55	3.95E+01	43.11			3.95E+01	4.31E+01
m	9	183.55	3.29E+01	42.83			3.29E+01	4.28E+01
m	10	186.67	2.10E+02	50.31	5.81E+01	8.50E+00	1.52E+02	5.10E+01
	11	226.09	4.24E+01	50.51			4.24E+01	5.05E+01
	12	239.70	9.86E+02	97.24	1.81E+01	5.76E+00	9.68E+02	9.74E+01
	13	271.24	5.02E+01	51.30			5.02E+01	5.13E+01
	14	278.34	4.69E+01	45.57			4.69E+01	4.56E+01
M	15	295.71	1.93E+02	40.68	1.02E+00	5.38E+00	1.92E+02	4.10E+01
m	16	300.97	5.94E+01	37.52			5.94E+01	3.75E+01
M	17	338.83	1.79E+02	38.74	3.86E+00	4.98E+00	1.75E+02	3.91E+01
m	18	352.60	3.40E+02	45.53	7.25E+00	4.86E+00	3.33E+02	4.58E+01
	19	409.85	3.45E+01	40.61			3.45E+01	4.06E+01

Analysis Report for 1606043-14

CP-5012 05-09

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
20	441.09	2.46E+01	27.11			2.46E+01	2.71E+01
21	463.57	7.90E+01	49.72			7.90E+01	4.97E+01
22	511.76	1.92E+02	53.53	7.58E+01	5.38E+00	1.16E+02	5.38E+01
23	563.26	1.80E+01	21.42			1.80E+01	2.14E+01
24	583.71	1.95E+02	48.89	6.11E+00	3.78E+00	1.88E+02	4.90E+01
25	609.85	2.22E+02	44.05	6.74E+00	3.64E+00	2.15E+02	4.42E+01
26	728.28	5.50E+01	34.64			5.50E+01	3.46E+01
27	768.45	2.33E+01	20.95			2.33E+01	2.10E+01
28	800.46	5.77E+01	59.04			5.77E+01	5.90E+01
29	896.79	1.76E+01	17.55			1.76E+01	1.75E+01
30	911.87	1.58E+02	32.31	4.21E+00	2.98E+00	1.53E+02	3.24E+01
31	969.74	1.08E+02	39.98			1.08E+02	4.00E+01
32	1050.73	1.80E+01	23.24			1.80E+01	2.32E+01
33	1120.67	5.91E+01	27.06			5.91E+01	2.71E+01
34	1218.65	1.85E+01	22.21			1.85E+01	2.22E+01
35	1239.19	3.73E+01	27.66			3.73E+01	2.77E+01
36	1309.64	1.84E+01	13.71	1.27E+00	2.06E+00	1.71E+01	1.39E+01
37	1409.36	2.50E+01	16.28			2.50E+01	1.63E+01
38	1461.58	6.45E+02	53.59	6.83E+00	2.10E+00	6.39E+02	5.36E+01
39	1527.23	7.00E+00	6.18			7.00E+00	6.18E+00
40	1764.47	3.47E+01	25.30	1.66E+00	1.65E+00	3.30E+01	2.54E+01
41	2105.16	8.21E+00	10.81			8.21E+00	1.08E+01
42	2205.09	1.80E+01	8.49			1.80E+01	8.49E+00
43	2217.46	8.20E+00	7.25			8.20E+00	7.25E+00
44	2336.31	5.00E+00	7.07			5.00E+00	7.07E+00
45	2615.00	9.20E+01	20.93	4.95E+00	1.35E+00	8.70E+01	2.10E+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 3:54:01PM

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	33.12	3.99E+01	49.28			3.99E+01	4.93E+01
2	46.95	1.11E+02	63.45	4.33E+01	8.35E+00	6.80E+01	6.40E+01

Analysis Report for 1606043-14

CP-5012 05-09

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	3	63.49	2.70E+02	116.75	1.14E+02	2.81E+01	1.56E+02	1.20E+02
	4	76.82	9.21E+02	130.87			9.21E+02	1.31E+02
	5	93.74	2.58E+02	79.66	1.29E+02	7.14E+00	1.29E+02	8.00E+01
	6	143.03	6.11E+01	69.20			6.11E+01	6.92E+01
	7	155.60	7.30E+01	62.99			7.30E+01	6.30E+01
M	8	177.55	3.95E+01	43.11			3.95E+01	4.31E+01
m	9	183.55	3.29E+01	42.83			3.29E+01	4.28E+01
m	10	186.67	2.10E+02	50.31	5.81E+01	8.50E+00	1.52E+02	5.10E+01
	11	226.09	4.24E+01	50.51			4.24E+01	5.05E+01
	12	239.70	9.86E+02	97.24	1.81E+01	5.76E+00	9.68E+02	9.74E+01
	13	271.24	5.02E+01	51.30			5.02E+01	5.13E+01
	14	278.34	4.69E+01	45.57			4.69E+01	4.56E+01
M	15	295.71	1.93E+02	40.68	1.02E+00	5.38E+00	1.92E+02	4.10E+01
m	16	300.97	5.94E+01	37.52			5.94E+01	3.75E+01
M	17	338.83	1.79E+02	38.74	3.86E+00	4.98E+00	1.75E+02	3.91E+01
m	18	352.60	3.40E+02	45.53	7.25E+00	4.86E+00	3.33E+02	4.58E+01
	19	409.85	3.45E+01	40.61			3.45E+01	4.06E+01
	20	441.09	2.46E+01	27.11			2.46E+01	2.71E+01
	21	463.57	7.90E+01	49.72			7.90E+01	4.97E+01
	22	511.76	1.92E+02	53.53	7.58E+01	5.38E+00	1.16E+02	5.38E+01
	23	563.26	1.80E+01	21.42			1.80E+01	2.14E+01
	24	583.71	1.95E+02	48.89	6.11E+00	3.78E+00	1.88E+02	4.90E+01
	25	609.85	2.22E+02	44.05	6.74E+00	3.64E+00	2.15E+02	4.42E+01
	26	728.28	5.50E+01	34.64			5.50E+01	3.46E+01
	27	768.45	2.33E+01	20.95			2.33E+01	2.10E+01
	28	800.46	5.77E+01	59.04			5.77E+01	5.90E+01
	29	896.79	1.76E+01	17.55			1.76E+01	1.75E+01
	30	911.87	1.58E+02	32.31	4.21E+00	2.98E+00	1.53E+02	3.24E+01
	31	969.74	1.08E+02	39.98			1.08E+02	4.00E+01
	32	1050.73	1.80E+01	23.24			1.80E+01	2.32E+01
	33	1120.67	5.91E+01	27.06			5.91E+01	2.71E+01
	34	1218.65	1.85E+01	22.21			1.85E+01	2.22E+01
	35	1239.19	3.73E+01	27.66			3.73E+01	2.77E+01
	36	1309.64	1.84E+01	13.71	1.27E+00	2.06E+00	1.71E+01	1.39E+01
	37	1409.36	2.50E+01	16.28			2.50E+01	1.63E+01
	38	1461.58	6.45E+02	53.59	6.83E+00	2.10E+00	6.39E+02	5.36E+01
	39	1527.23	7.00E+00	6.18			7.00E+00	6.18E+00
	40	1764.47	3.47E+01	25.30	1.66E+00	1.65E+00	3.30E+01	2.54E+01
	41	2105.16	8.21E+00	10.81			8.21E+00	1.08E+01
	42	2205.09	1.80E+01	8.49			1.80E+01	8.49E+00
	43	2217.46	8.20E+00	7.25			8.20E+00	7.25E+00
	44	2336.31	5.00E+00	7.07			5.00E+00	7.07E+00
	45	2615.00	9.20E+01	20.93	4.95E+00	1.35E+00	8.70E+01	2.10E+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 1606043-14

CP-5012 05-09

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	0.910	1460.81	*	10.67	3.19E+01	3.85E+00
GA-67	0.859	93.31	*	35.70	2.33E+00	4.08E+00
		208.95		2.24		
		300.22	*	16.00	4.16E+00	7.31E+00
LU-173	0.525	100.72		5.24		
		272.11	*	21.20	3.59E-01	3.68E-01
HG-203	0.890	279.19	*	77.30	1.06E-01	1.03E-01
TL-208	0.858	583.14	*	30.22	1.62E+00	4.47E-01
		860.37		4.48		
		2614.66	*	35.85	1.69E+00	4.33E-01
PB-210	0.968	46.50	*	4.25	2.48E+00	2.35E+00
BI-214	0.963	609.31	*	46.30	1.25E+00	2.81E-01
		1120.29	*	15.10	1.71E+00	7.95E-01
		1764.49	*	15.80	1.26E+00	9.71E-01
		2204.22	*	4.98	2.42E+00	1.16E+00
PB-214	0.940	295.21	*	19.19	1.58E+00	3.62E-01
		351.92	*	37.19	1.61E+00	2.56E-01
RA-226	0.967	186.21	*	3.28	5.50E+00	1.02E+01
AC-228	0.925	338.32	*	11.40	2.67E+00	6.36E-01
		911.07	*	27.70	2.05E+00	4.69E-01
		969.11	*	16.60	2.53E+00	9.62E-01
TH-234	0.994	63.29	*	3.80	4.34E+00	3.36E+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 3:54:01PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1606043-14

CP-5012 05-09

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	33.12	1.10746E-02	61.80		
	4	76.82	2.55790E-01	7.11		
	6	143.03	1.69753E-02	56.61	Tol.	U-235
	7	155.60	2.02738E-02	43.15		
M	8	177.55	1.09681E-02	54.59	Tol.	CS-136
m	9	183.55	9.13472E-03	65.13	Tol.	HO-166M
	11	226.09	1.17797E-02	59.55		
	12	239.70	2.68877E-01	5.03		
	19	409.85	9.58706E-03	58.83		
	20	441.09	6.83110E-03	55.12		
	21	463.57	2.19438E-02	31.47	Tol.	SB-125
	22	511.76	3.23098E-02	23.13		
	23	563.26	5.01157E-03	59.36	Tol.	CS-134
	26	728.28	1.52778E-02	31.49		
	27	768.45	6.47510E-03	44.94		
	28	800.46	1.60363E-02	51.13		
	29	896.79	4.87805E-03	49.97		
	32	1050.73	5.00000E-03	64.55		
	34	1218.65	5.12897E-03	60.16		
	35	1239.19	1.03562E-02	37.10	Tol.	CO-56
	36	1309.64	4.75353E-03	40.51		
	37	1409.36	6.94444E-03	32.56		
	39	1527.23	1.94444E-03	44.18		
	41	2105.16	2.28175E-03	65.77		
	43	2217.46	2.27778E-03	44.18		
	44	2336.31	1.38889E-03	70.71		

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

Analysis Report for 1606043-14

CP-5012 05-09

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.91	1460.81	*	10.67	3.19E+01	3.85E+00
GA-67	0.85	93.31	*	35.70	2.33E+00	4.08E+00
		208.95		2.24		
		300.22	*	16.00	4.16E+00	7.31E+00
LU-173	0.52	100.72		5.24		
		272.11	*	21.20	3.59E-01	3.68E-01
HG-203	0.89	279.19	*	77.30	1.06E-01	1.03E-01
TL-208	0.85	583.14	*	30.22	1.62E+00	4.47E-01
		860.37		4.48		
		2614.66	*	35.85	1.69E+00	4.33E-01
PB-210	0.96	46.50	*	4.25	2.48E+00	2.35E+00
BI-214	0.96	609.31	*	46.30	1.25E+00	2.81E-01
		1120.29	*	15.10	1.71E+00	7.95E-01
		1764.49	*	15.80	1.26E+00	9.71E-01
		2204.22	*	4.98	2.42E+00	1.16E+00
PB-214	0.94	295.21	*	19.19	1.58E+00	3.62E-01
		351.92	*	37.19	1.61E+00	2.56E-01
RA-226	0.96	186.21	*	3.28	5.50E+00	1.02E+01
AC-228	0.92	338.32	*	11.40	2.67E+00	6.36E-01
		911.07	*	27.70	2.05E+00	4.69E-01
		969.11	*	16.60	2.53E+00	9.62E-01
TH-234	0.99	63.29	*	3.80	4.34E+00	3.36E+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	0.910	3.19E+01	3.85E+00	
GA-67	0.859	2.76E+00	4.20E+00	
LU-173	0.525	3.59E-01	3.68E-01	
HG-203	0.890	1.06E-01	1.03E-01	
TL-208	0.858	1.66E+00	3.11E-01	

Analysis Report for 1606043-14

CP-5012 05-09

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
PB-210	0.968	2.48E+00	2.35E+00	
BI-214	0.963	1.35E+00	2.50E-01	
PB-214	0.940	1.60E+00	2.09E-01	
RA-226	0.967	5.50E+00	1.02E+01	
AC-228	0.925	2.31E+00	3.51E-01	
TH-234	0.994	4.34E+00	3.36E+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 1606043-14

CP-5012 05-09

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 3:54:01PM
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	33.12	1.10746E-02	61.80		
	4	76.82	2.55790E-01	7.11		
	6	143.03	1.69753E-02	56.61	Tol.	U-235
	7	155.60	2.02738E-02	43.15		
M	8	177.55	1.09681E-02	54.59	Tol.	CS-136
m	9	183.55	9.13472E-03	65.13	Tol.	HO-166M
	11	226.09	1.17797E-02	59.55		
	12	239.70	2.68877E-01	5.03		
	19	409.85	9.58706E-03	58.83		
	20	441.09	6.83110E-03	55.12		
	21	463.57	2.19438E-02	31.47	Tol.	SB-125
	22	511.76	3.23098E-02	23.13		
	23	563.26	5.01157E-03	59.36	Tol.	CS-134
	26	728.28	1.52778E-02	31.49		
	27	768.45	6.47510E-03	44.94		
	28	800.46	1.60363E-02	51.13		
	29	896.79	4.87805E-03	49.97		
	32	1050.73	5.00000E-03	64.55		
	34	1218.65	5.12897E-03	60.16		
	35	1239.19	1.03562E-02	37.10	Tol.	CO-56
	36	1309.64	4.75353E-03	40.51		
	37	1409.36	6.94444E-03	32.56		
	39	1527.23	1.94444E-03	44.18		
	41	2105.16	2.28175E-03	65.77		
	43	2217.46	2.27778E-03	44.18		
	44	2336.31	1.38889E-03	70.71		

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 1606043-14

CP-5012 05-09

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	3.09E-02	1.08E+00	1.08E+00
+	NA-22	1274.54		99.94	-1.46E-02	1.54E-01	1.54E-01
+	NA-24	1368.53		99.99	3.18E+02	1.30E+03	3.15E+03
		2754.09		99.86	-8.85E+02		1.30E+03
+	AL-26	1808.65		99.76	-1.90E-02	8.03E-02	8.03E-02
+	K-40	1460.81	*	10.67	3.19E+01	1.61E+00	1.61E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-1.54E-02	1.15E-01	1.15E-01
		78.34		96.00	1.76E-01		1.51E-01
+	SC-46	889.25		99.98	-1.26E-03	1.24E-01	1.24E-01
		1120.51		99.99	1.87E-01		2.15E-01
+	V-48	983.52		99.98	8.81E-02	2.01E-01	2.01E-01
		1312.10		97.50	-2.10E-02		2.09E-01
+	CR-51	320.08		9.83	5.08E-02	1.08E+00	1.08E+00
+	MN-54	834.83		99.97	-3.63E-02	1.16E-01	1.16E-01
+	CO-56	846.75		99.96	-2.22E-03	1.31E-01	1.31E-01
		1037.75		14.03	6.49E-02		1.05E+00
		1238.25		67.00	1.46E-01		3.09E-01
		1771.40		15.51	1.69E-01		7.65E-01
		2598.48		16.90	-1.12E-01		4.15E-01
+	CO-57	122.06		85.51	1.90E-02	9.03E-02	9.03E-02
		136.48		10.60	1.64E-01		7.34E-01
+	CO-58	810.76		99.40	2.78E-03	1.30E-01	1.30E-01
+	FE-59	1099.22		56.50	3.07E-02	2.69E-01	2.69E-01
		1291.56		43.20	4.66E-02		3.82E-01
+	CO-60	1173.22		100.00	3.63E-02	1.34E-01	1.51E-01
		1332.49		100.00	4.11E-02		1.34E-01
+	ZN-65	1115.52		50.75	-2.08E-02	3.07E-01	3.07E-01
+	GA-67	93.31	*	35.70	2.33E+00	2.33E+00	2.33E+00
		208.95		2.24	1.60E+01		3.02E+01
		300.22	*	16.00	4.16E+00		8.59E+00
+	SE-75	121.11		16.70	-2.44E-01	1.36E-01	4.63E-01
		136.00		59.20	-6.02E-02		1.36E-01
		264.65		59.80	1.54E-02		1.45E-01
		279.53		25.20	2.54E-01		3.91E-01
		400.65		11.40	4.78E-02		8.16E-01
+	RB-82	776.52		13.00	-6.17E-01	1.14E+00	1.14E+00
+	RB-83	520.41		46.00	7.08E-02	2.46E-01	2.46E-01
		529.64		30.30	1.36E-01		4.07E-01
		552.65		16.40	1.94E-01		6.83E-01
+	KR-85	513.99		0.43	9.32E+01	4.11E+01	4.11E+01
+	SR-85	513.99		99.27	4.49E-01	1.98E-01	1.98E-01

Analysis Report for 1606043-14

CP-5012 05-09

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	93.40	-1.40E-02	8.62E-02	1.38E-01
		1836.01	99.38	2.17E-02		8.62E-02
+	NB-93M	16.57	9.43	-1.45E+02	1.15E+02	1.15E+02
+	NB-94	702.63	100.00	-1.51E-02	1.02E-01	1.24E-01
		871.10	100.00	-5.55E-02		1.02E-01
+	NB-95	765.79	99.81	2.03E-02	1.63E-01	1.63E-01
+	NB-95M	235.69	25.00	-2.89E+01	2.26E+00	2.26E+00
+	ZR-95	724.18	43.70	7.79E-03	2.51E-01	2.95E-01
		756.72	55.30	-2.20E-02		2.51E-01
+	MO-99	181.06	6.20	-1.39E+01	9.35E+00	1.34E+01
		739.58	12.80	3.30E+00		9.35E+00
		778.00	4.50	1.69E+00		2.72E+01
+	RU-103	497.08	89.00	-5.05E-02	1.29E-01	1.29E-01
+	RU-106	621.84	9.80	-5.16E-01	1.07E+00	1.07E+00
+	AG-108M	433.93	89.90	5.18E-02	1.19E-01	1.21E-01
		614.37	90.40	3.99E-02		1.25E-01
		722.95	90.50	-8.51E-03		1.19E-01
+	CD-109	88.03	3.72	-4.79E+00	2.89E+00	2.89E+00
+	AG-110M	657.75	93.14	-3.46E-02	1.22E-01	1.22E-01
		677.61	10.53	-4.46E-01		1.02E+00
		706.67	16.46	3.34E-02		7.90E-01
		763.93	21.98	1.43E-01		6.04E-01
		884.67	71.63	3.11E-02		1.66E-01
		1384.27	23.94	-1.09E-01		4.55E-01
+	CD-113M	263.70	0.02	1.73E+02	3.68E+02	3.68E+02
+	SN-113	255.12	1.93	1.67E-01	1.46E-01	4.36E+00
		391.69	64.90	-2.76E-02		1.46E-01
+	TE123M	159.00	84.10	-1.77E-02	9.79E-02	9.79E-02
+	SB-124	602.71	97.87	-6.56E-02	1.30E-01	1.30E-01
		645.85	7.26	6.60E-01		1.81E+00
		722.78	11.10	-7.70E-02		1.08E+00
		1691.02	49.00	2.66E-02		2.22E-01
+	I-125	35.49	6.49	1.13E+00	4.27E+00	4.27E+00
+	SB-125	176.33	6.89	1.05E+00	3.78E-01	1.24E+00
		427.89	29.33	-1.04E-02		3.78E-01
		463.38	10.35	9.47E-01		1.22E+00
		600.56	17.80	4.53E-01		6.94E-01
		635.90	11.32	-4.47E-01		9.29E-01
+	SB-126	414.70	83.30	-2.44E-02	1.89E-01	2.01E-01
		666.33	99.60	5.81E-02		2.15E-01
		695.00	99.60	-1.28E-02		1.89E-01
		720.50	53.80	3.07E-02		3.51E-01
+	SN-126	87.57	37.00	-4.75E-01	2.87E-01	2.87E-01
+	SB-127	473.00	25.00	3.46E-01	1.69E+00	1.98E+00
		685.20	35.70	5.40E-01		1.69E+00
		783.80	14.70	2.32E+00		4.52E+00
+	I-129	29.78	57.00	1.55E-01	7.98E-01	7.98E-01
		33.60	13.20	6.98E-01		2.30E+00

Analysis Report for 1606043-14

CP-5012 05-09

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	6.06E-01	7.98E-01	2.49E+00
+	I-131	284.30	6.05	1.57E-01	2.23E-01	3.02E+00
		364.48	81.20	-9.71E-03		2.23E-01
		636.97	7.26	3.72E-01		3.37E+00
		722.89	1.80	-9.41E-01		1.31E+01
+	TE-132	49.72	13.10	-9.27E-01	7.03E-01	7.12E+00
		228.16	88.00	1.34E-01		7.03E-01
+	BA-133	81.00	33.00	6.51E-02	1.78E-01	3.26E-01
		302.84	17.80	4.25E-01		5.44E-01
		356.01	60.00	-5.05E-01		1.78E-01
+	I-133	529.87	86.30	6.64E+01	1.99E+02	1.99E+02
+	XE-133	81.00	38.00	1.89E-01	9.46E-01	9.46E-01
+	CS-134	563.23	8.38	-1.72E-01	1.19E-01	1.38E+00
		569.32	15.43	-2.77E-02		6.57E-01
		604.70	97.60	-6.36E-02		1.19E-01
		795.84	85.40	5.42E-02		1.59E-01
		801.93	8.73	1.59E-01		1.41E+00
+	CS-135	268.24	16.00	-1.53E-01	5.51E-01	5.51E-01
+	I-135	1131.51	22.50	2.31E+09	4.54E+09	6.49E+09
		1260.41	28.60	-2.88E+08		4.54E+09
		1678.03	9.54	-1.41E+09		9.00E+09
+	CS-136	153.22	7.46	-7.81E-01	1.83E-01	1.74E+00
		163.89	4.61	3.60E-01		2.76E+00
		176.55	13.56	8.59E-01		1.01E+00
		273.65	12.66	-5.96E-01		1.16E+00
		340.57	48.50	8.06E-01		4.38E-01
		818.50	99.70	9.24E-03		1.83E-01
		1048.07	79.60	-3.58E-02		2.70E-01
		1235.34	19.70	-1.93E-02		1.41E+00
+	CS-137	661.65	85.12	3.99E-02	1.49E-01	1.49E-01
+	LA-138	788.74	34.00	5.70E-02	1.87E-01	3.49E-01
		1435.80	66.00	4.08E-02		1.87E-01
+	CE-139	165.85	80.35	-1.69E-02	1.00E-01	1.00E-01
+	BA-140	162.64	6.70	1.13E+00	6.55E-01	1.95E+00
		304.84	4.50	-2.56E+00		2.98E+00
		423.70	3.20	1.51E+00		5.62E+00
		437.55	2.00	-1.64E+00		8.55E+00
		537.32	25.00	5.44E-02		6.55E-01
+	LA-140	328.77	20.50	3.84E-01	1.96E-01	7.66E-01
		487.03	45.50	-8.21E-02		3.46E-01
		815.85	23.50	6.31E-02		7.34E-01
		1596.49	95.49	1.88E-02		1.96E-01
+	CE-141	145.44	48.40	1.05E-01	2.12E-01	2.12E-01
+	CE-143	57.36	11.80	-2.91E+01	2.95E+01	9.35E+01
		293.26	42.00	4.64E+01		2.95E+01
		664.55	5.20	9.55E+01		2.53E+02
+	CE-144	133.54	10.80	1.94E-01	7.48E-01	7.48E-01
+	PM-144	476.78	42.00	3.52E-02	1.17E-01	2.40E-01
		618.01	98.60	5.82E-02		1.17E-01

Analysis Report for 1606043-14

CP-5012 05-09

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	696.49		99.49	1.92E-02	1.17E-01	1.23E-01
+	PM-145	36.85		21.70	-2.24E-01	5.27E-01	9.92E-01
		37.36		39.70	-1.99E-01		5.27E-01
		42.30		15.10	3.56E-01		1.06E+00
		72.40		2.31	-2.56E+01		4.87E+00
+	PM-146	453.90		39.94	1.17E-01	2.55E-01	2.55E-01
		735.90		14.01	-2.58E-01		8.04E-01
		747.13		13.10	1.22E-01		9.16E-01
+	ND-147	91.11		28.90	3.36E-01	6.77E-01	6.77E-01
		531.02		13.10	4.10E-01		1.56E+00
+	PM-149	285.90		3.10	3.90E+00	4.68E+01	4.68E+01
+	EU-152	121.78		20.50	7.75E-02	3.68E-01	3.68E-01
		244.69		5.40	-4.99E-03		1.83E+00
		344.27		19.13	-2.20E-02		4.21E-01
		778.89		9.20	-1.27E-01		1.29E+00
		964.01		10.40	2.38E-02		1.42E+00
		1085.78		7.22	3.54E-01		1.96E+00
		1112.02		9.60	6.27E-01		1.57E+00
		1407.95		14.94	3.64E-01		9.50E-01
+	GD-153	97.43		31.30	-3.04E-02	2.74E-01	2.74E-01
		103.18		22.20	-4.72E-02		3.64E-01
+	EU-154	123.07		40.50	-1.26E-02	1.86E-01	1.86E-01
		723.30		19.70	-3.92E-02		5.47E-01
		873.19		11.50	-4.27E-01		9.05E-01
		996.32		10.30	-5.05E-01		1.04E+00
		1004.76		17.90	-1.52E-01		6.69E-01
		1274.45		35.50	-4.08E-02		4.32E-01
+	EU-155	86.50		30.90	6.12E-01	3.58E-01	3.58E-01
		105.30		20.70	-6.79E-02		3.75E-01
+	EU-156	811.77		10.40	1.83E-01	1.60E+00	1.60E+00
		1153.47		7.20	-6.76E-01		3.02E+00
		1230.71		8.90	-5.66E-01		2.57E+00
+	HO-166M	184.41		72.60	2.00E-01	1.54E-01	1.54E-01
		280.45		29.60	-4.28E-03		2.95E-01
		410.94		11.10	2.27E-01		9.53E-01
		711.69		54.10	2.50E-02		2.36E-01
+	TM-171	66.72		0.14	-7.59E+01	8.41E+01	8.41E+01
+	HF-172	81.75		4.52	-2.11E+00	6.82E-01	2.09E+00
		125.81		11.30	0.00E+00		6.82E-01
+	LU-172	181.53		20.60	2.33E-01	5.86E-01	1.06E+00
		810.06		16.63	-2.78E-01		1.81E+00
		912.12		15.25	9.54E+00		4.20E+00
		1093.66		62.50	-3.08E-03		5.86E-01
+	LU-173	100.72		5.24	1.14E+00	6.00E-01	1.58E+00
		272.11	*	21.20	3.59E-01		6.00E-01
+	HF-175	343.40		84.00	-8.17E-02	1.07E-01	1.07E-01
+	LU-176	88.34		13.30	1.52E+00	8.73E-02	8.40E-01
		201.83		86.00	1.44E-03		9.57E-02
		306.78		94.00	1.13E-02		8.73E-02

Analysis Report for 1606043-14

CP-5012 05-09

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TA-182	67.75		41.20	-3.73E-02	2.78E-01	2.78E-01
		1121.30		34.90	7.76E-01		6.13E-01
		1189.05		16.23	2.09E-01		1.07E+00
		1221.41		26.98	5.64E-02		7.03E-01
		1231.02		11.44	-3.07E-01		1.39E+00
+	IR-192	308.46		29.68	6.02E-02	2.47E-01	3.04E-01
		468.07		48.10	-6.27E-02		2.47E-01
+	HG-203	279.19	*	77.30	1.06E-01	1.68E-01	1.68E-01
+	BI-207	569.67		97.72	2.24E-02	1.06E-01	1.06E-01
		1063.62		74.90	8.05E-02		1.69E-01
+	TL-208	583.14	*	30.22	1.62E+00	3.59E-01	6.00E-01
		860.37		4.48	1.68E+00		3.24E+00
		2614.66	*	35.85	1.69E+00		3.59E-01
+	BI-210M	262.00		45.00	-8.23E-02	1.75E-01	1.75E-01
		300.00		23.00	-8.90E-01		4.23E-01
+	PB-210	46.50	*	4.25	2.48E+00	3.81E+00	3.81E+00
+	PB-211	404.84		2.90	1.33E+00	3.17E+00	3.17E+00
		831.96		2.90	-8.28E-01		3.54E+00
+	BI-212	727.17		11.80	1.06E+00	1.28E+00	1.28E+00
		1620.62		2.75	7.27E-01		4.18E+00
+	PB-212	238.63		44.60	1.91E+00	4.53E-01	4.53E-01
		300.09		3.41	-6.01E+00		2.85E+00
+	BI-214	609.31	*	46.30	1.25E+00	3.32E-01	3.32E-01
		1120.29	*	15.10	1.71E+00		1.14E+00
		1764.49	*	15.80	1.26E+00		1.52E+00
		2204.22	*	4.98	2.42E+00		3.64E-01
+	PB-214	295.21	*	19.19	1.58E+00	8.45E-01	1.01E+00
		351.92	*	37.19	1.61E+00		8.45E-01
+	RN-219	401.80		6.50	5.20E-01	1.39E+00	1.39E+00
+	RA-223	323.87		3.88	-7.93E-02	2.27E+00	2.27E+00
+	RA-224	240.98		3.95	2.99E+01	5.37E+00	5.37E+00
+	RA-225	40.00		31.00	2.19E-01	9.01E-01	9.01E-01
+	RA-226	186.21	*	3.28	5.50E+00	7.21E+00	7.21E+00
+	TH-227	50.10		8.40	-2.04E-01	8.51E-01	1.57E+00
		236.00		11.50	-1.09E+01		8.51E-01
		256.20		6.30	-3.24E-02		1.27E+00
+	AC-228	338.32	*	11.40	2.67E+00	4.97E-01	2.69E+00
		911.07	*	27.70	2.05E+00		4.97E-01
		969.11	*	16.60	2.53E+00		1.38E+00
+	TH-230	48.44		16.90	4.50E-02	8.69E-01	8.69E-01
		62.85		4.60	3.88E+00		2.89E+00
		67.67		0.37	-3.93E+00		2.94E+01
+	PA-231	283.67		1.60	-2.41E+00	4.20E+00	4.97E+00
		302.67		2.30	3.28E+00		4.20E+00
+	TH-231	25.64		14.70	-2.94E+01	1.51E+00	9.29E+00
		84.21		6.40	-3.87E+00		1.51E+00
+	PA-233	311.98		38.60	-1.03E-01	2.64E-01	2.64E-01
+	PA-234	131.20		20.40	1.16E-01	4.11E-01	4.11E-01

Analysis Report for 1606043-14

CP-5012 05-09

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	733.99		8.80	-2.79E-01	4.11E-01	1.31E+00
		946.00		12.00	-2.42E-01		1.01E+00
+	PA-234M	1001.03		0.92	7.66E+00	1.39E+01	1.39E+01
+	TH-234	63.29	*	3.80	4.34E+00	5.46E+00	5.46E+00
+	U-235	143.76		10.50	9.03E-01	8.34E-01	8.34E-01
		163.35		4.70	2.18E-01		1.67E+00
		205.31		4.70	-9.92E-02		1.81E+00
+	NP-237	86.50		12.60	1.50E+00	8.75E-01	8.75E-01
+	NP-239	106.10		22.70	-9.10E-01	5.02E+00	5.02E+00
		228.18		10.70	2.33E+00		1.22E+01
		277.60		14.10	7.00E+00		9.94E+00
+	AM-241	59.54		35.90	1.71E-01	3.20E-01	3.20E-01
+	AM-243	74.67		66.00	-7.74E-01	2.10E-01	2.10E-01
+	CM-243	209.75		3.29	2.04E+00	6.79E-01	2.90E+00
		228.14		10.60	1.60E-01		8.36E-01
		277.60		14.00	4.79E-01		6.79E-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	1.08E+00	1.08E+00	3.09E-02	5.06E-01
	NA-22	1274.54		99.94	1.54E-01	1.54E-01	-1.46E-02	7.05E-02
	NA-24	1368.53		99.99	3.15E+03	1.30E+03	3.18E+02	1.40E+03
		2754.09		99.86	1.30E+03		-8.85E+02	4.12E+02
	AL-26	1808.65		99.76	8.03E-02	8.03E-02	-1.90E-02	3.19E-02
+	K-40	1460.81	*	10.67	1.61E+00	1.61E+00	3.19E+01	7.37E-01

Analysis Report for 1606043-14

CP-5012 05-09

	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	1.15E-01	1.15E-01	-1.54E-02	5.60E-02
		78.34		96.00	1.51E-01		1.76E-01	7.41E-02
	SC-46	889.25		99.98	1.24E-01	1.24E-01	-1.26E-03	5.69E-02
		1120.51		99.99	2.15E-01		1.87E-01	1.01E-01
	V-48	983.52		99.98	2.01E-01	2.01E-01	8.81E-02	9.24E-02
		1312.10		97.50	2.09E-01		-2.10E-02	9.41E-02
	CR-51	320.08		9.83	1.08E+00	1.08E+00	5.08E-02	5.11E-01
	MN-54	834.83		99.97	1.16E-01	1.16E-01	-3.63E-02	5.31E-02
	CO-56	846.75		99.96	1.31E-01	1.31E-01	-2.22E-03	6.04E-02
		1037.75		14.03	1.05E+00		6.49E-02	4.84E-01
		1238.25		67.00	3.09E-01		1.46E-01	1.44E-01
		1771.40		15.51	7.65E-01		1.69E-01	3.25E-01
		2598.48		16.90	4.15E-01		-1.12E-01	1.47E-01
	CO-57	122.06		85.51	9.03E-02	9.03E-02	1.90E-02	4.36E-02
		136.48		10.60	7.34E-01		1.64E-01	3.54E-01
	CO-58	810.76		99.40	1.30E-01	1.30E-01	2.78E-03	5.98E-02
	FE-59	1099.22		56.50	2.69E-01	2.69E-01	3.07E-02	1.22E-01
		1291.56		43.20	3.82E-01		4.66E-02	1.74E-01
	CO-60	1173.22		100.00	1.51E-01	1.34E-01	3.63E-02	6.92E-02
		1332.49		100.00	1.34E-01		4.11E-02	6.04E-02
	ZN-65	1115.52		50.75	3.07E-01	3.07E-01	-2.08E-02	1.42E-01
+	GA-67	93.31	*	35.70	2.33E+00	2.33E+00	2.33E+00	1.14E+00
		208.95		2.24	3.02E+01		1.60E+01	1.46E+01
		300.22	*	16.00	8.59E+00		4.16E+00	4.20E+00
	SE-75	121.11		16.70	4.63E-01	1.36E-01	-2.44E-01	2.23E-01
		136.00		59.20	1.36E-01		-6.02E-02	6.54E-02
		264.65		59.80	1.45E-01		1.54E-02	6.89E-02
		279.53		25.20	3.91E-01		2.54E-01	1.87E-01
		400.65		11.40	8.16E-01		4.78E-02	3.83E-01
	RB-82	776.52		13.00	1.14E+00	1.14E+00	-6.17E-01	5.28E-01
	RB-83	520.41		46.00	2.46E-01	2.46E-01	7.08E-02	1.15E-01
		529.64		30.30	4.07E-01		1.36E-01	1.92E-01
		552.65		16.40	6.83E-01		1.94E-01	3.19E-01
	KR-85	513.99		0.43	4.11E+01	4.11E+01	9.32E+01	1.98E+01
	SR-85	513.99		99.27	1.98E-01	1.98E-01	4.49E-01	9.53E-02
	Y-88	898.02		93.40	1.38E-01	8.62E-02	-1.40E-02	6.34E-02
		1836.01		99.38	8.62E-02		2.17E-02	3.42E-02
	NB-93M	16.57		9.43	1.15E+02	1.15E+02	-1.45E+02	5.28E+01
	NB-94	702.63		100.00	1.24E-01	1.02E-01	-1.51E-02	5.78E-02
		871.10		100.00	1.02E-01		-5.55E-02	4.63E-02
	NB-95	765.79		99.81	1.63E-01	1.63E-01	2.03E-02	7.64E-02
	NB-95M	235.69		25.00	2.26E+00	2.26E+00	-2.89E+01	1.09E+00
	ZR-95	724.18		43.70	2.95E-01	2.51E-01	7.79E-03	1.37E-01
		756.72		55.30	2.51E-01		-2.20E-02	1.17E-01
	MO-99	181.06		6.20	1.34E+01	9.35E+00	-1.39E+01	6.46E+00
		739.58		12.80	9.35E+00		3.30E+00	4.34E+00
		778.00		4.50	2.72E+01		1.69E+00	1.26E+01
	RU-103	497.08		89.00	1.29E-01	1.29E-01	-5.05E-02	6.05E-02
	RU-106	621.84		9.80	1.07E+00	1.07E+00	-5.16E-01	4.99E-01
	AG-108M	433.93		89.90	1.21E-01	1.19E-01	5.18E-02	5.76E-02
		614.37		90.40	1.25E-01		3.99E-02	5.84E-02
		722.95		90.50	1.19E-01		-8.51E-03	5.49E-02

Analysis Report for 1606043-14

CP-5012 05-09

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	2.89E+00	2.89E+00	-4.79E+00	1.41E+00
AG-110M	657.75	93.14	1.22E-01	1.22E-01	-3.46E-02	5.67E-02
	677.61	10.53	1.02E+00		-4.46E-01	4.74E-01
	706.67	16.46	7.90E-01		3.34E-02	3.69E-01
	763.93	21.98	6.04E-01		1.43E-01	2.82E-01
	884.67	71.63	1.66E-01		3.11E-02	7.62E-02
	1384.27	23.94	4.55E-01		-1.09E-01	1.98E-01
CD-113M	263.70	0.02	3.68E+02	3.68E+02	1.73E+02	1.76E+02
SN-113	255.12	1.93	4.36E+00	1.46E-01	1.67E-01	2.07E+00
	391.69	64.90	1.46E-01		-2.76E-02	6.88E-02
TE123M	159.00	84.10	9.79E-02	9.79E-02	-1.77E-02	4.71E-02
SB-124	602.71	97.87	1.30E-01	1.30E-01	-6.56E-02	6.11E-02
	645.85	7.26	1.81E+00		6.60E-01	8.45E-01
	722.78	11.10	1.08E+00		-7.70E-02	4.97E-01
	1691.02	49.00	2.22E-01		2.66E-02	9.29E-02
I-125	35.49	6.49	4.27E+00	4.27E+00	1.13E+00	2.06E+00
SB-125	176.33	6.89	1.24E+00	3.78E-01	1.05E+00	5.98E-01
	427.89	29.33	3.78E-01		-1.04E-02	1.80E-01
	463.38	10.35	1.22E+00		9.47E-01	5.79E-01
	600.56	17.80	6.94E-01		4.53E-01	3.27E-01
	635.90	11.32	9.29E-01		-4.47E-01	4.31E-01
SB-126	414.70	83.30	2.01E-01	1.89E-01	-2.44E-02	9.48E-02
	666.33	99.60	2.15E-01		5.81E-02	1.01E-01
	695.00	99.60	1.89E-01		-1.28E-02	8.77E-02
	720.50	53.80	3.51E-01		3.07E-02	1.63E-01
SN-126	87.57	37.00	2.87E-01	2.87E-01	-4.75E-01	1.40E-01
SB-127	473.00	25.00	1.98E+00	1.69E+00	3.46E-01	9.28E-01
	685.20	35.70	1.69E+00		5.40E-01	7.85E-01
	783.80	14.70	4.52E+00		2.32E+00	2.10E+00
I-129	29.78	57.00	7.98E-01	7.98E-01	1.55E-01	3.85E-01
	33.60	13.20	2.30E+00		6.98E-01	1.11E+00
	39.58	7.52	2.49E+00		6.06E-01	1.20E+00
I-131	284.30	6.05	3.02E+00	2.23E-01	1.57E-01	1.43E+00
	364.48	81.20	2.23E-01		-9.71E-03	1.05E-01
	636.97	7.26	3.37E+00		3.72E-01	1.57E+00
	722.89	1.80	1.31E+01		-9.41E-01	6.06E+00
TE-132	49.72	13.10	7.12E+00	7.03E-01	-9.27E-01	3.46E+00
	228.16	88.00	7.03E-01		1.34E-01	3.37E-01
BA-133	81.00	33.00	3.26E-01	1.78E-01	6.51E-02	1.59E-01
	302.84	17.80	5.44E-01		4.25E-01	2.60E-01
	356.01	60.00	1.78E-01		-5.05E-01	8.48E-02
I-133	529.87	86.30	1.99E+02	1.99E+02	6.64E+01	9.36E+01
XE-133	81.00	38.00	9.46E-01	9.46E-01	1.89E-01	4.62E-01
CS-134	563.23	8.38	1.38E+00	1.19E-01	-1.72E-01	6.47E-01
	569.32	15.43	6.57E-01		-2.77E-02	3.06E-01
	604.70	97.60	1.19E-01		-6.36E-02	5.57E-02
	795.84	85.40	1.59E-01		5.42E-02	7.42E-02
	801.93	8.73	1.41E+00		1.59E-01	6.54E-01
CS-135	268.24	16.00	5.51E-01	5.51E-01	-1.53E-01	2.63E-01
I-135	1131.51	22.50	6.49E+09	4.54E+09	2.31E+09	2.99E+09
	1260.41	28.60	4.54E+09		-2.88E+08	2.05E+09
	1678.03	9.54	9.00E+09		-1.41E+09	3.69E+09
CS-136	153.22	7.46	1.74E+00	1.83E-01	-7.81E-01	8.39E-01

Analysis Report for 1606043-14

CP-5012 05-09

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	2.76E+00	1.83E-01	3.60E-01	1.33E+00
	176.55	13.56	1.01E+00		8.59E-01	4.89E-01
	273.65	12.66	1.16E+00		-5.96E-01	5.54E-01
	340.57	48.50	4.38E-01		8.06E-01	2.11E-01
	818.50	99.70	1.83E-01		9.24E-03	8.42E-02
	1048.07	79.60	2.70E-01		-3.58E-02	1.24E-01
	1235.34	19.70	1.41E+00		-1.93E-02	6.55E-01
CS-137	661.65	85.12	1.49E-01	1.49E-01	3.99E-02	6.98E-02
LA-138	788.74	34.00	3.49E-01	1.87E-01	5.70E-02	1.61E-01
	1435.80	66.00	1.87E-01		4.08E-02	8.29E-02
CE-139	165.85	80.35	1.00E-01	1.00E-01	-1.69E-02	4.82E-02
BA-140	162.64	6.70	1.95E+00	6.55E-01	1.13E+00	9.37E-01
	304.84	4.50	2.98E+00		-2.56E+00	1.41E+00
	423.70	3.20	5.62E+00		1.51E+00	2.67E+00
	437.55	2.00	8.55E+00		-1.64E+00	4.04E+00
	537.32	25.00	6.55E-01		5.44E-02	3.06E-01
LA-140	328.77	20.50	7.66E-01	1.96E-01	3.84E-01	3.64E-01
	487.03	45.50	3.46E-01		-8.21E-02	1.62E-01
	815.85	23.50	7.34E-01		6.31E-02	3.35E-01
	1596.49	95.49	1.96E-01		1.88E-02	8.46E-02
CE-141	145.44	48.40	2.12E-01	2.12E-01	1.05E-01	1.03E-01
CE-143	57.36	11.80	9.35E+01	2.95E+01	-2.91E+01	4.54E+01
	293.26	42.00	2.95E+01		4.64E+01	1.42E+01
	664.55	5.20	2.53E+02		9.55E+01	1.19E+02
CE-144	133.54	10.80	7.48E-01	7.48E-01	1.94E-01	3.61E-01
PM-144	476.78	42.00	2.40E-01	1.17E-01	3.52E-02	1.13E-01
	618.01	98.60	1.17E-01		5.82E-02	5.47E-02
	696.49	99.49	1.23E-01		1.92E-02	5.74E-02
PM-145	36.85	21.70	9.92E-01	5.27E-01	-2.24E-01	4.79E-01
	37.36	39.70	5.27E-01		-1.99E-01	2.55E-01
	42.30	15.10	1.06E+00		3.56E-01	5.13E-01
	72.40	2.31	4.87E+00		-2.56E+01	2.38E+00
PM-146	453.90	39.94	2.55E-01	2.55E-01	1.17E-01	1.20E-01
	735.90	14.01	8.04E-01		-2.58E-01	3.72E-01
	747.13	13.10	9.16E-01		1.22E-01	4.25E-01
ND-147	91.11	28.90	6.77E-01	6.77E-01	3.36E-01	3.31E-01
	531.02	13.10	1.56E+00		4.10E-01	7.35E-01
PM-149	285.90	3.10	4.68E+01	4.68E+01	3.90E+00	2.22E+01
EU-152	121.78	20.50	3.68E-01	3.68E-01	7.75E-02	1.78E-01
	244.69	5.40	1.83E+00		-4.99E-03	8.81E-01
	344.27	19.13	4.21E-01		-2.20E-02	1.98E-01
	778.89	9.20	1.29E+00		-1.27E-01	5.97E-01
	964.01	10.40	1.42E+00		2.38E-02	6.61E-01
	1085.78	7.22	1.96E+00		3.54E-01	9.01E-01
	1112.02	9.60	1.57E+00		6.27E-01	7.22E-01
	1407.95	14.94	9.50E-01		3.64E-01	4.28E-01
GD-153	97.43	31.30	2.74E-01	2.74E-01	-3.04E-02	1.33E-01
	103.18	22.20	3.64E-01		-4.72E-02	1.76E-01
EU-154	123.07	40.50	1.86E-01	1.86E-01	-1.26E-02	8.97E-02
	723.30	19.70	5.47E-01		-3.92E-02	2.53E-01
	873.19	11.50	9.05E-01		-4.27E-01	4.10E-01
	996.32	10.30	1.04E+00		-5.05E-01	4.68E-01
	1004.76	17.90	6.69E-01		-1.52E-01	3.04E-01

Analysis Report for 1606043-14

CP-5012 05-09

	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	4.32E-01	1.86E-01	-4.08E-02	1.98E-01
	EU-155	86.50		30.90	3.58E-01	3.58E-01	6.12E-01	1.75E-01
		105.30		20.70	3.75E-01		-6.79E-02	1.81E-01
	EU-156	811.77		10.40	1.60E+00	1.60E+00	1.83E-01	7.34E-01
		1153.47		7.20	3.02E+00		-6.76E-01	1.38E+00
		1230.71		8.90	2.57E+00		-5.66E-01	1.18E+00
	HO-166M	184.41		72.60	1.54E-01	1.54E-01	2.00E-01	7.49E-02
		280.45		29.60	2.95E-01		-4.28E-03	1.40E-01
		410.94		11.10	9.53E-01		2.27E-01	4.52E-01
		711.69		54.10	2.36E-01		2.50E-02	1.10E-01
	TM-171	66.72		0.14	8.41E+01	8.41E+01	-7.59E+01	4.10E+01
	HF-172	81.75		4.52	2.09E+00	6.82E-01	-2.11E+00	1.02E+00
		125.81		11.30	6.82E-01		0.00E+00	3.29E-01
	LU-172	181.53		20.60	1.06E+00	5.86E-01	2.33E-01	5.12E-01
		810.06		16.63	1.81E+00		-2.78E-01	8.32E-01
		912.12		15.25	4.20E+00		9.54E+00	2.02E+00
		1093.66		62.50	5.86E-01		-3.08E-03	2.69E-01
+	LU-173	100.72		5.24	1.58E+00	6.00E-01	1.14E+00	7.65E-01
		272.11	*	21.20	6.00E-01		3.59E-01	2.90E-01
	HF-175	343.40		84.00	1.07E-01	1.07E-01	-8.17E-02	5.04E-02
	LU-176	88.34		13.30	8.40E-01	8.73E-02	1.52E+00	4.11E-01
		201.83		86.00	9.57E-02		1.44E-03	4.59E-02
		306.78		94.00	8.73E-02		1.13E-02	4.13E-02
	TA-182	67.75		41.20	2.78E-01	2.78E-01	-3.73E-02	1.36E-01
		1121.30		34.90	6.13E-01		7.76E-01	2.89E-01
		1189.05		16.23	1.07E+00		2.09E-01	4.94E-01
		1221.41		26.98	7.03E-01		5.64E-02	3.27E-01
		1231.02		11.44	1.39E+00		-3.07E-01	6.38E-01
	IR-192	308.46		29.68	3.04E-01	2.47E-01	6.02E-02	1.44E-01
		468.07		48.10	2.47E-01		-6.27E-02	1.17E-01
+	HG-203	279.19	*	77.30	1.68E-01	1.68E-01	1.06E-01	8.08E-02
	BI-207	569.67		97.72	1.06E-01	1.06E-01	2.24E-02	4.95E-02
		1063.62		74.90	1.69E-01		8.05E-02	7.70E-02
+	TL-208	583.14	*	30.22	6.00E-01	3.59E-01	1.62E+00	2.88E-01
		860.37		4.48	3.24E+00		1.68E+00	1.51E+00
		2614.66	*	35.85	3.59E-01		1.69E+00	1.53E-01
	BI-210M	262.00		45.00	1.75E-01	1.75E-01	-8.23E-02	8.32E-02
		300.00		23.00	4.23E-01		-8.90E-01	2.02E-01
+	PB-210	46.50	*	4.25	3.81E+00	3.81E+00	2.48E+00	1.86E+00
	PB-211	404.84		2.90	3.17E+00	3.17E+00	1.33E+00	1.49E+00
		831.96		2.90	3.54E+00		-8.28E-01	1.61E+00
	BI-212	727.17		11.80	1.28E+00	1.28E+00	1.06E+00	6.04E-01
		1620.62		2.75	4.18E+00		7.27E-01	1.81E+00
	PB-212	238.63		44.60	4.53E-01	4.53E-01	1.91E+00	2.22E-01
		300.09		3.41	2.85E+00		-6.01E+00	1.36E+00
+	BI-214	609.31	*	46.30	3.32E-01	3.32E-01	1.25E+00	1.58E-01
		1120.29	*	15.10	1.14E+00		1.71E+00	5.29E-01
		1764.49	*	15.80	1.52E+00		1.26E+00	7.08E-01
		2204.22	*	4.98	3.64E-01		2.42E+00	0.00E+00
+	PB-214	295.21	*	19.19	1.01E+00	8.45E-01	1.58E+00	4.95E-01
		351.92	*	37.19	8.45E-01		1.61E+00	4.16E-01
	RN-219	401.80		6.50	1.39E+00	1.39E+00	5.20E-01	6.54E-01
	RA-223	323.87		3.88	2.27E+00	2.27E+00	-7.93E-02	1.08E+00

Analysis Report for 1606043-14

CP-5012 05-09

	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	5.37E+00	5.37E+00	2.99E+01	2.64E+00
	RA-225	40.00		31.00	9.01E-01	9.01E-01	2.19E-01	4.36E-01
+	RA-226	186.21	*	3.28	7.21E+00	7.21E+00	5.50E+00	3.56E+00
	TH-227	50.10		8.40	1.57E+00	8.51E-01	-2.04E-01	7.62E-01
		236.00		11.50	8.51E-01		-1.09E+01	4.09E-01
		256.20		6.30	1.27E+00		-3.24E-02	6.03E-01
+	AC-228	338.32	*	11.40	2.69E+00	4.97E-01	2.67E+00	1.32E+00
		911.07	*	27.70	4.97E-01		2.05E+00	2.31E-01
		969.11	*	16.60	1.38E+00		2.53E+00	6.59E-01
	TH-230	48.44		16.90	8.69E-01	8.69E-01	4.50E-02	4.23E-01
		62.85		4.60	2.89E+00		3.88E+00	1.41E+00
		67.67		0.37	2.94E+01		-3.93E+00	1.43E+01
	PA-231	283.67		1.60	4.97E+00	4.20E+00	-2.41E+00	2.35E+00
		302.67		2.30	4.20E+00		3.28E+00	2.01E+00
	TH-231	25.64		14.70	9.29E+00	1.51E+00	-2.94E+01	4.53E+00
		84.21		6.40	1.51E+00		-3.87E+00	7.34E-01
	PA-233	311.98		38.60	2.64E-01	2.64E-01	-1.03E-01	1.25E-01
	PA-234	131.20		20.40	4.11E-01	4.11E-01	1.16E-01	1.99E-01
		733.99		8.80	1.31E+00		-2.79E-01	6.05E-01
		946.00		12.00	1.01E+00		-2.42E-01	4.62E-01
	PA-234M	1001.03		0.92	1.39E+01	1.39E+01	7.66E+00	6.38E+00
+	TH-234	63.29	*	3.80	5.46E+00	5.46E+00	4.34E+00	2.69E+00
	U-235	143.76		10.50	8.34E-01	8.34E-01	9.03E-01	4.04E-01
		163.35		4.70	1.67E+00		2.18E-01	8.03E-01
		205.31		4.70	1.81E+00		-9.92E-02	8.68E-01
	NP-237	86.50		12.60	8.75E-01	8.75E-01	1.50E+00	4.28E-01
	NP-239	106.10		22.70	5.02E+00	5.02E+00	-9.10E-01	2.43E+00
		228.18		10.70	1.22E+01		2.33E+00	5.85E+00
		277.60		14.10	9.94E+00		7.00E+00	4.75E+00
	AM-241	59.54		35.90	3.20E-01	3.20E-01	1.71E-01	1.56E-01
	AM-243	74.67		66.00	2.10E-01	2.10E-01	-7.74E-01	1.03E-01
	CM-243	209.75		3.29	2.90E+00	6.79E-01	2.04E+00	1.40E+00
		228.14		10.60	8.36E-01		1.60E-01	4.01E-01
		277.60		14.00	6.79E-01		4.79E-01	3.25E-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

No Action Level results available for reporting purposes.

Analysis Report for 1606043-14

CP-5012 05-09

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-5012 05-09

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	85	79	109	709	324
25:	68	52	57	49	52	57	53	44
33:	79	64	56	50	54	60	45	63
41:	71	60	57	49	65	60	117	122
49:	58	74	67	71	83	87	95	73
57:	69	78	77	92	96	118	91	222
65:	156	113	101	104	99	87	99	103
73:	100	124	157	359	179	466	214	93
81:	87	95	85	76	133	104	70	181
89:	132	89	167	69	162	266	117	81
97:	70	59	66	75	70	63	60	51
105:	54	79	59	51	63	61	51	60
113:	60	63	54	78	49	56	45	54
121:	45	50	52	58	51	51	53	47
129:	52	87	53	50	63	53	59	42
137:	47	43	51	40	53	74	49	69
145:	72	46	38	60	49	36	67	37
153:	38	54	61	53	46	55	42	31
161:	47	43	47	41	46	40	38	40
169:	41	46	46	35	38	31	44	41
177:	43	59	48	37	41	47	45	58
185:	38	80	174	63	48	48	37	36
193:	42	39	42	35	44	38	44	43
201:	36	37	37	34	33	50	46	33
209:	42	76	55	36	32	29	38	30
217:	42	40	34	38	29	37	28	36
225:	41	40	47	40	26	33	31	34
233:	32	34	35	44	45	61	350	431
241:	71	97	94	43	24	25	27	22
249:	25	23	19	24	22	33	26	25
257:	22	22	33	22	21	31	21	26
265:	32	29	22	24	24	37	41	34
273:	36	28	30	25	23	48	36	33
281:	21	20	26	21	23	20	30	24
289:	27	18	22	27	25	24	58	129
297:	59	19	22	32	48	34	26	20
305:	23	16	20	24	22	22	18	21
313:	17	21	31	17	20	13	28	22
321:	19	23	24	20	31	15	20	29
329:	43	12	27	16	22	28	14	21
337:	24	40	124	60	21	20	16	19
345:	17	17	16	14	17	19	32	109
353:	206	46	26	23	25	26	10	16
361:	12	21	15	14	17	20	16	14

369:	20	16	15	24	11	14	14	20

Sample Title: CP-5012 05-09

Channel								
377:	10	26	15	23	22	16	12	20
385:	14	16	20	17	23	25	19	13
393:	14	17	15	23	15	15	17	16
401:	15	11	23	21	12	12	20	11
409:	18	31	18	19	8	11	11	17
417:	17	19	17	20	11	13	15	20
425:	16	21	23	10	13	15	21	12
433:	22	16	17	11	15	16	9	23
441:	11	22	12	10	8	15	19	12
449:	5	12	10	12	11	21	14	11
457:	12	7	15	12	14	13	30	25
465:	31	13	11	12	14	9	11	12
473:	9	11	13	10	9	8	17	12
481:	12	9	16	6	10	10	8	14
489:	13	11	9	13	12	10	13	12
497:	8	12	9	9	11	15	11	12
505:	10	10	12	13	14	15	61	83
513:	46	18	10	13	12	8	10	10
521:	14	12	11	14	9	10	11	15
529:	16	8	10	15	17	11	13	11
537:	12	4	8	12	7	5	7	14
545:	13	14	8	12	10	14	9	9
553:	9	10	11	8	3	10	12	11
561:	12	8	23	11	10	8	7	7
569:	13	5	13	9	12	7	8	10
577:	13	12	7	9	14	19	49	126
585:	44	19	9	14	13	11	11	6
593:	11	7	11	6	12	14	13	14
601:	14	3	12	17	7	8	15	13
609:	53	136	67	8	6	11	10	7
617:	14	14	8	7	10	5	7	8
625:	12	7	9	10	13	11	9	8
633:	6	9	8	2	10	9	12	14
641:	11	9	11	13	12	6	7	8
649:	14	9	4	11	14	3	9	5
657:	10	4	16	7	9	13	10	14
665:	10	13	10	15	9	13	5	11
673:	6	9	7	9	9	6	4	6
681:	10	9	13	10	10	8	6	6
689:	4	9	4	6	6	13	9	11
697:	5	7	11	9	10	10	12	9
705:	6	12	12	11	15	6	8	10
713:	10	10	12	4	12	11	8	6
721:	9	6	8	6	5	8	15	34
729:	26	4	14	5	9	7	5	6
737:	8	9	7	15	2	6	11	5
745:	9	7	7	13	8	8	7	6
753:	11	8	6	10	14	6	12	6
761:	8	12	11	11	8	3	12	10
769:	17	11	5	7	14	7	10	7
777:	8	8	5	5	13	6	5	10
785:	6	12	9	7	6	5	5	7
793:	5	8	14	20	6	5	8	12

801:	5	9	3	6	10	7	9	11

Sample Title: CP-5012 05-09

Channel								
809:	9	4	8	5	1	10	4	8
817:	3	6	5	6	8	7	5	5
825:	10	9	4	4	3	3	9	4
833:	2	7	6	7	8	8	9	9
841:	6	6	3	7	5	4	13	7
849:	6	5	9	8	3	4	6	11
857:	9	8	5	9	11	18	8	3
865:	7	6	4	6	8	5	2	3
873:	4	3	4	11	6	6	3	4
881:	8	4	6	4	10	8	4	4
889:	4	4	8	7	3	6	5	10
897:	6	13	1	6	2	4	7	2
905:	9	6	7	6	1	11	47	75
913:	46	7	5	1	9	2	6	10
921:	4	2	6	7	9	5	7	6
929:	7	3	7	6	3	7	8	4
937:	5	8	5	7	9	6	4	7
945:	6	3	9	4	6	5	7	4
953:	10	7	6	6	4	2	3	5
961:	3	4	5	9	15	14	8	20
969:	44	64	26	4	7	5	7	2
977:	7	2	4	2	5	10	2	8
985:	8	9	4	10	1	10	6	6
993:	5	3	2	6	2	3	6	7
1001:	4	7	9	4	1	4	6	3
1009:	9	3	4	4	1	4	7	3
1017:	6	6	4	8	5	9	3	4
1025:	3	6	3	7	4	8	6	6
1033:	7	7	5	6	9	6	6	4
1041:	7	4	6	10	4	4	4	7
1049:	7	4	10	8	7	4	3	5
1057:	5	5	3	4	4	5	5	7
1065:	3	5	6	1	4	4	6	6
1073:	4	3	5	6	6	5	9	2
1081:	4	4	6	4	3	8	6	8
1089:	8	3	10	9	8	3	4	4
1097:	5	5	8	5	5	4	4	7
1105:	3	7	2	8	5	5	8	8
1113:	4	8	9	5	4	9	9	21
1121:	29	8	5	7	5	3	7	8
1129:	7	5	5	9	4	7	6	3
1137:	9	8	10	4	8	7	2	8
1145:	1	5	9	11	5	7	5	2
1153:	4	3	8	11	6	5	3	7
1161:	2	7	6	10	4	8	4	6
1169:	4	5	6	7	9	8	4	4
1177:	5	5	7	4	9	3	9	8
1185:	4	6	12	7	2	6	10	8
1193:	1	12	4	8	10	11	6	1
1201:	6	3	4	3	5	4	11	7
1209:	7	9	8	7	9	5	8	6
1217:	6	9	15	8	4	5	11	7
1225:	8	6	8	2	6	5	8	12

1233:	4	3	6	7	6	15	15	10

Sample Title: CP-5012 05-09

Channel								
1241:	7	12	7	5	9	10	5	12
1249:	5	5	5	4	5	5	6	4
1257:	9	1	4	1	5	6	3	7
1265:	1	8	3	6	5	7	8	5
1273:	4	3	7	6	6	5	7	2
1281:	2	5	7	4	7	3	7	5
1289:	2	5	6	4	4	7	5	2
1297:	3	1	4	2	4	1	4	6
1305:	2	2	4	6	3	10	5	1
1313:	1	7	2	6	4	2	5	4
1321:	4	4	7	5	1	5	4	3
1329:	3	3	2	6	6	5	2	2
1337:	2	4	7	3	4	3	3	5
1345:	4	1	0	3	2	2	2	0
1353:	4	3	1	1	6	3	1	5
1361:	2	1	4	1	4	2	4	1
1369:	6	2	3	2	4	2	5	4
1377:	5	6	4	3	3	3	1	3
1385:	3	1	1	3	2	2	3	3
1393:	5	2	1	3	3	8	4	2
1401:	3	3	3	1	1	1	4	8
1409:	8	4	2	3	3	1	1	1
1417:	1	1	3	1	0	2	1	4
1425:	1	2	2	2	2	1	1	0
1433:	5	1	5	4	2	0	3	3
1441:	3	1	2	2	5	0	1	2
1449:	1	3	0	2	1	4	2	0
1457:	1	5	8	85	251	230	62	15
1465:	3	2	2	2	0	0	1	0
1473:	3	1	0	4	4	1	4	3
1481:	1	0	1	1	1	0	0	1
1489:	2	2	1	3	2	2	1	1
1497:	3	0	1	0	0	3	1	2
1505:	1	2	0	1	1	3	3	3
1513:	3	2	2	0	1	2	1	0
1521:	1	1	2	1	0	1	6	1
1529:	0	0	0	2	2	2	1	1
1537:	0	3	0	4	2	2	3	1
1545:	1	2	0	1	0	2	0	2
1553:	1	1	0	2	3	4	2	2
1561:	3	1	0	1	2	3	1	2
1569:	3	2	0	0	1	2	1	0
1577:	3	0	0	0	6	3	4	3
1585:	1	2	2	3	3	1	1	4
1593:	6	1	4	1	1	0	1	2
1601:	1	2	1	1	2	0	1	0
1609:	2	2	3	3	1	1	2	1
1617:	4	1	0	2	3	2	2	0
1625:	3	2	3	1	1	3	4	2
1633:	3	0	1	0	0	0	2	1
1641:	1	1	0	2	0	3	0	0
1649:	0	1	2	1	3	0	0	2
1657:	0	1	1	0	3	2	0	2

1665:	1	1	2	0	1	0	1	0

Sample Title: CP-5012 05-09

Channel								
1673:	1	1	1	1	2	2	0	1
1681:	0	2	1	0	0	2	0	4
1689:	1	1	0	0	2	1	0	2
1697:	0	0	0	2	0	0	0	1
1705:	1	2	0	1	0	0	1	0
1713:	1	0	1	1	1	0	1	0
1721:	1	1	1	0	1	1	1	0
1729:	2	4	1	1	1	1	1	0
1737:	1	1	3	0	0	2	0	1
1745:	0	0	0	0	1	0	3	1
1753:	1	1	0	3	1	5	2	1
1761:	1	2	3	9	13	15	5	2
1769:	0	5	0	1	0	3	0	2
1777:	1	1	1	1	0	1	1	0
1785:	1	0	2	4	0	0	2	1
1793:	0	3	0	2	0	1	2	0
1801:	0	1	0	0	1	1	2	1
1809:	0	0	0	3	0	1	0	1
1817:	0	0	1	0	2	0	2	1
1825:	3	2	0	0	1	0	1	0
1833:	0	0	1	2	1	1	0	0
1841:	0	1	0	1	0	1	2	5
1849:	0	3	1	1	0	0	0	0
1857:	0	1	0	1	0	0	1	0
1865:	0	1	0	0	1	1	1	1
1873:	1	1	2	0	1	0	0	1
1881:	0	0	0	2	2	3	0	1
1889:	0	1	0	1	1	0	0	3
1897:	0	1	1	1	0	0	0	1
1905:	3	1	1	0	0	0	0	2
1913:	0	2	0	0	2	0	1	0
1921:	2	0	1	1	0	2	0	0
1929:	1	2	1	0	1	0	0	0
1937:	2	1	2	1	0	0	0	1
1945:	3	0	1	0	2	1	0	1
1953:	1	0	0	2	0	1	0	0
1961:	2	2	0	2	1	1	0	1
1969:	0	0	1	1	1	2	0	0
1977:	0	0	0	0	0	1	1	0
1985:	0	1	0	1	1	0	0	2
1993:	0	2	1	0	1	0	0	1
2001:	2	0	2	0	0	2	0	3
2009:	1	1	0	1	0	3	1	1
2017:	1	0	0	0	1	1	1	0
2025:	0	1	0	0	0	0	1	1
2033:	3	1	2	1	0	0	0	1
2041:	1	1	1	0	0	0	2	0
2049:	1	0	2	1	0	1	0	1
2057:	1	2	1	1	1	2	0	2
2065:	0	0	2	0	0	0	3	1
2073:	0	0	1	1	1	3	1	0
2081:	2	1	0	0	0	1	1	0
2089:	1	0	0	1	0	1	1	0

2097:	0	1	2	1	1	1	4	1

Sample Title: CP-5012 05-09

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

2529:	1	2	0	0	0	1	0	0

Sample Title: CP-5012 05-09

Channel							
2537:	1	2	0	1	0	0	1	0
2545:	0	0	1	0	1	0	0	0
2553:	1	0	1	0	0	1	0	0
2561:	0	1	1	0	0	0	0	0
2569:	1	0	1	0	0	1	0	2
2577:	0	0	0	1	2	0	0	0
2585:	0	1	0	0	0	1	1	0
2593:	0	0	0	0	0	1	1	0
2601:	0	0	0	1	1	0	0	1
2609:	1	0	1	2	16	33	32	8
2617:	4	1	0	1	0	1	0	0
2625:	0	0	0	0	0	0	1	0
2633:	1	0	1	0	0	0	1	0
2641:	0	0	0	0	0	0	1	0
2649:	0	1	1	0	1	0	0	0
2657:	0	0	0	0	0	0	0	1
2665:	0	1	0	0	0	2	0	1
2673:	2	0	0	0	0	0	1	0
2681:	1	1	2	2	0	1	0	0
2689:	0	0	0	1	0	0	0	0
2697:	0	0	1	0	0	1	0	0
2705:	0	0	0	0	0	0	0	0
2713:	0	0	1	0	0	1	1	0
2721:	0	0	0	1	0	0	0	0
2729:	0	0	1	0	0	1	0	0
2737:	0	0	0	0	0	0	1	0
2745:	0	0	2	0	1	0	0	0
2753:	0	0	0	0	0	1	1	0
2761:	0	0	0	1	0	0	0	0
2769:	1	0	0	0	0	0	1	0
2777:	0	0	0	1	0	0	0	0
2785:	0	0	1	0	0	1	0	3
2793:	1	1	0	0	0	1	1	0
2801:	0	0	1	0	1	0	0	0
2809:	1	0	0	0	1	0	0	0
2817:	0	0	1	0	0	1	1	0
2825:	0	0	0	0	0	1	0	0
2833:	0	0	1	0	0	0	0	0
2841:	0	0	0	1	0	0	0	0
2849:	0	1	0	1	0	0	0	0
2857:	0	0	0	3	0	0	0	1
2865:	0	1	0	0	1	1	0	0
2873:	0	0	0	0	0	0	0	0
2881:	1	0	0	1	0	0	0	0
2889:	0	0	1	1	1	0	0	0
2897:	0	0	1	0	0	0	0	0
2905:	1	0	0	0	0	0	0	0
2913:	1	0	0	2	0	3	0	0
2921:	0	0	1	0	1	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	1	0	0
2945:	0	0	0	1	0	1	0	0
2953:	0	0	0	0	0	0	0	0

2961:	0	1	0	0	1	0	0	1

Sample Title: CP-5012 05-09

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

3393:	0	0	0	0	1	0	0	2

Sample Title: CP-5012 05-09

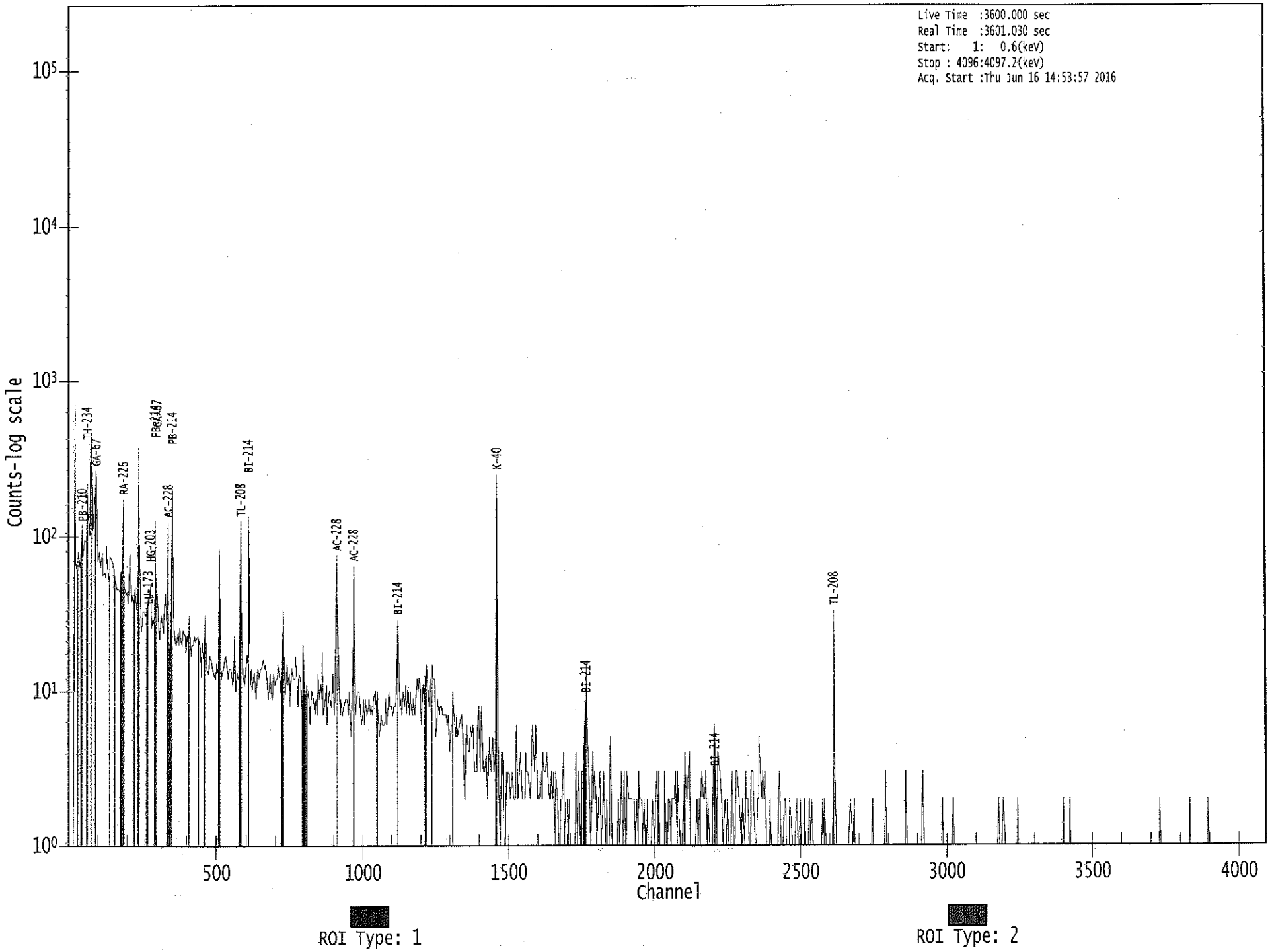
Channel								
3401:	0	0	0	0	0	0	1	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	1	2	0
3425:	0	0	0	0	1	0	1	0
3433:	0	0	0	0	0	1	0	0
3441:	0	0	0	1	0	0	0	0
3449:	0	0	0	0	0	1	0	0
3457:	0	1	0	0	1	0	0	0
3465:	0	0	0	0	0	0	0	1
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	1	0
3513:	0	0	1	1	0	0	0	0
3521:	0	0	0	1	0	0	0	1
3529:	1	0	1	0	1	0	0	0
3537:	0	0	0	0	0	0	1	0
3545:	0	0	0	1	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	1	0
3585:	0	0	0	1	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	1	0	0	0	1	0
3617:	0	0	0	0	0	0	0	0
3625:	0	1	0	0	0	0	0	0
3633:	0	0	1	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	1	0	0	0	0	0
3657:	0	0	0	0	0	0	0	1
3665:	0	0	0	0	0	0	0	0
3673:	1	0	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	1	0	0
3713:	0	0	0	1	0	0	0	0
3721:	0	0	0	0	0	1	0	1
3729:	2	0	0	1	1	0	0	0
3737:	0	0	0	0	1	0	0	0
3745:	0	0	0	1	0	0	1	0
3753:	0	0	0	0	0	1	0	0
3761:	0	0	0	0	0	0	0	1
3769:	0	0	1	0	1	1	0	0
3777:	0	0	0	1	0	1	0	0
3785:	1	0	0	0	0	0	0	0
3793:	0	1	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	1	0	0	0	0	0
3817:	0	1	0	0	0	0	0	0

3825:	0	0	0	0	1	0	0	2

Sample Title: CP-5012 05-09

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	1	0	0	0	0	0	0
3849:	0	1	0	0	0	1	0	0
3857:	0	0	1	0	0	0	0	0
3865:	0	0	0	0	0	1	0	0
3873:	0	0	0	1	1	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	2	0	1
3897:	0	1	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	1	0	0	0	0	0	0
3929:	0	0	1	0	0	0	0	0
3937:	0	0	0	0	0	0	0	1
3945:	0	0	0	0	1	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	1	0	0
3969:	0	1	0	0	0	0	0	0
3977:	0	1	0	0	1	0	0	0
3985:	1	0	0	0	0	0	0	1
3993:	0	0	0	0	0	0	0	0
4001:	0	0	1	0	0	0	0	0
4009:	0	0	0	0	0	0	1	0
4017:	0	0	1	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	1	0	0	0	0	0
4041:	0	0	0	1	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	1	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	1

0000039020.CNF



Apex-Gamma

Analysis Report for 1606043-15
CP-5012 09-15

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1606043-15
Sample Description	: CP-5012 09-15
Sample Type	: SOIL
Sample Size	: 2.891E+02 grams
Facility	: Countroom
Sample Taken On	: 6/7/2016 12:01:24PM
Acquisition Started	: 6/16/2016 3:07:34PM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3601.3 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	: 39021

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/17/16

Analysis Report for 1606043-15

CP-5012 09-15

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 4:07:38PM
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	12.97	13.09	0.0000	0.00
2	63.19	63.29	0.0000	0.00
3	72.91	73.00	0.0000	0.00
4	76.81	76.90	0.0000	0.00
5	86.80	86.89	0.0000	0.00
6	89.71	89.79	0.0000	0.00
7	93.04	93.12	0.0000	0.00
8	99.90	99.97	0.0000	0.00
9	114.67	114.74	0.0000	0.00
10	143.54	143.59	0.0000	0.00
11	171.01	171.05	0.0000	0.00
12	186.07	186.09	0.0000	0.00
13	209.81	209.82	0.0000	0.00
14	238.99	238.99	0.0000	0.00
15	270.47	270.45	0.0000	0.00
16	295.40	295.37	0.0000	0.00
17	300.98	300.94	0.0000	0.00
18	328.25	328.19	0.0000	0.00
19	338.58	338.53	0.0000	0.00
20	352.14	352.07	0.0000	0.00
21	434.85	434.74	0.0000	0.00
22	443.96	443.85	0.0000	0.00
23	462.93	462.81	0.0000	0.00
24	510.98	510.84	0.0000	0.00
25	562.55	562.38	0.0000	0.00
26	583.32	583.14	0.0000	0.00
27	609.58	609.39	0.0000	0.00
28	699.15	698.91	0.0000	0.00
29	723.14	722.89	0.0000	0.00
30	793.88	793.60	0.0000	0.00
31	830.64	830.35	0.0000	0.00
32	837.29	837.00	0.0000	0.00
33	848.94	848.64	0.0000	0.00
34	860.23	859.92	0.0000	0.00
35	911.56	911.24	0.0000	0.00
36	964.71	964.36	0.0000	0.00
37	969.40	969.05	0.0000	0.00
38	1121.02	1120.62	0.0000	0.00
39	1168.54	1168.12	0.0000	0.00
40	1248.10	1247.65	0.0000	0.00
41	1378.29	1377.79	0.0000	0.00
42	1461.39	1460.87	0.0000	0.00

Analysis Report for 1606043-15

CP-5012 09-15

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1496.20	1495.67	0.0000	0.00
44	1587.52	1586.96	0.0000	0.00
45	1593.66	1593.10	0.0000	0.00
46	1729.28	1728.68	0.0000	0.00
47	1764.38	1763.77	0.0000	0.00
48	2057.38	2056.71	0.0000	0.00
49	2204.88	2204.19	0.0000	0.00
50	2270.37	2269.67	0.0000	0.00
51	2434.17	2433.44	0.0000	0.00
52	2614.98	2614.24	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606043-15

CP-5012 09-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 4:07:38PM

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	1.72E+03	118.14	1.87E+03	1.02
	2	63.19	59 -	66	63.29	1.22E+02	88.25	1.22E+03	1.55
M	3	72.91	71 -	83	73.00	3.91E+01	43.88	4.57E+02	1.00
m	4	76.81	71 -	83	76.90	2.97E+02	62.49	4.65E+02	1.10
M	5	86.80	83 -	96	86.89	1.18E+02	51.92	5.03E+02	1.22
m	6	89.71	83 -	96	89.79	1.14E+02	50.28	4.75E+02	1.23
m	7	93.04	83 -	96	93.12	2.05E+02	53.89	4.45E+02	1.23
	8	99.90	98 -	102	99.97	4.05E+01	48.85	4.87E+02	1.13
	9	114.67	112 -	117	114.74	4.33E+01	53.39	5.33E+02	2.24
	10	143.54	140 -	146	143.59	5.97E+01	55.32	5.11E+02	1.55
	11	171.01	169 -	174	171.05	4.90E+01	44.96	3.68E+02	1.87
	12	186.07	183 -	188	186.09	1.61E+02	51.44	3.99E+02	1.29
	13	209.81	206 -	213	209.82	5.11E+01	58.75	5.36E+02	1.98
	14	238.99	235 -	242	238.99	6.47E+02	83.09	7.17E+02	1.19
	15	270.47	267 -	274	270.45	4.78E+01	51.92	4.12E+02	1.61
	16	295.40	292 -	297	295.37	1.44E+02	40.32	2.09E+02	1.77
	17	300.98	299 -	305	300.94	5.00E+01	40.13	2.58E+02	1.69
	18	328.25	325 -	331	328.19	5.14E+01	39.00	2.41E+02	1.25
	19	338.58	335 -	344	338.53	1.33E+02	53.85	3.34E+02	1.97
	20	352.14	348 -	355	352.07	2.77E+02	50.95	2.48E+02	1.25
	21	434.85	432 -	437	434.74	2.98E+01	24.68	9.63E+01	2.91
	22	443.96	438 -	454	443.85	4.83E+01	57.70	3.03E+02	5.51
	23	462.93	460 -	465	462.81	3.63E+01	27.75	1.23E+02	1.28
	24	510.98	506 -	516	510.84	1.54E+02	47.20	2.15E+02	2.18
	25	562.55	559 -	566	562.38	2.77E+01	29.26	1.25E+02	1.50
	26	583.32	578 -	587	583.14	2.10E+02	42.66	1.40E+02	1.65
	27	609.58	604 -	613	609.39	1.91E+02	47.27	2.09E+02	1.91
	28	699.15	697 -	702	698.91	1.98E+01	20.27	6.24E+01	1.67
	29	723.14	708 -	734	722.89	6.65E+01	74.11	3.35E+02	1.94
	30	793.88	790 -	798	793.60	2.35E+01	27.23	1.01E+02	4.71
	31	830.64	828 -	832	830.35	1.44E+01	13.44	2.71E+01	1.27
	32	837.29	833 -	842	837.00	3.20E+01	24.94	7.21E+01	1.59
	33	848.94	846 -	852	848.64	1.47E+01	17.87	4.45E+01	3.67
	34	860.23	856 -	863	859.92	3.69E+01	24.58	7.63E+01	1.28
	35	911.56	908 -	916	911.24	1.41E+02	33.17	8.69E+01	2.00
M	36	964.71	962 -	973	964.36	1.92E+01	19.39	5.19E+01	2.51
m	37	969.40	962 -	973	969.05	7.46E+01	29.66	6.22E+01	2.63
	38	1121.02	1118 -	1126	1120.62	2.95E+01	21.98	6.11E+01	2.01
	39	1168.54	1164 -	1172	1168.12	3.40E+01	22.70	5.80E+01	4.34
	40	1248.10	1243 -	1251	1247.65	2.21E+01	21.43	5.39E+01	3.79

Analysis Report for 1606043-15

CP-5012 09-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1378.29	1375 -	1382	1377.79	9.25E+00	12.65	2.15E+01	1.79
42	1461.39	1456 -	1465	1460.87	5.43E+02	49.14	3.40E+01	2.06
43	1496.20	1491 -	1498	1495.67	8.82E+00	7.75	4.36E+00	2.71
44	1587.52	1582 -	1590	1586.96	1.80E+01	10.01	4.00E+00	1.45
45	1593.66	1591 -	1598	1593.10	1.40E+01	10.20	8.00E+00	2.32
46	1729.28	1724 -	1731	1728.68	1.20E+01	9.80	8.00E+00	1.59
47	1764.38	1760 -	1767	1763.77	3.10E+01	11.14	0.00E+00	2.46
48	2057.38	2053 -	2059	2056.71	7.00E+00	5.29	0.00E+00	1.98
49	2204.88	2201 -	2206	2204.19	1.08E+01	10.00	1.05E+01	1.22
50	2270.37	2265 -	2273	2269.67	9.00E+00	6.00	0.00E+00	5.99
51	2434.17	2429 -	2436	2433.44	9.00E+00	6.00	0.00E+00	2.92
52	2614.98	2608 -	2618	2614.24	6.60E+01	16.25	0.00E+00	2.19

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 4:07:38PM

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	12.97	12 -	15	1.72E+03	118.14	1.87E+03	8.70E+01
	2	63.19	59 -	66	1.22E+02	88.25	1.22E+03	7.02E+01
M	3	72.91	71 -	83	3.91E+01	43.88	4.57E+02	3.51E+01
m	4	76.81	71 -	83	2.97E+02	62.49	4.65E+02	3.55E+01
M	5	86.80	83 -	96	1.18E+02	51.92	5.03E+02	3.69E+01
m	6	89.71	83 -	96	1.14E+02	50.28	4.75E+02	3.58E+01
m	7	93.04	83 -	96	2.05E+02	53.89	4.45E+02	3.47E+01
	8	99.90	98 -	102	4.05E+01	48.85	4.87E+02	3.88E+01
	9	114.67	112 -	117	4.33E+01	53.39	5.33E+02	4.25E+01
	10	143.54	140 -	146	5.97E+01	55.32	5.11E+02	4.37E+01
	11	171.01	169 -	174	4.90E+01	44.96	3.68E+02	3.51E+01
	12	186.07	183 -	188	1.61E+02	51.44	3.99E+02	3.68E+01
	13	209.81	206 -	213	5.11E+01	58.75	5.36E+02	4.68E+01
	14	238.99	235 -	242	6.47E+02	83.09	7.17E+02	5.40E+01
	15	270.47	267 -	274	4.78E+01	51.92	4.12E+02	4.11E+01
	16	295.40	292 -	297	1.44E+02	40.32	2.09E+02	2.66E+01

Analysis Report for 1606043-15

CP-5012 09-15

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	17	300.98	299 -	305	5.00E+01	40.13	2.58E+02	3.09E+01
	18	328.25	325 -	331	5.14E+01	39.00	2.41E+02	2.98E+01
	19	338.58	335 -	344	1.33E+02	53.85	3.34E+02	4.00E+01
	20	352.14	348 -	355	2.77E+02	50.95	2.48E+02	3.17E+01
	21	434.85	432 -	437	2.98E+01	24.68	9.63E+01	1.82E+01
	22	443.96	438 -	454	4.83E+01	57.70	3.03E+02	4.60E+01
	23	462.93	460 -	465	3.63E+01	27.75	1.23E+02	2.05E+01
	24	510.98	506 -	516	1.54E+02	47.20	2.15E+02	3.30E+01
	25	562.55	559 -	566	2.77E+01	29.26	1.25E+02	2.24E+01
	26	583.32	578 -	587	2.10E+02	42.66	1.40E+02	2.57E+01
	27	609.58	604 -	613	1.91E+02	47.27	2.09E+02	3.15E+01
	28	699.15	697 -	702	1.98E+01	20.27	6.24E+01	1.50E+01
	29	723.14	708 -	734	6.65E+01	74.11	3.35E+02	1.40E+01
	30	793.88	790 -	798	2.35E+01	27.23	1.01E+02	2.09E+01
	31	830.64	828 -	832	1.44E+01	13.44	2.71E+01	9.12E+00
	32	837.29	833 -	842	3.20E+01	24.94	7.21E+01	9.10E+00
	33	848.94	846 -	852	1.47E+01	17.87	4.45E+01	1.33E+01
	34	860.23	856 -	863	3.69E+01	24.58	7.63E+01	1.76E+01
	35	911.56	908 -	916	1.41E+02	33.17	8.69E+01	1.91E+01
M	36	964.71	962 -	973	1.92E+01	19.39	5.19E+01	1.18E+01
m	37	969.40	962 -	973	7.46E+01	29.66	6.22E+01	1.30E+01
	38	1121.02	1118 -	1126	2.95E+01	21.98	6.11E+01	1.57E+01
	39	1168.54	1164 -	1172	3.40E+01	22.70	5.80E+01	1.60E+01
	40	1248.10	1243 -	1251	2.21E+01	21.43	5.39E+01	1.58E+01
	41	1378.29	1375 -	1382	9.25E+00	12.65	2.15E+01	9.12E+00
	42	1461.39	1456 -	1465	5.43E+02	49.14	3.40E+01	1.28E+01
	43	1496.20	1491 -	1498	8.82E+00	7.75	4.36E+00	4.09E+00
	44	1587.52	1582 -	1590	1.80E+01	10.01	4.00E+00	4.37E+00
	45	1593.66	1591 -	1598	1.40E+01	10.20	8.00E+00	5.70E+00
	46	1729.28	1724 -	1731	1.20E+01	9.80	8.00E+00	5.70E+00
	47	1764.38	1760 -	1767	3.10E+01	11.14	0.00E+00	0.00E+00
	48	2057.38	2053 -	2059	7.00E+00	5.29	0.00E+00	0.00E+00
	49	2204.88	2201 -	2206	1.08E+01	10.00	1.05E+01	6.21E+00
	50	2270.37	2265 -	2273	9.00E+00	6.00	0.00E+00	0.00E+00
	51	2434.17	2429 -	2436	9.00E+00	6.00	0.00E+00	0.00E+00
	52	2614.98	2608 -	2618	6.60E+01	16.25	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 1606043-15

CP-5012 09-15

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 4:07:38PM

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	1.72E+03	118.14	1.87E+03	.....
	2	63.19	59 -	66	63.29	1.22E+02	88.25	1.22E+03	TH-234
									TH-230
M	3	72.91	71 -	83	73.00	3.91E+01	43.88	4.57E+02	PM-145
m	4	76.81	71 -	83	76.90	2.97E+02	62.49	4.65E+02	.....
M	5	86.80	83 -	96	86.89	1.18E+02	51.92	5.03E+02	NP-237
									EU-155
									SN-126
m	6	89.71	83 -	96	89.79	1.14E+02	50.28	4.75E+02	.....
m	7	93.04	83 -	96	93.12	2.05E+02	53.89	4.45E+02	GA-67
	8	99.90	98 -	102	99.97	4.05E+01	48.85	4.87E+02	LU-173
	9	114.67	112 -	117	114.74	4.33E+01	53.39	5.33E+02	.....
	10	143.54	140 -	146	143.59	5.97E+01	55.32	5.11E+02	U-235
	11	171.01	169 -	174	171.05	4.90E+01	44.96	3.68E+02	.....
	12	186.07	183 -	188	186.09	1.61E+02	51.44	3.99E+02	RA-226
	13	209.81	206 -	213	209.82	5.11E+01	58.75	5.36E+02	CM-243
									GA-67
	14	238.99	235 -	242	238.99	6.47E+02	83.09	7.17E+02	PB-212
	15	270.47	267 -	274	270.45	4.78E+01	51.92	4.12E+02	.....
	16	295.40	292 -	297	295.37	1.44E+02	40.32	2.09E+02	PB-214
	17	300.98	299 -	305	300.94	5.00E+01	40.13	2.58E+02	GA-67
									PB-212
									BI-210M
	18	328.25	325 -	331	328.19	5.14E+01	39.00	2.41E+02	LA-140
	19	338.58	335 -	344	338.53	1.33E+02	53.85	3.34E+02	AC-228
	20	352.14	348 -	355	352.07	2.77E+02	50.95	2.48E+02	PB-214
	21	434.85	432 -	437	434.74	2.98E+01	24.68	9.63E+01	AG-108M
	22	443.96	438 -	454	443.85	4.83E+01	57.70	3.03E+02	.....
	23	462.93	460 -	465	462.81	3.63E+01	27.75	1.23E+02	SB-125
	24	510.98	506 -	516	510.84	1.54E+02	47.20	2.15E+02	.....
	25	562.55	559 -	566	562.38	2.77E+01	29.26	1.25E+02	CS-134
	26	583.32	578 -	587	583.14	2.10E+02	42.66	1.40E+02	TL-208
	27	609.58	604 -	613	609.39	1.91E+02	47.27	2.09E+02	BI-214
	28	699.15	697 -	702	698.91	1.98E+01	20.27	6.24E+01	.....
	29	723.14	708 -	734	722.89	6.65E+01	74.11	3.35E+02	EU-154
									AG-108M
									I-131
									SB-124
	30	793.88	790 -	798	793.60	2.35E+01	27.23	1.01E+02	.....
	31	830.64	828 -	832	830.35	1.44E+01	13.44	2.71E+01	.....
	32	837.29	833 -	842	837.00	3.20E+01	24.94	7.21E+01	.....

Analysis Report for 1606043-15

CP-5012 09-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	33	848.94	846 -	852	848.64	1.47E+01	17.87	4.45E+01	.....
	34	860.23	856 -	863	859.92	3.69E+01	24.58	7.63E+01	TL-208
	35	911.56	908 -	916	911.24	1.41E+02	33.17	8.69E+01	AC-228
									LU-172
M	36	964.71	962 -	973	964.36	1.92E+01	19.39	5.19E+01	EU-152
m	37	969.40	962 -	973	969.05	7.46E+01	29.66	6.22E+01	AC-228
	38	1121.02	1118 -	1126	1120.62	2.95E+01	21.98	6.11E+01	TA-182
									SC-46
									BI-214
	39	1168.54	1164 -	1172	1168.12	3.40E+01	22.70	5.80E+01	.....
	40	1248.10	1243 -	1251	1247.65	2.21E+01	21.43	5.39E+01	.....
	41	1378.29	1375 -	1382	1377.79	9.25E+00	12.65	2.15E+01	.....
	42	1461.39	1456 -	1465	1460.87	5.43E+02	49.14	3.40E+01	K-40
	43	1496.20	1491 -	1498	1495.67	8.82E+00	7.75	4.36E+00	.....
	44	1587.52	1582 -	1590	1586.96	1.80E+01	10.01	4.00E+00	.....
	45	1593.66	1591 -	1598	1593.10	1.40E+01	10.20	8.00E+00	.....
	46	1729.28	1724 -	1731	1728.68	1.20E+01	9.80	8.00E+00	.....
	47	1764.38	1760 -	1767	1763.77	3.10E+01	11.14	0.00E+00	BI-214
	48	2057.38	2053 -	2059	2056.71	7.00E+00	5.29	0.00E+00	.....
	49	2204.88	2201 -	2206	2204.19	1.08E+01	10.00	1.05E+01	BI-214
	50	2270.37	2265 -	2273	2269.67	9.00E+00	6.00	0.00E+00	.....
	51	2434.17	2429 -	2436	2433.44	9.00E+00	6.00	0.00E+00	.....
	52	2614.98	2608 -	2618	2614.24	6.60E+01	16.25	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 4:07:38PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	12.97	1.72E+03	118.14	1.22E-05	1.66E-03
	2	63.19	1.22E+02	88.25	2.36E-02	1.74E-03
M	3	72.91	3.91E+01	43.88	2.53E-02	1.95E-03
m	4	76.81	2.97E+02	62.49	2.57E-02	2.03E-03
M	5	86.80	1.18E+02	51.92	2.60E-02	2.25E-03
m	6	89.71	1.14E+02	50.28	2.60E-02	2.27E-03
m	7	93.04	2.05E+02	53.89	2.60E-02	2.27E-03

Analysis Report for 1606043-15

CP-5012 09-15

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	8	99.90	4.05E+01	48.85	2.58E-02	2.27E-03
	9	114.67	4.33E+01	53.39	2.50E-02	2.27E-03
	10	143.54	5.97E+01	55.32	2.29E-02	2.35E-03
	11	171.01	4.90E+01	44.96	2.09E-02	2.43E-03
	12	186.07	1.61E+02	51.44	1.99E-02	2.40E-03
	13	209.81	5.11E+01	58.75	1.85E-02	2.36E-03
	14	238.99	6.47E+02	83.09	1.70E-02	2.31E-03
	15	270.47	4.78E+01	51.92	1.56E-02	2.26E-03
	16	295.40	1.44E+02	40.32	1.47E-02	2.21E-03
	17	300.98	5.00E+01	40.13	1.45E-02	2.20E-03
	18	328.25	5.14E+01	39.00	1.36E-02	2.16E-03
	19	338.58	1.33E+02	53.85	1.33E-02	2.14E-03
	20	352.14	2.77E+02	50.95	1.30E-02	2.12E-03
	21	434.85	2.98E+01	24.68	1.11E-02	1.83E-03
	22	443.96	4.83E+01	57.70	1.09E-02	1.78E-03
	23	462.93	3.63E+01	27.75	1.05E-02	1.68E-03
	24	510.98	1.54E+02	47.20	9.77E-03	1.43E-03
	25	562.55	2.77E+01	29.26	9.05E-03	1.16E-03
	26	583.32	2.10E+02	42.66	8.79E-03	1.06E-03
	27	609.58	1.91E+02	47.27	8.48E-03	9.21E-04
	28	699.15	1.98E+01	20.27	7.58E-03	7.00E-04
	29	723.14	6.65E+01	74.11	7.38E-03	7.31E-04
	30	793.88	2.35E+01	27.23	6.83E-03	8.22E-04
	31	830.64	1.44E+01	13.44	6.58E-03	8.69E-04
	32	837.29	3.20E+01	24.94	6.53E-03	8.77E-04
	33	848.94	1.47E+01	17.87	6.46E-03	8.92E-04
	34	860.23	3.69E+01	24.58	6.39E-03	9.07E-04
	35	911.56	1.41E+02	33.17	6.09E-03	9.28E-04
M	36	964.71	1.92E+01	19.39	5.81E-03	8.21E-04
m	37	969.40	7.46E+01	29.66	5.79E-03	8.11E-04
	38	1121.02	2.95E+01	21.98	5.15E-03	5.04E-04
	39	1168.54	3.40E+01	22.70	4.99E-03	4.08E-04
	40	1248.10	2.21E+01	21.43	4.74E-03	3.82E-04
	41	1378.29	9.25E+00	12.65	4.41E-03	3.66E-04
	42	1461.39	5.43E+02	49.14	4.23E-03	3.72E-04
	43	1496.20	8.82E+00	7.75	4.16E-03	3.75E-04
	44	1587.52	1.80E+01	10.01	4.01E-03	3.82E-04
	45	1593.66	1.40E+01	10.20	4.00E-03	3.83E-04
	46	1729.28	1.20E+01	9.80	3.81E-03	3.93E-04
	47	1764.38	3.10E+01	11.14	3.77E-03	3.96E-04
	48	2057.38	7.00E+00	5.29	3.53E-03	4.01E-04
	49	2204.88	1.08E+01	10.00	3.45E-03	4.01E-04
	50	2270.37	9.00E+00	6.00	3.43E-03	4.01E-04
	51	2434.17	9.00E+00	6.00	3.40E-03	4.01E-04
	52	2614.98	6.60E+01	16.25	3.40E-03	4.01E-04

Analysis Report for 1606043-15

CP-5012 09-15

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 4:07:38PM

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	1.72E+03	118.14			1.72E+03	1.18E+02
	2	63.19	1.22E+02	88.25	2.91E+01	8.34E+00	9.32E+01	8.86E+01
M	3	72.91	3.91E+01	43.88			3.91E+01	4.39E+01
m	4	76.81	2.97E+02	62.49			2.97E+02	6.25E+01
M	5	86.80	1.18E+02	51.92			1.18E+02	5.19E+01
m	6	89.71	1.14E+02	50.28			1.14E+02	5.03E+01
m	7	93.04	2.05E+02	53.89	4.47E+01	7.30E+00	1.61E+02	5.44E+01
	8	99.90	4.05E+01	48.85			4.05E+01	4.88E+01
	9	114.67	4.33E+01	53.39			4.33E+01	5.34E+01
	10	143.54	5.97E+01	55.32	5.98E+00	5.50E+00	5.38E+01	5.56E+01
	11	171.01	4.90E+01	44.96			4.90E+01	4.50E+01
	12	186.07	1.61E+02	51.44	3.13E+01	6.95E+00	1.29E+02	5.19E+01
	13	209.81	5.11E+01	58.75			5.11E+01	5.88E+01
	14	238.99	6.47E+02	83.09	1.19E+01	7.10E+00	6.35E+02	8.34E+01
	15	270.47	4.78E+01	51.92			4.78E+01	5.19E+01
	16	295.40	1.44E+02	40.32			1.44E+02	4.03E+01
	17	300.98	5.00E+01	40.13			5.00E+01	4.01E+01
	18	328.25	5.14E+01	39.00			5.14E+01	3.90E+01
	19	338.58	1.33E+02	53.85			1.33E+02	5.39E+01
	20	352.14	2.77E+02	50.95	9.12E+00	4.79E+00	2.68E+02	5.12E+01
	21	434.85	2.98E+01	24.68			2.98E+01	2.47E+01
	22	443.96	4.83E+01	57.70			4.83E+01	5.77E+01
	23	462.93	3.63E+01	27.75			3.63E+01	2.77E+01
	24	510.98	1.54E+02	47.20	6.97E+01	5.00E+00	8.48E+01	4.75E+01
	25	562.55	2.77E+01	29.26			2.77E+01	2.93E+01
	26	583.32	2.10E+02	42.66	3.98E+00	3.57E+00	2.06E+02	4.28E+01
	27	609.58	1.91E+02	47.27	8.66E+00	3.90E+00	1.83E+02	4.74E+01
	28	699.15	1.98E+01	20.27			1.98E+01	2.03E+01
	29	723.14	6.65E+01	74.11			6.65E+01	7.41E+01
	30	793.88	2.35E+01	27.23			2.35E+01	2.72E+01
	31	830.64	1.44E+01	13.44			1.44E+01	1.34E+01
	32	837.29	3.20E+01	24.94			3.20E+01	2.49E+01
	33	848.94	1.47E+01	17.87			1.47E+01	1.79E+01
	34	860.23	3.69E+01	24.58			3.69E+01	2.46E+01
	35	911.56	1.41E+02	33.17	2.01E+00	2.72E+00	1.39E+02	3.33E+01

Analysis Report for 1606043-15

CP-5012 09-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	36	964.71	1.92E+01	19.39			1.92E+01	1.94E+01
m	37	969.40	7.46E+01	29.66			7.46E+01	2.97E+01
	38	1121.02	2.95E+01	21.98			2.95E+01	2.20E+01
	39	1168.54	3.40E+01	22.70			3.40E+01	2.27E+01
	40	1248.10	2.21E+01	21.43			2.21E+01	2.14E+01
	41	1378.29	9.25E+00	12.65			9.25E+00	1.26E+01
	42	1461.39	5.43E+02	49.14	3.09E+00	1.97E+00	5.40E+02	4.92E+01
	43	1496.20	8.82E+00	7.75			8.82E+00	7.75E+00
	44	1587.52	1.80E+01	10.01			1.80E+01	1.00E+01
	45	1593.66	1.40E+01	10.20			1.40E+01	1.02E+01
	46	1729.28	1.20E+01	9.80			1.20E+01	9.80E+00
	47	1764.38	3.10E+01	11.14			3.10E+01	1.11E+01
	48	2057.38	7.00E+00	5.29			7.00E+00	5.29E+00
	49	2204.88	1.08E+01	10.00			1.08E+01	1.00E+01
	50	2270.37	9.00E+00	6.00			9.00E+00	6.00E+00
	51	2434.17	9.00E+00	6.00			9.00E+00	6.00E+00
	52	2614.98	6.60E+01	16.25	3.07E+00	1.34E+00	6.29E+01	1.63E+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 4:07:38PM

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	1.72E+03	118.14			1.72E+03	1.18E+02
	2	63.19	1.22E+02	88.25	2.91E+01	8.34E+00	9.32E+01	8.86E+01
M	3	72.91	3.91E+01	43.88			3.91E+01	4.39E+01
m	4	76.81	2.97E+02	62.49			2.97E+02	6.25E+01
M	5	86.80	1.18E+02	51.92			1.18E+02	5.19E+01
m	6	89.71	1.14E+02	50.28			1.14E+02	5.03E+01
m	7	93.04	2.05E+02	53.89	4.47E+01	7.30E+00	1.61E+02	5.44E+01
	8	99.90	4.05E+01	48.85			4.05E+01	4.88E+01
	9	114.67	4.33E+01	53.39			4.33E+01	5.34E+01
	10	143.54	5.97E+01	55.32	5.98E+00	5.50E+00	5.38E+01	5.56E+01
	11	171.01	4.90E+01	44.96			4.90E+01	4.50E+01

Analysis Report for 1606043-15

CP-5012 09-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	12	186.07	1.61E+02	51.44	3.13E+01	6.95E+00	1.29E+02	5.19E+01
	13	209.81	5.11E+01	58.75			5.11E+01	5.88E+01
	14	238.99	6.47E+02	83.09	1.19E+01	7.10E+00	6.35E+02	8.34E+01
	15	270.47	4.78E+01	51.92			4.78E+01	5.19E+01
	16	295.40	1.44E+02	40.32			1.44E+02	4.03E+01
	17	300.98	5.00E+01	40.13			5.00E+01	4.01E+01
	18	328.25	5.14E+01	39.00			5.14E+01	3.90E+01
	19	338.58	1.33E+02	53.85			1.33E+02	5.39E+01
	20	352.14	2.77E+02	50.95	9.12E+00	4.79E+00	2.68E+02	5.12E+01
	21	434.85	2.98E+01	24.68			2.98E+01	2.47E+01
	22	443.96	4.83E+01	57.70			4.83E+01	5.77E+01
	23	462.93	3.63E+01	27.75			3.63E+01	2.77E+01
	24	510.98	1.54E+02	47.20	6.97E+01	5.00E+00	8.48E+01	4.75E+01
	25	562.55	2.77E+01	29.26			2.77E+01	2.93E+01
	26	583.32	2.10E+02	42.66	3.98E+00	3.57E+00	2.06E+02	4.28E+01
	27	609.58	1.91E+02	47.27	8.66E+00	3.90E+00	1.83E+02	4.74E+01
	28	699.15	1.98E+01	20.27			1.98E+01	2.03E+01
	29	723.14	6.65E+01	74.11			6.65E+01	7.41E+01
	30	793.88	2.35E+01	27.23			2.35E+01	2.72E+01
	31	830.64	1.44E+01	13.44			1.44E+01	1.34E+01
	32	837.29	3.20E+01	24.94			3.20E+01	2.49E+01
	33	848.94	1.47E+01	17.87			1.47E+01	1.79E+01
	34	860.23	3.69E+01	24.58			3.69E+01	2.46E+01
	35	911.56	1.41E+02	33.17	2.01E+00	2.72E+00	1.39E+02	3.33E+01
M	36	964.71	1.92E+01	19.39			1.92E+01	1.94E+01
m	37	969.40	7.46E+01	29.66			7.46E+01	2.97E+01
	38	1121.02	2.95E+01	21.98			2.95E+01	2.20E+01
	39	1168.54	3.40E+01	22.70			3.40E+01	2.27E+01
	40	1248.10	2.21E+01	21.43			2.21E+01	2.14E+01
	41	1378.29	9.25E+00	12.65			9.25E+00	1.26E+01
	42	1461.39	5.43E+02	49.14	3.09E+00	1.97E+00	5.40E+02	4.92E+01
	43	1496.20	8.82E+00	7.75			8.82E+00	7.75E+00
	44	1587.52	1.80E+01	10.01			1.80E+01	1.00E+01
	45	1593.66	1.40E+01	10.20			1.40E+01	1.02E+01
	46	1729.28	1.20E+01	9.80			1.20E+01	9.80E+00
	47	1764.38	3.10E+01	11.14			3.10E+01	1.11E+01
	48	2057.38	7.00E+00	5.29			7.00E+00	5.29E+00
	49	2204.88	1.08E+01	10.00			1.08E+01	1.00E+01
	50	2270.37	9.00E+00	6.00			9.00E+00	6.00E+00
	51	2434.17	9.00E+00	6.00			9.00E+00	6.00E+00
	52	2614.98	6.60E+01	16.25	3.07E+00	1.34E+00	6.29E+01	1.63E+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 1606043-15

CP-5012 09-15

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	0.948	1460.81	*	10.67	3.11E+01	3.99E+00
GA-67	0.924	93.31	*	35.70	3.14E+00	5.25E+00
		208.95	*	2.24	2.24E+01	3.72E+01
		300.22	*	16.00	3.91E+00	7.15E+00
AG-108M	0.434	433.93	*	89.90	7.79E-02	6.57E-02
		614.37		90.40		
		722.95	*	90.50	2.59E-01	2.89E-01
SN-126	0.910	87.57	*	37.00	3.18E-01	1.43E-01
EU-155	0.353	86.50	*	30.90	3.83E-01	1.71E-01
		105.30		20.70		
TL-208	0.989	583.14	*	30.22	2.02E+00	4.84E-01
		860.37	*	4.48	3.34E+00	2.28E+00
		2614.66	*	35.85	1.34E+00	3.82E-01
PB-212	0.972	238.63	*	44.60	2.18E+00	4.11E-01
		300.09	*	3.41	2.62E+00	2.14E+00
BI-214	0.973	609.31	*	46.30	1.21E+00	3.40E-01
		1120.29	*	15.10	9.83E-01	7.40E-01
		1764.49	*	15.80	1.35E+00	5.05E-01
		2204.22	*	4.98	1.62E+00	1.52E+00
PB-214	0.993	295.21	*	19.19	1.33E+00	4.21E-01
		351.92	*	37.19	1.44E+00	3.62E-01
RA-226	0.997	186.21	*	3.28	5.14E+00	9.65E+00
AC-228	0.975	338.32	*	11.40	2.27E+00	9.89E-01
		911.07	*	27.70	2.13E+00	6.07E-01
		969.11	*	16.60	2.01E+00	8.49E-01
TH-234	0.999	63.29	*	3.80	2.69E+00	2.57E+00
NP-237	0.986	86.50	*	12.60	9.35E-01	4.19E-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

Analysis Report for 1606043-15

CP-5012 09-15

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 4:07:38PM
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	4.78137E-01	3.43		
M	3	72.91	1.08520E-02	56.16	Tol.	PM-145
m	4	76.81	8.23718E-02	10.54		
m	6	89.71	3.15991E-02	22.10		
	8	99.90	1.12627E-02	60.24	D-Esc	
	9	114.67	1.20358E-02	61.62		
	10	143.54	1.49336E-02	51.71	Tol.	U-235
	11	171.01	1.35974E-02	45.92		
	15	270.47	1.32672E-02	54.36		
	18	328.25	1.42668E-02	37.97	Tol.	LA-140
	22	443.96	1.34049E-02	59.78		
	23	462.93	1.00709E-02	38.27	Tol.	SB-125
	24	510.98	2.35535E-02	27.99	Sum	
	25	562.55	7.69907E-03	52.78	Sum	
	28	699.15	5.49837E-03	51.21		
	30	793.88	6.52778E-03	57.94	Sum	
	31	830.64	4.01290E-03	46.53		
	32	837.29	8.88072E-03	39.00		
	33	848.94	4.09535E-03	60.62	Sum	
M	36	964.71	5.34408E-03	50.40	Tol.	EU-152
	39	1168.54	9.44004E-03	33.40		
	40	1248.10	6.13095E-03	48.55		
	41	1378.29	2.56944E-03	68.37		
	43	1496.20	2.44950E-03	43.92		
	44	1587.52	5.00000E-03	27.81		
	45	1593.66	3.88889E-03	36.42	D-Esc	
	46	1729.28	3.33333E-03	40.82		
	48	2057.38	1.94444E-03	37.80		
	50	2270.37	2.50000E-03	33.33		
	51	2434.17	2.50000E-03	33.33		

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 1606043-15

CP-5012 09-15

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	0.94	1460.81	*	10.67	3.11E+01	3.99E+00
GA-67	0.92	93.31	*	35.70	3.14E+00	5.25E+00
		208.95	*	2.24	2.24E+01	3.72E+01
		300.22	*	16.00	3.91E+00	7.15E+00
AG-108M	0.43	433.93	*	89.90	7.79E-02	6.57E-02
		614.37		90.40		
		722.95	*	90.50	2.59E-01	2.89E-01
SN-126	0.91	87.57	*	37.00	3.18E-01	1.43E-01
EU-155	0.35	86.50	*	30.90	3.83E-01	1.71E-01
		105.30		20.70		
TL-208	0.98	583.14	*	30.22	2.02E+00	4.84E-01
		860.37	*	4.48	3.34E+00	2.28E+00
		2614.66	*	35.85	1.34E+00	3.82E-01
PB-212	0.97	238.63	*	44.60	2.18E+00	4.11E-01
		300.09	*	3.41	2.62E+00	2.14E+00
BI-214	0.97	609.31	*	46.30	1.21E+00	3.40E-01
		1120.29	*	15.10	9.83E-01	7.40E-01
		1764.49	*	15.80	1.35E+00	5.05E-01
		2204.22	*	4.98	1.62E+00	1.52E+00
PB-214	0.99	295.21	*	19.19	1.33E+00	4.21E-01
		351.92	*	37.19	1.44E+00	3.62E-01
RA-226	0.99	186.21	*	3.28	5.14E+00	9.65E+00
AC-228	0.97	338.32	*	11.40	2.27E+00	9.89E-01
		911.07	*	27.70	2.13E+00	6.07E-01
		969.11	*	16.60	2.01E+00	8.49E-01
TH-234	0.99	63.29	*	3.80	2.69E+00	2.57E+00
NP-237	0.98	86.50	*	12.60	9.35E-01	4.19E-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

Analysis Report for 1606043-15

CP-5012 09-15

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.948	3.11E+01	3.99E+00	
	GA-67	0.924	2.92E+00	3.63E+00	
	AG-108M	0.434	8.67E-02	6.40E-02	
?	SN-126	0.910	3.18E-01	1.43E-01	
?	EU-155	0.353	3.83E-01	1.71E-01	
	TL-208	0.989	1.63E+00	2.97E-01	
	PB-212	0.972	2.12E+00	4.04E-01	
	BI-214	0.973	1.23E+00	2.60E-01	
	PB-214	0.993	1.39E+00	2.75E-01	
	RA-226	0.997	5.14E+00	9.65E+00	
	AC-228	0.975	2.13E+00	4.42E-01	
	TH-234	0.999	2.69E+00	2.57E+00	
?	NP-237	0.986	9.35E-01	4.19E-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

Analysis Report for 1606043-15

CP-5012 09-15

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 4:07:38PM
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	4.78137E-01	3.43		
M	3	72.91	1.08520E-02	56.16	Tol.	PM-145
m	4	76.81	8.23718E-02	10.54		
m	6	89.71	3.15991E-02	22.10		
	8	99.90	1.12627E-02	60.24	D-Esc	
	9	114.67	1.20358E-02	61.62		
	10	143.54	1.49336E-02	51.71	Tol.	U-235
	11	171.01	1.35974E-02	45.92		
	15	270.47	1.32672E-02	54.36		
	18	328.25	1.42668E-02	37.97	Tol.	LA-140
	22	443.96	1.34049E-02	59.78		
	23	462.93	1.00709E-02	38.27	Tol.	SB-125
	24	510.98	2.35535E-02	27.99	Sum	
	25	562.55	7.69907E-03	52.78	Sum	
	28	699.15	5.49837E-03	51.21		
	30	793.88	6.52778E-03	57.94	Sum	
	31	830.64	4.01290E-03	46.53		
	32	837.29	8.88072E-03	39.00		
	33	848.94	4.09535E-03	60.62	Sum	
M	36	964.71	5.34408E-03	50.40	Tol.	EU-152
	39	1168.54	9.44004E-03	33.40		
	40	1248.10	6.13095E-03	48.55		
	41	1378.29	2.56944E-03	68.37		
	43	1496.20	2.44950E-03	43.92		
	44	1587.52	5.00000E-03	27.81		
	45	1593.66	3.88889E-03	36.42	D-Esc	
	46	1729.28	3.33333E-03	40.82		
	48	2057.38	1.94444E-03	37.80		
	50	2270.37	2.50000E-03	33.33		
	51	2434.17	2.50000E-03	33.33		

Analysis Report for 1606043-15

CP-5012 09-15

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	-8.78E-03	9.24E-01	9.24E-01
+	NA-22	1274.54		99.94	8.28E-02	1.76E-01	1.76E-01
+	NA-24	1368.53		99.99	4.91E+02	5.25E+02	3.19E+03
		2754.09		99.86	0.00E+00		5.25E+02
+	AL-26	1808.65		99.76	5.24E-02	1.11E-01	1.11E-01
+	K-40	1460.81	*	10.67	3.11E+01	1.68E+00	1.68E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	4.70E-02	8.51E-02	8.51E-02
		78.34		96.00	4.54E-01		1.30E-01
+	SC-46	889.25		99.98	-4.33E-02	1.43E-01	1.43E-01
		1120.51		99.99	1.55E-01		1.99E-01
+	V-48	983.52		99.98	8.60E-02	2.01E-01	2.01E-01
		1312.10		97.50	1.31E-01		2.33E-01
+	CR-51	320.08		9.83	1.79E-01	1.10E+00	1.10E+00
+	MN-54	834.83		99.97	-5.26E-02	1.34E-01	1.34E-01
+	CO-56	846.75		99.96	-8.70E-03	1.33E-01	1.44E-01
		1037.75		14.03	1.98E-01		1.02E+00
		1238.25		67.00	2.19E-01		3.33E-01
		1771.40		15.51	-3.05E-01		6.80E-01
		2598.48		16.90	0.00E+00		1.33E-01
+	CO-57	122.06		85.51	-4.54E-02	9.02E-02	9.02E-02
		136.48		10.60	2.52E-01		7.84E-01
+	CO-58	810.76		99.40	-3.05E-02	1.22E-01	1.22E-01
+	FE-59	1099.22		56.50	1.04E-01	3.06E-01	3.06E-01
		1291.56		43.20	1.34E-01		4.10E-01
+	CO-60	1173.22		100.00	4.62E-02	1.42E-01	1.78E-01
		1332.49		100.00	-1.55E-02		1.42E-01
+	ZN-65	1115.52		50.75	1.58E-02	2.39E-01	2.39E-01
+	GA-67	93.31	*	35.70	3.14E+00	3.70E+00	3.70E+00
		208.95	*	2.24	2.24E+01		4.23E+01
		300.22	*	16.00	3.91E+00		5.04E+00
+	SE-75	121.11		16.70	5.83E-03	1.46E-01	4.79E-01

Analysis Report for 1606043-15

CP-5012 09-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	5.72E-02	1.46E-01	1.46E-01
		264.65		59.80	-5.28E-03		1.56E-01
		279.53		25.20	2.87E-02		4.13E-01
		400.65		11.40	-2.81E-03		7.78E-01
+	RB-82	776.52		13.00	1.14E-01	1.29E+00	1.29E+00
+	RB-83	520.41		46.00	2.79E-02	2.16E-01	2.16E-01
		529.64		30.30	-8.23E-02		3.05E-01
		552.65		16.40	1.41E-01		6.67E-01
+	KR-85	513.99		0.43	-8.19E+00	2.90E+01	2.90E+01
+	SR-85	513.99		99.27	-3.94E-02	1.40E-01	1.40E-01
+	Y-88	898.02		93.40	1.65E-02	1.19E-01	1.66E-01
		1836.01		99.38	3.31E-02		1.19E-01
+	NB-93M	16.57		9.43	1.42E+02	1.64E+02	1.64E+02
+	NB-94	702.63		100.00	1.20E-02	1.21E-01	1.21E-01
		871.10		100.00	2.42E-02		1.35E-01
+	NB-95	765.79		99.81	1.66E-01	1.83E-01	1.83E-01
+	NB-95M	235.69		25.00	-2.98E+01	2.88E+00	2.88E+00
+	ZR-95	724.18		43.70	-9.65E-02	2.89E-01	3.61E-01
		756.72		55.30	1.43E-01		2.89E-01
+	MO-99	181.06		6.20	3.29E+00	1.09E+01	1.38E+01
		739.58		12.80	5.87E+00		1.09E+01
		778.00		4.50	-1.42E+01		2.71E+01
+	RU-103	497.08		89.00	7.05E-03	1.20E-01	1.20E-01
+	RU-106	621.84		9.80	-1.49E-01	1.28E+00	1.28E+00
+	AG-108M	433.93	*	89.90	7.79E-02	1.02E-01	1.02E-01
		614.37		90.40	3.26E-02		1.48E-01
		722.95	*	90.50	2.59E-01		4.73E-01
+	CD-109	88.03		3.72	4.17E+00	3.02E+00	3.02E+00
+	AG-110M	657.75		93.14	-2.71E-02	1.43E-01	1.43E-01
		677.61		10.53	5.05E-01		1.15E+00
		706.67		16.46	1.65E-01		7.30E-01
		763.93		21.98	-4.93E-01		6.06E-01
		884.67		71.63	2.04E-02		2.00E-01
		1384.27		23.94	1.39E-01		5.40E-01
+	CD-113M	263.70		0.02	-1.52E+02	3.69E+02	3.69E+02
+	SN-113	255.12		1.93	-2.19E+00	1.55E-01	4.32E+00
		391.69		64.90	-2.41E-02		1.55E-01
+	TE123M	159.00		84.10	-4.34E-02	1.03E-01	1.03E-01
+	SB-124	602.71		97.87	0.00E+00	1.40E-01	1.40E-01
		645.85		7.26	-6.90E-01		1.80E+00
		722.78		11.10	-2.12E+00		1.27E+00
		1691.02		49.00	-4.57E-02		2.15E-01
+	I-125	35.49		6.49	-1.37E-01	2.80E+00	2.80E+00
+	SB-125	176.33		6.89	-8.33E-02	3.58E-01	1.17E+00
		427.89		29.33	2.55E-01		3.58E-01
		463.38		10.35	5.03E-01		1.09E+00
		600.56		17.80	-1.72E-02		6.98E-01
		635.90		11.32	1.69E-01		1.11E+00

Analysis Report for 1606043-15

CP-5012 09-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70		83.30	-3.43E-02	1.70E-01	1.70E-01
		666.33		99.60	8.34E-02		2.20E-01
		695.00		99.60	-4.52E-02		2.34E-01
		720.50		53.80	-8.70E-02		3.80E-01
+	SN-126	87.57	*	37.00	3.18E-01	5.07E-01	5.07E-01
+	SB-127	473.00		25.00	-2.14E-01	1.70E+00	1.80E+00
		685.20		35.70	2.41E-01		1.70E+00
		783.80		14.70	2.30E+00		4.90E+00
+	I-129	29.78		57.00	-1.11E-01	4.85E-01	4.85E-01
		33.60		13.20	-1.18E-01		1.38E+00
		39.58		7.52	-1.10E-01		1.68E+00
+	I-131	284.30		6.05	4.32E-01	2.36E-01	3.33E+00
		364.48		81.20	1.98E-01		2.36E-01
		636.97		7.26	6.31E-01		3.78E+00
		722.89		1.80	-2.60E+01		1.55E+01
+	TE-132	49.72		13.10	8.60E-01	6.55E-01	4.33E+00
		228.16		88.00	-1.28E-01		6.55E-01
+	BA-133	81.00		33.00	2.14E-01	1.34E-01	2.23E-01
		302.84		17.80	-1.08E-01		5.32E-01
		356.01		60.00	-9.70E-02		1.34E-01
+	I-133	529.87		86.30	9.80E+00	1.54E+02	1.54E+02
+	XE-133	81.00		38.00	6.21E-01	6.49E-01	6.49E-01
+	CS-134	563.23		8.38	1.00E+00	1.35E-01	1.43E+00
		569.32		15.43	1.48E-01		7.45E-01
		604.70		97.60	3.77E-03		1.35E-01
		795.84		85.40	7.36E-02		1.74E-01
		801.93		8.73	1.77E-02		1.58E+00
+	CS-135	268.24		16.00	-1.46E-01	6.48E-01	6.48E-01
+	I-135	1131.51		22.50	3.91E+08	5.20E+09	7.18E+09
		1260.41		28.60	-1.13E+09		5.20E+09
		1678.03		9.54	-5.51E+09		9.92E+09
+	CS-136	153.22		7.46	9.16E-02	1.84E-01	1.80E+00
		163.89		4.61	-1.33E+00		3.01E+00
		176.55		13.56	3.50E-01		9.93E-01
		273.65		12.66	-5.82E-01		1.06E+00
		340.57		48.50	7.14E-02		3.93E-01
		818.50		99.70	-2.91E-02		1.84E-01
		1048.07		79.60	-1.05E-01		2.86E-01
		1235.34		19.70	4.92E-01		1.63E+00
+	CS-137	661.65		85.12	1.98E-02	1.62E-01	1.62E-01
+	LA-138	788.74		34.00	4.30E-02	1.46E-01	4.03E-01
		1435.80		66.00	-7.29E-02		1.46E-01
+	CE-139	165.85		80.35	7.75E-03	1.08E-01	1.08E-01
+	BA-140	162.64		6.70	2.93E-01	6.10E-01	2.12E+00
		304.84		4.50	1.78E-03		3.13E+00
		423.70		3.20	1.99E-01		5.20E+00
		437.55		2.00	1.07E+00		7.67E+00
		537.32		25.00	-1.60E-01		6.10E-01
+	LA-140	328.77		20.50	7.17E-01	2.57E-01	8.72E-01

Analysis Report for 1606043-15

CP-5012 09-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	487.03		45.50	-7.39E-03	2.57E-01	3.44E-01
		815.85		23.50	3.26E-01		8.00E-01
		1596.49		95.49	1.12E-02		2.57E-01
+	CE-141	145.44		48.40	-3.51E-02	2.04E-01	2.04E-01
+	CE-143	57.36		11.80	3.15E+00	2.80E+01	6.91E+01
		293.26		42.00	-4.34E+00		2.80E+01
		664.55		5.20	4.45E+01		2.61E+02
+	CE-144	133.54		10.80	8.33E-02	7.68E-01	7.68E-01
+	PM-144	476.78		42.00	-1.97E-03	1.29E-01	2.07E-01
		618.01		98.60	5.95E-03		1.29E-01
		696.49		99.49	8.85E-03		1.51E-01
+	PM-145	36.85		21.70	5.62E-02	3.63E-01	6.88E-01
		37.36		39.70	2.97E-02		3.63E-01
		42.30		15.10	5.53E-02		7.47E-01
		72.40		2.31	1.43E+00		3.66E+00
+	PM-146	453.90		39.94	-2.23E-02	2.21E-01	2.21E-01
		735.90		14.01	2.62E-02		8.85E-01
		747.13		13.10	6.92E-02		9.68E-01
+	ND-147	91.11		28.90	-5.68E-01	6.90E-01	6.90E-01
		531.02		13.10	2.83E-01		1.24E+00
+	PM-149	285.90		3.10	-3.63E+00	4.89E+01	4.89E+01
+	EU-152	121.78		20.50	-1.85E-01	3.68E-01	3.68E-01
		244.69		5.40	-3.83E+00		1.62E+00
		344.27		19.13	9.28E-02		4.68E-01
		778.89		9.20	3.15E-01		1.40E+00
		964.01		10.40	-4.21E+00		1.70E+00
		1085.78		7.22	-1.01E+00		1.89E+00
		1112.02		9.60	5.79E-01		1.45E+00
		1407.95		14.94	8.35E-02		9.00E-01
+	GD-153	97.43		31.30	1.04E-01	2.72E-01	2.72E-01
		103.18		22.20	-1.66E-01		3.56E-01
+	EU-154	123.07		40.50	-2.84E-03	1.92E-01	1.92E-01
		723.30		19.70	-1.08E+00		6.44E-01
		873.19		11.50	-1.46E-01		1.14E+00
		996.32		10.30	-4.46E-01		1.37E+00
		1004.76		17.90	-1.38E-01		6.95E-01
		1274.45		35.50	2.32E-01		4.93E-01
+	EU-155	86.50	*	30.90	3.83E-01	3.99E-01	6.09E-01
		105.30		20.70	3.35E-01		3.99E-01
+	EU-156	811.77		10.40	-2.98E-01	1.62E+00	1.62E+00
		1153.47		7.20	1.26E-01		3.11E+00
		1230.71		8.90	-3.62E-01		2.87E+00
+	HO-166M	184.41		72.60	5.98E-02	1.49E-01	1.49E-01
		280.45		29.60	2.32E-02		3.34E-01
		410.94		11.10	5.31E-01		9.13E-01
		711.69		54.10	9.32E-02		2.58E-01
+	TM-171	66.72		0.14	3.41E+01	5.85E+01	5.85E+01
+	HF-172	81.75		4.52	1.20E+00	7.09E-01	1.58E+00
		125.81		11.30	-1.05E+00		7.09E-01

Analysis Report for 1606043-15

CP-5012 09-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53		20.60	-4.97E-02	5.57E-01	1.07E+00
		810.06		16.63	-4.29E-01		1.71E+00
		912.12		15.25	1.02E+01		4.64E+00
		1093.66		62.50	-1.78E-01		5.57E-01
+	LU-173	100.72		5.24	3.04E-01	5.24E-01	1.56E+00
		272.11		21.20	5.89E-01		5.24E-01
+	HF-175	343.40		84.00	-7.89E-02	1.14E-01	1.14E-01
+	LU-176	88.34		13.30	1.15E+00	9.22E-02	8.32E-01
		201.83		86.00	-8.28E-02		9.84E-02
		306.78		94.00	-2.20E-03		9.22E-02
+	TA-182	67.75		41.20	1.14E-01	2.06E-01	2.06E-01
		1121.30		34.90	6.64E-01		5.73E-01
		1189.05		16.23	5.72E-01		1.20E+00
		1221.41		26.98	2.62E-01		7.45E-01
		1231.02		11.44	-6.49E-01		1.51E+00
+	IR-192	308.46		29.68	-1.58E-01	2.18E-01	3.03E-01
		468.07		48.10	1.12E-02		2.18E-01
+	HG-203	279.19		77.30	7.67E-02	1.48E-01	1.48E-01
+	BI-207	569.67		97.72	2.32E-02	1.17E-01	1.17E-01
		1063.62		74.90	-3.87E-02		1.79E-01
+	TL-208	583.14	*	30.22	2.02E+00	1.89E-01	5.37E-01
		860.37	*	4.48	3.34E+00		3.43E+00
		2614.66	*	35.85	1.34E+00		1.89E-01
+	BI-210M	262.00		45.00	7.04E-02	1.86E-01	1.86E-01
		300.00		23.00	5.69E-01		4.48E-01
+	PB-210	46.50		4.25	3.62E+00	2.66E+00	2.66E+00
+	PB-211	404.84		2.90	-1.37E+00	2.92E+00	2.92E+00
		831.96		2.90	-1.74E+00		4.43E+00
+	BI-212	727.17		11.80	1.21E+00	1.37E+00	1.37E+00
		1620.62		2.75	-1.16E+00		4.80E+00
+	PB-212	238.63	*	44.60	2.18E+00	3.83E-01	3.83E-01
		300.09	*	3.41	2.62E+00		3.38E+00
+	BI-214	609.31	*	46.30	1.21E+00	1.18E-01	4.42E-01
		1120.29	*	15.10	9.83E-01		1.14E+00
		1764.49	*	15.80	1.35E+00		1.18E-01
		2204.22	*	4.98	1.62E+00		2.28E+00
+	PB-214	295.21	*	19.19	1.33E+00	3.63E-01	5.15E-01
		351.92	*	37.19	1.44E+00		3.63E-01
+	RN-219	401.80		6.50	-3.47E-01	1.29E+00	1.29E+00
+	RA-223	323.87		3.88	-2.43E-01	2.17E+00	2.17E+00
+	RA-224	240.98		3.95	2.16E+01	5.14E+00	5.14E+00
+	RA-225	40.00		31.00	-4.00E-02	6.10E-01	6.10E-01
+	RA-226	186.21	*	3.28	5.14E+00	3.16E+00	3.16E+00
+	TH-227	50.10		8.40	1.90E-01	9.54E-01	9.54E-01
		236.00		11.50	-1.12E+01		1.08E+00
		256.20		6.30	1.99E-01		1.24E+00
+	AC-228	338.32	*	11.40	2.27E+00	6.37E-01	1.41E+00
		911.07	*	27.70	2.13E+00		6.37E-01

Analysis Report for 1606043-15

CP-5012 09-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	2.01E+00	6.37E-01	1.25E+00
+	TH-230	48.44		16.90	-7.23E-01	5.05E-01	5.05E-01
		62.85		4.60	3.10E+00		2.17E+00
		67.67		0.37	1.20E+01		2.18E+01
+	PA-231	283.67		1.60	7.42E-01	4.11E+00	5.71E+00
		302.67		2.30	-8.32E-01		4.11E+00
+	TH-231	25.64		14.70	-2.70E-01	1.19E+00	3.81E+00
		84.21		6.40	2.79E-01		1.19E+00
+	PA-233	311.98		38.60	-6.69E-02	2.66E-01	2.66E-01
+	PA-234	131.20		20.40	3.25E-01	4.31E-01	4.31E-01
		733.99		8.80	3.17E-01		1.37E+00
		946.00		12.00	8.88E-03		1.08E+00
+	PA-234M	1001.03		0.92	2.36E+00	1.51E+01	1.51E+01
+	TH-234	63.29	*	3.80	2.69E+00	4.19E+00	4.19E+00
+	U-235	143.76		10.50	6.03E-01	7.97E-01	7.97E-01
		163.35		4.70	2.55E-01		1.84E+00
		205.31		4.70	-2.92E-02		1.89E+00
+	NP-237	86.50	*	12.60	9.35E-01	1.49E+00	1.49E+00
+	NP-239	106.10		22.70	-1.99E+00	5.35E+00	5.35E+00
		228.18		10.70	-2.21E+00		1.14E+01
		277.60		14.10	1.66E+00		9.91E+00
+	AM-241	59.54		35.90	-6.32E-02	2.34E-01	2.34E-01
+	AM-243	74.67		66.00	-3.15E-01	1.75E-01	1.75E-01
+	CM-243	209.75		3.29	2.15E+00	6.76E-01	3.05E+00
		228.14		10.60	-1.51E-01		7.77E-01
		277.60		14.00	1.14E-01		6.76E-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

Analysis Report for 1606043-15

CP-5012 09-15

	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	9.24E-01	9.24E-01	-8.78E-03	4.25E-01
	NA-22	1274.54		99.94	1.76E-01	1.76E-01	8.28E-02	8.04E-02
	NA-24	1368.53		99.99	3.19E+03	5.25E+02	4.91E+02	1.39E+03
		2754.09		99.86	5.25E+02		0.00E+00	0.00E+00
	AL-26	1808.65		99.76	1.11E-01	1.11E-01	5.24E-02	4.60E-02
+	K-40	1460.81	*	10.67	1.68E+00	1.68E+00	3.11E+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	8.51E-02	8.51E-02	4.70E-02	4.11E-02
		78.34		96.00	1.30E-01		4.54E-01	6.35E-02
	SC-46	889.25		99.98	1.43E-01	1.43E-01	-4.33E-02	6.55E-02
		1120.51		99.99	1.99E-01		1.55E-01	9.21E-02
	V-48	983.52		99.98	2.01E-01	2.01E-01	8.60E-02	9.16E-02
		1312.10		97.50	2.33E-01		1.31E-01	1.05E-01
	CR-51	320.08		9.83	1.10E+00	1.10E+00	1.79E-01	5.16E-01
	MN-54	834.83		99.97	1.34E-01	1.34E-01	-5.26E-02	6.17E-02
	CO-56	846.75		99.96	1.44E-01	1.33E-01	-8.70E-03	6.63E-02
		1037.75		14.03	1.02E+00		1.98E-01	4.59E-01
		1238.25		67.00	3.33E-01		2.19E-01	1.55E-01
		1771.40		15.51	6.80E-01		-3.05E-01	2.75E-01
		2598.48		16.90	1.33E-01		0.00E+00	0.00E+00
	CO-57	122.06		85.51	9.02E-02	9.02E-02	-4.54E-02	4.34E-02
		136.48		10.60	7.84E-01		2.52E-01	3.78E-01
	CO-58	810.76		99.40	1.22E-01	1.22E-01	-3.05E-02	5.51E-02
	FE-59	1099.22		56.50	3.06E-01	3.06E-01	1.04E-01	1.39E-01
		1291.56		43.20	4.10E-01		1.34E-01	1.85E-01
	CO-60	1173.22		100.00	1.78E-01	1.42E-01	4.62E-02	8.18E-02
		1332.49		100.00	1.42E-01		-1.55E-02	6.30E-02
	ZN-65	1115.52		50.75	2.39E-01	2.39E-01	1.58E-02	1.06E-01
+	GA-67	93.31	*	35.70	3.70E+00	3.70E+00	3.14E+00	1.82E+00
		208.95	*	2.24	4.23E+01		2.24E+01	2.06E+01
		300.22	*	16.00	5.04E+00		3.91E+00	2.41E+00
	SE-75	121.11		16.70	4.79E-01	1.46E-01	5.83E-03	2.30E-01
		136.00		59.20	1.46E-01		5.72E-02	7.04E-02
		264.65		59.80	1.56E-01		-5.28E-03	7.41E-02
		279.53		25.20	4.13E-01		2.87E-02	1.97E-01
		400.65		11.40	7.78E-01		-2.81E-03	3.61E-01
	RB-82	776.52		13.00	1.29E+00	1.29E+00	1.14E-01	5.93E-01
	RB-83	520.41		46.00	2.16E-01	2.16E-01	2.79E-02	9.96E-02
		529.64		30.30	3.05E-01		-8.23E-02	1.39E-01
		552.65		16.40	6.67E-01		1.41E-01	3.09E-01
	KR-85	513.99		0.43	2.90E+01	2.90E+01	-8.19E+00	1.37E+01
	SR-85	513.99		99.27	1.40E-01	1.40E-01	-3.94E-02	6.59E-02
	Y-88	898.02		93.40	1.66E-01	1.19E-01	1.65E-02	7.63E-02
		1836.01		99.38	1.19E-01		3.31E-02	4.94E-02
	NB-93M	16.57		9.43	1.64E+02	1.64E+02	1.42E+02	7.97E+01
	NB-94	702.63		100.00	1.21E-01	1.21E-01	1.20E-02	5.60E-02
		871.10		100.00	1.35E-01		2.42E-02	6.19E-02
	NB-95	765.79		99.81	1.83E-01	1.83E-01	1.66E-01	8.56E-02
	NB-95M	235.69		25.00	2.88E+00	2.88E+00	-2.98E+01	1.39E+00
	ZR-95	724.18		43.70	3.61E-01	2.89E-01	-9.65E-02	1.68E-01
		756.72		55.30	2.89E-01		1.43E-01	1.35E-01

Analysis Report for 1606043-15

CP-5012 09-15

	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	1.38E+01	1.09E+01	3.29E+00	6.61E+00
		739.58		12.80	1.09E+01		5.87E+00	5.06E+00
		778.00		4.50	2.71E+01		-1.42E+01	1.24E+01
	RU-103	497.08		89.00	1.20E-01	1.20E-01	7.05E-03	5.54E-02
	RU-106	621.84		9.80	1.28E+00	1.28E+00	-1.49E-01	5.96E-01
+	AG-108M	433.93	*	89.90	1.02E-01	1.02E-01	7.79E-02	4.75E-02
		614.37		90.40	1.48E-01		3.26E-02	6.96E-02
		722.95	*	90.50	4.73E-01		2.59E-01	2.31E-01
	CD-109	88.03		3.72	3.02E+00	3.02E+00	4.17E+00	1.47E+00
	AG-110M	657.75		93.14	1.43E-01	1.43E-01	-2.71E-02	6.68E-02
		677.61		10.53	1.15E+00		5.05E-01	5.29E-01
		706.67		16.46	7.30E-01		1.65E-01	3.36E-01
		763.93		21.98	6.06E-01		-4.93E-01	2.80E-01
		884.67		71.63	2.00E-01		2.04E-02	9.19E-02
		1384.27		23.94	5.40E-01		1.39E-01	2.36E-01
	CD-113M	263.70		0.02	3.69E+02	3.69E+02	-1.52E+02	1.75E+02
	SN-113	255.12		1.93	4.32E+00	1.55E-01	-2.19E+00	2.04E+00
		391.69		64.90	1.55E-01		-2.41E-02	7.30E-02
	TE123M	159.00		84.10	1.03E-01	1.03E-01	-4.34E-02	4.96E-02
	SB-124	602.71		97.87	1.40E-01	1.40E-01	0.00E+00	6.51E-02
		645.85		7.26	1.80E+00		-6.90E-01	8.32E-01
		722.78		11.10	1.27E+00		-2.12E+00	5.85E-01
		1691.02		49.00	2.15E-01		-4.57E-02	8.69E-02
	I-125	35.49		6.49	2.80E+00	2.80E+00	-1.37E-01	1.34E+00
	SB-125	176.33		6.89	1.17E+00	3.58E-01	-8.33E-02	5.62E-01
		427.89		29.33	3.58E-01		2.55E-01	1.68E-01
		463.38		10.35	1.09E+00		5.03E-01	5.11E-01
		600.56		17.80	6.98E-01		-1.72E-02	3.26E-01
		635.90		11.32	1.11E+00		1.69E-01	5.16E-01
	SB-126	414.70		83.30	1.70E-01	1.70E-01	-3.43E-02	7.89E-02
		666.33		99.60	2.20E-01		8.34E-02	1.03E-01
		695.00		99.60	2.34E-01		-4.52E-02	1.09E-01
		720.50		53.80	3.80E-01		-8.70E-02	1.75E-01
+	SN-126	87.57	*	37.00	5.07E-01	5.07E-01	3.18E-01	2.50E-01
	SB-127	473.00		25.00	1.80E+00	1.70E+00	-2.14E-01	8.29E-01
		685.20		35.70	1.70E+00		2.41E-01	7.81E-01
		783.80		14.70	4.90E+00		2.30E+00	2.27E+00
	I-129	29.78		57.00	4.85E-01	4.85E-01	-1.11E-01	2.31E-01
		33.60		13.20	1.38E+00		-1.18E-01	6.58E-01
		39.58		7.52	1.68E+00		-1.10E-01	8.01E-01
	I-131	284.30		6.05	3.33E+00	2.36E-01	4.32E-01	1.58E+00
		364.48		81.20	2.36E-01		1.98E-01	1.11E-01
		636.97		7.26	3.78E+00		6.31E-01	1.76E+00
		722.89		1.80	1.55E+01		-2.60E+01	7.15E+00
	TE-132	49.72		13.10	4.33E+00	6.55E-01	8.60E-01	2.06E+00
		228.16		88.00	6.55E-01		-1.28E-01	3.12E-01
	BA-133	81.00		33.00	2.23E-01	1.34E-01	2.14E-01	1.08E-01
		302.84		17.80	5.32E-01		-1.08E-01	2.52E-01
		356.01		60.00	1.34E-01		-9.70E-02	6.22E-02
	I-133	529.87		86.30	1.54E+02	1.54E+02	9.80E+00	7.03E+01
	XE-133	81.00		38.00	6.49E-01	6.49E-01	6.21E-01	3.13E-01
	CS-134	563.23		8.38	1.43E+00	1.35E-01	1.00E+00	6.68E-01
		569.32		15.43	7.45E-01		1.48E-01	3.47E-01

Analysis Report for 1606043-15

CP-5012 09-15

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	1.35E-01	1.35E-01	3.77E-03	6.33E-02
	795.84	85.40	1.74E-01		7.36E-02	8.11E-02
	801.93	8.73	1.58E+00		1.77E-02	7.29E-01
CS-135	268.24	16.00	6.48E-01	6.48E-01	-1.46E-01	3.10E-01
I-135	1131.51	22.50	7.18E+09	5.20E+09	3.91E+08	3.29E+09
	1260.41	28.60	5.20E+09		-1.13E+09	2.34E+09
	1678.03	9.54	9.92E+09		-5.51E+09	4.01E+09
CS-136	153.22	7.46	1.80E+00	1.84E-01	9.16E-02	8.65E-01
	163.89	4.61	3.01E+00		-1.33E+00	1.45E+00
	176.55	13.56	9.93E-01		3.50E-01	4.76E-01
	273.65	12.66	1.06E+00		-5.82E-01	5.00E-01
	340.57	48.50	3.93E-01		7.14E-02	1.88E-01
	818.50	99.70	1.84E-01		-2.91E-02	8.34E-02
	1048.07	79.60	2.86E-01		-1.05E-01	1.30E-01
	1235.34	19.70	1.63E+00		4.92E-01	7.57E-01
CS-137	661.65	85.12	1.62E-01	1.62E-01	1.98E-02	7.59E-02
LA-138	788.74	34.00	4.03E-01	1.46E-01	4.30E-02	1.87E-01
	1435.80	66.00	1.46E-01		-7.29E-02	6.05E-02
CE-139	165.85	80.35	1.08E-01	1.08E-01	7.75E-03	5.16E-02
BA-140	162.64	6.70	2.12E+00	6.10E-01	2.93E-01	1.02E+00
	304.84	4.50	3.13E+00		1.78E-03	1.48E+00
	423.70	3.20	5.20E+00		1.99E-01	2.44E+00
	437.55	2.00	7.67E+00		1.07E+00	3.57E+00
	537.32	25.00	6.10E-01		-1.60E-01	2.80E-01
LA-140	328.77	20.50	8.72E-01	2.57E-01	7.17E-01	4.15E-01
	487.03	45.50	3.44E-01		-7.39E-03	1.59E-01
	815.85	23.50	8.00E-01		3.26E-01	3.63E-01
	1596.49	95.49	2.57E-01		1.12E-02	1.13E-01
CE-141	145.44	48.40	2.04E-01	2.04E-01	-3.51E-02	9.82E-02
CE-143	57.36	11.80	6.91E+01	2.80E+01	3.15E+00	3.32E+01
	293.26	42.00	2.80E+01		-4.34E+00	1.34E+01
	664.55	5.20	2.61E+02		4.45E+01	1.22E+02
CE-144	133.54	10.80	7.68E-01	7.68E-01	8.33E-02	3.70E-01
PM-144	476.78	42.00	2.07E-01	1.29E-01	-1.97E-03	9.52E-02
	618.01	98.60	1.29E-01		5.95E-03	6.04E-02
	696.49	99.49	1.51E-01		8.85E-03	7.08E-02
PM-145	36.85	21.70	6.88E-01	3.63E-01	5.62E-02	3.29E-01
	37.36	39.70	3.63E-01		2.97E-02	1.73E-01
	42.30	15.10	7.47E-01		5.53E-02	3.57E-01
	72.40	2.31	3.66E+00		1.43E+00	1.77E+00
PM-146	453.90	39.94	2.21E-01	2.21E-01	-2.23E-02	1.02E-01
	735.90	14.01	8.85E-01		2.62E-02	4.08E-01
	747.13	13.10	9.68E-01		6.92E-02	4.46E-01
ND-147	91.11	28.90	6.90E-01	6.90E-01	-5.68E-01	3.36E-01
	531.02	13.10	1.24E+00		2.83E-01	5.69E-01
PM-149	285.90	3.10	4.89E+01	4.89E+01	-3.63E+00	2.31E+01
EU-152	121.78	20.50	3.68E-01	3.68E-01	-1.85E-01	1.77E-01
	244.69	5.40	1.62E+00		-3.83E+00	7.69E-01
	344.27	19.13	4.68E-01		9.28E-02	2.20E-01
	778.89	9.20	1.40E+00		3.15E-01	6.43E-01
	964.01	10.40	1.70E+00		-4.21E+00	7.93E-01
	1085.78	7.22	1.89E+00		-1.01E+00	8.54E-01
	1112.02	9.60	1.45E+00		5.79E-01	6.54E-01

Analysis Report for 1606043-15

CP-5012 09-15

	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	9.00E-01	3.68E-01	8.35E-02	3.96E-01
	GD-153	97.43		31.30	2.72E-01	2.72E-01	1.04E-01	1.32E-01
		103.18		22.20	3.56E-01		-1.66E-01	1.72E-01
	EU-154	123.07		40.50	1.92E-01	1.92E-01	-2.84E-03	9.26E-02
		723.30		19.70	6.44E-01		-1.08E+00	2.98E-01
		873.19		11.50	1.14E+00		-1.46E-01	5.21E-01
		996.32		10.30	1.37E+00		-4.46E-01	6.23E-01
		1004.76		17.90	6.95E-01		-1.38E-01	3.12E-01
		1274.45		35.50	4.93E-01		2.32E-01	2.25E-01
+	EU-155	86.50	*	30.90	6.09E-01	3.99E-01	3.83E-01	3.00E-01
		105.30		20.70	3.99E-01		3.35E-01	1.93E-01
	EU-156	811.77		10.40	1.62E+00	1.62E+00	-2.98E-01	7.32E-01
		1153.47		7.20	3.11E+00		1.26E-01	1.41E+00
		1230.71		8.90	2.87E+00		-3.62E-01	1.31E+00
	HO-166M	184.41		72.60	1.49E-01	1.49E-01	5.98E-02	7.19E-02
		280.45		29.60	3.34E-01		2.32E-02	1.59E-01
		410.94		11.10	9.13E-01		5.31E-01	4.29E-01
		711.69		54.10	2.58E-01		9.32E-02	1.20E-01
	TM-171	66.72		0.14	5.85E+01	5.85E+01	3.41E+01	2.82E+01
	HF-172	81.75		4.52	1.58E+00	7.09E-01	1.20E+00	7.59E-01
		125.81		11.30	7.09E-01		-1.05E+00	3.41E-01
	LU-172	181.53		20.60	1.07E+00	5.57E-01	-4.97E-02	5.12E-01
		810.06		16.63	1.71E+00		-4.29E-01	7.76E-01
		912.12		15.25	4.64E+00		1.02E+01	2.22E+00
		1093.66		62.50	5.57E-01		-1.78E-01	2.51E-01
	LU-173	100.72		5.24	1.56E+00	5.24E-01	3.04E-01	7.53E-01
		272.11		21.20	5.24E-01		5.89E-01	2.51E-01
	HF-175	343.40		84.00	1.14E-01	1.14E-01	-7.89E-02	5.37E-02
	LU-176	88.34		13.30	8.32E-01	9.22E-02	1.15E+00	4.06E-01
		201.83		86.00	9.84E-02		-8.28E-02	4.71E-02
		306.78		94.00	9.22E-02		-2.20E-03	4.35E-02
	TA-182	67.75		41.20	2.06E-01	2.06E-01	1.14E-01	9.95E-02
		1121.30		34.90	5.73E-01		6.64E-01	2.66E-01
		1189.05		16.23	1.20E+00		5.72E-01	5.54E-01
		1221.41		26.98	7.45E-01		2.62E-01	3.44E-01
		1231.02		11.44	1.51E+00		-6.49E-01	6.89E-01
	IR-192	308.46		29.68	3.03E-01	2.18E-01	-1.58E-01	1.42E-01
		468.07		48.10	2.18E-01		1.12E-02	1.01E-01
	HG-203	279.19		77.30	1.48E-01	1.48E-01	7.67E-02	7.05E-02
	BI-207	569.67		97.72	1.17E-01	1.17E-01	2.32E-02	5.44E-02
		1063.62		74.90	1.79E-01		-3.87E-02	8.09E-02
+	TL-208	583.14	*	30.22	5.37E-01	1.89E-01	2.02E+00	2.55E-01
		860.37	*	4.48	3.43E+00		3.34E+00	1.59E+00
		2614.66	*	35.85	1.89E-01		1.34E+00	6.58E-02
	BI-210M	262.00		45.00	1.86E-01	1.86E-01	7.04E-02	8.81E-02
		300.00		23.00	4.48E-01		5.69E-01	2.14E-01
	PB-210	46.50		4.25	2.66E+00	2.66E+00	3.62E+00	1.28E+00
	PB-211	404.84		2.90	2.92E+00	2.92E+00	-1.37E+00	1.36E+00
		831.96		2.90	4.43E+00		-1.74E+00	2.03E+00
	BI-212	727.17		11.80	1.37E+00	1.37E+00	1.21E+00	6.47E-01
		1620.62		2.75	4.80E+00		-1.16E+00	2.08E+00
+	PB-212	238.63	*	44.60	3.83E-01	3.83E-01	2.18E+00	1.87E-01
		300.09	*	3.41	3.38E+00		2.62E+00	1.62E+00

Analysis Report for 1606043-15

CP-5012 09-15

	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	4.42E-01	1.18E-01	1.21E+00	2.12E-01
		1120.29	*	15.10	1.14E+00		9.83E-01	5.25E-01
		1764.49	*	15.80	1.18E-01		1.35E+00	0.00E+00
		2204.22	*	4.98	2.28E+00		1.62E+00	9.38E-01
+	PB-214	295.21	*	19.19	5.15E-01	3.63E-01	1.33E+00	2.45E-01
		351.92	*	37.19	3.63E-01		1.44E+00	1.74E-01
	RN-219	401.80		6.50	1.29E+00	1.29E+00	-3.47E-01	5.97E-01
	RA-223	323.87		3.88	2.17E+00	2.17E+00	-2.43E-01	1.02E+00
	RA-224	240.98		3.95	5.14E+00	5.14E+00	2.16E+01	2.52E+00
	RA-225	40.00		31.00	6.10E-01	6.10E-01	-4.00E-02	2.91E-01
+	RA-226	186.21	*	3.28	3.16E+00	3.16E+00	5.14E+00	1.53E+00
	TH-227	50.10		8.40	9.54E-01	9.54E-01	1.90E-01	4.55E-01
		236.00		11.50	1.08E+00		-1.12E+01	5.24E-01
		256.20		6.30	1.24E+00		1.99E-01	5.88E-01
+	AC-228	338.32	*	11.40	1.41E+00	6.37E-01	2.27E+00	6.83E-01
		911.07	*	27.70	6.37E-01		2.13E+00	2.98E-01
		969.11	*	16.60	1.25E+00		2.01E+00	5.88E-01
	TH-230	48.44		16.90	5.05E-01	5.05E-01	-7.23E-01	2.41E-01
		62.85		4.60	2.17E+00		3.10E+00	1.05E+00
		67.67		0.37	2.18E+01		1.20E+01	1.05E+01
	PA-231	283.67		1.60	5.71E+00	4.11E+00	7.42E-01	2.71E+00
		302.67		2.30	4.11E+00		-8.32E-01	1.95E+00
	TH-231	25.64		14.70	3.81E+00	1.19E+00	-2.70E-01	1.82E+00
		84.21		6.40	1.19E+00		2.79E-01	5.73E-01
	PA-233	311.98		38.60	2.66E-01	2.66E-01	-6.69E-02	1.25E-01
	PA-234	131.20		20.40	4.31E-01	4.31E-01	3.25E-01	2.08E-01
		733.99		8.80	1.37E+00		3.17E-01	6.32E-01
		946.00		12.00	1.08E+00		8.88E-03	4.89E-01
	PA-234M	1001.03		0.92	1.51E+01	1.51E+01	2.36E+00	6.89E+00
+	TH-234	63.29	*	3.80	4.19E+00	4.19E+00	2.69E+00	2.06E+00
	U-235	143.76		10.50	7.97E-01	7.97E-01	6.03E-01	3.84E-01
		163.35		4.70	1.84E+00		2.55E-01	8.86E-01
		205.31		4.70	1.89E+00		-2.92E-02	9.07E-01
+	NP-237	86.50	*	12.60	1.49E+00	1.49E+00	9.35E-01	7.34E-01
	NP-239	106.10		22.70	5.35E+00	5.35E+00	-1.99E+00	2.58E+00
		228.18		10.70	1.14E+01		-2.21E+00	5.41E+00
		277.60		14.10	9.91E+00		1.66E+00	4.72E+00
	AM-241	59.54		35.90	2.34E-01	2.34E-01	-6.32E-02	1.13E-01
	AM-243	74.67		66.00	1.75E-01	1.75E-01	-3.15E-01	8.53E-02
	CM-243	209.75		3.29	3.05E+00	6.76E-01	2.15E+00	1.47E+00
		228.14		10.60	7.77E-01		-1.51E-01	3.70E-01
		277.60		14.00	6.76E-01		1.14E-01	3.22E-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 1606043-15

CP-5012 09-15

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-5012 09-15

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	0	19	487
9:	1063	733	413	183	1987	386	100	137
17:	138	94	95	82	62	52	56	47
25:	55	56	50	59	42	53	45	47
33:	36	51	51	48	55	53	50	57
41:	50	54	62	52	57	48	138	50
49:	39	60	45	41	72	54	60	56
57:	63	81	69	81	81	85	119	154
65:	73	69	85	96	68	69	82	97
73:	113	97	332	135	335	281	60	68
81:	78	85	50	109	90	72	146	127
89:	66	131	69	75	212	131	56	47
97:	57	54	55	82	50	43	46	51
105:	58	75	53	43	72	42	45	48
113:	52	52	60	58	40	46	46	40
121:	42	43	48	42	53	50	50	39
129:	82	63	45	46	43	46	41	57
137:	45	46	40	38	45	45	44	59
145:	44	40	29	46	44	32	36	46
153:	37	50	44	49	36	24	54	41
161:	47	44	54	34	39	42	50	29
169:	27	52	46	38	41	29	36	35
177:	41	30	41	34	40	36	36	41
185:	43	143	69	28	34	37	35	28
193:	43	35	26	37	29	44	42	28
201:	30	40	28	35	43	33	36	28
209:	62	57	42	29	32	28	26	26
217:	36	28	42	34	25	39	22	31
225:	26	34	31	21	22	21	29	31
233:	37	27	29	30	32	174	520	49
241:	81	91	33	19	25	27	28	28
249:	22	21	16	32	23	20	17	24
257:	17	21	15	24	25	18	24	19
265:	20	31	28	20	22	66	51	23
273:	20	24	22	12	32	42	21	24
281:	26	29	25	23	17	24	20	19
289:	19	12	26	17	16	25	104	77
297:	10	17	18	46	35	24	16	16
305:	24	14	23	16	17	14	20	18
313:	13	15	19	18	18	17	14	17
321:	17	21	14	11	17	18	14	49
329:	30	22	22	18	24	13	24	16
337:	16	77	77	26	17	17	16	14
345:	17	20	14	16	18	13	41	211
353:	67	20	15	17	4	7	20	12
361:	10	19	13	13	15	13	6	14

369:	19	17	12	17	19	12	8	13

Sample Title: CP-5012 09-15

Channel								
377:	6	20	12	10	15	18	21	18
385:	18	22	17	11	16	17	10	13
393:	27	12	18	16	13	14	11	10
401:	13	14	10	10	15	11	12	16
409:	16	30	12	14	11	9	11	11
417:	14	11	14	12	10	18	16	13
425:	10	22	18	19	12	12	8	11
433:	11	17	15	18	6	8	16	15
441:	5	20	9	25	7	10	12	7
449:	7	14	14	13	11	7	14	7
457:	15	11	10	14	5	18	39	15
465:	7	11	15	7	17	10	13	11
473:	5	12	6	12	5	12	10	6
481:	13	12	13	11	5	15	11	12
489:	12	13	8	8	7	12	13	8
497:	7	11	9	10	8	8	13	11
505:	9	10	8	18	26	42	67	37
513:	23	12	12	7	13	7	7	13
521:	8	11	10	4	14	8	6	5
529:	10	11	6	8	8	8	8	15
537:	6	8	7	13	11	4	10	12
545:	7	9	7	10	8	12	12	11
553:	7	9	9	8	11	9	6	10
561:	12	22	13	10	12	5	11	11
569:	16	10	14	14	11	14	12	12
577:	9	7	12	9	14	21	124	72
585:	7	9	5	7	9	14	4	8
593:	7	9	12	8	10	7	12	9
601:	9	12	8	11	8	9	10	17
609:	107	101	12	11	10	13	10	8
617:	13	10	5	12	8	6	9	11
625:	12	7	9	9	2	5	8	8
633:	6	12	10	9	6	9	10	6
641:	10	7	7	11	3	4	8	10
649:	10	12	9	10	12	9	7	11
657:	7	8	14	7	10	9	11	13
665:	7	13	5	10	5	6	5	4
673:	3	5	4	4	12	7	11	6
681:	2	10	4	6	7	5	7	8
689:	7	8	11	3	8	15	11	8
697:	7	16	11	7	4	6	2	10
705:	9	2	11	4	7	6	13	7
713:	15	13	7	9	8	7	5	7
721:	8	7	6	7	9	7	22	25
729:	8	8	6	7	4	2	8	11
737:	7	8	7	10	12	5	8	4
745:	4	5	11	5	13	6	7	6
753:	17	5	9	6	8	9	9	7
761:	5	3	6	12	7	9	7	9
769:	19	4	6	12	11	5	3	6
777:	8	8	7	5	4	8	9	4
785:	7	10	12	4	5	4	10	8
793:	7	11	15	8	6	5	8	4

801:	5	4	13	9	7	13	4	6

Sample Title: CP-5012 09-15

Channel								
809:	10	2	4	2	3	4	2	5
817:	7	5	7	3	3	8	5	4
825:	3	1	3	3	6	6	11	2
833:	3	5	8	15	7	3	9	6
841:	8	4	5	6	5	4	8	7
849:	8	8	2	0	5	3	3	6
857:	8	8	8	11	22	5	7	3
865:	8	4	4	5	10	5	4	5
873:	6	7	6	6	6	4	8	3
881:	6	8	6	5	10	3	6	5
889:	7	8	8	2	6	7	7	4
897:	4	11	7	11	3	5	7	6
905:	12	4	4	2	6	23	73	55
913:	9	7	3	6	6	3	5	2
921:	4	3	1	9	9	5	2	4
929:	7	1	9	3	5	10	5	3
937:	5	7	7	2	2	5	3	4
945:	1	4	9	4	8	7	5	4
953:	7	3	5	5	4	7	7	6
961:	5	4	7	7	24	7	9	14
969:	66	23	4	9	1	6	7	8
977:	2	2	3	3	7	4	4	4
985:	5	7	3	4	5	5	3	9
993:	5	5	6	4	4	9	3	8
1001:	6	2	2	5	6	3	3	4
1009:	4	4	4	5	8	4	10	5
1017:	5	4	3	2	5	3	1	6
1025:	4	1	5	4	7	3	5	3
1033:	2	5	4	4	5	3	2	6
1041:	6	2	4	7	4	2	4	6
1049:	5	5	7	9	5	1	7	3
1057:	4	4	6	3	3	7	4	2
1065:	4	6	6	4	4	8	10	5
1073:	4	4	2	5	2	3	7	7
1081:	6	2	1	7	2	4	8	5
1089:	8	4	5	6	5	2	3	3
1097:	3	6	7	4	6	6	5	4
1105:	2	3	5	3	9	1	3	2
1113:	3	5	6	1	2	1	6	16
1121:	18	3	7	5	2	2	7	3
1129:	5	7	7	6	7	4	8	4
1137:	6	3	6	6	3	4	2	5
1145:	4	2	7	5	4	1	3	4
1153:	5	6	8	4	2	6	6	2
1161:	8	3	4	3	5	7	12	10
1169:	8	10	5	3	3	9	5	10
1177:	5	5	6	3	3	4	5	3
1185:	8	4	3	6	10	8	14	3
1193:	5	2	8	4	5	5	6	8
1201:	7	4	3	7	3	5	5	10
1209:	8	5	7	6	5	2	12	6
1217:	5	6	7	4	6	10	12	4
1225:	4	6	6	4	5	5	5	8

1233:	4	4	9	6	9	13	8	6

Sample Title: CP-5012 09-15

Channel								
1241:	6	3	7	3	4	5	10	6
1249:	7	6	1	2	4	1	6	4
1257:	4	8	4	1	2	3	5	4
1265:	5	1	6	6	3	2	5	6
1273:	8	2	4	1	12	4	4	1
1281:	7	7	5	4	4	4	3	3
1289:	3	3	4	6	5	4	1	3
1297:	4	2	3	2	3	5	3	2
1305:	4	1	4	1	3	4	5	2
1313:	2	6	5	1	1	3	2	2
1321:	2	4	4	2	9	4	5	3
1329:	1	3	3	3	3	3	6	3
1337:	3	5	0	3	4	2	2	6
1345:	2	0	1	2	4	3	2	2
1353:	3	1	2	1	2	3	3	3
1361:	0	3	2	1	3	5	1	2
1369:	1	0	4	1	3	0	1	1
1377:	4	6	2	3	1	2	2	3
1385:	3	3	2	2	1	0	2	1
1393:	2	0	2	2	2	1	3	1
1401:	6	3	3	1	2	3	0	7
1409:	1	4	2	1	4	1	4	1
1417:	1	1	2	4	2	2	3	1
1425:	4	0	4	4	1	1	2	0
1433:	1	2	1	2	1	1	2	4
1441:	1	2	0	2	3	1	2	4
1449:	4	5	0	4	4	4	4	2
1457:	5	4	26	150	251	109	12	1
1465:	0	1	0	5	2	0	2	1
1473:	2	1	0	3	2	0	1	1
1481:	0	3	1	1	2	1	1	0
1489:	2	0	1	0	1	0	3	2
1497:	4	0	0	3	1	2	2	3
1505:	4	2	2	1	4	2	4	1
1513:	2	4	1	0	2	1	2	1
1521:	3	1	1	4	0	0	2	0
1529:	1	1	2	2	2	1	1	2
1537:	0	0	1	1	3	1	3	0
1545:	3	0	0	1	0	0	1	1
1553:	2	1	0	0	1	1	1	2
1561:	0	0	2	0	1	1	2	1
1569:	1	2	2	1	3	1	2	1
1577:	2	3	1	4	0	0	2	1
1585:	2	0	3	9	3	0	1	5
1593:	6	3	1	1	1	0	1	1
1601:	1	0	2	0	0	0	2	2
1609:	1	1	0	1	0	3	2	0
1617:	0	2	0	1	5	2	2	2
1625:	2	1	0	3	2	1	1	3
1633:	0	3	0	1	0	1	2	1
1641:	0	1	1	0	1	1	0	1
1649:	0	0	0	1	1	0	1	0
1657:	1	1	0	1	2	1	1	0

1665:	3	0	2	0	3	1	3	2

Sample Title: CP-5012 09-15

Channel								
1673:	0	0	1	2	0	1	0	1
1681:	1	0	1	1	1	2	0	1
1689:	0	0	0	1	1	1	2	0
1697:	1	0	2	0	0	2	0	2
1705:	0	1	1	0	1	1	2	3
1713:	1	4	2	1	0	0	0	2
1721:	0	1	1	1	1	2	2	2
1729:	3	5	0	0	0	1	0	3
1737:	1	2	0	1	0	0	0	4
1745:	1	0	0	0	2	0	2	0
1753:	0	1	0	1	1	2	0	0
1761:	2	3	6	11	7	2	0	0
1769:	2	1	0	1	0	0	2	3
1777:	1	2	1	1	2	1	0	1
1785:	0	0	2	0	0	0	2	1
1793:	1	3	0	0	0	0	3	1
1801:	0	1	0	2	2	2	2	0
1809:	0	0	0	0	0	0	0	1
1817:	0	0	2	1	0	0	0	0
1825:	0	0	0	1	0	1	0	0
1833:	1	1	0	2	2	0	2	0
1841:	0	0	1	0	1	0	1	3
1849:	0	0	0	1	0	3	1	2
1857:	1	1	1	1	3	0	0	0
1865:	1	0	1	1	0	1	3	1
1873:	1	1	0	0	0	3	0	0
1881:	0	0	0	0	0	0	0	0
1889:	0	1	0	1	1	2	0	1
1897:	0	0	1	1	0	0	2	1
1905:	0	0	3	1	0	1	1	0
1913:	0	1	0	1	0	2	2	1
1921:	2	3	2	2	1	2	0	2
1929:	0	2	0	1	4	0	1	1
1937:	3	1	0	0	2	1	1	0
1945:	1	1	0	0	0	4	1	0
1953:	1	0	1	1	0	2	3	0
1961:	1	0	1	0	1	0	1	0
1969:	2	1	0	1	0	0	0	2
1977:	1	1	0	2	1	0	2	2
1985:	2	0	1	2	0	2	0	1
1993:	1	0	1	0	0	1	0	0
2001:	1	0	1	0	0	0	2	0
2009:	1	0	2	0	0	1	0	0
2017:	0	0	1	1	1	1	2	0
2025:	2	0	0	0	2	0	1	0
2033:	0	2	0	0	0	1	1	1
2041:	0	1	2	1	1	3	0	1
2049:	0	0	0	0	0	1	0	1
2057:	3	2	0	0	0	1	1	1
2065:	2	1	1	0	0	1	0	1
2073:	0	3	0	1	1	1	3	0
2081:	0	0	0	0	0	1	1	0
2089:	2	0	1	0	0	3	3	0

2097:	1	1	0	2	1	2	1	1

Sample Title: CP-5012 09-15

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

2529:	0	0	0	0	0	1	0	0

Sample Title: CP-5012 09-15

Channel								
2537:	0	0	0	0	0	1	0	0
2545:	0	0	0	0	0	1	0	0
2553:	2	1	0	0	0	1	0	0
2561:	0	1	0	0	0	0	0	0
2569:	1	0	0	1	1	2	0	0
2577:	0	0	0	0	1	0	0	1
2585:	1	1	1	0	0	0	0	0
2593:	1	0	0	0	0	0	0	0
2601:	0	0	0	1	0	0	0	0
2609:	1	1	1	0	11	26	15	9
2617:	2	0	0	0	0	2	1	0
2625:	0	0	0	0	1	0	1	0
2633:	0	0	0	2	0	0	1	1
2641:	0	0	0	1	1	0	0	0
2649:	0	0	0	0	0	0	0	1
2657:	0	0	0	0	1	0	0	1
2665:	0	0	0	0	0	0	0	1
2673:	0	0	0	0	0	0	1	1
2681:	0	0	0	0	0	0	0	0
2689:	1	0	0	0	0	0	0	0
2697:	1	0	0	0	0	2	0	0
2705:	0	0	0	0	0	0	1	0
2713:	0	1	3	0	1	0	1	0
2721:	0	0	1	0	0	0	2	0
2729:	0	0	0	0	2	0	0	0
2737:	0	0	0	0	0	0	1	1
2745:	0	0	0	0	0	0	0	0
2753:	0	0	0	0	0	2	1	0
2761:	2	0	0	0	0	0	2	0
2769:	0	2	0	0	0	0	0	0
2777:	1	0	0	0	0	0	0	0
2785:	1	0	0	0	0	0	0	0
2793:	0	1	0	0	0	0	0	1
2801:	0	0	0	0	0	0	0	0
2809:	1	0	0	1	0	0	0	0
2817:	1	0	0	0	0	0	0	0
2825:	0	0	0	0	0	0	1	0
2833:	0	0	0	0	1	0	1	0
2841:	0	0	0	0	1	0	0	0
2849:	0	1	0	0	0	1	1	1
2857:	1	0	0	0	0	1	0	0
2865:	1	0	1	1	1	0	0	0
2873:	1	1	2	0	0	1	0	0
2881:	0	0	0	0	0	0	0	0
2889:	1	2	0	0	0	0	0	0
2897:	0	0	0	0	0	1	0	0
2905:	1	1	0	0	0	0	1	1
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	1	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	1	0	0
2953:	0	0	0	0	0	0	0	0

2961:	0	0	0	0	1	1	0	0

Sample Title: CP-5012 09-15

Channel								
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	0	0	1	0
2985:	0	0	1	0	1	0	1	0
2993:	1	0	1	1	1	0	0	0
3001:	1	0	0	0	0	0	1	0
3009:	0	1	0	0	0	1	1	0
3017:	0	1	0	1	0	0	0	1
3025:	0	0	0	0	0	0	0	0
3033:	0	1	1	0	0	0	1	0
3041:	1	1	0	0	1	0	0	0
3049:	1	0	0	1	0	0	0	0
3057:	0	1	0	1	0	0	0	0
3065:	1	0	0	0	0	0	0	0
3073:	0	1	0	1	0	0	0	0
3081:	0	0	1	1	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	1	3	0	0
3113:	0	0	0	0	0	0	0	0
3121:	1	0	0	0	0	0	0	0
3129:	0	0	0	0	0	1	1	0
3137:	0	0	0	0	0	0	1	0
3145:	0	0	0	0	0	0	0	0
3153:	1	0	0	0	2	0	2	1
3161:	1	0	0	0	0	1	0	1
3169:	0	0	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	1	1	1	0	2
3201:	0	0	1	0	0	1	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	1	0	0	1
3225:	0	0	0	0	1	0	1	0
3233:	0	1	1	0	0	0	0	0
3241:	1	0	2	0	0	0	0	0
3249:	0	0	0	0	0	1	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	1	0	0	0	0	0
3273:	0	2	0	0	0	0	0	1
3281:	1	0	0	0	0	0	0	0
3289:	0	1	0	0	0	0	0	0
3297:	0	0	1	0	0	0	0	0
3305:	0	0	0	0	0	1	0	0
3313:	0	0	0	1	0	0	0	0
3321:	0	0	0	0	0	1	1	1
3329:	0	0	0	0	0	0	1	0
3337:	0	0	0	0	1	0	0	0
3345:	0	0	0	0	0	0	1	0
3353:	0	0	0	0	1	0	0	0
3361:	0	1	1	0	0	0	0	0
3369:	0	0	0	1	0	0	0	2
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393:	0	0	0	1	1	0	0	0

Sample Title: CP-5012 09-15

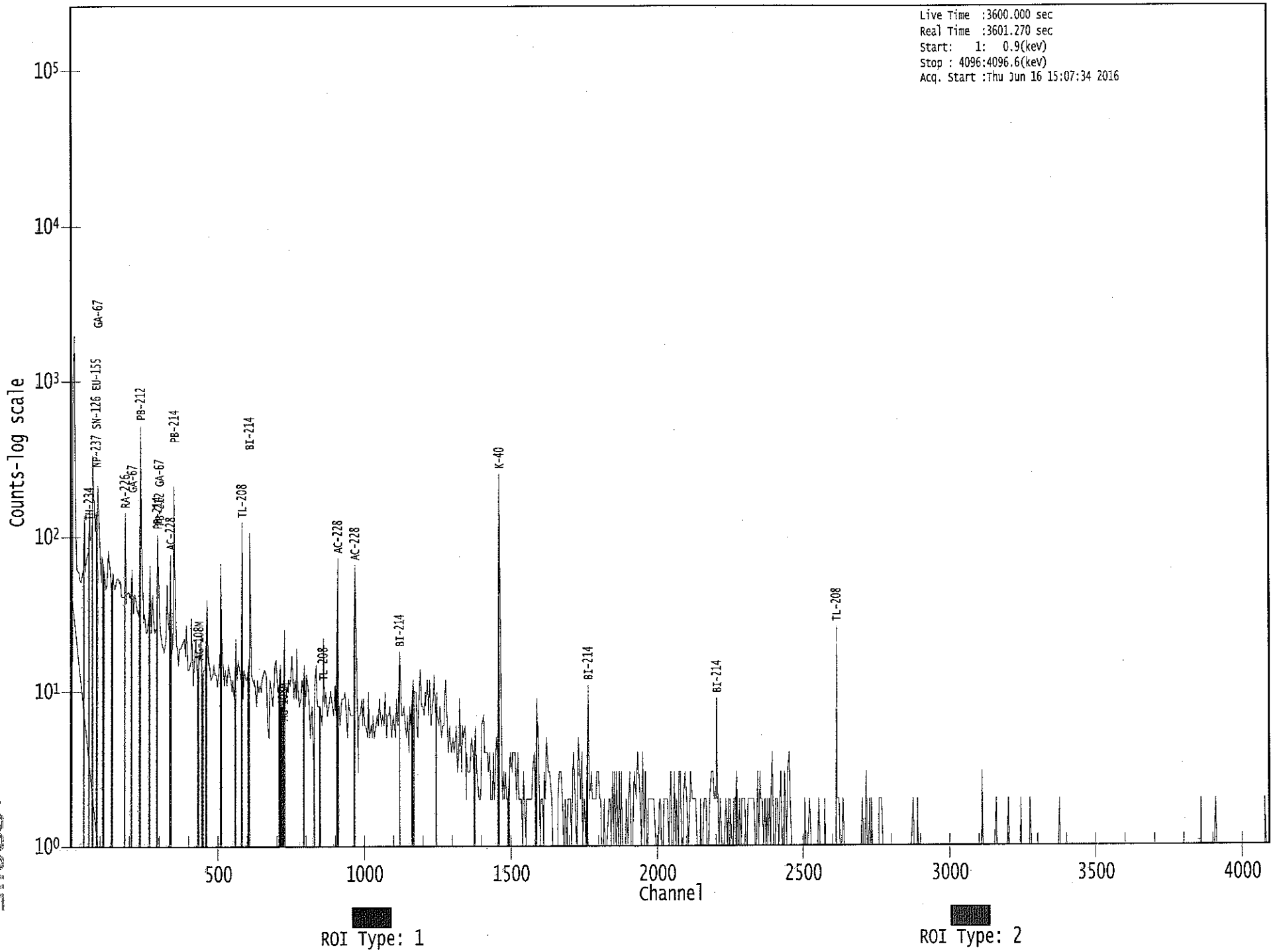
Channel								
3401:	0	1	0	0	1	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	1	0	0
3425:	0	0	0	1	0	0	0	0
3433:	1	0	0	0	0	0	0	0
3441:	0	0	0	1	0	1	0	0
3449:	0	0	1	1	0	1	0	1
3457:	0	0	1	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	1	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	1	0	0	0	0	0
3497:	0	0	0	0	0	0	1	0
3505:	0	0	1	0	0	0	0	0
3513:	0	0	0	1	0	0	0	1
3521:	0	0	0	0	0	0	0	1
3529:	0	1	1	0	0	0	0	0
3537:	0	0	0	1	0	0	0	1
3545:	0	0	0	0	0	1	0	0
3553:	0	0	0	0	0	0	0	1
3561:	0	0	0	0	0	0	0	0
3569:	1	0	1	0	0	1	1	0
3577:	0	0	0	0	0	1	0	0
3585:	0	1	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	1	1	0	0	1	0
3625:	1	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	1	0	0	1	1	0	0
3657:	0	0	0	0	0	0	0	1
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	1	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	1	0	0	0	0	0
3713:	1	0	0	0	1	1	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	1	0	0	0	1
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	1	0	0	0	0
3753:	0	0	1	1	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	1	0	0	0	0	0
3777:	1	0	0	0	1	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	1	0

3825:	0	1	0	1	0	0	0	0

Sample Title: CP-5012 09-15

Channel								
3833:	1	0	0	0	0	0	0	0
3841:	0	0	0	1	0	0	0	0
3849:	1	0	0	0	0	0	0	0
3857:	0	0	2	0	1	0	0	0
3865:	0	0	0	0	1	0	0	0
3873:	0	0	1	0	0	0	0	0
3881:	0	0	1	0	1	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	1
3905:	1	0	0	0	2	0	1	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	1	0	0
3929:	0	0	1	0	0	0	1	0
3937:	0	0	0	1	0	1	1	0
3945:	1	0	0	0	0	0	0	0
3953:	1	0	0	0	0	0	0	0
3961:	0	1	0	1	0	0	0	0
3969:	0	0	0	0	1	0	0	1
3977:	0	0	0	0	0	0	0	0
3985:	0	0	1	0	0	0	0	0
3993:	0	0	0	0	0	0	1	0
4001:	0	0	0	0	0	1	0	0
4009:	0	0	0	0	0	0	0	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:	1	1	1	0	0	0	0	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	2	0	0	0
4081:	1	0	0	0	0	1	0	1
4089:	0	0	0	0	0	0	1	0

0000039021.CNF



****
***** 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 6:04:33 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 [Mean +/- Std. Dev.]	Value	Deviation/Flags < 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)

****
***** GENIE QUALITY ASSURANCE *****
****

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	3.4578E+000	3.7851E-002
[SD:-2.4376E+035+/-******]		< : : : >

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 *****
****

6/16

Last Results Report
6/16/16 6:04:08 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001B.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 [Mean +/- Std. Dev.]	Value	Deviation/Flags < 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 *****
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Last Results Report
6/16/16 5:40:22 AM

6116

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 ke	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 [Mean +/- Std. Dev.]	Value	Deviation/Flags < 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)

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***** GENIE QUALITY ASSURANCE *****
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6/16

Last Results Report
6/16/16 7:09:58 AM

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 ke	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 (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)

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***** GENIE QUALITY ASSURANCE *****
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Last Results Report
6/16/16 5:39:56 AM

6116

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000002GAS-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	5.9878E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Peak centroid 661.65 kev	6.6133E+002	
Boundary Limits: [6.600E+002, 6.640E+002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1332.49 ke	1.3320E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1836.1 kev	1.8353E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Am-241	1.6498E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Cs-137	1.8564E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Co-60	1.8804E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	2.4911E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Decay corrected activity	1.4760E+005	
Boundary Limits: [1.224E-001, 1.836E-001]		< : : : >
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 [Mean +/- Std. Dev.]	Value	Deviation/Flags < 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)

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***** GENIE QUALITY ASSURANCE *****
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Last Results Report
6/16/16 7:26:52 AM

6/16

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001GAF-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 [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Decay corrected activity Boundary Limits: [7.572E-003, 1.136E-002]	1.0745E+004	< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Decay corrected activity Boundary Limits: [1.626E-002, 2.440E-002]	1.9594E+004	< : : : >

Flags Key:
LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
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UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)